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Jeffrey A. Meyers  
Commissioner

Lisa M. Morris  
Director

STATE OF NEW HAMPSHIRE  
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
*DIVISION OF PUBLIC HEALTH SERVICES*

29 HAZEN DRIVE, CONCORD, NH 03301  
603-271-4501 1-800-852-3345 Ext. 4501  
Fax: 603-271-4827 TDD Access: 1-800-735-2964  
www.dhhs.nh.gov

April 2, 2019

His Excellency, Governor Christopher T. Sununu  
and the Honorable Council  
State House  
Concord, New Hampshire 03301

**REQUESTED ACTION**

Authorize the Department of Health and Human Services, Division of Public Health, to enter into an agreement with Deloitte Consulting, LLP, Vendor #174776, 7 Eagle Square #301, Concord, NH 03301, to provide a Business Intelligence (BI) solution, with specific functionality to surround the creation of an opioid dashboard, in an amount not to exceed \$2,270,549, effective upon date of Governor and Executive Council approval, through November 29, 2019. 100% Federal Funds.

Funds are available in the following account(s) for State Fiscal Year (SFY) 2019 and are anticipated to be available in SFY 2020, contingent upon legislative approval of the operational budget with authority to adjust encumbrances between State Fiscal Years through the Budget Office.

**05-95-90-902510-7039 HEALTH AND SOCIAL SERVICES, DEPT OF HEALTH AND HUMAN SVS, HHS: DIVISION OF PUBLIC HEALTH, Public Health Crisis Response**

State Fiscal Year	Class/Account	Class Title	Job Number	Total Amount
2019	102-500731	Contracts for Prog Svc	90703900	\$1,745,973
2019	102-500731	Contracts for Prog Svc.	90703902	120,000
2020	102-500731	Contracts for Prog Svc	90703900	\$404,576
			Total	\$2,270,549

**EXPLANATION**

The purpose of this request is for the development of a software system and associated services that are required for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard that is integrated with and expands upon the Department's existing enterprise wide data warehousing and business intelligence infrastructure.

The Department was notified on August 29, 2018 that it had received \$4.0 million dollars in grant funding from the Centers for Disease Control and Prevention to respond to the opioid crisis, all of which must be expensed by August 30, 2019. Part of the funding was for data integration and opioid dashboards. This provides the Department with a unique opportunity to organize data into meaningful information, identify actionable uses of information and develop realistic, fact based, evidence-supported policies and programs, which will allow the Department to accurately focus on how to best address the opioid crisis.

Data related to the opioid crisis, in many respects, presents the largest data management and analysis challenge of any issue faced not just by the Department, but by the State as a whole. While the contracted development of the data integration and dashboard system will be focused on opioids, the infrastructure developed and the data integrated will be fully leveraged to support all the analytical challenges the Department faces. For example, key elements of child welfare data are needed for analysis of opioids, by integrating this data into the Department's business intelligence infrastructure, the data will then be positioned to meet other analytic needs of the program. Beyond data integration the contractor will assist the Department with implementation of high-level analytic tools in its environment, provide technical training for Department and other agency staff, provide the toolsets needed to implement agile project management, and provide assistance in developing data governance policies and procedures. All these efforts will be applicable to all systems.

The Department maintains, or has access to, multiple systems that compile data on a variety of health and social issues that correlate with risk, progression, misuse and addiction to opioids and resulting health consequences, including overdose deaths. These systems organize and support various functional areas in delivering services to the citizens, as well as systems that capture information about the health and well-being of the general public. Additionally, other New Hampshire state agencies and federal partners capture important data related to the opioid crisis. In aggregate, these systems maintain a large wealth of data.

As an example, during the project, health care claims, state funded treatment, child welfare, and other key data relative to the opioid crisis will be securely integrated to allow for analysis, summary reporting and to provide targeted interventions in areas of the state with the highest burden of Substance Use Disorder. Additionally, the integration efforts will be made to maximize the future value of the data for other health issues New Hampshire faces now and in the future.

Deloitte Consulting, LLP was selected for this project through a competitive bid process. A Request for Proposals/Applications was posted on The Department of Health and Human Services' web site from October 16, 2018 through December 10, 2018. A bidder's conference was held on October 30, 2018. The Department received six (6) proposals/applications. The proposals/applications were reviewed and scored by a team of individuals with program specific knowledge. The review included a thorough discussion of the strengths and weaknesses of the proposals/applications. The Score Summary is attached.

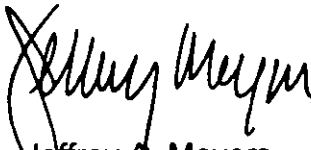
As referenced in the Request for Proposals and in Part 2 – Information Technologies Provisions, Section 2. Contract Term of this contract, the Department has the option to extend contract services for up to one (1) additional year, contingent upon satisfactory delivery of services, available funding, agreement of the parties and approval of the Governor and Executive Council.

Area served: Statewide.

Source of Funds: 100% Federal Funds from Centers for Disease Control – Public Health  
Emergency Response: Cooperative Agreement for Emergency Response: Public Health Crisis  
Response Funding Opportunity Number: CDC-RFA-TP18-1802

In the event that the Federal (or Other) Funds become no longer available, General Funds  
will not be requested to support this program.

Respectfully submitted,



Jeffrey A. Meyers  
Commissioner



**STATE OF NEW HAMPSHIRE**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
27 Hazen Dr., Concord, NH 03301  
Fax: 603-271-1516 TDD Access: 1-800-735-2964  
[www.nh.gov/doit](http://www.nh.gov/doit)

**Denis Goulet**  
*Commissioner*

April 18, 2019

Jeffrey A. Meyers, Commissioner  
Department of Health and Human Services  
State of New Hampshire  
129 Pleasant Street  
Concord, NH 03301

Dear Commissioner Meyers:

This letter represents formal notification that the Department of Information Technology (DoIT) has approved your agency's request to enter into a contract with Deloitte Consulting, LLP, of Concord NH as described below and referenced as DoIT No. 2019-043.

The purpose of this request is for the development of a software system and associated services that are required for DHHS to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard that is integrated with and expands upon the Department's existing enterprise wide data warehousing and business intelligence infrastructure.

The amount of the contract is not to exceed \$2,270,549, and shall become effective upon the date of Governor and Executive Council approval through November 29, 2019.

A copy of this letter should accompany the Department of Health and Human Services' submission to the Governor and Executive Council for approval.

Sincerely,

Denis Goulet

DG/kaf  
DoIT #2019-043

cc: Bruce Smith, IT Manager, DoIT



**New Hampshire Department of Health and Human Services**  
**Office of Business Operations**  
**Contracts & Procurement Unit**  
**Summary Scoring Sheet**

**Preliminary Scores from Initial Evaluation**

**Data Analytics Platform for Opioid  
Crisis**

**DHHS-RFP-2019-043/RFP-2019-DPHS-19-DATAA**

**RFP Name**

**RFP Number**

**Reviewer Names**

**Bidder Name**

1. Deloitte Consulting, LLC
2. Edifecs, Inc
3. Lewin Group, Inc
4. Pulselight Holdings, Inc
5. SAS Institute, Inc.
6. Spruce Technology, Inc

Pass/Fail	Maximum Points	Actual Points
	1000	772
	1000	448
	1000	771
	1000	430
	1000	725
	1000	450

1. David Wieters, Director, Bureau of Information Services
2. Andrew Chalsma, Director of Data Analytics and Reporting, NH
3. Brian Earp, Senior Financial Manger, Ofc of Info Sys, DHHS
4. Richelle Swanson, Administratr III BDC, Financial Analyst DPHS
5. Sai Cherala, Bureau Chief Populatn Hlth & Commnty Svc
6. Annette Escalante, Director Bureau of Drug & Alcohol Services
7. Chiahui Chawla
8. \_\_\_\_\_

**Refined Scores following Oral Presentations**

1. Deloitte Consulting, LLC
2. Lewin Group, Inc

	0	802
	0	731

Subject: DHHS-RFP-2019-043/RFP-2019-DPHS-19-DATAA

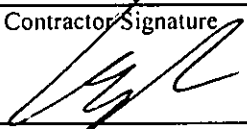
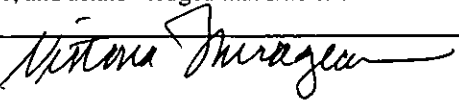
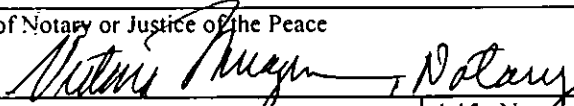

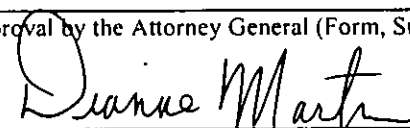
**Notice:** This agreement and all of its attachments shall become public upon submission to Governor and Executive Council for approval. Any information that is private, confidential or proprietary must be clearly identified to the agency and agreed to in writing prior to signing the contract.

**AGREEMENT**

The State of New Hampshire and the Contractor hereby mutually agree as follows:

**GENERAL PROVISIONS**

**1. IDENTIFICATION.**

1.1 State Agency Name NH Department of Health and Human Services		1.2 State Agency Address 129 Pleasant Street Concord, NH 03301-3857	
1.3 Contractor Name Deloitte Consulting, LLP.		1.4 Contractor Address 7 Eagle Square #301 Concord, NH 03301	
1.5 Contractor Phone Number 617-437-3483	1.6 Account Number 05-95-90-902510-7039	1.7 Completion Date November 29, 2019	1.8 Price Limitation \$2,270,549
1.9 Contracting Officer for State Agency Nathan D. White, Director Bureau of Contracts and Procurement		1.10 State Agency Telephone Number 603-271-9631	
1.11 Contractor Signature 		1.12 Name and Title of Contractor Signatory Gregory Spino Managing Director	
1.13 Acknowledgement: State of _____, County of _____ On <u>April 5, 2019</u> , before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public or Justice of the Peace  [Seal]			
1.13.2 Name and Title of Notary or Justice of the Peace  Notary			
1.14 State Agency Signature 		1.15 Name and Title of State Agency Signatory LISA MORRIS, DIRECTOR OPHS	
1.16 Approval by the N.H. Department of Administration, Division of Personnel (if applicable) By: _____ Director, On: _____			
1.17 Approval by the Attorney General (Form, Substance and Execution) (if applicable) By:  On: <u>4/17/19</u>			
1.18 Approval by the Governor and Executive Council (if applicable) By: _____ On: _____			

**2. EMPLOYMENT OF CONTRACTOR/SERVICES TO BE PERFORMED.** The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

**3. EFFECTIVE DATE/COMPLETION OF SERVICES.**

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.18, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.14 ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any costs incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

**4. CONDITIONAL NATURE OF AGREEMENT.**

Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

**5. CONTRACT PRICE/PRICE LIMITATION/PAYMENT.**

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

**6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.**

6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. This may include the requirement to utilize auxiliary aids and services to ensure that persons with communication disabilities, including vision, hearing and speech, can communicate with, receive information from, and convey information to the Contractor. In addition, the Contractor shall comply with all applicable copyright laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

**7. PERSONNEL.**

7.1 The Contractor shall at its own expense provide all personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this

Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

#### 8. EVENT OF DEFAULT/REMEDIES.

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

8.1.1 failure to perform the Services satisfactorily or on schedule;

8.1.2 failure to submit any report required hereunder; and/or

8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two (2) days after giving the Contractor notice of termination;

8.2.2 give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;

8.2.3 set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or

8.2.4 treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

#### 9. DATA/ACCESS/CONFIDENTIALITY/PRESERVATION.

9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

10. **TERMINATION.** In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

11. **CONTRACTOR'S RELATION TO THE STATE.** In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

12. **ASSIGNMENT/DELEGATION/SUBCONTRACTS.** The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice and consent of the State. None of the Services shall be subcontracted by the Contractor without the prior written notice and consent of the State.

13. **INDEMNIFICATION.** The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

#### 14. INSURANCE.

14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate ; and

14.1.2 special cause of loss coverage form covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

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14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than thirty (30) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation or modification of the policy.

**15. WORKERS' COMPENSATION.**

15.1 By signing this agreement, the Contractor agrees, certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A ("*Workers' Compensation*").

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

**16. WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

**17. NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

**18. AMENDMENT.** This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no

such approval is required under the circumstances pursuant to State law, rule or policy.

**19. CONSTRUCTION OF AGREEMENT AND TERMS.**

This Agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party.

**20. THIRD PARTIES.** The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

**21. HEADINGS.** The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

**22. SPECIAL PROVISIONS.** Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

**23. SEVERABILITY.** In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

**24. ENTIRE AGREEMENT.** This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

**STATE OF NEW HAMPSHIRE**  
**Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS-RFP-2019-043/RFP-2019-DPHS-19-DATAA**  
**PART 2 - INFORMATION TECHNOLOGY PROVISIONS**

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**STATE OF NEW HAMPSHIRE**  
**Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS-RFP-2019-043/RFP-2019-DPHS-19-DATAA**  
**PART 2 - INFORMATION TECHNOLOGY PROVISIONS**

**TERMS AND DEFINITIONS**

The following general contracting terms and definitions apply except as specifically noted elsewhere in this document.

<b>Acceptance</b>	Notice from the State that a Deliverable has achieved the criteria for Acceptance Test or Review.
<b>Acceptance Letter</b>	An Acceptance Letter provides notice from the State that a Deliverable has met the criteria for Acceptance Tests or Review.
<b>Acceptance Period</b>	The timeframe during which the Acceptance Test is performed
<b>Acceptance Test Plan</b>	The Acceptance Test Plan provided by the Vendor and agreed to by the State that describes at a minimum, the specific Acceptance process, criteria, and Schedule for Deliverables.
<b>Acceptance Test and Review</b>	Tests performed to determine whether Defects exist in the application Software or the System to allow for acceptance
<b>Access Control</b>	Supports the management of permissions for logging onto a computer or network
<b>Agreement</b>	A contract duly executed and legally binding.
<b>Appendix</b>	Supplementary material that is collected and appended at the back of a document
<b>Audit Trail Capture and Analysis</b>	Supports the identification and monitoring of activities within an application or system
<b>Authorized User</b>	The Vendor's employees, Contractors, Subcontractors or other agents who need to access the State's Personal data to enable the Contractor to perform the Services required.
<b>Best and Final Offer (BAFO)</b>	For negotiated procurements, a Vendor's final offer following the conclusion of discussions.
<b>Breach or Breach of Security</b>	Unlawful and unauthorized acquisition of unencrypted computerized Data that materially compromises the security, confidentiality or integrity of personal information maintained by a person or commercial entity.
<b>Business Hours</b>	Vendor personnel shall work normal business hours between 8:00 a.m. and 4:30 p.m. EST, eight (8) hour days, forty (40) hour weeks, excluding State of New Hampshire holidays. Changes to this Schedule may be made upon agreement with the State Project Manager.
<b>CCP</b>	Change Control Procedures
<b>Certification</b>	The Vendor's written declaration with full supporting and written Documentation (including without limitation test results as applicable) that the Vendor has completed development of the Deliverable and certified its readiness for applicable Acceptance Testing or Review.
<b>Change Control</b>	Formal process for initiating changes to the proposed solution or process once development has begun.

**STATE OF NEW HAMPSHIRE**  
**Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS-RFP-2019-043/RFP-2019-DPHS-19-DATAA**  
**PART 2 - INFORMATION TECHNOLOGY PROVISIONS**

<b>Change Order</b>	Formal documentation prepared for approving a proposed change in the Specifications or contract.
<b>CM</b>	Configuration Management
<b>Completion Date</b>	End date for the Contract
<b>Confidential Information</b>	Information required to be kept Confidential from unauthorized disclosure <i>under the Contract</i>
<b>Contract</b>	This Agreement between the State of New Hampshire and a Vendor, which creates binding obligations for each party to perform as specified in the Contract Documents.
<b>Contract Agreement</b>	Part 1 and Part 2. The documentation consisting of both the General Provisions and the Exhibits which represents the understanding and acceptance of the reciprocal legal rights and duties of the parties with respect to the Scope of Work
<b>Contract Conclusion</b>	Refers to the conclusion of the Contract, for any reason, including but not limited to, the successful Contract completion, termination for convenience, or termination for default.
<b>Contract Documents</b>	Documents that comprise this Contract (See Contract Agreement, Section 1.1)
<b>Contract Managers</b>	The persons identified by the State and the Vendor who shall be responsible for all contractual authorization and administration of the Contract. These responsibilities shall include but not be limited to processing Contract Documentation, obtaining executive approvals, tracking costs and payments, and representing the parties in all Contract administrative activities. (See Section 4: <i>Contract Management</i> )
<b>Contract Price</b>	The total, not to exceed amount to be paid by the State to the Contractor for product and services described in the Contract Agreement. This amount is listed in the General Provisions Section 1.8 as well as Exhibit B Paragraph 2.
<b>Contractor</b>	The Vendor whose proposal or quote was awarded the Contract with the State and who is responsible for the Services and Deliverables of the Contract.
<b>Contracted Vendor/Vendor</b>	The Vendor whose proposal or quote was awarded the Contract with the State and who is responsible for the Services and Deliverables of the Contract.
<b>Conversion/Migration Validation Test</b>	A test to ensure that a Data conversion process correctly takes Data from a legacy system and successfully converts it to a form that can be used by the new System.
<b>COTS</b>	Commercial Off-The-Shelf Software
<b>CR</b>	Change Request
<b>Cure Period</b>	The thirty (30) day period following written notification of a default within which a contracted vendor must cure the default identified.
<b>Custom Code</b>	Code developed by the Vendor specifically for this project for the State of New Hampshire

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<b>Custom Software</b>	Software developed by the Vendor specifically for this project for the State of New Hampshire
<b>Data</b>	State's records, files, forms, Data and other documents or information, in either electronic or paper form, that will be used /converted by the Vendor during the Contract Term
<b>DBA</b>	Database Administrator
<b>Deficiencies/Defects</b>	<p>A failure, deficiency or defect in a Deliverable resulting in a Deliverable, the Software, or the System, not conforming to its Specifications.</p> <p><b>Class A Deficiency – Software</b> - Critical, does not allow System to operate, no work around, demands immediate action; <i>Written Documentation</i> - missing significant portions of information or unintelligible to State; <i>Non Software</i> - Services were inadequate and require re-performance of the Service.</p> <p><b>Class B Deficiency – Software</b> - important, does not stop operation and/or there is a work around and user can perform tasks; <i>Written Documentation</i> - portions of information are missing but not enough to make the document unintelligible; <i>Non Software</i> - Services were deficient, require reworking, but do not require re-performance of the Service.</p> <p><b>Class C Deficiency – Software</b> - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; <i>Written Documentation</i> - minimal changes required and of minor editing nature; <i>Non Software</i> - Services require only minor reworking and do not require re-performance of the Service.</p>
<b>Deliverable</b>	A Deliverable is any Written, Software, or Non-Software Deliverable (letter, report, manual, book, other), provided by the Vendor to the State under the terms of a Contract requirement.
<b>Department</b>	An agency of the State
<b>Department of Information Technology (DoIT)</b>	The Department of Information Technology established under RSA 21-R by the Legislature effective September 5, 2008.
<b>Documentation</b>	All information that describes the installation, operation, and use of the Software, either in printed or electronic format.
<b>Digital Signature</b>	Guarantees the unaltered state of a file
<b>Effective Date</b>	The Contract and all obligations of the parties hereunder shall become effective on the date the Governor and the Executive Council of the State of New Hampshire approves the Contract
<b>Encryption</b>	Supports the transformation of data for security purposes

Contractor Initials:           
Date: 4/5/19

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<b>Enhancements</b>	Updates, additions, modifications to, and new releases for the Software, and all changes to the Documentation as a result of Enhancements, including, but not limited to, Enhancements produced by Change Orders
<b>Event of Default</b>	Any one or more of the following acts or omissions of a Vendor shall constitute an Event of Default hereunder ("Event of Default"): a. Failure to perform the Services as required under the Contract or on Schedule; b. Failure to submit any report required; and/or c. Failure to perform any other covenant, term or condition of the Contract.
<b>Firm Fixed Price Contract</b>	A Firm-Fixed-Price Contract provides a price that is not subject to increase without amending the contract agreement, e.g., adjustment simply on the basis of the Vendor's cost experience in performing the Contract
<b>Fully Loaded</b>	Rates are inclusive of all allowable expenses, including, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses
<b>GAAP</b>	Generally Accepted Accounting Principles
<b>Governor and Executive Council</b>	The New Hampshire Governor and Executive Council.
<b>Harvest</b>	Software to archive and/or control versions of software
<b>Identification and Authentication</b>	Supports obtaining information about those parties attempting to log on to a system or application for security purposes and the validation of those users
<b>Implementation</b>	The process for making the System fully operational for processing the Data.
<b>Implementation Plan</b>	Sets forth the transition from development of the System to full operation, and includes without limitation, training, business and technical procedures.
<b>Information Technology (IT)</b>	Refers to the tools and processes used for the gathering, storing, manipulating, transmitting, sharing, and sensing of information including, but not limited to, Data processing, computing, information systems, telecommunications, and various audio and video technologies.
<b>Input Validation</b>	Ensure that the values entered by users or provided by other applications meets the size, type and format expected. Protecting the application from cross site scripting, SQL injection, buffer overflow, etc.
<b>Intrusion Detection</b>	Supports the detection of illegal entrance into a computer system
<b>Invoking Party</b>	In a dispute, the party believing itself aggrieved

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<b>Key Project Staff</b>	Personnel identified by the State and by Deloitte Consulting as essential to work on the Project.
<b>Licensee</b>	The State of New Hampshire
<b>Non Exclusive Contract</b>	A contract executed by the State that does not restrict the State from seeking alternative sources for the Deliverables or Services provided under the Contract.
<b>Non-Public Information</b>	Data, other than Personal Data, that is not subject to distribution to the public as public information. It is deemed to be sensitive and confidential by the State because it contains information that is exempt by statute, ordinance or administrative rule from access by the general public as public information.
<b>Non-Software Deliverables</b>	Deliverables that are not Software Deliverables or Written Deliverables, e.g., meetings, help support, services, other
<b>Normal Business Hours</b>	Normal Business Hours – 8:00 a.m. to 4:30 p.m. EST, Monday through Friday excluding State of New Hampshire holidays. State holidays are: New Year’s Day, Martin Luther King Day, President’s Day, Memorial Day, July 4 <sup>th</sup> , Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day. Specific dates will be provided
<b>Notice to Proceed (NTP)</b>	The State Contract Manager’s written direction to the Vendor to begin work on the Contract on a given date and time
<b>Open Data Formats</b>	A data format based on an underlying Open Standard.
<b>Open Source Software</b>	Software that guarantees the user unrestricted use of the Software as defined in RSA 21-R:10 and RSA 21-R:11.
<b>Open Standards</b>	Specifications for the encoding and transfer of computer data that is defined in RSA 21-R:10 and RSA 21-R:13.
<b>Operating System</b>	System is fully functional, all Data has been loaded into the System, is available for use by the State in its daily operations.
<b>Operational</b>	Operational means that the System is operating and fully functional, all Data has been loaded; the System is available for use by the State in its daily operations, and the State has issued an Acceptance Letter.
<b>Order of Precedence</b>	The order in which Contract/Documents control in the event of a conflict or ambiguity. A term or condition in a document controls over a conflicting or ambiguous term or condition in a document that is lower in the Order of Precedence
<b>Personal Data</b>	Data that includes information relating to a person that identifies the person by name and has any of the following Personally Identifiable Information (PII): government-issued identification numbers (e.g., Social Security, driver’s license, passport); financial account information, including account number, credit or debit card numbers; or Protected Health Information (PHI) relating to a person.

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<b>Project</b>	The planned undertaking regarding the entire subject matter of an RFP and Contract and the activities of the parties related hereto.
<b>Project Team</b>	The group of State employees and contracted Vendor's personnel responsible for managing the processes and mechanisms required such that the Services are procured in accordance with the Work Plan on time, on budget and to the required specifications and quality
<b>Project Management Plan</b>	A document that describes the processes and methodology to be employed by the Vendor to ensure a successful Project.
<b>Project Managers</b>	The persons identified who shall function as the State's and the Vendor's representative with regard to Review and Acceptance of Contract Deliverables, invoice sign off, and review and approval of Change Requests (CR) utilizing the Change Control Procedures (CCP)
<b>Project Staff</b>	State personnel assigned to work with the Vendor on the Project
<b>Proposal</b>	The submission from a Vendor in response to the Request for a Proposal or Statement of Work
<b>Regression Test Plan</b>	A plan integrated into the Work Plan used to ascertain whether fixes to Defects have caused errors elsewhere in the application/process.
<b>Review</b>	The process of reviewing Deliverables for Acceptance
<b>Review Period</b>	The period set for review of a Deliverable. If none is specified then the Review Period is five (5) business days.
<b>RFP (Request for Proposal)</b>	A Request For Proposal solicits Proposals to satisfy State functional requirements by supplying data processing product and/or Service resources according to specific terms and conditions
<b>Role/Privilege Management</b>	Supports the granting of abilities to users or groups of users of a computer, application or network
<b>SaaS- Software as a Service</b>	Occurs where the COTS application is hosted but the State does not own the license or the code. The vendor allows the use of the software as a part of their service.
<b>Schedule</b>	The dates described in the Work Plan for deadlines for performance of Services and other Project events and activities under the Contract
<b>Service Level Agreement (SLA)</b>	A signed agreement between the Vendor and the State specifying the level of Service that is expected of, and provided by, the Vendor during the term of the Contract identified in the Statement of Work.
<b>Services</b>	The work or labor to be performed by the Vendor on the Project as described in the Contract.
<b>Software</b>	All custom Software and COTS Software provided by the Vendor under the Contract
<b>Software-as-a-Service (SaaS)</b>	The capability provided to the State to use the Contractor's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin-client interface such as a Web browser (e.g., Web-based email) or a program interface. The State does not manage or control the underlying cloud infrastructure



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	including network, servers, Operating Systems, storage or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.
<b>Software Deliverables</b>	COTS Software and Enhancements
<b>Software License</b>	Licenses provided to the State under this Contract
<b>Solution</b>	The Solution consists of the total Solution, which includes, without limitation, Software and Services, addressing the requirements and terms of the Specifications. The off-the-shelf Software provided by or in conjunction with the Vendor and configured Software customized for the State provided by the Vendor in response to this RFP.
<b>Specifications</b>	The written Specifications that set forth the requirements which include, without limitation, this RFP, the Proposal, the Contract, any performance standards, Documentation, applicable State and federal policies, laws and regulations, State technical standards, subsequent State-approved Deliverables, and other Specifications and requirements described in the Contract Documents. The Specifications are, by this reference, made a part of the Contract as though completely set forth herein.
<b>State</b>	STATE is defined as: State of New Hampshire Department of Health and Human Services 129 Pleasant St Concord, NH 03301 Reference to the term "State" shall include applicable agencies
<b>Statement of Work (SOW)</b>	A Statement of Work clearly defines the basic requirements and objectives of a Project. The Statement of Work also defines a high level view of the architecture, performance and design requirements, the roles and responsibilities of the State and the Vendor. The Contract Agreement SOW defines the results that the Vendor remains responsible and accountable for achieving.
<b>State's Confidential Records</b>	State's information regardless of its form that is not subject to public disclosure under applicable state and federal laws and regulations, including but not limited to <u>RSA Chapter 91-A</u>
<b>State Data</b>	Any information contained within State systems in electronic or paper format.
<b>State Fiscal Year (SFY)</b>	The New Hampshire State Fiscal Year extends from July 1 <sup>st</sup> through June 30 <sup>th</sup> of the following calendar year
<b>State Project Leader</b>	State's representative with regard to Project oversight
<b>State's Project Manager (PM)</b>	State's representative with regard to Project management and technical matters. Agency Project Managers are responsible for

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	review and Acceptance of specific Contract Deliverables, invoice sign off, and Review and approval of a Change Proposal (CP).
<b>Subcontractor</b>	A person, partnership, or company not in the employment of, or owned by, the Vendor, which is performing Services under this Contract under a separate Contract with or on behalf of the Vendor.
<b>System</b>	All Software, specified hardware, and interfaces and extensions, integrated and functioning together in accordance with the Specifications.
<b>TBD</b>	To Be Determined
<b>Technical Authorization</b>	Direction to a Vendor, which fills in details, clarifies, interprets, or specifies technical requirements. It must be: (1) consistent with Statement of Work within statement of Services; (2) not constitute a new assignment; and (3) not change the terms, documents of specifications of the Contract Agreement
<b>Test Plan</b>	A plan, integrated in the Work Plan, to verify the code (new or changed) works to fulfill the requirements of the Project. It may consist of a timeline, a series of tests and test data, test scripts and reports for the test results as well as a tracking mechanism.
<b>Term</b>	Period of the Contract from the Effective Date through termination.
<b>Transition Services</b>	Services and support provided when <CONTRACTOR> is supporting System changes.
<b>UAT</b>	User Acceptance Test
<b>Unit Test</b>	Developers create their own test data and test scenarios to verify the code they have created or changed functions properly as defined.
<b>User Acceptance Testing</b>	Tests done by knowledgeable business users who are familiar with the scope of the Project. They create/develop test cases to confirm the System was developed according to specific user requirements. The test cases and scripts/scenarios should be mapped to business requirements outlined in the user requirements documents.
<b>User Management</b>	Supports the administration of computer, application and network accounts within an organization
<b>Vendor/ Contracted Vendor</b>	The Vendor whose proposal or quote was awarded the Contract with the State and who is responsible for the Services and Deliverables of the Contract.
<b>Verification</b>	Supports the confirmation of authority to enter a computer system, application or network
<b>Virtual Private Network</b>	Extends a private network across a public network, and enables users to send and receive Data across shared or public networks as if their computing devices were directly connected to the private network
<b>Walk Through</b>	A step-by-step review of a Specification, usability features or design before it is handed off to the technical team for development

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<b>Warranty Period</b>	A period of coverage during which CONTRACTOR is responsible for providing a warranty for products and Services delivered as defined in the Contract.
<b>Warranty Releases</b>	Code releases that are done during the Warranty Period.
<b>Warranty Services</b>	The Services to be provided by the Vendor during the Warranty Period.
<b>Work Hours</b>	Vendor personnel shall work normal business hours between 8:00 am and 5:00 pm, eight (8) hour days, forty (40) hour weeks, excluding State of New Hampshire holidays. Changes to this schedule may be made upon agreement with the State Project Manager.
<b>Work Plan</b>	The overall plan of activities for the Project created in accordance with the Contract. The plan and delineation of tasks, activities and events to be performed and Deliverables to be produced under the Project as specified in Appendix C. The Work Plan shall include a detailed description of the Schedule, tasks/activities, Deliverables, critical events, task dependencies, and the resources that would lead and/or participate on each task.
<b>Written Deliverables</b>	Non-Software written deliverable Documentation (letter, report, manual, book, other) provided by the Vendor either in paper or electronic format.

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**INTRODUCTION**

This Contract is by and between the State of New Hampshire, acting through New Hampshire Department of Health and Human Services ("State"), and Deloitte Consulting LLP, a Delaware Limited Liability Partnership, ("Contractor"), having its principal place of business at 7 Eagle Square, #301, Concord, NH 03301.

**RECITALS**

The State agrees to have Deloitte Consulting, LLP provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard for the State;

Deloitte Consulting, LLP agrees to provide and implement a scalable Opioid Crisis Response Management Business Intelligence dashboard as described in the Statement of Work.

The parties therefore agree as follows:

**1. CONTRACT DOCUMENTS**

**1.1 CONTRACT DOCUMENTS**

This Contract Agreement (DHHS-RFP-2019-043/RFP-2019-DPHS-19-DATAA) is comprised of the following documents:

- A. Part 1 - Form P-37 General Provision
- B. Part 2 - Information Technology Provisions
- C. Part 3 - Exhibits
  - Exhibit A- Contract Deliverables
  - Exhibit B- Price and Payment Schedule
  - Exhibit C- Special Provisions
  - Exhibit D- Administrative Services
  - Exhibit E- Implementation Services
  - Exhibit F- Testing Services
  - Exhibit G- Maintenance and Support Services
  - Exhibit H- Requirements
  - Exhibit I- Work Plan
  - Exhibit J- Software Agreement
  - Exhibit K- Warranty and Warranty Services
  - Exhibit L- Training Services
  - Exhibit M- Agency RFP with Addendums, by reference
  - Exhibit N- Vendor Proposal, by reference
  - Exhibit O- Certificates and Attachments
  - Exhibit P – DHHS Information Security Requirements

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Exhibit Q – DHHS Health Insurance Portability Act, Business Associate Agreement  
Exhibit R – DHHS Exhibits

**1.2 ORDER OF PRECEDENCE**

In the event of conflict or ambiguity among any of the text of the Contract Documents, the following Order of Precedence shall govern:

- a. State of New Hampshire, DHHS Contract Agreement 2019-043/RFP-2019-DPHS-19-DATAA, including Parts 1, 2, and 3.
- b. State of New Hampshire, DHHS 2019-043/RFP-2019-DPHS-19-DATAA.
- c. Vendor Proposal Response to 2019-043/RFP-2019-DPHS-19-DATAA dated December 10, 2018

**2. CONTRACT TERM**

The Contract and all obligations of the parties hereunder shall become effective after full execution by the parties, and the receipt of required governmental approvals, including, but not limited to, Governor and Executive Council of the State of New Hampshire approval (“Effective Date”).

The Contract shall begin on the Effective Date and extend through November 29, 2019. The Term may be extended up to one (1) year, (“Extended Term”) at the sole option of the State, subject to the parties prior written agreement on applicable fees for each extended term.

The Contractor shall commence work upon issuance of a Notice to Proceed by the State and complete work by the time established through the Project Work Plan. The following statement shall apply only to the “go-live” date indicated in Exhibit I:

**Time is of the essence in the performance of the Contractor’s obligation under the contract.**

**3. COMPENSATION**

**3.1 CONTRACT PRICE**

The Contract Price, Part 1, P37, block 1.8 price limitation, method of payment, and terms of payment are identified and more particularly described in section 5 of P-37 Agreement and Part 3 Contract Exhibit B: *Price and Payment Schedule*.

**3.2 NON-EXCLUSIVE CONTRACT**

The State reserves the right, at its discretion, to retain other vendors to provide any of the Services or Deliverables identified under this procurement or make an award by item, part or portion of an item, group of items, or total Proposal. The Contractor shall not be responsible for any delay, act, or omission of such other vendors, except that the Contractor shall be responsible for any delay, act, or omission of the other vendors if such delay, act, or omission is caused by or due to the fault of the Contractor.

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**4. CONTRACT MANAGEMENT**

The Project will require the coordinated efforts of a Project Team consisting of both the Contractor and State personnel. The Contractor shall provide all necessary resources to perform its obligations under the Contract. The Contractor shall be responsible for managing the Project to its successful completion.

**4.1 THE CONTRACTOR'S CONTRACT MANAGER**

The Contractor shall assign a Contract Manager who shall be responsible for all Contract authorization and administration. The Contractor's Contract Manager is:

Gregory Spino  
Managing Director  
200 Berkley Street  
Boston, MA 02110  
Tel: 617-448-9688  
Email: gspino@deloitte.com

**4.2 THE CONTRACTOR'S PROJECT MANAGER**

**4.2.1 Contract Project Manager**

The Contractor shall assign a Project Manager who meets the requirements of the Contract. The Contractor's selection of the Contracted Vendor Project Manager shall be subject to the prior written approval of the State. The State's approval process may include, without limitation, at the State's discretion, review of the proposed Contractor's Project Manager's resume, qualifications, references, and background checks, and an interview. The State may require removal or reassignment of the Contractor's Project Manager who, in the sole judgment of the State, is found unacceptable or is not performing to the State's satisfaction.

**4.2.2** The Contractor's Project Manager must be qualified to perform the obligations required of the position under the Contract, shall have full authority to make binding decisions under the Contract, and shall function as the Contractor's representative for all administrative and management matters. The Contractor's Project Manager shall perform the duties required under the Contract, including, but not limited to, those set forth in Exhibit I, Section 2. The Contractor's Project Manager or State approved designee must be available to promptly respond during Normal Business Hours, typically within one (1) day, to inquiries from the State, and be at the site as needed. The Contractor's Project Manager must work diligently and use his/ her reasonable efforts on the Project.

**4.2.3** Except in the event of disability, illness, grave personal circumstances, or separation from service ("Removal Justifications"), the Contractor shall not change its assignment of the Contractor's Project Manager without providing the

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State written justification and obtaining the prior written approval of the State. State approvals for replacement of the Contractor's Project Manager shall not be unreasonably withheld. The replacement Project Manager shall have comparable or greater skills than of the Contractor's Project Manager being replaced; meet the requirements of the Contract; and be subject to reference and background checks described above in General Provisions, Section 4.2.1: *Contract Project Manager*, and in Contract Agreement General Provisions, Section 4.6: *Reference and Background Checks*, below. The Contractor shall assign a replacement of the Contractor's Project Manager within ten (10) business days of the departure of the prior Contractor's Project Manager, and the Contractor shall continue during the ten (10) business day period to provide competent Project management Services through the assignment of a qualified interim Project Manager.

4.2.4 Notwithstanding any other provision of the Contract, unless the Contractor cures the failure within the Cure Period following written notice from the State, the State shall have the option, at its discretion, to terminate the Contract, declare the Contractor in default and pursue its remedies at law and in equity, if the Contractor fails to assign a the Contractor Project Manager meeting the requirements and terms of the Contract.

4.2.5 CONTRACTOR Project Manager is:  
Jeffrey Walker  
Senior Manager  
200 Berkley Street  
Boston, MA 02110  
Tel: 770-241-3846  
Email: jefwalker@deloitte.com

**4.3 CONTRACTOR KEY PROJECT STAFF**

4.3.1 The Contractor shall assign Key Project Staff who meet the requirements of the Contract, and can implement the Software Solution meeting the requirements set forth in RFP Appendix C: *System Requirements and Deliverables*, Table C.2: *System Requirements and Deliverables-Vendor Response Checklist*. The State may conduct reference and background checks on the Contractor's Key Project Staff. The State reserves the right to require removal or reassignment of the Contractor's Key Project Staff who are found unacceptable to the State. Any background checks shall be performed in accordance with General Provisions Section 4.6: *Background Checks*.

4.3.2 Except in the event of a Removal Justification, upon commencement of Services by the applicable Contractor's Key Project Staff member, the Contractor shall not change any of the Contractor's Key Project Staff commitments indicated below without providing the State written justification and obtaining the prior written approval of the State. State approvals for replacement of the Contractor's Key

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Project Staff will not be unreasonably withheld. The replacement of the Contractor's Key Project Staff shall have comparable or greater skills than of the Contractor's Key Project Staff being replaced; meet the requirements of the Contract, including but not limited to the requirements set forth in RFP Appendix C: *System Requirements and Deliverables* and be subject to reference and background checks described in Contract Agreement- General Provisions, Section 4.6: *Reference and Background Checks*,

4.3.3 Notwithstanding any other provision of the Contract to the contrary, unless the Contractor cures the failure within the Cure Period following written notice from the State, the State shall have the option to terminate the Contract, declare the Contractor in default and to pursue its remedies at law and in equity, if the Contractor fails to assign Key Project Staff meeting the requirements and terms of the Contract or if the Contractor's replacement Project staff do not meet the requirements of the Contract.

4.3.3.1 The Contractor Key Project Staff shall consist of the following individuals in the roles identified below:

**The Contractor's Key Project Staff:**

Key Member(s)	Title
Gregory Spino	Enterprise Architect Lead
Sean Conlin	Opioid Analytics Lead
Jeff Walker	Project Manager
Kelly Neway	Training Lead
Tim Hartman	Data Scientist, Lead (PhD)
Dipak Modi	Security Lead
Varsha Goel	Senior Database (ETL)
Quinn Chasan	Digital Analytics

**4.4 STATE CONTRACT MANAGER**

The State shall assign a Contract Manager who shall function as the State's representative with regard to Contract administration. The State Contract Manager is:

David Wieters  
 Director, Bureau of Information Services  
 Department of Health and Human Services  
 State of New Hampshire  
 129 Pleasant Street  
 Concord, NH 03301  
 Tel: 603-271-9529  
 Email: david.wieters@dhhs.nh.gov



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**4.5 STATE PROJECT MANAGER**

The State shall assign a Project Manager. The State Project Manager's duties shall include the following:

- a. Leading the Project;
- b. Engaging and managing all Contractors;
- c. Managing significant issues and risks.
- d. Reviewing and accepting Contract Deliverables;
- e. Invoice sign-offs;
- f. Review and approval of change proposals; and
- g. Managing stakeholders' concerns.

The State Project Manager is:

Andrew Chalsma  
Director of Data Analytics and Reporting  
Department of Health and Human Services  
State of New Hampshire  
129 Pleasant Street  
Concord, NH 03301  
Tel: 603-271-9425  
Email: andrew.chalsma@dhhs.nh.gov

**4.6 REFERENCE AND BACKGROUND CHECKS**

The Contractor shall conduct criminal background checks as part of its general hiring processes and not utilize any staff, including subcontractors, to fulfill the obligations of the contract whose background checks revealed that they have been convicted of any crime of dishonesty, including but not limited to criminal fraud, or otherwise convicted of any felony or misdemeanor offense for which the individual received more than 1 year of incarceration. The Contractor shall promote and maintain an awareness of the importance of securing the State's information among the Contractor's employees and agents.

The State may, at its sole expense, conduct reference and background screening of the Contracted Vendor Project Manager and the Contractor Key Project Staff with Vendor concurrence. The State shall maintain the confidentiality of background screening results in accordance with the Contract Agreement – General Provisions-Section 11: Use of State's Information, Confidentiality.

**5. DELIVERABLES**

**5.1 CONTRACTOR RESPONSIBILITIES**

The Contractor shall be solely responsible for meeting all of its requirements, and terms and conditions specified in this Contract, regardless of whether or not a subcontractor is used.

The Contractor may subcontract Services subject to the provisions of the Contract, including but not limited to, the terms and conditions in the Contract Agreement. The Contractor must submit any non-confidential information and documentation relating to the Subcontractor, including

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terms and conditions consistent with this Contract upon request. The State will consider the Contractor to be wholly responsible for the performance of the Contract and the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from the Contract.

**5.2 DELIVERABLES AND SERVICES**

The Contractor shall provide the State with the Deliverables and Services in accordance with the time frames in the Work Plan for this Contract, and as more particularly described in Contract Exhibit A: *Contract Deliverables*.

**5.3 NON-SOFTWARE AND WRITTEN DELIVERABLES REVIEW AND ACCEPTANCE**

After receiving written Certification from the Contractor that a Non-Software or Written Deliverable is final, complete, and ready for Review, the State will Review the Deliverable to determine whether it meets the Requirements outlined in Contract Exhibit A: *Contract Deliverables*. The State will notify the Contractor in writing of its Acceptance or rejection of the Deliverable within five (5) business days of the State's receipt of the Contractor's written Certification. If the State rejects the Deliverable (i.e. the Deliverable does not meet the Requirements outlined in Exhibit A), the State shall notify the Contractor of the nature and class of the Deficiency and the Contractor shall correct the Deficiency within the period identified in the Work Plan. If no period for the Contractor's correction of the Deliverable is identified, the Contractor shall correct the Deficiency in the Deliverable within five (5) business days. Upon receipt of the corrected Deliverable, the State shall have five (5) business days to review the Deliverable and notify the Contractor of its Acceptance or rejection thereof, with the option to extend the Review Period up to five (5) additional business days. If the Contractor fails to correct the Deficiency within the allotted period of time after at least 3 attempts, the State may, at its option, continue reviewing the Deliverable and require the Contractor to continue until the Deficiency is corrected, or immediately terminate the Contract, declare the Contractor in default, and pursue its remedies at law and in equity.

**5.4 SOFTWARE REVIEW AND ACCEPTANCE**

System/Software Testing and Acceptance shall be performed as set forth in the Test Plan and more particularly described in Exhibit F: *Testing Services*.

**6. SOFTWARE**

The Contractor shall provide the State with access to the Software and Documentation set forth in the Contract, and particularly described in Exhibit J: *Software Agreement*.

**7. SERVICES**

The Contractor shall provide the Services required under the Contract Documents. All Services shall meet, and be performed, in accordance with the Specifications.

**7.1 ADMINISTRATIVE SERVICES**

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The Contractor shall provide the State with the administrative Services set forth in the Contract, and particularly described in Exhibit D: Administrative Services.

**7.2 IMPLEMENTATION SERVICES**

The Contractor shall provide the State with the Implementation Services set forth in the Contract, and particularly described in Exhibit E: Implementation Services.

**7.3 TESTING SERVICES**

The Contractor shall perform testing Services for the State set forth in the Contract, and particularly described in Exhibit F: Testing Services.

**7.4 TRAINING SERVICES**

The Contractor shall provide the State with training Services set forth in the Contract, and particularly described in Exhibit L: Training Services.

**7.5 MAINTENANCE AND SUPPORT SERVICES**

The Contractor shall provide the State with Maintenance and support Services for the Software set forth in the Contract, and particularly described in Exhibit G: System Maintenance and Support.

**7.6 WARRANTY SERVICES**

The Contractor shall provide the State with warranty Services set forth in the Contract, and particularly described in Exhibit K: Warranty & Warranty Services.

**8. WORK PLAN DELIVERABLE**

The Contractor shall provide the State with a Work Plan that shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, major milestones, task dependencies, and payment Schedule.

The initial Work Plan shall be a separate Deliverable and is set forth in Contract Exhibit I: *Work Plan*. The Contractor shall update the Work Plan as necessary, but no less than every two weeks, to accurately reflect the status of the Project, including without limitation, the Schedule, tasks, Deliverables, major milestones, task dependencies, and payment Schedule. Any such updates to the Work Plan must be approved by the State, in writing, prior to final incorporation into Contract Exhibit I: *Work Plan*. The updated Contract Exhibit I: *Work Plan*, as approved by the State, is incorporated herein by reference.

Unless agreed to in writing by the State, changes to the Contract Exhibit I: *Work Plan* shall not relieve the Contractor from liability to the State for damages resulting from the Contractor's failure to perform its obligations under the Contract, including, without limitation, performance in accordance with the Schedule.

In the event of any delay in the Schedule, the Contractor must promptly notify the State in writing, identifying the nature of the delay, i.e., specific actions or inactions of the Contractor or the State

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causing the problem; its estimated duration period to reconciliation; specific actions that need to be taken to correct the problem; and the expected Schedule impact on the Project.

In the event additional time is required by the Contractor to correct Deficiencies, the Schedule shall not change unless agreed to in writing by the State, except that the Schedule shall automatically extend on a day-to-day basis to the extent that the delay does not result from the Contractor's failure to fulfill its obligations under the Contract. To the extent that the State's execution of its major tasks takes longer than described in the Work Plan, or in the event the schedule is extended as a result of a force majeure event or is caused by a third party, the Schedule shall automatically extend on a day-to-day basis.

Notwithstanding anything to the contrary, the State shall have the option to terminate the Contract for default, at its discretion the Vendor's Work Plan or elements within the Work Plan fail meet the requirements of the Contract, unless such failure is cured by the Contractor during the Cure Period following written notice from the State.

**9. CHANGE ORDERS**

The State may request changes or revisions at any time by written Change Order. Change Orders cannot change the price limitation, contract end date or materially change from the Scope of Services defined within the Request for Proposals (RFP). The State originated changes or revisions shall be approved by the Department of Information Technology. Within five (5) business days of the Contractor's receipt of a Change Order, the Contractor shall advise the State, in detail, of any impact on cost (e.g., increase or decrease), the Schedule, or the Work Plan and any changes which impact cost, time and/or scope as agreed to by the parties shall be included within an Amendment to the Contract.

The Contractor may request a change within the scope of the Contract by written Change Order, identifying any impact on cost, the Schedule, or the Work Plan. Change Orders cannot change the price limitation, contract end date or materially change the Scope of Services defined within the Request for Proposals (RFP), unless the parties agree to such changes in an Amendment. The State shall attempt to respond to the Contractor's requested Change Order within five (5) business days. The State Agency, as well as the Department of Information Technology, must approve all Change Orders in writing. The State shall be deemed to have rejected the Change Order if the parties are unable to reach an agreement in writing and any changes which are agreed to by the parties shall be included within a mutually agreeable Change Order. All Change Order requests from the Contractor to the State, and the State acceptance of the Contractor's estimate for a State requested change, will be acknowledged and responded to, either acceptance or rejection, in writing. If accepted, the Change Order(s) shall be subject to the Contract amendment process, as determined to apply by the State.

**10. INTELLECTUAL PROPERTY**

**10.1 SOFTWARE TITLE**

Title, right, and interest (including all ownership and intellectual property rights) in the Software, and its associated Documentation, shall remain with the Contractor.

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Upon successful completion and/or termination of the Implementation of the Project, the Contracted Vendor shall own and hold all, title, and rights in any Software modifications developed in connection with performance of obligations under the Contract, or modifications to the Contracted Vendor provided Software, and their associated Documentation including any and all performance enhancing operational plans and the Vendors' special utilities. The Contracted Vendor shall license back to the State the right to produce, publish, or otherwise use such software, source code, object code, modifications, reports, and Documentation developed under the Contract.

In no event shall the Vendor be precluded from developing for itself, or for others, materials that are competitive with, or similar to Custom Software, modifications developed in connection with performance of obligations under the Contract. In addition, the Vendor shall be free to use its general knowledge, skills, experience, and any other ideas, concepts, know-how, and techniques that are acquired or used in the course of its performance under this agreement.

**10.2 STATE'S DATA AND PROPERTY**

Except for Contractor Technology, all rights, title and interest in State Data shall remain with the State. Except for Contractor Technology, all data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demandor upon termination of this Agreement for any reason. the Contractor shall not access State user accounts or State data, except (1) in the course of data center operations, (2) in response to service or technical issues, (3) as required by the express terms of this contract or (4) at the State's written request.

"Contractor Technology" means all works of authorship, materials, information and other intellectual property created prior to or independently of the performance of the Services, or created by the Contractor or its subcontractors as a tool for their use in performing the Services, plus any modifications or enhancements thereto and derivative works based thereon. Contractor Technology includes HHS Interactive Opioid Insights. The Contractor grants to the State the right to use, in perpetuity, for the State's internal business purposes, any Contractor Technology included in the Deliverables in connection with its use of the Deliverables. The Contractor will provide the training, code, documentation and ability to modify the Contractor technology independent of the Contractor or some other solution will be provided that meets these terms without incurring additional costs to the State to meet the deliverables that Contract technology is identified to meet. Additionally, the State will have the right to use and enhance Contractor Technology independently from the Contractor.

**10.3 CONTRACTOR'S MATERIALS**

Subject to the provisions of this Contract, the Contractor may develop for itself, or for others, materials that are competitive with, or similar to, the Deliverables. In accordance with the provision of this Contract, the Contractor shall not distribute any products containing or disclose any State Confidential Information. The Contractor shall be free to use its general knowledge, skills and experience, and any ideas, concepts, know-how, and techniques that are acquired or used in the course of its performance under this Contract, provided that such is not obtained as the result of the deliberate memorization of the State Confidential Information by the Contractor employees or third party consultants engaged by the Contractor.

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Without limiting the foregoing, the parties agree that the general knowledge referred to herein cannot include information or records not subject to public disclosure under New Hampshire RSA Chapter 91-A, which includes but is not limited to the following: records of grand juries and petit juries; records of parole and pardon boards; personal school records of pupils; records pertaining to internal personnel practices, financial information, test questions, scoring keys and other examination data use to administer a licensing examination, examination for employment, or academic examination and personnel, medical, welfare, library use, video tape sale or rental, and other files containing personally identifiable information that is private in nature.

#### **10.4 STATE WEBSITE COPYRIGHT**

##### **WWW Copyright and Intellectual Property Rights**

All right, title and interest in the State WWW site <NH.GOV, etc.>, including copyright to all Data and information, shall remain with the State. The State shall also retain all right, title and interest in any user interfaces and computer instructions embedded within the WWW pages. All WWW pages and any other Data or information shall, where applicable, display the State's copyright.

#### **10.5 CUSTOM SOFTWARE SOURCE CODE**

In the event that the State purchases software development services, which results in Custom Software, the Contractor shall provide the State with a copy of the source code for the Custom Software, which shall be subject to the License rights. The State shall receive a worldwide, perpetual, irrevocable, non-exclusive paid –up right and license to use, copy, modify and prepare derivative works of any custom developed software. This section does not apply to the Contractor's proprietary software code.

#### **10.6 SURVIVAL**

This Contract Agreement Section 10: *Intellectual Property* shall survive the termination of the Contract.

## **11 USE OF STATE'S INFORMATION, CONFIDENTIALITY**

### **11.1 USE OF STATE'S INFORMATION**

In performing its obligations under the Contract, the Contractor may gain access to information of the State, including State Confidential Information. "State Confidential Information" shall include, but not be limited to, information exempted from public disclosure under New Hampshire RSA Chapter 91-A: *Access to Public Records and Meetings* (see e.g. RSA Chapter 91-A: 5 *Exemptions*). The Contractor shall not use the State Confidential Information developed or obtained during the performance of, or acquired, or developed by reason of the Contract, except as directly connected to and necessary for the Contractor's performance under the Contract.

### **11.2 STATE CONFIDENTIAL INFORMATION**

The Contractor shall maintain the confidentiality of and protect from unauthorized use, disclosure, publication, and reproduction (collectively "release"), all State Confidential

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Information that becomes available to the Contractor in connection with its performance under the Contract, regardless of its form.

Subject to applicable federal or State laws and regulations, Confidential Information shall not include information which: (i) shall have otherwise become publicly available other than as a result of disclosure by the receiving party in breach hereof; (ii) was disclosed to the receiving party on a non-confidential basis from a source other than the disclosing party, which the receiving party believes is not prohibited from disclosing such information as a result of an obligation in favor of the disclosing party; (iii) is developed by the receiving party independently of, or was known by the receiving party prior to, any disclosure of such information made by the disclosing party; or (iv) is disclosed with the written consent of the disclosing party. A receiving party also may disclose Confidential Information to the extent required by an order of a court of competent jurisdiction.

Any disclosure of the State Confidential Information shall require the prior written approval of the State. The Contractor shall promptly notify the State if any request, subpoena or other legal process is served upon the Contractor regarding the State Confidential Information, and the Contractor shall cooperate with the State in any effort the State undertakes to contest the request, subpoena or other legal process, at no additional cost to the State.

In the event of the unauthorized release of State Confidential Information, the Contractor shall promptly notify the State, and the State may immediately be entitled to pursue any remedy at law and in equity, including, but not limited to, injunctive relief.

**11.3 CONTRACTOR CONFIDENTIAL INFORMATION**

Insofar as the Contractor seeks to maintain the confidentiality of its confidential or proprietary information, the Contractor must clearly identify in writing all information it claims to be confidential or proprietary. Notwithstanding the foregoing, the State acknowledges that the Contractor considers the Software and Documentation to be Confidential Information. The Contractor acknowledges that the State is subject to State and federal laws governing disclosure of information including, but not limited to, RSA Chapter 91-A. The State shall maintain the confidentiality of the identified Confidential Information insofar as it is consistent with applicable State and federal laws or regulations, including but not limited to, RSA Chapter 91-A. In the event the State receives a request for the information identified by the Contractor as confidential, the State shall notify the Contractor and specify the date the State will be releasing the requested information. At the request of the State, the Contractor shall cooperate and assist the State with the collection and review of the Contractor's information, at no additional expense to the State. Any effort to prohibit or enjoin the release of the information shall be the Contractor's sole responsibility and at the Contractor's sole expense. If the Contractor fails to obtain a court order enjoining the disclosure, the State shall release the information on the date specified in the State's notice to the Contractor, without any liability to the Contractor.

**11.4 SURVIVAL**

This Contract Agreement Section 11, *Use of State's Information, Confidentiality*, shall

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survive termination or conclusion of the Contract.

**12 LIMITATION OF LIABILITY**

**12.1 STATE**

Subject to applicable laws and regulations, in no event shall the State be liable for any consequential, special, indirect, incidental, punitive, or exemplary damages. Subject to applicable laws and regulations, the State's liability to the Contractor shall not exceed the total Contract price set forth in Contract Agreement – General Provisions, Block 1.8.

**12.2 CONTRACTOR**

Subject to applicable laws and regulations, in no event shall the Contractor be liable for any consequential, special, indirect, incidental, punitive or exemplary damages and the Contractor's liability to the State for any claims, liabilities, or expenses relating to this Contract shall not exceed two times (2X) the total Contract price set forth in Contract Agreement – P-37, General Provisions, Block 1.8.

Notwithstanding the foregoing, this limitation of liability shall not apply to the Contractor's obligation set forth in Exhibit K, Section 1.2, as well as the indemnification obligation set forth below in this Section 12.2 for any third party claims for bodily injury, death, or damage to real or tangible personal property to the extent caused by the Contractor's negligence or willful misconduct.

Notwithstanding the monetary limitation contained in this paragraph 12.2 above, in the event a claim or action is brought against the State in which infringement, violation of Contractor's obligations under the Business Associate Agreement, and/or any third party claims for bodily injury, death, or damage to real or tangible personal property to the extent caused by the Contractor's negligence or willful misconduct are alleged, the Contractor, at its own expense, shall defend, indemnify and hold harmless the State against all such claims or actions for any expenses, costs or damages, including legal fees and expenses, incurred by the State in connection with such claims or actions.

**12.3 STATE'S IMMUNITY**

Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive termination or Contract conclusion.

**12.4 SURVIVAL**

This Section 12: *Limitation of Liability* shall survive termination or Contract conclusion.

**13 TERMINATION**

This Section 13 shall survive the termination or Contract Conclusion.

**13.1 TERMINATION FOR DEFAULT**



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Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default")

- a. Failure to perform the Services as required under the Contract or on schedule;
- b. Failure to submit any report required; and/or
- c. Failure to perform any other covenant, term or condition of the Contract

**13.1.1** Upon the occurrence of any Event of Default, which is not cured within the Cure Period following written notice from the State, the State may take any one or more, or all, of the following actions:

- a. Unless otherwise provided in the Contract, the State shall provide the Contractor written notice of default and require it to be remedied within, in the absence of a greater specification of time, thirty (30) days from the date of notice, ("Cure Period"). If the Contractor fails to cure the default within the Cure Period, the State may terminate the Contract effective two (2) days after giving the Contractor notice of termination, at its sole discretion, treat the Contract as breached and pursue its remedies at law or in equity or both.
- b. Give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under the Contract solely for the invoices in dispute (and any such dispute shall be resolved in accordance with Section 16 below).
- c. Set off against any other obligations the State may owe to the Vendor any damages the State suffers by reason of any Event of Default;
- d. Treat the Contract as breached and pursue any of its remedies at law or in equity, or both.
- e. Terminate the Contract and procure Services that are the subject of the breach of the Contract from another source and the Contractor shall be liable for reimbursing the State for the excess costs of such replacement Services, directly related to the replacement of the Contract, to the extent the fees that the State actually pays exceed the fees that the State would have otherwise paid to the Contractor, all of which shall be subject to the limitations of liability set forth in the Contract.

**13.1.2** The Vendor shall provide the State with written notice of default, and the State shall cure the default within thirty (30) days or the Vendor may terminate the Contract.

**13.2 TERMINATION FOR CONVENIENCE**

**13.2.1** The State may, at its sole discretion, terminate the Contract for convenience, in whole or in part, by thirty (30) days written notice to the Contractor. In the event of a termination for convenience, the State shall pay the Contractor the agreed upon price, if separately stated in this Contract, for Deliverables for which Acceptance has been given by the State as well as for any works-in-progress. Amounts for Services or Deliverables provided

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prior to the date of termination for which no separate price is stated under the Contract shall be paid, in whole or in part, generally in accordance with Contract Exhibit B, *Price and Payment Schedule*, of the Contract.

- 13.2.2 During the thirty (30) day period, the Contractor shall wind down and cease Services as quickly and efficiently as reasonably possible, without performing unnecessary Services or activities and by minimizing negative effects on the State from such winding down and cessation of Services.

**13.3 TERMINATION FOR CONFLICT OF INTEREST**

- 13.3.1 The State may terminate the Contract by written notice if it reasonably determines that a conflict of interest exists, including but not limited to, a violation by any of the parties hereto of applicable laws regarding ethics in public acquisitions and procurement and performance of Contracts.

In such case, the State shall be entitled to a pro-rated refund of any current development, support, and maintenance costs. The State shall pay all other contracted payments that would have become due and payable if the Contractor did not know, or reasonably did not know, of the conflict of interest.

- 13.3.2 In the event the Contract is terminated as provided above pursuant to a violation by the Contractor, the State shall be entitled to pursue the same remedies against the Contractor as it could pursue in the event of a default of the Contract by the Contractor.

**13.4 TERMINATION PROCEDURE**

- 13.4.1 Upon termination of the Contract, the State, in addition to any other rights provided in the Contract, may require the Contractor to deliver to the State any property, including without limitation, Software and Written Deliverables, for such part of the Contract as has been terminated upon applicable payment thereof and provided that any Deliverables which are provided in-progress shall be provided as-is and without warranty.

- 13.4.2 After receipt of a notice of termination, and except as otherwise directed by the State, the Contractor shall:

- a. The State shall be entitled to any post-termination assistance generally made available with respect to the services for up to 30 days and subject to applicable payment therefor, unless a unique data retrieval arrangement has been established as part of the SLA.
- b. Stop work under the Contract on the date, and to the extent specified, in the notice;
- c. Promptly, but in no event longer than thirty (30) days after termination, terminate its orders and subcontracts related to the work which has been terminated and settle all

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outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the State to the extent required, which approval or ratification shall be final for the purpose of this Section;

- d. Take such action as the State reasonably directs, or as necessary to preserve and protect the property related to the Contract which is in the possession of the Contractor and in which the State has an interest;
- e. During any period of service suspension, the Contractor shall not take any action to intentionally erase any State data.
  1. In the event of termination of any services or agreement in entirety, the Contractor shall not take any action to intentionally erase any State data for a period of:
    - 10 days after the effective date of termination, if the termination is in accordance with the contract period
    - 30 days after the effective date of termination, if the termination is for convenience
    - 60 days after the effective date of termination, if the termination is for cause
  2. After such period, the Contractor shall have no obligation to maintain or provide any State data and shall thereafter, unless legally prohibited, delete all State data in its systems or otherwise in its possession or under its control.
- f. Upon applicable payment therefor, transfer title to the State and deliver in the manner, at the times, and to the extent directed by the State, any property (except for Contractor Technology) which is required to be furnished to the State and which has been accepted or requested by the State; and
- g. The Contractor shall implement an orderly return of State data in a CSV or another mutually agreeable format at a time agreed to by the parties and the subsequent secure disposal of State data;
- h. The Contractor shall securely dispose of all requested data in all of its forms residing on the Contractor devices, when requested by the State. Data shall be permanently deleted and shall not be recoverable, according to National Institute of Standards and Technology (NIST)-approved methods. Certificates of destruction shall be provided to the State.
- i. Provide written Certification to the State that the Contractor has surrendered to the State all said property.

**14 CHANGE OF OWNERSHIP**

In the event that the Contractor should change ownership for any reason whatsoever, the State shall have the option of continuing under the Contract with the Contractor, its successors or assigns for the full remaining term of the Contract; continuing under the Contract with the Contractor, its successors

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or assigns for such period of time as determined necessary by the State; or immediately terminate the Contract for convenience without liability to the Contractor, its successors or assigns.

**15 ASSIGNMENT, DELEGATION AND SUBCONTRACTS**

15.1 The Contractor shall not assign, delegate, subcontract, or otherwise transfer any of its interest, rights, or duties under the Contract without the prior written consent of the State. Such consent shall not be unreasonably withheld. Any attempted transfer, assignment, delegation, or other transfer made without the State's prior written consent shall be null and void, and may constitute an event of default at the sole discretion of the State.

15.2 The Contractor shall remain wholly responsible for performance of the entire Contract even if assignees, delegates, Subcontractors, or other transferees ("Assigns") are used, unless otherwise agreed to in writing by the State, and the Assigns fully assumes in writing any and all obligations and liabilities under the Contract from the Effective Date. In the absence of a written assumption of full obligations and liabilities of the Contract, any permitted assignment, delegation, subcontract, or other transfer shall neither relieve the Contractor of any of its obligations under the Contract nor affect any remedies available to the State against the Contractor that may arise from any event of default of the provisions of the contract. The State shall consider the Contractor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from the Contract.

15.3 Notwithstanding the foregoing, nothing herein shall prohibit the Contractor from assigning the Contract to the successor of all or substantially all of the assets or business of the Contractor provided that the successor fully assumes in writing all obligations and responsibilities under the Contract. In the event that the Contractor should change ownership, as permitted under Section 15: *Change of Ownership*, the State shall have the option to continue under the Contract with the Contractor, its successors or assigns for the full remaining term of the Contract; continue under the Contract with the Contractor, its successors or assigns for such period of time as determined necessary by the State; or immediately terminating the Contract without liability to the Contractor, its successors or assigns.

**16 DISPUTE RESOLUTION**

Prior to the filing of any formal proceedings with respect to a dispute (other than an action seeking injunctive relief with respect to intellectual property rights or Confidential Information), the party believing itself aggrieved (the "Invoking Party") shall call for progressive management involvement in the dispute negotiation by written notice to the other party. Such notice shall be without prejudice to the Invoking Party's right to any other remedy permitted under the Contract.

The parties shall use reasonable efforts to arrange personal meetings and/or telephone conferences as needed, at mutually convenient times and places, between negotiators for the parties at the following successive management levels, each of which shall have a period of allotted time as specified below in which to attempt to resolve the dispute:

**Dispute Resolution Responsibility and Schedule Table**

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**PART 2 - INFORMATION TECHNOLOGY PROVISIONS**

<b>LEVEL</b>	<b>Deloitte Consulting, LLP</b>	<b>STATE</b>	<b>CUMULATIVE ALLOTTED TIME</b>
<b>Primary</b>	Jeffrey Walker Senior Manager	Andrew Chalsma State Project Manager (PM)	5 Business Days
<b>First</b>	Gregory Spino Managing Director	David Wieters Director, BIS	10 Business Days
<b>Second</b>	Scott Workman Managing Director	Jeffrey A. Meyers Commissioner	15 Business Days

The allotted time for the first level negotiations shall begin on the date the Invoking Party's notice is received by the other party. Subsequent allotted time is days from the date that the original Invoking Party's notice is received by the other party. In the event that the parties do not resolve the dispute within the time periods set forth above, either party may pursue its available remedies, at law or equity, in accordance with Section 17.7 below.

**17 SAAS GENERAL TERMS AND CONDITIONS**

**17.1 COMPUTER USE**

In consideration for receiving access to and use of the computer facilities, network, licensed or developed software, software maintained or operated by any of the State entities, systems, equipment, Documentation, information, reports, or data of any kind (hereinafter "Information"), the Contractor understands and agrees to the following rules:

- a. Every Authorized User has the responsibility to assure the protection of information from unauthorized access, misuse, theft, damage, destruction, modification, or disclosure.
- b. That information shall be used solely for conducting official State business, and all other use or access is strictly forbidden including, but not limited to, personal, or other private and non-State use and that at no time shall the Contractor access or attempt to access any information without having the express authority to do so.
- c. That at no time shall the Contractor access or attempt to access any information in a manner inconsistent with the approved policies, procedures, and /or agreements relating to system entry/access.
- d. Except for Contractor Technology, that all software licensed, developed, or being evaluated by the State cannot be copied, shared, distributed, sub-licensed, modified, reverse engineered, rented, or sold, and that at all times the Contractor must use reasonable care to protect and keep such software confidential in accordance with the license or any other Agreement executed by the State. Except for Contractor Technology, only equipment or software owned, licensed, or being evaluated by the State, can be used by

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the Contractor. Personal software (including but not limited to palmtop sync software) shall not be installed on any equipment.

- e. That if the Contractor is found to be in violation of any of the above-stated rules, or Exhibit P, DHHS Information Security Requirements, the User may face removal from the State Contract, and/or criminal or civil prosecution, if the act constitutes a violation of law.

**17.2 EMAIL USE**

Email and other electronic communication messaging systems are State of New Hampshire property and are to be used for business purposes only and in accordance with Exhibit P, DHHS Information Security Requirements. Email is defined as "internal Email systems" or "State-funded Email systems." The Contractor understands and agrees that use of email shall follow State standard policy (available upon request).

**17.3 INTERNET/INTRANET USE**

The Internet/Intranet is to be used for access to and distribution of information in direct support of the business of the State of New Hampshire according to State standard policy (available upon request).

**17.4 REGULATORY GOVERNMENT APPROVALS**

The Contractor shall obtain all necessary and applicable regulatory or other governmental approvals necessary to perform its obligations under the Contract.

**17.5 INSURANCE CERTIFICATE**

The Insurance Certificate should note the Certificate Holder in the lower left hand block including State of New Hampshire, Department Name, name of the individual responsible for the funding of the contracts and his/her address.

**17.6 EXHIBITS**

The Exhibits referred to, in and attached to the Contract are incorporated by reference as if fully included in the text.

**17.7 VENUE AND JURISDICTION**

Any action on the Contract may only be brought in the State of New Hampshire, Merrimack County Superior Court.

**17.8 SURVIVAL**

The terms, conditions and warranties contained in the Contract that by their context are intended to survive the completion of the performance, cancellation or termination of the Contract shall so survive, including, but not limited to, the terms of the Exhibit E Section 3: Records Retention and Access Requirements, Exhibit E Section 4: Accounting Requirements, and General Provisions-Section 11: Use of State's Information, Confidentiality and General Provisions- Section 14: Termination which shall all survive the termination of the Contract.

**17.9 FORCE MAJEURE**

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Neither the Contractor nor the State shall be responsible for delays or failures in performance resulting from events beyond the control of such party and without fault or negligence of such party. Such events shall include, but not be limited to, acts of God, strikes, lock outs, riots, and acts of War, epidemics, acts of Government, fire, power failures, nuclear accidents, earthquakes, and unusually severe weather.

Except in the event of the foregoing, Force Majeure events shall not include the Contractor's inability to hire or provide personnel needed for the Contractor's performance under the Contract.

**17.10 NOTICES**

Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the following addresses.

TO THE CONTRACTOR:  
DELOITTE CONSULTING  
7 EAGLE SQUARE

CONCORD, NH 03301

TO STATE:  
STATE OF NEW HAMPSHIRE  
DEPARTMENT OF HEALTH AND  
HUMAN SERVICES  
129 PLEASANT STREET  
CONCORD, NH 03301

**17.11 DATA PROTECTION –**

The Contractor shall comply with Exhibit P of this Contract, Information Security Requirements.

**17.12. DATA LOCATION**

The Contractor shall provide its Services to the State and solely from data centers within the Continental United States. All storage, processing and transmission of State data shall be restricted to information technology systems within the Continental United States. The Contractor shall not allow its personnel or sub-contractors to store State data on portable devices, including personal computers, except as set forth in Exhibit P, DHHS Information Security Requirements.

**17.13. SECURITY INCIDENT OR DATA BREACH NOTIFICATION –**

The Contractor shall comply with Exhibit P of this Contract, Information Security Requirements.

**17.14. BREACH RESPONSIBILITIES –**

The Contractor shall comply with Exhibit P of this Contract, Information Security Requirements.

**17.15. NOTIFICATION OF LEGAL REQUESTS**

The Contractor shall contact the State upon receipt of any electronic discovery, litigation holds, discovery searches and expert testimonies related to the State's data under this contract, or

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which might reasonably require access to the data of the State. The Contractor shall refer to Exhibit P, DHHS Information Security Requirements for additional provisions.

**17.16. CONTRACT AUDIT**

The Contractor shall allow the State to audit conformance to the contract terms. The State may perform this audit or contract with a third party at its discretion and at the State's expense.

**17.17. SECURITY**

The Contractor shall disclose its non-proprietary security processes and technical controls to the State in the form of Contractor's Information Security Statement such that adequate protection and flexibility can be attained between the State and the Contractor. For example: virus checking and port sniffing — the State and the Contractor shall understand each other's roles and responsibilities.

**17.18. NON-DISCLOSURE AND SEPARATION OF DUTIES**

The Contractor shall enforce separation of job duties, require commercially reasonable non-disclosure agreements, and limit staff knowledge of State data to that which is reasonably necessary to perform job duties.

**17.19. IMPORT AND EXPORT OF DATA**

The State shall have the ability to import or export data with respect to the DAP in piecemeal or in entirety at its discretion without interference from the Contractor. This includes the ability for the State to import or export data to/from other service providers.

**17.20. RESPONSIBILITIES AND UPTIME GUARANTEE**

The Contractor shall be responsible for the acquisition and operation of all hardware, software and network support related to the services being provided. The technical and professional activities required for establishing, managing and maintaining the environments are the responsibilities of the Contractor. The system shall be available 24/7/365 (with agreed-upon maintenance downtime and subject to the availability of the State's applicable server), and provide service to customers as defined in the SLA.

**17.21. RIGHT TO REMOVE INDIVIDUALS**


The State shall have the right at any time to require that the Contractor remove from interaction with State any the Contractor representative who the State believes is detrimental to its working relationship with the Contractor. The State shall provide the Contractor with notice of its determination, and the reasons it requests the removal. If the State signifies that a potential security violation exists with respect to the request, the Contractor shall promptly remove such individual. the Contractor shall not assign the person to any aspect of the contract or future work orders without the State's consent.



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1. **Problem Statement:** The Department of Health and Human Services requires a Business Intelligence (BI) Solution, with specific functionality to surround the creation of an opioid dashboard, utilizing multiple disparate systems data in a single centralized repository of information. This agreement also requires the necessary training for the Department to continue to support and expand the solution and utilize additional systems in order to scale the system and maintain it post-implementation.
2. **Goals** – Implement a scalable enterprise data analytics platform that serves as a comprehensive data repository across multiple source systems, providing analytic capabilities that address the current opioid crisis. Platform will extend the existing Department Enterprise Business Intelligence (EBI) environment to become the Data Analytics Platform (DAP).
3. **Project Overview** The general scope of the project is to provide Deloitte's Health and Human Services (HHS) Interactive Opioid Insights module, to serve as a baseline solution for the Department's Comprehensive Opioid Response Business Intelligence (CORBi). The module shall be comprised of several dynamic Tableau dashboards connected to data, including machine learning models process and analyzed in R or Python.
4. **Statement of Work**
  - 4.1. The Statement and Scope of Work are addressed through:
    - 4.1.1. Business Requirements Document
    - 4.1.2. Vendor Response to RFP
5. **General Project Assumptions**
  - 5.1. The Contractor will provide project tracking tools and templates to record and manage Issues, Risks, Change Requests, Requirements, Decision Sheets, and other documents used in the management and tracking of the project. The State of New Hampshire and the Contractor's Project Managers will review these tools and templates and determine which ones will be used for the project. Training on these tools and templates will be conducted at the start of each phase in which they will be used.
  - 5.2. Prior to the commencement of work on Non-Software and Written Deliverables, the Contractor shall provide to the State a template, table of contents, or agenda for Review and prior approval by the State.
  - 5.3. The Contractor shall help ensure that appropriate levels of security are implemented and maintained in order to protect the integrity and reliability of the State's Information Technology resources, information, and services. Security requirements are defined in Appendix C-2 of the Request for Proposal. The Contractor shall provide the State

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resources, information, and Services on an ongoing basis, with the appropriate infrastructure and security controls to ensure business continuity and to safeguard the confidentiality and integrity of State networks, Systems and Data.

5.4. The Deliverables are set forth in the Schedule described below in Section 6. By unconditionally accepting a Deliverable, the State reserves the right to reject any and all Deliverables (as defined in Section 5.3 of the Contract) in the event the State detects any Deficiency in the System, in whole or in part, through completion of all Acceptance Testing, including but not limited to, Software/System Acceptance Testing, and any extensions thereof.

5.5. Pricing for Deliverables set forth in Exhibit B: *Price and Payment Schedule*. Pricing will be effective for the Term of this Contract, and any extensions thereof based on mutual agreement.

6. **DELIVERABLES, MILESTONES, AND ACTIVITIES SCHEDULE.** The sprints represented below will be prioritized based upon the minimally viable product as defined in the grant. The scope of the sprints can be refined and adjusted based on the sprint backlog as agreed upon by the vendor and the state consistent with the change management process defined in section 9.:

	Activity, Deliverable, or Milestone	Deliverable Type	Estimated Start Date	Estimated Finish Date
<b>Agile Sprint Activities</b>				
1	<b>Sprint 0 (Project Planning &amp; Initiation)</b>	Agile Sprint	4/1/2019	4/12/2019
2	<b>Sprint 1 (Child Welfare and CDC Data Integration &amp; Visualization)</b>	Agile Sprint	4/15/2019	5/10/2019
3	<b>Sprint 2 (Medicaid &amp; Commercial Claims Integration)</b>	Agile Sprint	5/13/2019	6/7/2019
4	<b>Sprint 3 (Vital Records/Medical Examiner, Grant/State BDAS and Naloxone Services Data Integration)</b>	Agile Sprint	6/10/2019	7/5/2019
5	<b>Sprint 4 (Live Hospital ED Surveillance, AHEDD data integration &amp; AT-RISK Predictive Model with Google Digital Data)</b>	Agile Sprint	7/8/2019	8/2/2019

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6	Sprint 5 (Emergency Medical Services data (TEMSIS) & HHSi Opioid Insight Dashboard)	Agile Sprint	8/5/2019	8/30/2019
7	Sprint 6 (30 Day Closeout Plus remaining Warranty)	Agile Sprint	9/3/2019	11/29/2019
<b>Sprint 0 (Planning and Project Management)</b>				
8	Conduct Project Kickoff Meeting	Non-Software		April 2019
9	Work Plan	Written		April 2019
10	Infrastructure Plan, including Desktop and Network Configuration Requirements	Written		April 2019
11	Security Plan	Written		April 2019
12	Communications and Change Management Plan	Written		April 2019
<b>Sprint Execution (Installation, Testing, and System Deployment)</b>				
13	Sprint 1 Summary	Written		
	Project Status Reports	Written		April 2019-August 2019
	Daily Scrum Notes	Written		April 2019-August 2019
	Requirements Traceability Matrix	Written		April 2019-August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019-August 2019
	Code Development and Unit Testing	Software		April 2019-August 2019
	Conduct Integration Testing	Non-Software		April 2019-August 2019
	Conduct User Acceptance Testing	Non-software		April 2019-August 2019
	Deployment Plan	Written		April 2019-August 2019
	Data Loaded into Production Environment	Software		April 2019-August 2019
	Conduct Training	Non-Software		April 2019-August 2019
	Execute Security Plan	Non-Software		April 2019-August 2019
14	Sprint 2 Summary	Written		

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	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019
	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
15	Sprint 3 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019

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	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
16	Sprint 4 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019
	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
17	Sprint 5 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019

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	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019
	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
<b>Sprint 6 (Clean up and Project Closure Activities as Needed)</b>				
18	End User Support Plan	Written		September 2019
	Business Continuity Plan	Written		October 2019
20	Documentation of Operational Procedures	Written		November, 2019
21	Ongoing Hosting Support	Non-Software		September- November 2019
22	Conduct Project Exit Meeting	Non-Software		November, 2019
23	Conduct System Performance (Load/Stress) Testing	Non-software		October, 2019
24	Certification of 3rd Party Pen Testing and Application Vulnerability Scanning	Non-software		October, 2019

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**PART 3 - EXHIBIT B**  
**PRICE AND PAYMENT SCHEDULE**

**1. PAYMENT SCHEDULE**

**1.1. Not to Exceed**

1.1.1. This is a FIXED PRICE Contract for the period between the Effective Date through September 30,2019. The Contractor shall be responsible for performing its obligations in accordance with the Contract. This Contract will allow the Contractor to invoice the State for the following activities, Deliverables, or milestones appearing in the price and payment tables below.

	Activity, Deliverable, or Milestone	Deliverable Type	Estimated Start Date	Estimated Finish Date	Price
<b>Agile Sprint Activities</b>					
1	Sprint 0 (Project Planning & Initiation)	Agile Sprint	4/1/2019	4/12/2019	Included
2	Sprint 1 (Child Welfare and CDC Data Integration & Visualization)	Agile Sprint	4/15/2019	5/10/2019	Included
3	Sprint 2 (Medicaid & Commercial Claims Integration)	Agile Sprint	5/13/2019	6/7/2019	Included
4	Sprint 3 (Vital Records/Medical Examiner, Grant/State BDAS and Naloxone Services Data Integration)	Agile Sprint	6/10/2019	7/5/2019	Included
5	Sprint 4 (Live Hospital ED Surveillance, AHEDD data integration & AT-RISK Predictive Model with Google Digital Data)	Agile Sprint	7/8/2019	8/2/2019	Included
6	Sprint 5 (Emergency Medical Services data (TEMSIS) & HHSi Opioid Insight Dashboard)	Agile Sprint	8/5/2019	8/30/2019	Included
7	Sprint 6 (30 Day Closeout Plus remaining Warranty)	Agile Sprint	9/3/2019	11/29/2019	Included
<b>Sprint 0 (Planning and Project Management)</b>					
8	Conduct Project Kickoff Meeting	Non-Software		April, 2019	\$115,844
9	Work Plan	Written		April, 2019	\$114,844
10	Infrastructure Plan, including Desktop and Network Configuration Requirements	Written		April, 2019	\$46,338
11	Security Plan	Written		April, 2019	\$46,338

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Exhibit B – Price and Payment Schedule – Part 3

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12	Communications and Change Management Plan	Written		April, 2019	\$46,338
<b>Sprint Execution (Installation, Testing, and System Deployment)</b>					
13	<b>Sprint 1 Summary</b>	<b>Written</b>			<b>\$381,569.40</b>
	Project Status Reports	Written		April 2019 – August 2019	Included In the Sprint Summary
	Daily Scrum Notes	Written		April 2019 – August 2019	Included In the Sprint Summary
	Requirements Traceability Matrix	Written		April 2019 – August 2019	Included In the Sprint Summary
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019	Included In the Sprint Summary
	Code Development and Unit Testing	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Integration Testing	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019	Included In the Sprint Summary
	Deployment Plan	Written		April 2019- August 2019	Included In the Sprint Summary
	Data Loaded into Production Environment	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Training	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Execute Security Plan	Non-Software		April 2019- August 2019	Included In the Sprint Summary
14	<b>Sprint 2 Summary</b>	<b>Written</b>			<b>\$381,569.40</b>
	Project Status Reports	Written		April 2019 – August 2019	Included In the Sprint Summary

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	Daily Scrum Notes	Written		April 2019 – August 2019	Included In the Sprint Summary
	Requirements Traceability Matrix	Written		April 2019 – August 2019	Included In the Sprint Summary
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019	Included In the Sprint Summary
	Code Development and Unit Testing	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Integration Testing	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019	Included In the Sprint Summary
	Deployment Plan	Written		April 2019- August 2019	Included In the Sprint Summary
	Data Loaded into Production Environment	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Training	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Execute Security Plan	Non-Software		April 2019- August 2019	Included In the Sprint Summary
<b>15</b>	<b>Sprint 3 Summary</b>	<b>Written</b>			<b>\$381,569.40</b>
	Project Status Reports	Written		April 2019 – August 2019	Included In the Sprint Summary
	Daily Scrum Notes	Written		April 2019 – August 2019	Included In the Sprint Summary
	Requirements Traceability Matrix	Written		April 2019 – August 2019	Included In the Sprint Summary

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	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019	Included In the Sprint Summary
	Code Development and Unit Testing	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Integration Testing	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019	Included In the Sprint Summary
	Deployment Plan	Written		April 2019- August 2019	Included In the Sprint Summary
	Data Loaded into Production Environment	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Training	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Execute Security Plan	Non-Software		April 2019- August 2019	Included In the Sprint Summary
<b>16</b>	<b>Sprint 4 Summary</b>	<b>Written</b>			<b>\$381,569.40</b>
	Project Status Reports	Written		April 2019 – August 2019	Included In the Sprint Summary
	Daily Scrum Notes	Written		April 2019 – August 2019	Included In the Sprint Summary
	Requirements Traceability Matrix	Written		April 2019 – August 2019	Included In the Sprint Summary
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019	Included In the Sprint Summary
	Code Development and Unit Testing	Software		April 2019- August 2019	Included In the Sprint Summary

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	Conduct Integration Testing	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019	Included In the Sprint Summary
	Deployment Plan	Written		April 2019- August 2019	Included In the Sprint Summary
	Data Loaded into Production Environment	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Training	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Execute Security Plan	Non-Software		April 2019- August 2019	Included In the Sprint Summary
<b>17</b>	<b>Sprint 5 Summary</b>	<b>Written</b>			<b>\$381,569.40</b>
	Project Status Reports	Written		April 2019 – August 2019	Included In the Sprint Summary
	Daily Scrum Notes	Written		April 2019 – August 2019	Included In the Sprint Summary
	Requirements Traceability Matrix	Written		April 2019 – August 2019	Included In the Sprint Summary
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019	Included In the Sprint Summary
	Code Development and Unit Testing	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Integration Testing	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019	Included In the Sprint Summary

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	Deployment Plan	Written		April 2019- August 2019	Included In the Sprint Summary
	Data Loaded into Production Environment	Software		April 2019- August 2019	Included In the Sprint Summary
	Conduct Training	Non-Software		April 2019- August 2019	Included In the Sprint Summary
	Execute Security Plan	Non-Software		April 2019- August 2019	Included In the Sprint Summary
<b>Sprint 6 (Clean up and Project Closure Activities as Needed)</b>					
18	End User Support Plan	Written		September 2019	\$0
19	Business Continuity Plan	Written		October, 2019	\$0
20	Documentation of Operational Procedures	Written		November, 2019	\$0
21	Ongoing Hosting Support	Non-Software		September - November 2019	\$0
22	Conduct Project Exit Meeting	Non-Software		November 2019	\$0
23	Conduct System Performance (Load/Stress) Testing	Non-software		October, 2019	\$0
24	Certification of 3rd Party Pen Testing and Application Vulnerability Scanning	Non-software		October, 2019	\$0

**1.2. Proposed Vendor Staff, Resource Hours and Rates Worksheet**

1.2.1. The following worksheet indicates STAFFING TITLES individuals that shall be assigned to the Project. their hours and associated applicable rates. Names are provided for INFORMATIONAL PURPOSES RELATED TO THE PROPOSED FIXED PRICE, AND OTHER THAN KEY PERSONNEL, NAMES ARE SUBJECT TO CHANGE BY DELOITTE AS REQUIRED .

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Title	Name	Initiation Hours	Implementation Hours	Project Close out Hours	Hourly Rate	Hours X Rate
Enterprise Architect Lead	Gregory Spino	30	160	20	\$ 240	\$ 50,400
Opioid Analytics Lead	Sean Conlin	10	90	10	\$ 350	\$ 38,500
Project Manager	Jeff Walker	40	460	40	\$ 220	\$ 118,800
ETL and Data Wrangling Lead	Abhishek Pathak	160	1200	160	\$ 196	\$ 297,920
Training Lead	Kelly Neway	100	664	100	\$ 150	\$ 129,600
Data Visualization	TBD	120	792	120	\$ 155	\$ 159,960
Data Scientist, Lead (PhD)	Tim Hartman	40	420	20	\$ 350	\$ 168,000
Data Scientist	TBD	60	400	20	\$ 215	\$ 103,200
Data Scientist	TBD	40	190	10	\$ 215	\$ 51,600
Data Governance	TBD	100	759	160	\$ 175	\$ 178,325
Security Lead	Dipak Modi	0	104	40	\$ 196	\$ 28,224
UI Designer	TBD	0	120	40	\$ 130	\$ 20,800
Clinician	Manal Azer	0	100	20	\$ 175	\$ 21,000
Physician	TBD	0	100	20	\$ 350	\$ 42,000
Senior Database (ETL)	Varsha Goel	0	1460	0	\$ 145	\$ 211,700
Database (ETL)	TBD	0	980	0	\$ 130	\$ 127,400

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Exhibit B – Price and Payment Schedule – Part 3

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Contractor's Initials   *g*

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Title	Name	Initiation Hours	Implementation Hours	Project Close out Hours	Hourly Rate	Hours X Rate
Database (ETL)	TBD	0	980	0	\$ 130	\$ 127,400
Tester	TBD	0	1200	120	\$ 98	\$ 129,360
Tester	TBD	0	600	40	\$ 98	\$ 62,720
Security	TBD	0	600	120	\$172	\$ 123,840
Digital Analytics	Quinn Chasan	0	100	0	\$ -	\$ -
Cloud Engineer	Sean Wholtman	0	100	0	\$ 350	\$ 35,000
Cloud Data Scientist	Bryce Buffaloe	0	100	0	\$ -	\$ -
Digital Data Analyst	TBD	0	128	0	\$ 350	\$ 44,800
<b>TOTALS**</b>		<b>700</b>	<b>11807</b>	<b>1060</b>		<b>\$ 2,270,549</b>

**1.3. Future Vendor Rates Worksheet**

1.3.1. The State may request additional Services from the selected Vendor AT THE rates BELOW in the event that additional Service is required "SFY" refers to State Fiscal Year. The New Hampshire State Fiscal Year runs from July 1 through June 30 of the following calendar year. Positions not identified in the Proposed Position Worksheet may be included in the Future Vendor Rates Worksheet.

**Table 1.4: Future Vendor Rates Worksheet**

	SFY 2020	SFY 2021	SFY 2022	SFY 2023
Clinician	\$ 180	\$ 186	\$ 191	\$ 197

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Data Governance Lead	\$ 180	\$ 186	\$ 191	\$ 197
Data Scientist Lead PhD	\$ 443	\$ 456	\$ 470	\$ 484
Data Scientist	\$ 361	\$ 371	\$ 382	\$ 394
Data Scientist	\$ 361	\$ 371	\$ 382	\$ 394
Data Visualization	\$ 160	\$ 164	\$ 169	\$ 174
Database (ETL)	\$ 268	\$ 276	\$ 284	\$ 293
Enterprise Architect Lead	\$ 247	\$ 255	\$ 262	\$ 270
ETL and Data Wrangling Lead	\$ 202	\$ 208	\$ 214	\$ 221
Opioid Analytics Lead	\$ 361	\$ 371	\$ 382	\$ 394
Physician	\$ 361	\$ 371	\$ 382	\$ 394
Project Manager	\$ 227	\$ 233	\$ 240	\$ 248
Security	\$ 177	\$ 183	\$ 188	\$ 194
Security Lead	\$ 202	\$ 208	\$ 214	\$ 221
Senior Database (ETL)	\$ 149	\$ 154	\$ 158	\$ 163
Tester	\$ 202	\$ 208	\$ 214	\$ 221
Training Lead	\$ 155	\$ 159	\$ 164	\$ 169
UI Designer	\$ 134	\$ 138	\$ 142	\$ 146

**1.4. Website Hosting, Maintenance and Support Pricing Worksheet**

<b>HOSTED SERVICES</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>TOTAL</b>
Web Site Hosting Fee*	\$27,000	\$27,000	\$27,000	\$27,000	\$27,000	\$135,000

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<b>HOSTED SERVICES</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>TOTAL</b>
Technical Support and updates						
Maintenance and Updates						
<b>GRAND TOTAL</b>	<b>\$27,000</b>	<b>\$27,000</b>	<b>\$27,000</b>	<b>\$27,000</b>	<b>\$27,000</b>	<b>\$135,000</b>

NOTE: The prices above represent the price for Google Hosting Services where the State purchases the services directly from Google, and the Contractor serves as a payee agent. This hosted services pricing is not included in the Contract Not to Exceed fixed price, but may be added via a change order. The purchase and licensing of Google Hosting Services shall be governed by a separate agreement between the State and a third party.

**2. CONTRACT PRICE**

2.1. Notwithstanding any provision in the Contract to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments made by the State exceed the amount indicated in the P-37 General Provisions Block 1.8 ("Price Limitation"). The payment by the State of the total Contract price shall be the only, and the complete reimbursement to the Contractor for all fees and expenses, of whatever nature, incurred by the Contractor in the performance hereof.

2.2. The State will not be responsible for any travel or out of pocket expenses incurred in the performance of the Services performed under this Contract.

**3. INVOICING**

3.1. The Contractor shall submit correct invoices to the State for all amounts to be paid by the State. All invoices submitted shall be subject to the State's prior written approval, which shall not be unreasonably withheld. The Contractor shall only submit invoices for Services or Deliverables as permitted by the Contract. Invoices must be in a format as determined by the State and contain detailed information, including without limitation: itemization of each Deliverable and identification of the Deliverable for which payment is sought, and the Acceptance date triggering such payment; date of delivery and/or installation; monthly maintenance charges; any other Project costs or retention amounts if applicable.

3.2. Upon Acceptance of a Deliverable, and a properly documented and undisputed invoice, the State will pay the correct and undisputed invoice within thirty (30) days



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of invoice receipt (and All disputes shall be resolved in accordance with Section 16 of the Contract). Invoices will not be backdated and shall be promptly dispatched.

3.3. Invoices shall be sent to:

Financial Administrator  
Department of Health and Human Services  
Division of Public Health  
29 Hazen Dr.  
Concord, NH 03301

4. PAYMENT ADDRESS

4.1. Payments shall be made via ACH. Use the following link to enroll with the State Treasury for ACH payments: <https://www.nh.gov/treasury/state-vendors/index.htm>

5. OVERPAYMENTS TO THE CONTRACTOR

5.1. The Contractor shall promptly, but no later than fifteen (15) business days, return to the State the full amount of any overpayment or erroneous payment upon discovery or notice from the State.

6. CREDITS

6.1. The State may apply credits due to the State arising out of this Contract, against the Contractor's invoices with

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6.2. appropriate information attached

**7. PROJECT HOLDBACK**

7.1. The State shall withhold ten percent (10%) of each sprint release or milestone payment amount (per the workplan) for a period of 60 days after first productive use of the sprint release or milestone as applicable.

**THE STATE RESPONSIBILITIES**

8.1 The State shall cooperate with the Contractor in the performance of the Services, including (i) providing the Contractor with timely access to data, information, and personnel of the State; (ii) providing DOIT support required to provide, install, maintain and support the necessary environments and tools; (iii) promptly notifying the Contractor of any issues, concerns or disputes with respect to the Services and (iv) having responsibility for data sharing/data use agreements for data sources, assignment of data privacy and security designations for data, and approval of authorizations and privileges for data access and disclosure. With respect to the data and information provided by the State to the Contractor or its subcontractors for the performance of the Services, the State shall have all rights required to provide such data and information.

8.2. The State shall be solely responsible for; (i) the performance of its personnel and agents; (ii) the accuracy and completeness of all data and information provided to the Contractor for purposes of the performance of the Services; (iii) performing all management functions for the Department; (iv) designating a management member to oversee the Services; (v) evaluating the adequacy and results of the Services; and (vii) establishing and maintaining internal controls, including monitoring ongoing activities of the Department.

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SPECIAL PROVISIONS

1. Revisions to Form P-37, General Provisions

1.1. Section 4, Conditional Nature of Agreement, is replaced as follows:

4. CONDITIONAL NATURE OF AGREEMENT.

Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including without limitation, the continuance of payments, in whole or in part, under this Agreement are contingent upon continued appropriation or availability of funds, including any subsequent changes to the appropriation or availability of funds affected by any state or federal legislative or executive action that reduces, eliminates, or otherwise modifies the appropriation or availability of funding for this Agreement and the Scope of Services provided in Exhibit A, Scope of Services, in whole or in part. In no event shall the State be liable for any payments hereunder in excess of appropriated or available funds. In the event of a reduction, termination or modification of appropriated or available funds, the State shall have the right to withhold payment until such funds become available, if ever. The State shall have the right to reduce, terminate or modify services under this Agreement immediately upon giving the Contractor notice of such reduction, termination or modification. The State shall not be required to transfer funds from any other source or account into the Account(s) identified in block 1.6 of the General Provisions, Account Number, or any other account in the event funds are reduced or unavailable.

1.2. Subsection 8.1.1, Event of Default/Remedies, is deleted and replaced as follows:

8.1.1 failure to perform the Services in accordance with the Agreement.

1.3. Subsection 8.2.1, Event of Default/Remedies, is deleted and replaced as follows:

8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater specification of time, thirty (30) days from the date of the notice, and if the Event of Default is not timely remedied, terminate this

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Agreement, effective two (2) days after giving the Contractor notice of termination.

1.4. Section 10, Termination, is amended by adding the following language:

10.1 The State may terminate the Agreement at any time for any reason, at the sole discretion of the State, 30 days after giving the Contractor written notice that the State is exercising its option to terminate the Agreement.

10.2 In the event of early termination, the Contractor shall, within 15 days of notice of early termination, develop and submit to the State a Transition Plan for services under the Agreement, including but not limited to, identifying the present and future needs of clients receiving services under the Agreement and establishes a process to meet those needs.

10.3 The Contractor shall fully cooperate with the State and shall promptly provide detailed information to support the Transition Plan including, but not limited to, any information or data requested by the State related to the termination of the Agreement and Transition Plan and shall provide ongoing communication and revisions of the Transition Plan to the State as requested.

10.4 In the event that services under the Agreement, including but not limited to clients receiving services under the Agreement are transitioned to having services delivered by another entity including contracted providers or the State, the Contractor shall provide a process for uninterrupted delivery of services in the Transition Plan.

10.5 The Contractor shall establish a method of notifying clients and other affected individuals about the transition. The Contractor shall include the proposed communications in its Transition Plan submitted to the State as described above.

1.5. Section 13, Indemnification, is deleted and replaced as follows:

13. The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, or by or on behalf of any local, state or federal government entity, on account of, based or

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resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor, its subcontractors, and assignees. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

13.1 The Contractor shall require any subcontractor, delegates, or transferees to agree in writing to defend, indemnify and hold harmless the State, its officers and employees from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the States, its officer and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the subcontractor, delegate, or transferee.

1.6. Subsection 14.2, Insurance, is deleted and replaced as follows:

14.2 The policies described in subsection 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed or otherwise legally permitted to conduct business in the State of New Hampshire.

1.7. Subsection 14.3, Insurance, is deleted and replaced as follows:

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9 or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than five (5) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any certificate renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the policyholder first named insured no less than thirty (30) days prior written notice of cancellation or modification of the policy. In turn, Contractor shall provide written notice to

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Contracting Officer identified in block 1.9, or his or her successor, in the event Contractor is unable to procure replacement insurance coverage meeting substantially all of the requirements and specifications herein thirty (30) days prior to cancellation or modification of the policy.

**2. Renewal**

- 2.1. The Department reserves the right to extend this agreement for up to one (1) additional year, contingent upon satisfactory delivery of services, available funding, written agreement of the parties and approval of the Governor and Executive Council.

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**EXHIBIT D**  
**ADMINISTRATIVE SERVICES**

**1. TRAVEL EXPENSES**

1.1. The Contractor must assume all reasonable travel and related expenses. All labor rates will be "fully loaded", including, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses.

**2. SHIPPING AND DELIVERY FEE EXEMPTION**

2.1. The State will not pay for any shipping or delivery fees unless specifically itemized in the Contract.

**3. ACCESS/COOPERATION**

3.1. As applicable, and subject to the applicable laws and regulations, the State will provide the Contractor with access to all program files, libraries, personal computer-based systems, software packages, network systems, security systems, and hardware as required completing the contracted Services.

3.2. The State will use reasonable efforts to provide approvals, authorizations, and decisions reasonably necessary to allow the Contractor to perform its obligations under the Contract.

**4. STATE-OWNED DOCUMENTS AND COPYRIGHT PRIVILEGES**

4.1. The Contractor shall provide the State access to all State-owned documents, materials, reports, and other work in progress relating to this RFP. Upon expiration or termination of the Contract with the State, the Contractor shall turn over all State-owned documents, material, reports, and work in progress relating to this RFP to the State at no additional cost to the State. Documents must be provided in both printed and electronic format.

**5. RECORDS RETENTION AND ACCESS REQUIREMENTS**

5.1. The Contractor shall agree to the conditions of all applicable State and federal laws and regulations, which are incorporated herein by reference, regarding retention and access requirements, including without limitation, retention

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policies consistent with the Federal Acquisition Regulations (FAR) Subpart 4.7 *Contractor Records Retention*.

5.2. The Contractor and its Subcontractors shall maintain payment related books, records, documents, specifically applicable to the services The Contractor and its Subcontractors shall retain all such records for three (3) years following termination of the Contract, including any extensions. Records relating to any litigation matters regarding the Contract shall be kept for one (1) year following the termination of all litigation, including the termination of all appeals or the expiration of the appeal period.

5.3. Upon prior notice and subject to reasonable time frames, all such records shall be subject to inspection, examination, audit and copying by personnel so authorized by the State and federal officials so authorized by law, rule, regulation or Contract, as applicable. Access to these items shall be provided within Merrimack County of the State of New Hampshire, unless otherwise agreed by the State. Delivery of and access to such records shall be at no cost to the State during the three (3) year period following termination of the Contract and one (1) year term following litigation relating to the Contract, including all appeals or the expiration of the appeal period. The Contractor shall include the record retention and review requirements of this section in any of its subcontracts.

Records made available to the State under this Section may be redacted by the Contractor to the extent necessary to protect its proprietary and confidential information and to avoid any invasion of personal privacy.

5.4. The State agrees that books, records, documents, and other evidence of accounting procedures and practices related to the Contractor's cost structure and profit factors shall be excluded from the State's review unless the cost of any other Services or Deliverables provided under the Contract is calculated or derived from the cost structure or profit factors.

**6. ACCOUNTING REQUIREMENTS**

6.1. The Contractor shall maintain an accounting system that allows for an audit per the provisions of Standards for Audit of Governmental Organizations,



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Programs, Activities and Functions, issued by the US General Accounting Office (GAO standards). The costs applicable to the Contract shall be ascertainable from the accounting system and the Contractor shall maintain records pertaining to the Services and all other costs and expenditures.

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PART 3 - EXHIBIT E  
IMPLEMENTATION SERVICES

**1. PROJECT MANAGEMENT** *The State believes that effective communication and reporting are essential to Project success.*

1.1. The Contractor Key Project Staff shall participate in meetings as requested by the State, in accordance with the requirements and terms of this Contract.

1.1.1. **Introductory Meeting:** Participants will include the Contractor's Key Project Staff and State Project leaders from both Department of Justice and the Department of Information Technology. This meeting will enable leaders to become acquainted and establish any preliminary Project procedures.

1.1.2. **Kickoff Meeting:** Participants will include the State and the Contractor's Project Team and major stakeholders. This meeting is to establish a sound foundation for activities that will follow.

1.1.3. **Status Meetings:** Participants will include, at the minimum, the Contractor's Project Manager and the State Project Manager. These meetings will be conducted at least bi-weekly and address overall Project status and any additional topics needed to remain on schedule and within budget. A status and error report from the Contractor shall serve as the basis for discussion.

1.1.4. **The Work Plan:** must be reviewed at each Status Meeting and updated, at minimum, on a bi-weekly basis, in accordance with the Contract.

1.1.5. **Special Meetings:** Need may arise for a special meeting with State leaders or Project stakeholders to address specific issues.

1.1.6. **Exit Meeting:** Participants will include Project leaders from the Contractor and the State. Discussion will focus on lessons learned from the Project and on follow up options that the State may wish to consider.

1.2. The State expects the Contractor to prepare agendas and background for and minutes of meetings. Background for each status meeting must include an updated Work Plan. Drafting of formal presentations, such as a presentation for the kickoff meeting, will also be the Contractor's responsibility.

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- 1.3. The Contractor's Project Manager or the Contractor's Key Project Staff shall submit monthly status reports in accordance with the Schedule and terms of this Contract. All status reports shall be prepared in formats approved by the State. The Contractor's Project Manager shall assist the State's Project Manager, or itself produce reports related to Project Management as reasonably requested by the State, all at no additional cost to the State. The Contractor shall produce Project status reports, which shall contain, at a minimum, the following:
- 1.3.1. Project status related to the Work Plan;
  - 1.3.2. Deliverable status;
  - 1.3.3. Accomplishments during weeks being reported;
  - 1.3.4. Planned activities for the upcoming two (2) week period;
  - 1.3.5. Future activities; and
  - 1.3.6. Issues and concerns requiring resolution.
  - 1.3.7. Report and remedies in case of falling behind Schedule
- 1.4. As reasonably requested by the State, the Contractor shall provide the State with information or reports regarding the Project. The Contractor shall prepare special reports and presentations relating to Project Management, and shall assist the State in preparing reports and presentations, as reasonably requested by the State, all at no additional cost to the State.

**2. IMPLEMENTATION STRATEGY**

**2.1 Key Components**

- 2.1.1 The Contractor shall employ an industry-standard Implementation strategy with a timeline set forth in accordance with the Work Plan;
- 2.1.2 The Contractor and the State shall adopt a change management approach to identify and plan key strategies and communication initiatives.
- 2.1.3 The Contractor's team will provide training templates as defined in the Training Plan, which will be customized to address the State's specific requirements. Decisions regarding format,

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content, style, and presentation shall be made early on in the process, by the State, providing sufficient time for development of material as functionality is defined and configured.

- 2.1.4 The Contractor shall manage Project execution and provide the tools needed to create and manage the Project's Work Plan and tasks, manage and schedule Project staff, track and manage issues, manage changing requirements, maintain communication within the Project Team, and report status.

2.2 Timeline

- 2.2.1 The timeline is set forth in the Work Plan. During the initial planning period Project task and resource plans will be established for: the preliminary training plan, the change management plan, communication approaches, Project standards and procedures finalized, and team training initiated. Timing will be structured to recognize interdependencies between applications and structure a cost effective and timely execution. Processes will be documented, training established, and the application will be ready for Implementation in accordance with the Work Plan.

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**PART 3 - EXHIBIT F**  
**TESTING SERVICES**

1. The Contractor shall provide the following Products and Services described in this Exhibit F, including but not limited to:

2. TESTING AND ACCEPTANCE

1.1. The Contractor, working with the State shall bear all responsibilities for the full suite of Test Planning and preparation throughout the Project in accordance with Section 5.3 of the Contract. The Contractor will also provide training as necessary to the State staff responsible for test activities. The Contractor shall be responsible for all aspects of testing contained in the Acceptance Test Plan including support, at no additional cost, during User Acceptance Test conducted by the State and the testing of the training materials.

1.2. The Test Plan methodology shall reflect the needs of the Project and be included in the finalized Work Plan. A separate Test Plan and set of test materials will be prepared for each Software function or module.

1.3. All Testing and Acceptance (both business and technically oriented testing) shall apply to testing the System as a whole, (e.g., software modules or functions, and Implementation(s)). This shall include planning, test scenario and script development, Data and System preparation for testing, and execution of Unit Tests, System Integration Tests, Conversion Tests, Installation tests, Regression tests, Performance Tuning and Stress tests, Security Review and tests, and support of the State during User Acceptance Test and Implementation.

1.4. In addition, the Contractor shall provide a mechanism for reporting actual test results vs. expected results and for the resolution and tracking of all errors and problems identified during test execution. The Contractor shall also correct Deficiencies and support required re-testing.

1.5. TEST PLANNING AND PREPARATION

1.5.1. The Contractor shall provide the State with an overall Test Plan that will guide all testing. The Contractor provided, State approved, Test Plan will include, at a minimum, identification, preparation, and Documentation of planned testing, a requirements traceability matrix, test variants, test scenarios, test cases, test scripts, test Data, test phases, unit tests,

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expected results, and a tracking method for reporting actual versus expected results as well as all errors and problems identified during test execution.

1.5.2. As identified in the Acceptance Test Plan, and documented in accordance with the Work Plan and the Contract, State testing will commence upon the Contractor's Project Manager's Certification, in writing, that the Contractor's own staff has successfully executed all prerequisite Contractor's testing, along with reporting the actual testing results, prior to the start of any testing executed by State staff. The State will be presented with a State approved Acceptance Test Plan, test scenarios, test cases, test scripts, test data, and expected results.

1.5.3. The State will commence User Acceptance Testing within five (5) business days of receiving Certification from the Contractor that the State's personnel have been trained and the System is installed, configured, complete, and ready for State testing. The testing will be conducted by the State in an environment independent from the Contractor's development environment. The Contractor must assist the State with testing in accordance with the Test Plan and the Work Plan, utilizing test and live Data to validate reports, and conduct stress and performance testing, at no additional cost.

1.5.4. Testing begins upon completion of the Software configuration as required and user training according to the Work Plan. Testing ends upon issuance of a letter of UAT Acceptance by the State.

1.5.5. The Contractor must demonstrate that their testing methodology can be integrated with the State standard methodology.

**1.6. CONVERSION VALIDATION TESTING (If applicable)**

In Conversion Validation Testing, target application functions are validated.

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<b>Activity Description</b>	The conversion validation test should replicate the entire flow of the converted data through the Software Solution. As the Software Solution is interfaced to legacy or third-party applications/interfaces, testing verifies that the resulting flow of the converted data through these interface points performs correctly.
<b>Contractor Team Responsibilities</b>	For conversions and interfaces, the Contractor's team will execute the applicable validation tests and compare execution results with the documented expected results.
<b>State and Contractor Responsibilities</b>	Extract and cleanse, if necessary, the legacy data to be converted in the data conversions.
<b>Work Product Description</b>	Validation-Tested Conversion Programs. These programs include conversion programs that have been tested to verify that the resulting converted legacy data performs correctly in the entire suite of the Application.

**1.7. INSTALLATION TESTING**

1.7.1. In Installation Testing the application components are installed in the System Test environment to test the installation routines and are refined for the eventual production environment. This activity serves as a dry run of the installation steps in preparation for configuring the production system.

**1.8. USER ACCEPTANCE TESTING (UAT)**

1.8.1. The State begins UAT upon completion of the Software configuration as required and user training according to the Work Plan. Testing ends upon issuance of a letter of UAT Acceptance by the State and in accordance with the mutually agreed-upon project timeline.

1.8.2. The User Acceptance Test (UAT) is a verification process performed in a copy of the production environment. The User Acceptance Test verifies

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System functionality against predefined Acceptance criteria that support the successful execution of approved business processes.

- 1.8.3. UAT will also serve as a performance and stress test of the System. It may cover any aspect of the new System, including administrative procedures such as backup and recovery. The results of the UAT provide evidence that the new System meets the User Acceptance criteria as defined in the Work Plan.
- 1.8.4. The results of the User Acceptance Test provide evidence that the new System meets the User Acceptance criteria as defined in the Work Plan.
- 1.8.5. Upon successful conclusion of UAT and successful System deployment, the State will issue a letter of UAT Acceptance and the respective Warranty Period shall commence

<b>Activity Description</b>	The System User Acceptance Tests verify System functionality against predefined Acceptance criteria that support the successful execution of approved processes.
<b>Contractor Team Responsibilities</b>	<ul style="list-style-type: none"> <li>• Provide the State an Acceptance Test Plan and selection of test scripts for the Acceptance Test.</li> <li>• Monitor the execution of the test scripts and assist as needed during the User Acceptance Test activities.</li> <li>• Work jointly with the State in determining the required actions for problem resolution.</li> </ul>
<b>State Responsibilities</b>	<ul style="list-style-type: none"> <li>• Approve the development of the User Acceptance Test Plan and the set of data for use during the User Acceptance Test.</li> <li>• Validate the Acceptance Test environment.</li> <li>• Execute the test scripts and conduct User Acceptance Test activities.</li> <li>• Document and summarize Acceptance Test results.</li> <li>• Work jointly with the Contractor in determining the required actions for problem resolution.</li> <li>• Provide Acceptance of the validated Systems.</li> </ul>



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<b>Work Product Description</b>	The Deliverable for User Acceptance Tests is the User Acceptance Test Results. These results provide evidence that the new System meets the User Acceptance criteria defined in the Work Plan.
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1.9. PERFORMANCE TUNING AND STRESS TESTING

1.9.1. The Contractor shall develop and document hardware and Software configuration and tuning of <SOFTWARE> infrastructure as well as assist and direct the State's System Administrators and Database Administrators in configuring and tuning the infrastructure to support the software throughout the Project

1.10. SCOPE

1.10.1. The scope of Performance Testing shall be to measure the System level metrics critical for the development of the applications infrastructure and operation of the applications in the production environment.

1.10.2. It will include the measurement of response rates of the application for end-user transactions and resource utilization (of various servers and network) under various load conditions. These response rates shall become the basis for changes and retesting until optimum System performance is achieved.

1.10.3. Performance testing and tuning shall occur in the final production environment and shall use a copy of the final production database to provide the best results.

1.11. Test Types -*Performance testing shall use two different types of testing to determine the stability of the application. They are baseline tests and load tests.*

1.11.1. **Baseline Tests:** Baseline tests shall collect performance data and load analysis by running scripts where the output is broken down into business transactions or functions. The test is like a single user executing a

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defined business transaction. During baseline testing, each individual script is run to establish a baseline for transaction response time, throughput and other user-based metrics.

- 1.11.2. **Load Tests:** Load testing will determine if the behavior of the System can be sustained over a long period of time while running under expected conditions. Load test helps to verify the ability of the application environment under different load conditions based on workload distribution. System response time and utilization is measured and recorded.

**1.12. TUNING**

- 1.12.1. Tuning will be the Contractor led and occur during both the development of the application and load testing. Tuning is the process whereby the application performance is maximized. This can be the result of making code more efficient during development as well as making tuning parameter changes to the environment.

**1.13. REGRESSION TESTING**

- 1.13.1. As a result, of the user testing activities, problems will be identified that require correction. The State will notify the Contractor of the nature of the testing failures in writing. The Contractor will be required to perform additional testing activities in response to State and/or user problems identified from the testing results. Regression testing means selective re-testing to detect faults introduced during the modification effort, both to verify that the modifications have not caused unintended adverse effects, and to verify that the modified and related (possibly affected) System components still meet their specified requirements.
- 1.13.2. In designing and conducting such regression testing, the Contractor will be required to assess the risks inherent to the modification being implemented and weigh those risks against the time and effort required for conducting the regression tests. In other words, the Contractor will be expected to design and conduct regression tests that will identify any unintended consequences of the modification while taking into account Schedule and economic considerations.

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**1.14. SECURITY REVIEW AND TESTING**

- 1.14.1. IT Security involves all functions pertaining to the securing of State Data and Systems through the creation and definition of security policies, procedures and controls covering such areas as identification, authentication and non-repudiation.
- 1.14.2. All components of the Software shall be reviewed and tested to ensure they protect the State's hardware and software and its related Data assets. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability. Tests shall, at a minimum, cover each of the service components. Test procedures shall include penetration tests and application vulnerability scanning.

<b>Service Component</b>	<b>Defines the set of capabilities that:</b>
Identification and Authentication	Supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users
Access Control	Supports the management of permissions for logging onto a computer or network
Encryption	Supports the encoding of data for security purposes
Intrusion Detection	Supports the detection of illegal entrance into a computer system
Verification	Supports the confirmation of authority to enter a computer system, application or network
Digital Signature	Guarantees the unaltered state of a file
User Management	Supports the administration of computer, application and network accounts within an organization.

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Role/Privilege Management	Supports the granting of abilities to users or groups of users of a computer, application or network
Audit Trail Capture and Analysis	Supports the identification and monitoring of activities within an application or system
Input Validation	Ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.

1.14.3. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability. Tests shall, at a minimum, cover each of the service components. Test procedures shall include 3<sup>rd</sup> party penetration tests and application vulnerability scanning.

1.14.4. Prior to the System being moved into production the Contractor shall provide results of all security testing to the Department of Information Technology for review and Acceptance. All Software and hardware shall be free of malicious code (malware).

**1.15. PENETRATION TESTING (NON-PCI ENVIRONMENT)**

1.15.1. The Contractor shall provide verification that their Software and System environment has undergone penetration testing in accordance with current recommendations from a recognized industry standards organization, such as the U.S. Department of Commerce National Institute of Standards Technology (NIST). The State requires that the Contractor has this testing performed annually by a qualified third-party vendor at least annually, and after every major software and/or system update.

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**MAINTENANCE AND SUPPORT SERVICES**

**1. SYSTEM MAINTENANCE**

1.1. The Contractor shall maintain and support the System in all material respects as described in the applicable program Documentation through the contract end date.

**2. SYSTEM SUPPORT**

2.1. The Contractor will be responsible for performing on-site or remote technical support in accordance with the Contract Documents, including without limitation the requirements, terms, and conditions contained herein.

2.2. As part of the 90 day warranty period (as defined in Exhibit K the below), support levels shall be as follows:

2.2.1. Class A Deficiencies – The Contractor shall have available to the Department on-call telephone assistance, with issue tracking available to the Department, during Department business hours (M – F, 8:00 am – 4:30 pm) with an email/telephone response within two (2) hours of request, or the Contractor shall provide support with remote diagnostic Services within four (4) business hours of a request;

2.2.2. Class B & C Deficiencies – The Department shall notify the Contractor of such Deficiencies during regular business hours and the Contractor shall respond back within two (2) hours of notification of planned corrective action.

**3. SUPPORT OBLIGATIONS AND TERM**

3.1. The Contractor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications and terms and requirements of the Contract, including but not limited to S1.1 through S1.20 of the Support and Maintenance Requirements in Exhibit H *Requirements*, Attachment 1.

3.2. The Contractor shall maintain a record of the activities related to warranty repair or maintenance activities performed for the Department.

3.3. For all maintenance Service calls, the Contractor shall ensure the following information will be collected and maintained: nature of Deficiency; current status of the Deficiency; action plans, dates and times; expected and actual completion time;

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Deficiency resolution information; Resolved by; Identifying number i.e. work order number; and Issue identified by.

- 3.4. The Contractor must work with the Department to identify and troubleshoot potentially large scale System failures or Deficiencies by collecting the following information: mean time between reported Deficiencies with the Software; diagnosis of the root cause of the problem; and identification of repeat calls or repeat Software problems.
- 3.5. SUBJECT TO THE LIMITATIONS SET FORTH IN SECTION 1.1 OF Exhibit K, If the Contractor fails to correct a Deficiency within the allotted period of time stated in A MUTUALLY AGREED SUPPORT PLAN, the Contractor shall be deemed to have committed an Event of Default, and the State shall have the right, at its option, to pursue the remedies in Part 2 Section 13.1.1.2 (unless cured during the cure period upon written notice from the state).

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SAAS EXHIBIT H  
REQUIREMENTS

Attachment 1: Project Requirements is hereby incorporated within.

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Exhibit H - Requirements - Part 3

Date: 4/5/19

Contractor's Initials LS

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1. The Contractor's Project Manager and the State Project manager shall finalize the Work Plan for Implementation within five (5) days of the Effective Date and further refine the tasks required to implement the Project. The elements of the preliminary Work Plan are documented in accordance with the Contractor's plan to implement the System. Continued development and management of the Work Plan is a joint effort on the part of the Contractor and State Project Managers.
2. The preliminary Work Plan for Implementation created by the Contractor and the State is set forth at the end of this Exhibit.
3. In conjunction with the Contractor's Project Management methodology, which shall be used to manage the Project's life cycle, the Contractor team and the State shall finalize the Work Plan at the onset of the Project. This plan shall identify the tasks, Deliverables, major milestones, task dependencies, and a payment Schedule required to implement the Project. It shall also address intra-task dependencies, resource allocations (both State and Contractor's team members), refine the Project's scope, and establish the Project's Schedule. The Plan is documented in accordance with the Contractor's Work Plan and shall utilize an approved project management application to support the ongoing management of the Project.

4. ASSUMPTIONS

4.1. General

- 4.1.1. The State shall provide team members with decision-making authority to support the Implementation efforts, at the level outlined in the Request for Proposal Document State Staffing Matrix.
- 4.1.2. All State tasks must be performed in accordance with the revised Work Plan.
- 4.1.3. All key decisions will be resolved within two (2) business days. Issues not resolved within this initial period will be escalated to the State Project Manager for resolution.
- 4.1.4. Any activities, decisions or issues taken on by the State that affect the mutually agreed upon Work Plan timeline, scope, resources, and costs shall be subject to the identified Change Control process.
- 4.1.5. The Contractor shall maintain an accounting system that allows for an audit, per the provisions of standards for audit of governmental organizations, programs, activities and functions, issued by the US General Accounting Office (GAO Standards).



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**4.2. PROJECT MANAGEMENT**

- 4.2.1. The State shall approve the Project Management Methodology used for the Project.
- 4.2.2. The State shall provide the Project Team with reasonable access to the State personnel as needed to complete Project tasks.
- 4.2.3. A Project folder created within the State system, or otherwise agreed upon solution, shall be used for centralized storage and retrieval of Project documents, work products, and other material and information relevant to the success of the Project and required by Project Team members. This central repository is secured by determining which team members have access to the Project folder and granting either view or read/write privileges. The Contractor's Project Manager will establish and maintain this folder. The State Project Manager shall approve access for the State team. Documentation can be stored locally for the Contractor and State team on a "shared" network drive to facilitate ease and speed of access. Final versions of all Documentation shall be loaded to the State System.
- 4.2.4. The Contractor assumes that an Alternate Project Manager may be appointed from time to time to handle reasonable and ordinary absences of the Project Manager.

**4.3. PROJECT SCHEDULE**

- 4.3.1. Deployment is planned to begin on Jun 27, 2019 with a planned go-live date of August 25, 2019.

**4.4. REPORTING**

- 4.4.1. The Contractor shall conduct daily sprint meetings in addition to bi-weekly status meetings, and provide reports that include, but are not limited to, minutes, action items, test results, and Documentation.

**4.5. USER TRAINING**

- 4.5.1. The Contractor's Team shall lead the development of the end-user training plan.
- 4.5.2. A train the trainer approach shall be used for the delivery of end-user training.
- 4.5.3. The State is responsible for the delivery of end-user training.

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4.5.4. The State shall schedule and track attendance on all end-user training classes.

4.6. PERFORMANCE AND SECURITY TESTING

4.6.1. The Contractor's Team shall provide a performance test workshop to identify the key scenarios to be tested, the approach and tools required, and best practices information on performance testing.

4.6.2. The State shall work with the Contractor on all testing as set forth in Contract Exhibit F – *Testing Services*.

5. ROLES AND RESPONSIBILITIES

5.1. Contractor Team Roles and Responsibilities

5.1.1. Contractor Team Project Executive

5.1.1.1. The Contractor Team's Project Executives (Contractor and Subcontractor Project Executives) shall be responsible for advising on and monitoring the quality of the Services throughout the Project life cycle. The Project Executive shall advise the Contractor Team Project Manager and the State's Project leadership on the best practices for implementing the Contractor Software Solution within the State. The Project Executive shall participate in the definition of the Project Plan and provide guidance to the State's Team.

5.1.2. CONTRACTOR TEAM PROJECT MANAGER

5.1.2.1. The Contractor Team Project Manager shall have overall responsibility for the day-to-day management of the Project and shall plan, track, and manage the activities of the Contractor Implementation Team. The Contractor Team Project Manager will have the following responsibilities:

5.1.2.1.1. Maintain communications with the State's Project Manager;

5.1.2.1.2. Work with the State in planning and conducting a kick-off meeting;

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- 5.1.2.1.3. Create and maintain the Work Plan;
- 5.1.2.1.4. Assign the Contractor Team consultants to tasks in the Implementation Project according to the scheduled staffing requirements;
- 5.1.2.1.5. Define roles and responsibilities of all the Contractor Team members;
- 5.1.2.1.6. Provide spring reports, sprint planning, sprint retrospective weekly sprint reports and monthly update progress reports to the State Project Manager;
- 5.1.2.1.7. Notify the State Project Manager of requirements for State resources in order to provide sufficient lead time for resources to be made available;
- 5.1.2.1.8. Review task progress for time, quality, and accuracy in order to achieve progress;
- 5.1.2.1.9. Review requirements and scheduling changes and identify the impact on the Project in order to identify whether the changes may require a change of scope;
- 5.1.2.1.10. Implement scope and Schedule changes as authorized by the State Project Manager and with appropriate Change Control approvals as identified in the Implementation Plan;
- 5.1.2.1.11. Inform the State Project Manager and staff of any urgent issues if and when they arise;
- 5.1.2.1.12. Provide the State completed Project Deliverables and obtain sign-off from the State's Project Manager.
- 5.1.2.1.13. Manage handoff to the Contractor operational staff;
- 5.1.2.1.14. Manage Transition Services as needed.

**5.1.3. CONTRACTOR TEAM ANALYSIS**

- 5.1.3.1. The Contractor Team shall conduct analysis of requirements, validate the Contractor Team's understanding of the State business requirements by application, and perform business requirements mapping;
- 5.1.3.2.

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- 5.1.3.3. Construct and confirm application test case scenarios;
- 5.1.3.4. Produce application configuration definitions and configure the applications;
- 5.1.3.5. Conduct testing of the configured application;
- 5.1.3.6. Produce functional Specifications for extensions, conversions, and interfaces;
- 5.1.3.7. Assist the State in the testing of extensions, conversions, and interfaces;
- 5.1.3.8. Assist the State in execution of the State's Acceptance Test;
- 5.1.3.9. Conduct follow-up meetings to obtain feedback, results, and concurrence/approval from the State;
- 5.1.3.10. Assist with the correction of configuration problems identified during system, integration and Acceptance Testing; and
- 5.1.3.11. Assist with the transition to production.

**5.1.4. CONTRACTOR TEAM TASKS**

- 5.1.4.1. The Contractor team shall assume the following tasks:
  - 5.1.4.1.1. Development and review of functional and technical Specification to determine that they are at an appropriate level of detail and quality;
  - 5.1.4.1.2. Development and Documentation of conversion and interface programs in accordance with functional and technical Specifications;
  - 5.1.4.1.3. Development and Documentation of installation procedures; and
  - 5.1.4.1.4. Unit testing of conversions and interfaces developed; and
  - 5.1.4.1.5. System Integration Testing.

**6. STATE ROLES AND RESPONSIBILITIES**

- 6.1. The following State resources have been identified for the Project. The time demands on the individual State team members will vary depending on the phase and specific tasks of the Implementation. The demands on the Subject Matter Experts' time will vary based on the need determined by the State Leads and the phase of the Implementation.

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**6.1.1. STATE PROJECT MANAGER**

6.1.1.1. The State Project Manager shall work side-by-side with the Contractor Project Manager. The role of the State Project Manager is to manage State resources (IF ANY), facilitate completion of all tasks assigned to State staff, and communicate Project status on a regular basis. The State Project Manager represents the State in all decisions on Implementation Project matters, provides all necessary support in the conduct of the Implementation Project, and provides necessary State resources, as defined by the Work Plan and as otherwise identified throughout the course of the Project. The State Project Manager has the following responsibilities:

- 6.1.1.1.1. Plan and conduct a kick-off meeting with assistance from the Contractor team;
- 6.1.1.1.2. Assist the Contractor Project Manager in the development of a detailed Work Plan;
- 6.1.1.1.3. Identify and secure the State Project Team members in accordance with the Work Plan;
- 6.1.1.1.4. Define roles and responsibilities of all State Project Team members assigned to the Project;
- 6.1.1.1.5. Identify and secure access to additional State end-user staff as needed to support specific areas of knowledge if and when required to perform certain Implementation tasks;
- 6.1.1.1.6. Communicate issues to State management as necessary to secure resolution of any matter that cannot be addressed at the Project level;
- 6.1.1.1.7. Inform the Contractor Project Manager of any urgent issues if and when they arise; and
- 6.1.1.1.8. Assist the Contractor team staff to obtain requested information if and when required to perform certain Project tasks.
- 6.1.1.1.9. Manage handoff to State operational staff;
- 6.1.1.1.10. Manage State staff during Transition Services as needed.

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6.1.2. STATE SUBJECT MATTER EXPERT(S) (SME)

6.1.2.1. The role of the State SME is to assist application teams with an understanding of the State's current business practices and processes, provide agency knowledge, and participate in the Implementation. Responsibilities of the SME include the following:

- 6.1.2.1.1. Be the key user and contact for their Agency or Department;
- 6.1.2.1.2. Attend Project Team training and acquire in-depth functional knowledge of the relevant applications;
- 6.1.2.1.3. Assist in validating and documenting user requirements, as needed;
- 6.1.2.1.4. Assist in mapping business requirements;
- 6.1.2.1.5. Assist in constructing test scripts and data;
- 6.1.2.1.6. Assist in System Integration, and Acceptance Testing;
- 6.1.2.1.7. Assist in performing conversion and integration testing and Data verification;
- 6.1.2.1.8. Attend Project meetings when requested; and
- 6.1.2.1.9. Assist in training end users in the use of the Contractor Software Solution and the business processes the application supports.

6.1.2.2. A State technical SME and a State business SME will be identified for each of the data sources required as a part of the CORbi project. These resources will be available as required throughout the lifecycle of a Sprint starting with the data acquisition of data to be loaded into the DAP platform. The State (DHHS) PMO will manage the data acquisition effort. The DHHS team will be responsible for pushing data from the data sources into the landing zone (could potentially be a SFTP server or a landing table) except where the data source is stored in an Oracle environment accessible by Informatica. All data element associated with the data sets being presented will be ingested into the new location (data mart). This will allow for all data elements to be stored in their final destination for future use in

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accordance with deliverables B6.1 through B6.16. DHHS staff will provide the data definitions and security classifications (e.g. PII) for the data elements to be utilized. DHHS will also lead with vendor support the design to specify and validate the extract logic from the landing zone to the data mart layer and visualizations including tables, data elements, reference data and any join logic required to pull data from the landing zone into the data mart layer. The data source layout and any memorandums of understanding of other activities that need to be completed in advance of utilizing a data source will be finalized and provided to the Deloitte team no later than one week prior to the Sprint start.

**6.1.3. STATE TECHNICAL LEAD AND ARCHITECT**

6.1.3.1. The State's Technical Lead and Architect reports to the State's Project Manager and is responsible for leading and managing the State's technical tasks. Responsibilities include:

- 6.1.3.1.1. Attend technical training as necessary to support the Project;
- 6.1.3.1.2. Assist the State and the Contractor Team Project Managers to establish the detailed Work Plan;
- 6.1.3.1.3. Manage the day-to-day activities of the State's technical resources assigned to the Project;
- 6.1.3.1.4. Work with State IT management to obtain State technical resources in accordance with the Work Plan;
- 6.1.3.1.5. Work in partnership with the Contractor and lead the State technical staff's efforts in documenting the technical operational procedures and processes for the Project. This is a Contractor Deliverable and it will be expected that the Contractor will lead the overall effort with support and assistance from the State; and

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6.1.3.1.6. Represent the technical efforts of the State in daily sprint meetings and the bi-weekly Project meetings.

**6.1.4. STATE TESTING ADMINISTRATOR**

6.1.4.1. The State's Testing Administrator will coordinate the State's testing efforts. Responsibilities include:

6.1.4.1.1. Coordinating the development of system, integration, performance, and Acceptance Test plans;

6.1.4.1.2. Coordinating system, integration, performance, and Acceptance Tests;

6.1.4.1.3. Chairing test review meetings;

6.1.4.1.4. Coordinating the State's team and external third parties involvement in testing;

6.1.4.1.5. Ensuring that proposed process changes are considered by process owners;

6.1.4.1.6. Establish priorities of Deficiencies requiring resolution; and

6.1.4.1.7. Tracking Deficiencies through resolution.

**6.2. Data Migration TESTING RESPONSIBILITIES**

6.2.1. The Contractor Team and the State, based on their assigned migration responsibilities, as set forth in Contract Exhibit F: *Testing Services* shall identify applicable test scripts and installation instructions, adapt them to the Project specifics, test the business process, and compare with the documented expected results.

6.2.2. The Contractor Team and the State, based on their assigned conversion responsibilities, shall execute the applicable test scripts that complete the conversion and compare execution results with the documented expected results.

6.2.3. The State is responsible for documenting the technical Specifications of all programs that extract and format Data from the legacy systems for use by the conversion processes.

6.2.4. The Contractor Team and the State, based on their assigned conversion responsibilities, shall develop and unit test their assigned conversions.



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- 6.2.5. The State and the Contractor Teams shall jointly conduct System and Integration Testing, verifying and validating the accuracy and completeness of the conversions.
- 6.2.6. The State and the Contractor Teams shall jointly verify and validate the accuracy and completeness of the conversions for Acceptance Testing and production.

**7. INTERFACES**

- 7.1. Interfaces shall be implemented in cooperation with the State. The following Table 5.1 identifies the interfaces within the scope of this Contract and their relative assignment.
- 7.2. Table: IN-SCOPE INTERFACES

Interface	Components, if applicable	Responsible Party	Description
Comprehensive Health Care Information System (CHIS)			
Child Welfare System			
Automated Hospital Emergency Department Data (AHEDD)			
Vital Records Data			
Drug Overdose Death Data			
Trauma Emergency Medical Services Information System (TEMSIS)			

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Interface	Components, if applicable	Responsible Party	Description
Grant/State BDAS Treatment Services			
Population Data			

**7.3. Interface Responsibilities (DEPENDENT ON WHO IS WORKING ON THIS THE CONTRACTOR, THE STATE OR BOTH)**

- 7.3.1. The Contractor Team shall provide the State Contractor Application Data requirements and examples, of data mappings and interfaces implemented on other Projects. The Contractor Team shall identify the APIs or ETL the State should use in the design and development of the interface.
- 7.3.2. The Contractor Team shall lead the State with the mapping of legacy Data to the Contractor Application.
- 7.3.3. The Contractor Team shall lead the review of functional and technical interface Specifications.
- 7.3.4. The Contractor Team shall assist the State with the resolution of problems and issues associated with the development and Implementation of the interfaces.
- 7.3.5. The Contractor Team shall document the functional and technical Specifications for the interfaces.
- 7.3.6. The Contractor Team shall create the initial Test Plan and related scripts to Unit Test the interface. The State shall validate and accept.
- 7.3.7. The Contractor Team shall develop and Unit Test the interface.
- 7.3.8. The State and the Contractor Team shall jointly verify and validate the accuracy and completeness of the interface.
- 7.3.9. The State is responsible for documenting the procedures required to run the interfaces in production.
- 7.3.10. The State shall document the technical changes needed to legacy systems to accommodate the interface.
- 7.3.11. The State shall develop and test all legacy application changes needed to accommodate the interface.
- 7.3.12. The State and the Contractor Teams shall jointly construct test scripts and create any data needed to support testing the interfaces.

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7.3.13. The State is responsible for all data extracts and related formatting needed from legacy systems to support the interfaces.

7.3.14. The State is responsible for the scheduling of interface operation in production.

**8. PRELIMINARY WORK PLAN**

8.1. The following Table 11.2 provides the preliminary agreed upon Work Plan for the Contract.

8.2. Table: High Level Preliminary NH Project Plan DELIVERABLES, MILESTONES, AND ACTIVITIES SCHEDULE MAY CHANGE AS NEEDED. SAMPLE ONLY:

	Activity, Deliverable, or Milestone	Deliverable Type	Estimated Start Date	Estimated Finish Date
<b>Agile Sprint Activities</b>				
1	Sprint 0 (Project Planning & Initiation)	Agile Sprint	4/1/2019	4/12/2019
2	Sprint 1 (Child Welfare and CDC Data Integration & Visualization)	Agile Sprint	4/15/2019	5/10/2019
3	Sprint 2 (Medicaid & Commercial Claims Integration)	Agile Sprint	5/13/2019	6/7/2019
4	Sprint 3 (Vital Records/Medical Examiner, Grant/State BDAS and Naloxone Services Data Integration)	Agile Sprint	6/10/2019	7/5/2019
5	Sprint 4 (Live Hospital ED Surveillance, AHEDD data integration & AT-RISK Predictive Model with Google Digital Data)	Agile Sprint	7/8/2019	8/2/2019
6	Sprint 5 (Emergency Medical Services data)	Agile Sprint	8/5/2019	8/30/2019

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	(TEMSIS) & HHSi Opioid Insight Dashboard			
7	Sprint 6 (30 Day Closeout Plus remaining Warranty)	Agile Sprint	9/3/2019	11/29/2019
Sprint 0 (Planning and Project Management)				
8	Conduct Project Kickoff Meeting	Non-Software		April 2019
9	Work Plan	Written		April 2019
10	Infrastructure Plan, including Desktop and Network Configuration Requirements	Written		April 2019
11	Security Plan	Written		April 2019
12	Communications and Change Management Plan	Written		April 2019
Sprint Execution (Installation, Testing, and System Deployment)				
13	Sprint 1 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019

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	Data Loaded into Production Environment	Software		April 2019- August 2019
	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
14	Sprint 2 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019
	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
15	Sprint 3 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019

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	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019
	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
16	Sprint 4 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019

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	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019
	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
17	Sprint 5 Summary	Written		
	Project Status Reports	Written		April 2019- August 2019
	Daily Scrum Notes	Written		April 2019- August 2019
	Requirements Traceability Matrix	Written		April 2019- August 2019
	Data Migration Design and Data Source Extract Logic	Written		April 2019- August 2019
	Code Development and Unit Testing	Software		April 2019- August 2019
	Conduct Integration Testing	Non-Software		April 2019- August 2019
	Conduct User Acceptance Testing	Non-software		April 2019- August 2019
	Deployment Plan	Written		April 2019- August 2019
	Data Loaded into Production Environment	Software		April 2019- August 2019

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	Conduct Training	Non-Software		April 2019- August 2019
	Execute Security Plan	Non-Software		April 2019- August 2019
Sprint 6 (Clean up and Project Closure Activities as Needed)				
18	End User Support Plan	Written		September 2019
	Business Continuity Plan	Written		October 2019
20	Documentation of Operational Procedures	Written		November, 2019
21	Ongoing Hosting Support	Non-Software		September- November 2019
22	Conduct Project Exit Meeting	Non-Software		November, 2019
23	Conduct System Performance (Load/Stress) Testing	Non-software		October, 2019
24	Certification of 3rd Party Pen Testing and Application Vulnerability Scanning	Non-software		October, 2019



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PART 3 - EXHIBIT J  
SOFTWARE AGREEMENT

1. LICENSE GRANT

Exhibit J not used/applicable for this agreement

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**PART 3 - EXHIBIT K**  
**WARRANTY & WARRANTY SERVICE**

1. WARRANTIES

1.1. SYSTEM

- 1.1.1. The Contractor warrants that the System (i.e. contractor deliverables) will operate to conform to the Specifications, terms, and requirements of the Contract during the warranty period the Contractor shall have no obligation under this section to make warranty repairs attributable to:
- 1.1.1.1. The State's misuse or modification of such system;
  - 1.1.1.2. The State's failure to use corrections or enhancements made available by the Contractor at no additional cost to the State;
  - 1.1.1.3. The State's use of such system in combination with any product other than those specified by the Contractor;
  - 1.1.1.4. The quality or integrity of data from other automated or manual products with which such system interfaces;
  - 1.1.1.5. Hardware, systems, software, telecommunications equipment or software not a part of such system which is inadequate to allow proper operation of such system or which is not operating in accordance with the manufacturer's specifications; or
  - 1.1.1.6. Operation or utilization of such system in a manner not contemplated by this Contract.
- 1.1.2. The warranty set forth in this section shall not apply with respect to hardware or software that is supplied by a third party to the State.
- 1.1.3. The Terms and conditions of the warranty to the State with respect to such hardware or software will be provided by the third party vendor of such hardware or software.

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**WARRANTY & WARRANTY SERVICE**

1.1.4. Contractor bears no responsibility of any kind for such hardware or software and the State shall not look to the Contractor for any warranty for such products.

1.2. NON-INFRINGEMENT

1.2.1. The Contractor warrants that it has good title to, or the right to allow the State to use all services, equipment and software ("materials") provided under this Contract, and that such services, equipment and software do not violate or infringe any patent, trademark, copyright, trade name or other intellectual property rights or misappropriate a trade secret of any third party, except to the extent that such infringement or violation arises from, or could have been avoided except for;

1.2.1.1. The State's modifications of the material or use thereof in a manner not contemplated by the Contract;

1.2.1.2. The failure of the State to use any corrections or modifications made available by the Contractor without charge;

1.2.1.3. Information, items, instructions or specifications provided by or on behalf of the State; or

1.2.1.4. The use of the material in combination with any product or data not provided by the Contractor, whether or not with the Contractor's consent.

1.2.2. If the State's use of any such material, or any portion thereof is or is likely to be enjoined by order of a court of competent jurisdiction as such an infringement or unauthorized use, the Contractor at its option and expense, shall have the right to:

1.2.2.1. Procure for the client the continued use of such material;

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1.2.2.2. Replace such material with a non-infringing material, or;

1.2.2.3. Modify such material so it becomes non-infringing, provided that if 1.2.2.1 or 1.2.2.2 is the option chosen by the Contractor, the replacement or modified material is capable of performing substantially the same function.

1.2.3. The foregoing provisions of Section 1.2 constitute the sole and exclusive remedy of the State and the sole and exclusive obligation of the Contractor, relating to a claim that any of the Contractor's materials infringes any patent, copyright or other intellectual property right of a third party.

**1.3. VIRUSES; DESTRUCTIVE PROGRAMMING**

1.3.1. The Contractor warrants that during the warranty period the Contractor Deliverables shall not contain any viruses, destructive programming, or mechanisms designed to disrupt the performance of the Software in accordance with the Specifications.

**1.4. COMPATIBILITY**

1.4.1. The Contractor warrants that during the warranty period all Contractor deliverables, including but not limited to the components provided, including any replacement or upgraded System Software components provided by the Contractor to correct Deficiencies or as an Enhancement, shall operate with the rest of the System without loss of any functionality.

**1.5. SERVICES**

1.5.1. The Contractor warrants during the warranty period that all Services to be provided under the Contract will be provided expediently, in a professional manner, in accordance with industry standards and that Services will comply with performance standards, Specifications, and terms of the Contract.

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**WARRANTY & WARRANTY SERVICE**

**2. WARRANTY PERIOD**

- 2.1. The Warranty Period shall remain in effect for ninety (90) days beyond implementation of each milestone/sprint as referenced in Exhibit A. If the contract is Amended the Warranty Period shall remain in effect for ninety (90) days beyond implementation of each amended updated milestone/sprint. This warranty period does not apply to the warranty for non-infringement, which shall remain in effect indefinitely.

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**PART 3 - EXHIBIT L**  
**TRAINING SERVICES**

1. The Contractor shall provide the following Training Services.
  - 1.1. The Contractor shall follow the Analyze, Design, Develop, Implement, Evaluate (Agile-ADDIE) training design methodology.
  - 1.2. The Contractor shall develop and deliver a Train-the-Trainer (TTT) program, as well as create self-service capabilities that promote sustainable use of the system for technical, business and external users.
  - 1.3. Attachment #3 (Page 185 of response), Section D-2.2 State Personnel and Training is incorporated herein.

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**PART 3 - EXHIBIT M**  
**AGENCY RFP WITH ADDENDUMS, BY REFERENCE**

1. Attachment #2, RFP-2019-043/RFP-2019-DPHS-19-DATAA, is incorporated herein.

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**PART 3 - EXHIBIT N**  
**VENDOR PROPOSAL, BY REFERENCE**

1. Attachment #3, Deloitte Proposal to DHHS-RFP-2019-043/RFP-2019-DPHS-19-DATAA, Data Analytics Platform for Opioid Crisis dated December 10, 2018 is hereby incorporated by reference as fully set forth herein.

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Exhibit N – Vendor Proposal, by Reference – Part 3

Date: 4/5/19

Contractor's Initials CS

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**PART 3 - EXHIBIT O**  
**CERTIFICATES AND ATTACHMENTS**

Attached are:

1. Exhibit H Requirements – Attachment #1
2. Exhibit M Agency RFP with Addendums – Attachment #2
3. Exhibit N Vendor Proposal – Attachment #3
4. Contractor's Certificate of Good Standing
5. Contractor's Certificate of Vote/Authority
6. Contractor's Certificate of Insurance

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Exhibit O – Certificate and Attachments – Part 3  
Date: 4/12/19  
Contractor's Initials



A. Definitions

The following terms may be reflected and have the described meaning in this document:

1. "Breach" means the loss of control, compromise, unauthorized disclosure, unauthorized acquisition, unauthorized access, or any similar term referring to situations where persons other than authorized users and for an other than authorized purpose have access or potential access to personally identifiable information, whether physical or electronic. With regard to Protected Health Information, "Breach" shall have the same meaning as the term "Breach" in section 164.402 of Title 45, Code of Federal Regulations.
2. "Computer Security Incident" shall have the same meaning "Computer Security Incident" in section two (2) of NIST Publication 800-61, Computer Security Incident Handling Guide, National Institute of Standards and Technology, U.S. Department of Commerce.
3. "Confidential Data" means all information owned, managed, created, received, from or on behalf of, the Department of Health and Human Services (DHHS) that is protected by information security, privacy or confidentiality rules and state and federal laws in End Users' possession or control in connection with the performance of Services. This information includes but is not limited to Derivative Data, Protected Health Information (PHI), Personally Identifiable Information (PII), Federal Tax Information, Social Security Administration, and CJIS (Criminal Justice Information Services) data. For the avoidance of doubt, Personal Information, as defined in NH RSA 359-C:19, does not include business contact information, which includes name, work postal address, work telephone number, title, office name and work email address used solely for the purpose of enabling business communications pursuant to the Contract.
4. "Derivative Data" means data or information based on or created from Confidential Data.
5. "End User" means any person or entity (i.e., Contractor, Contractor's personnel, business associate, subcontractor, and other Contractor-authorized downstream user) that is engaged or employed by Contractor to perform Services on behalf of Contractor pursuant to this Contract.
6. "HIPAA" means the Health Insurance Portability and Accountability Act of 1996 and the regulations promulgated thereunder.
7. "Incident" means an act that potentially violates an explicit or implied security policy, which includes attempts (either failed or successful) to gain unauthorized access to a system or its data, unwanted disruption or denial of service, the unauthorized use of a system for the processing or storage of data; and changes to system hardware, firmware, or software characteristics without the owner's knowledge, instruction, or consent. Incidents include the loss of data through theft or device misplacement, loss or misplacement of hardcopy documents, and misrouting of physical or electronic



Exhibit P

DHHS Information Security Requirements

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mail, all of which may have the potential to put the data at risk of unauthorized access, use, disclosure, modification or destruction.

8. "Open Wireless Network" means any network or segment of a network that is not designated by the State of New Hampshire's Department of Information Technology or delegate as a protected network (designed, tested, and approved, by means of the State, to transmit) will be considered an open network and not adequately secure for the transmission of unencrypted PI, PFI, PHI or Confidential Data.
9. "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. Parts 160 and 164, promulgated under HIPAA by the United States Department of Health and Human Services.
10. "Protected Health Information" (or "PHI") has the same meaning as provided in the definition of "Protected Health Information" in the HIPAA Privacy Rule at 45 C.F.R. § 160.103.
11. "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. Part 164, Subpart C, and amendments thereto.
12. "Unsecured Protected Health Information" means Protected Health Information that is not secured by a technology standard that renders Protected Health Information unusable, unreadable, or indecipherable to unauthorized individuals and is developed or endorsed by a standards developing organization that is accredited by the American National Standards Institute.

**I. RESPONSIBILITIES OF DHHS AND THE CONTRACTOR**

**A. Business Use and Disclosure of Confidential Data.**

1. The Contractor must not use, disclose, maintain or transmit Confidential Data except as reasonably necessary as outlined under this Contract. Further, Contractor, including but not limited to all its directors, officers, employees and agents, must not use, disclose, maintain or transmit PHI in any manner that would constitute a violation of the Privacy and Security Rule as applicable to the Contractor in its performance of the Services.
2. The Contractor must not disclose any Confidential Data in response to a request for disclosure on the basis that it is required by law, in response to a subpoena, etc., without first notifying DHHS, if legally permissible, so that DHHS has an opportunity to consent or object to the disclosure.
3. The Contractor agrees that Confidential Data or Derivative Data therefrom disclosed to an End User must only be used pursuant to the terms of this Contract.
4. The Contractor agrees Confidential Data obtained under this Contract may not be used for any other purposes that are not indicated in this Contract.
5. The Contractor agrees to grant access to relevant information with respect to the



Exhibit P

DHHS Information Security Requirements

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Contractor's handling of Confidential Data as well as make available appropriate personnel to discuss such information to the authorized representatives of DHHS for the purpose of inspecting to confirm compliance with the terms of this Contract.

**II. METHODS OF SECURE TRANSMISSION OF DATA**

1. Application Encryption. If End User is transmitting Confidential Data between Contractor-controlled applications, the Contractor will first verify the Contractor's application encryption capabilities to enable secure transmission via the internet.
2. Computer Disks and Portable Storage Devices. End User may not use computer disks or portable storage devices, such as a thumb drive, as a method of transmitting Confidential Data. Encrypted thumb drives may be used with written exception from DHHS Information Security.
3. Encrypted Email. End User may only employ email to transmit Confidential Data if email is encrypted and being sent to and being received by email addresses of persons authorized to receive such information.
4. Encrypted Web Site. If End User is employing the Web to transmit Confidential Data, the secure socket layers (SSL) must be used and the web site must be secure. SSL encrypts data transmitted via a Web site.
5. File Hosting Services, also known as File Sharing Sites. End User may not use file hosting services, such as Dropbox or Google Cloud Storage, to transmit Confidential Data.
6. Ground Mail Service. End User may only transmit Confidential Data via *certified* ground mail within the continental U.S. and when sent to a named individual.
7. Laptops and PDA. If End User is employing portable devices to transmit Confidential Data, said devices must be encrypted and password-protected.
8. Open Wireless Networks. End User may not transmit Confidential Data via an open wireless network unless End User employs a virtual private network (VPN) connection when remotely transmitting via an open wireless network. For the avoidance of doubt, Contractor's internal network shall not be considered an open wireless network.
9. Remote User Communication. If End User is employing remote communication to access or transmit Confidential Data, a virtual private network (VPN) must be installed on the End User's mobile device(s) or laptop from which information will be transmitted or accessed.
10. SSH File Transfer Protocol (SFTP), also known as Secure File Transfer Protocol. If End User is employing a non-DHHS SFTP to transmit Confidential Data, End User will structure the Folder and access privileges to prevent inappropriate disclosure of information. Any non-DHHS SFTP folders and sub-folders used by End User for transmitting Confidential Data and their Confidential Data will be deleted without undue delay.
11. Wireless Devices. If End User is transmitting Confidential Data via wireless devices, all Confidential Data must be encrypted to prevent inappropriate disclosure of information.



Exhibit P

DHHS Information Security Requirements

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III. RETENTION AND DISPOSITION OF IDENTIFIABLE RECORDS

The Contractor will only retain the Confidential Data for the duration of this Contract. After such time, the Contractor will have 30 days to destroy the Confidential Data in whatever form it may exist, unless, otherwise required by law or permitted under this Contract. If it is infeasible to return or destroy the Confidential Data, protections pursuant to this Information Security Requirements Exhibit survive this contract. To this end, the Contractor must:

A. Retention

1. The Contractor agrees it will not store, transfer or process Confidential Data collected in connection with the Services rendered under this Contract outside of the United States. This physical location requirement shall also apply in the implementation of cloud computing, cloud service or cloud storage capabilities, and includes backup data and Disaster Recovery locations.
2. The Contractor agrees to ensure proper security monitoring capabilities are in place to detect potential security events that can impact State of NH systems and/or Department confidential information for contractor provides systems.
3. The Contractor agrees to provide security awareness and education for its End Users in support of protecting Department confidential information.
4. The Contractor agrees to retain all electronic and hard copies of Confidential Data in a secure location and identified herein.
5. The Contractor agrees Confidential Data stored in a Cloud must be in a FedRAMP/HITECH compliant solution and comply with all applicable statutes and regulations regarding the privacy and security. All Contractor or End User controlled servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a whole, must have aggressive intrusion-detection and firewall protection that aligns with leading industry standards.
6. The Contractor agrees to reasonably cooperate with the State's Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure to the extent applicable to the scope of the Services.

B. Disposition

If the Contractor will maintain any Confidential Data on its systems (or its sub-contractor systems), the Contractor will maintain a documented process for securely disposing of such data upon request or contract termination; and will provide written confirmation to the State regarding any State of New Hampshire data destroyed by the Contractor or any subcontractors inadvertently or pursuant to this Exhibit. When no longer in use, electronic media containing State of New Hampshire Confidential Data shall be rendered unrecoverable via a secure wipe program in accordance with industry-accepted standards for secure deletion and media sanitization, or otherwise physically destroying the media (for example, degaussing) as described in NIST Special Publication 800-88, Rev 1, Guidelines for Media Sanitization, National Institute of Standards and Technology, U.S. Department of Commerce. The Contractor will document and confirm in writing the completion of the data destruction, and will provide such written confirmation to the Department upon request. The written confirmation will include details reasonably necessary to demonstrate data has been properly



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destroyed.

1. Unless otherwise specified in the Contract and subject to Section III.B. as soon as reasonably practical after the completion or the termination of this Contract, Contractor agrees to destroy all hard copies of Confidential Data using a secure method such as shredding.
2. Unless otherwise specified in the Contract and subject to Section III.B., as soon as reasonably practical after the completion or the termination of this Contract, Contractor agrees to completely destroy all electronic Confidential Data by means of data erasure, also known as secure data wiping.

#### IV. PROCEDURES FOR SECURITY

A. Contractor agrees to safeguard the Confidential Data received under this Contract, and any derivative data or files containing Confidential Data, as follows:

1. The Contractor will maintain proper security controls to protect Department Confidential Data collected, processed, managed, and/or stored in the delivery of contracted services.
2. The Contractor will maintain policies and procedures to protect Department Confidential Data throughout the information lifecycle, where applicable, (from creation, transformation, use, storage and secure destruction) regardless of the media used to store the data (i.e., tape, disk, paper, etc.).
3. The Contractor will maintain appropriate authentication and access controls to contractor systems that collect, transmit, or store Confidential Data where applicable.
4. The Contractor will take steps to ensure proper security monitoring capabilities are in place designed to detect potential security events that can impact Department Confidential Data processed on Contractor-provided and Contractor-controlled systems.
5. The Contractor will provide regular security awareness and education for its personnel in support of protecting Confidential Data.
6. If the Contractor will be sub-contracting any core functions of the engagement supporting the services for State of New Hampshire that involves disclosing Confidential Data to a subcontractor, the Contractor will enter into a written agreement with such subcontractor that defines specific security expectations that at a minimum are substantially the same as those applicable security obligations for the Contractor, including breach notification requirements.
7. The Contractor will work with the Department to sign and comply with all applicable State of New Hampshire and Department system access and authorization policies and procedures, systems access forms, and computer use agreements as part of obtaining and maintaining access to any Department system(s). Agreements will be completed and signed by the Contractor and any applicable sub-contractors prior to system access being authorized.

DHHS Information Security Requirements



8. If the Department determines the Contractor is a Business Associate pursuant to 45 CFR 160.103, the Contractor will execute a HIPAA Business Associate Agreement (BAA) with the Department and is responsible for maintaining compliance with the agreement.
9. The Contractor will not store, knowingly or unknowingly, any State of New Hampshire or Department data offshore or outside the boundaries of the United States unless prior express written consent is obtained from the Information Security Office leadership member within the Department.
10. Data Security Breach Liability. In the event of an Incident, Computer Security Incident, or Breach the Contractor shall make immediate efforts to contain the Incident/Breach, to minimize any damage or loss resulting from the Incident, Computer Security Incident, or Breach, as well as, investigate the cause(s) and promptly take measures to prevent future Incidents, Computer Security Incidents, or Breaches of a similar nature from reoccurring.
11. Contractor must, comply with all statutes and regulations regarding the privacy and security of Confidential Data applicable to Contractor in its performance of the Services, and must in all other respects maintain the privacy and security of PI and PHI at a level and scope that is not less than the level and scope of requirements applicable to Contractor in its performance of the Services, including, but not limited to, provisions of the Privacy Act of 1974 (5 U.S.C. § 552a), DHHS Privacy Act Regulations (45 C.F.R. §5b), HIPAA Privacy and Security Rules (45 C.F.R. Parts 160 and 164) that govern protections for individually identifiable health information and as applicable under State law; in each case that are applicable to Contractor in its provision of Services under the Contract.
12. Contractor must safeguard the Confidential Data at a level consistent with the requirements applicable to Contractor in its performance of the Services. Contractor agrees to establish and maintain appropriate administrative, technical, physical, and organizational safeguards to protect the confidentiality of the Confidential Data and to prevent unauthorized use or access to it.
13. Contractor agrees to maintain a documented Breach Notification and Incident Response process that complies with the requirements of this Information Security Requirements Exhibit with respect to Confidential Data.
14. Contractor must restrict access to the Confidential Data obtained under this Contract to only those authorized End Users who need such Confidential Data to perform their official duties in connection with purposes identified in this Contract.
15. The Contractor must ensure that it requires all End Users:
  - a. comply with such safeguards as referenced in Section IV A. above, implemented to protect Confidential Data that is furnished by DHHS under this Contract from loss, theft or inadvertent disclosure.
  - b. safeguard this Confidential Data at all times.

DHHS Information Security Requirements



- c. ensure that Contractor-issued laptops and other electronic devices/media containing PHI, PI, or PFI are encrypted and password-protected.
- d. send emails containing Confidential Data only if encrypted and being sent to and being received by email addresses of persons authorized to receive such information.
- e. limit disclosure of the Confidential Data to the extent permitted by law.
- f. Confidential Data received under this Contract and individually identifiable data derived from Confidential Data, must be stored in an area that is physically and technologically secure from access by unauthorized persons during duty hours as well as non-duty hours (e.g., door locks, card keys, biometric identifiers, etc.).
- g. only authorized End Users may transmit the Confidential Data, including any derivative files containing personally identifiable information, and in all cases, such data must be encrypted at all times when in transit, at rest, or when stored on portable media as required in section IV above.
- h. in all other instances Confidential Data must be maintained, used and disclosed using appropriate safeguards, as determined by a risk-based assessment of the circumstances involved.
- i. understand that their user credentials (user name and password) must not be shared with anyone. End Users will keep their credential information secure. This applies to credentials used to access the site directly or indirectly through a third party application.

Contractor is responsible for oversight and compliance of their End Users. DHHS reserves the right to reasonably request relevant documentation with respect to Contractor's handling Confidential Data to monitor compliance with this Contract, including the privacy and security requirements provided in herein, HIPAA, and other applicable laws and Federal regulations until such time the Confidential Data is disposed of in accordance with this Contract.

**V. LOSS REPORTING**

The Contractor must notify the DHHS's Information Security Officer, Privacy Officer, and Contracts Unit, via the email addresses provided in this Agreement, of any information security events, Computer Security Incidents, Incidents, or Breaches that adversely affects the confidentiality, integrity, or availability of Confidential Data under the control of Contractor as soon as feasible, but no more than 48 hours after the Contractor has determined that the aforementioned has occurred and that Confidential Data under the control of Contractor may have been exposed or compromised.

If a suspected or known information security event, Computer Security Incident, Incident or Breach involves **Social Security Administration (SSA)** provided data or **Internal Revenue Services (IRS)** provided **Federal Tax Information (FTI)** under the control of Contractor, then the Contractor must notify DHH Information Security *immediately and without delay*.

The Contractor must comply with all applicable state and federal laws relating to the



DHHS Information Security Requirements



privacy and security of Confidential Data, and safeguard the Confidential Data at the level consistent with the requirements applicable as set forth herein. In addition to, and notwithstanding, Contractor's compliance with all applicable obligations and procedures, Contractor's procedures must also address how the Contractor will:

1. Identify Incidents;
2. Determine if Confidential Data is involved in Incidents;
3. Report suspected or confirmed Incidents as required in this Exhibit.
4. Identify and convene a core response group to determine the risk level of Incidents and determine risk-based responses to Incidents; and
5. Determine whether Breach notification is required to the State, and, if so, identify appropriate Breach notification methods, timing, source, and contents from among different options to make such notification to DHHS in accordance with this Exhibit.

Incidents and/or Breaches that implicate PI within the Contractor's or End User's possession or control must be addressed and reported, as applicable, in accordance with NH RSA 359-C:20(I)(c).

**I. BREACH LIABILITY**

Should an Incident, Computer Security Incident, or Breach be determined to have been caused by the Contractor and/or End User's failure to safeguard State of New Hampshire networks, systems or DHHS Confidential Data per this Information Security Requirements Exhibit, and/or P-37, then the State may recover from the Contractor and/or End User all costs of response and recovery from the Incident, Computer Security Incident, or Breach, including but not limited to: credit monitoring services, mailing costs, and costs associated with website and telephone call center services.

**VI. CONFLICT OF TERMS**

In the event of any conflict or inconsistency between other Contract provisions and the Information Security Requirements Exhibit, this Exhibit shall control and govern the rights and obligations of the parties with respect to the subject matter of this Exhibit.

**VII. PERSONS TO CONTACT**

- A. DHHS contact program and policy:

DHHS-Contracts@dhhs.nh.gov

(In subject line insert RFP/Contract Name and Number)

- B. DHHS contact for Information Security and Data Management issues:

DHHSInformationSecurityOffice@dhhs.nh.gov

- C. DHHS contacts for Privacy issues:

DHHSPrivacyOfficer@dhhs.nh.gov



Exhibit Q

**HEALTH INSURANCE PORTABILITY ACT**  
**BUSINESS ASSOCIATE AGREEMENT**

The Contractor identified in Section 1.3 of the General Provisions of the Agreement agrees to comply with the Health Insurance Portability and Accountability Act, Public Law 104-191 and with the Standards for Privacy and Security of Individually Identifiable Health Information, 45 CFR Parts 160 and 164 applicable to business associates. As defined herein, "Business Associate" shall mean the Contractor and subcontractors and agents of the Contractor that receive, use or have access to protected health information under this Agreement and "Covered Entity" shall mean the State of New Hampshire, Department of Health and Human Services.

(1) **Definitions.**

- a. "**Breach**" shall have the same meaning as the term "Breach" in section 164.402 of Title 45, Code of Federal Regulations.
- b. "**Business Associate**" has the meaning given such term in section 160.103 of Title 45, Code of Federal Regulations.
- c. "**Covered Entity**" has the meaning given such term in section 160.103 of Title 45, Code of Federal Regulations.
- d. "**Designated Record Set**" shall have the same meaning as the term "designated record set" in 45 CFR Section 164.501.
- e. "**Data Aggregation**" shall have the same meaning as the term "data aggregation" in 45 CFR Section 164.501.
- f. "**Health Care Operations**" shall have the same meaning as the term "health care operations" in 45 CFR Section 164.501.
- g. "**HITECH Act**" means the Health Information Technology for Economic and Clinical Health Act, Title XIII, Subtitle D, Part 1 & 2 of the American Recovery and Reinvestment Act of 2009.
- h. "**HIPAA**" means the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191 and the Standards for Privacy and Security of Individually Identifiable Health Information, 45 CFR Parts 160, 162 and 164 and amendments thereto.
- i. "**Individual**" shall have the same meaning as the term "individual" in 45 CFR Section 160.103 and shall include a person who qualifies as a personal representative in accordance with 45 CFR Section 164.501(g).
- j. "**Privacy Rule**" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 CFR Parts 160 and 164, promulgated under HIPAA by the United States Department of Health and Human Services.
- k. "**Protected Health Information**" shall have the same meaning as the term "protected health information" in 45 CFR Section 160.103, limited to the information created or received by Business Associate from or on behalf of Covered Entity.



Exhibit Q

- l. "Required by Law" shall have the same meaning as the term "required by law" in 45CFR Section 164.103.
- m. "Secretary" shall mean the Secretary of the Department of Health and Human Services or his/her designee.
- n. "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 CFR Part 164, Subpart C, and amendments thereto.
- o. "Unsecured Protected Health Information" means protected health information that is not secured by a technology standard that renders protected health information unusable, unreadable, or indecipherable to unauthorized individuals and is developed or endorsed by a standards developing organization that is accredited by the American National Standards Institute.
- p. Other Definitions - All terms not otherwise defined herein shall have the meaning established under 45 C.F.R. Parts 160, 162 and 164, as amended from time to time, and the HITECH Act.

**(2) Business Associate Use and Disclosure of Protected Health Information.**

- a. Business Associate shall not use, disclose, maintain or transmit Protected Health Information (PHI) except as reasonably necessary to provide the services outlined under Part 2- Information Technology Provisions of the Agreement. Further, Business Associate, including but not limited to all its directors, officers, employees and agents, shall not use, disclose, maintain or transmit PHI in any manner that would constitute a violation of the Privacy and Security Rule.
- b. Business Associate may use or disclose PHI:
  - I. For the proper management and administration of the Business Associate;
  - II. As required by law, pursuant to the terms set forth in paragraph d. below; or
  - III. For data aggregation purposes for the health care operations of Covered Entity.
- c. To the extent Business Associate is permitted under the Agreement to disclose PHI to a third party, Business Associate must obtain, prior to making any such disclosure, (i) reasonable assurances from the third party that such PHI will be held confidentially and used or further disclosed only as required by law or for the purpose for which it was disclosed to the third party; and (ii) an agreement from such third party to notify Business Associate, in accordance with the HIPAA Privacy, Security, and Breach Notification Rules of any breaches of the confidentiality of the PHI, to the extent it has obtained knowledge of such breach.



Exhibit Q

- d. ~~The Business Associate shall not, unless such disclosure is reasonably necessary to provide services under Part 2 - Information Technology Provisions of the Agreement, disclose any PHI in response to a request for disclosure on the basis that it is required by law, without first notifying Covered Entity so that Covered Entity has an opportunity to object to the disclosure and to seek appropriate relief. If Covered Entity objects to such disclosure, the Business Associate shall refrain from disclosing the PHI until Covered Entity has exhausted all remedies.~~
- e. If the Covered Entity notifies the Business Associate that Covered Entity has agreed to be bound by additional restrictions over and above those uses or disclosures or security safeguards of PHI pursuant to the Privacy and Security Rule, the Business Associate shall be bound by such additional restrictions and shall not disclose PHI in violation of such additional restrictions and shall abide by any additional security safeguards.

(3) **Obligations and Activities of Business Associate.**

- a. The Business Associate shall notify the Covered Entity's Privacy Officer immediately after the Business Associate becomes aware of any use or disclosure of protected health information not provided for by the Agreement including breaches of unsecured protected health information and/or any security incident that may have an impact on the protected health information of the Covered Entity.
- b. The Business Associate shall immediately perform a risk assessment when it becomes aware of any of the above situations. The risk assessment shall include, but not be limited to:
- o The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification;
  - o The unauthorized person used the protected health information or to whom the disclosure was made;
  - o Whether the protected health information was actually acquired or viewed
  - o The extent to which the risk to the protected health information has been mitigated.

The Business Associate shall complete the risk assessment within 48 hours of the breach and immediately report the findings of the risk assessment in writing to the Covered Entity.

- c. The Business Associate shall comply with all sections of the Privacy, Security, and Breach Notification Rule.
- d. Business Associate shall make available all of its internal policies and procedures, books and records relating to the use and disclosure of PHI received from, or created or received by the Business Associate on behalf of Covered Entity to the Secretary for purposes of determining Covered Entity's compliance with HIPAA and the Privacy and Security Rule.



Exhibit Q

- e. ~~Business Associate shall require all of its business associates that receive, use or have access to PHI under the Agreement, to agree in writing to adhere to the same restrictions and conditions on the use and disclosure of PHI contained herein, including the duty to return or destroy the PHI as provided under Section 3 (l). The Covered Entity shall be considered a direct third party beneficiary of the Contractor's business associate agreements with Contractor's intended business associates, who will be receiving PHI pursuant to this Agreement, with rights of enforcement and indemnification from such business associates who shall be governed by standard Paragraph #13 of the standard contract provisions (P-37) of this Agreement for the purpose of use and disclosure of protected health information.~~
- f. Within five (5) business days of receipt of a written request from Covered Entity, Business Associate shall make available during normal business hours at its offices all records, books, agreements, policies and procedures relating to the use and disclosure of PHI to the Covered Entity, for purposes of enabling Covered Entity to determine Business Associate's compliance with the terms of the Agreement.
- g. Within ten (10) business days of receiving a written request from Covered Entity, Business Associate shall provide access to PHI in a Designated Record Set to the Covered Entity, or as directed by Covered Entity, to an individual in order to meet the requirements under 45 CFR Section 164.524.
- h. Within ten (10) business days of receiving a written request from Covered Entity for an amendment of PHI or a record about an individual contained in a Designated Record Set, the Business Associate shall make such PHI available to Covered Entity for amendment and incorporate any such amendment to enable Covered Entity to fulfill its obligations under 45 CFR Section 164.526.
- i. Business Associate shall document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an individual for an accounting of disclosures of PHI in accordance with 45 CFR Section 164.528.
- j. Within ten (10) business days of receiving a written request from Covered Entity for a request for an accounting of disclosures of PHI, Business Associate shall make available to Covered Entity such information as Covered Entity may require to fulfill its obligations to provide an accounting of disclosures with respect to PHI in accordance with 45 CFR Section 164.528.
- k. In the event any individual requests access to, amendment of, or accounting of PHI directly from the Business Associate, the Business Associate shall within two (2) business days forward such request to Covered Entity. Covered Entity shall have the responsibility of responding to forwarded requests. However, if forwarding the individual's request to Covered Entity would cause Covered Entity or the Business Associate to violate HIPAA and the Privacy and Security Rule, the Business Associate shall instead respond to the individual's request as required by such law and notify Covered Entity of such response as soon as practicable.



Exhibit Q

1. Within ten (10) business days of termination of the Agreement, for any reason, the Business Associate shall return or destroy, as specified by Covered Entity, all PHI received from, or created or received by the Business Associate in connection with the Agreement, and shall not retain any copies or back-up tapes of such PHI. If return or destruction is not feasible, or the disposition of the PHI has been otherwise agreed to in the Agreement, Business Associate shall continue to extend the protections of the Agreement, to such PHI and limit further uses and disclosures of such PHI to those purposes that make the return or destruction infeasible, for so long as Business Associate maintains such PHI. If Covered Entity, in its sole discretion, requires that the Business Associate destroy any or all PHI, the Business Associate shall certify to Covered Entity that the PHI has been destroyed.

(4) **Obligations of Covered Entity**

- a. Covered Entity shall notify Business Associate of any changes or limitation(s) in its Notice of Privacy Practices provided to individuals in accordance with 45 CFR Section 164.520, to the extent that such change or limitation may affect Business Associate's use or disclosure of PHI.
- b. Covered Entity shall promptly notify Business Associate of any changes in, or revocation of permission provided to Covered Entity by individuals whose PHI may be used or disclosed by Business Associate under this Agreement, pursuant to 45 CFR Section 164.506 or 45 CFR Section 164.508.
- c. Covered entity shall promptly notify Business Associate of any restrictions on the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 CFR 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(5) **Termination for Cause**

In addition to Paragraph 10 of the standard terms and conditions (P-37) of this Agreement the Covered Entity may immediately terminate the Agreement upon Covered Entity's knowledge of a breach by Business Associate of the Business Associate Agreement set forth herein as Exhibit I. The Covered Entity may either immediately terminate the Agreement or provide an opportunity for Business Associate to cure the alleged breach within a timeframe specified by Covered Entity. If Covered Entity determines that neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.

(6) **Miscellaneous**

- a. **Definitions and Regulatory References.** All terms used, but not otherwise defined herein, shall have the same meaning as those terms in the Privacy and Security Rule, amended from time to time. A reference in the Agreement, as amended to include this Exhibit I, to a Section in the Privacy and Security Rule means the Section as in effect or as amended.



Exhibit Q

- b. Amendment. Covered Entity and Business Associate agree to take such action as is necessary to amend the Agreement, from time to time as is necessary for Covered Entity to comply with the changes in the requirements of HIPAA, the Privacy and Security Rule, and applicable federal and state law.
- c. Data Ownership. The Business Associate acknowledges that it has no ownership rights with respect to the PHI provided by or created on behalf of Covered Entity.
- d. Interpretation. The parties agree that any ambiguity in the Agreement shall be resolved to permit Covered Entity to comply with HIPAA, the Privacy and Security Rule.
- e. Segregation. If any term or condition of this Exhibit I or the application thereof to any person(s) or circumstance is held invalid, such invalidity shall not affect other terms or conditions which can be given effect without the invalid term or condition; to this end the terms and conditions of this Exhibit I are declared severable.
- f. Survival. Provisions in this Exhibit I regarding the use and disclosure of PHI, return or destruction of PHI, extensions of the protections of the Agreement in section (3) l, the defense and indemnification provisions of section (3) e and Paragraph 13 of the standard terms and conditions (P-37), shall survive the termination of the Agreement.

IN WITNESS WHEREOF, the parties hereto have duly executed this Exhibit I.

Department of Health and Human Services

The State

[Signature]  
Signature of Authorized Representative

LISA MORRIS  
Name of Authorized Representative

DIRECTOR, DPHS  
Title of Authorized Representative

4/11/19  
Date

Deloitte Consulting LLP

Name of the Contractor

[Signature]  
Signature of Authorized Representative

Gregory Spino  
Name of Authorized Representative

Managing Director  
Title of Authorized Representative

04/05/2019  
Date

[Signature]  
4/5/19



**CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS**

The Vendor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 et seq.), and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

**ALTERNATIVE I - FOR GRANTEES OTHER THAN INDIVIDUALS**

**US DEPARTMENT OF HEALTH AND HUMAN SERVICES - CONTRACTORS  
US DEPARTMENT OF EDUCATION - CONTRACTORS  
US DEPARTMENT OF AGRICULTURE - CONTRACTORS**

This certification is required by the regulations implementing Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 et seq.). The January 31, 1989 regulations were amended and published as Part II of the May 25, 1990 Federal Register (pages 21681-21691), and require certification by grantees (and by inference, sub-grantees and sub-contractors), prior to award, that they will maintain a drug-free workplace. Section 3017.630(c) of the regulation provides that a grantee (and by inference, sub-grantees and sub-contractors) that is a State may elect to make one certification to the Department in each federal fiscal year in lieu of certificates for each grant during the federal fiscal year covered by the certification. The certificate set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government wide suspension or debarment. Contractors using this form should send it to:

Commissioner  
NH Department of Health and Human Services  
129 Pleasant Street,  
Concord, NH 03301-6505

1. The grantee certifies that it will or will continue to provide a drug-free workplace by:
  - 1.1. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
  - 1.2. Establishing an ongoing drug-free awareness program to inform employees about
    - 1.2.1. The dangers of drug abuse in the workplace;
    - 1.2.2. The grantee's policy of maintaining a drug-free workplace;
    - 1.2.3. Any available drug counseling, rehabilitation, and employee assistance programs; and
    - 1.2.4. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
  - 1.3. Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
  - 1.4. Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will
    - 1.4.1. Abide by the terms of the statement; and
    - 1.4.2. Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
  - 1.5. Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph 1.4.2 from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency





- has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
- 1.6. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph 1.4.2, with respect to any employee who is so convicted
    - 1.6.1. Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
    - 1.6.2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
  - 1.7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6.
2. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant.

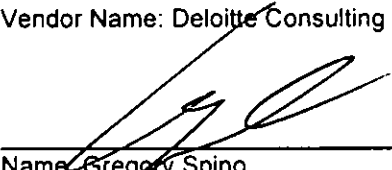
Place of Performance (street address, city, county, state, zip code) (list each location)

7 Eagle Square #301  
Concord NH, 03301

Check  if there are workplaces on file that are not identified here.

Vendor Name: Deloitte Consulting LLP

4/5/19  
Date

  
Name: Gregory Spino  
Title: Managing Director



**CERTIFICATION REGARDING LOBBYING**

The Vendor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Section 319 of Public Law 101-121, Government wide Guidance for New Restrictions on Lobbying, and 31 U.S.C. 1352, and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

US DEPARTMENT OF HEALTH AND HUMAN SERVICES - CONTRACTORS  
US DEPARTMENT OF EDUCATION - CONTRACTORS  
US DEPARTMENT OF AGRICULTURE - CONTRACTORS

Programs (indicate applicable program covered):

- \*Temporary Assistance to Needy Families under Title IV-A
- \*Child Support Enforcement Program under Title IV-D
- \*Social Services Block Grant Program under Title XX
- \*Medicaid Program under Title XIX
- \*Community Services Block Grant under Title VI
- \*Child Care Development Block Grant under Title IV

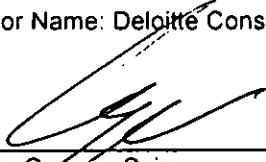
The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement (and by specific mention sub-grantee or sub-contractor).
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement (and by specific mention sub-grantee or sub-contractor), the undersigned shall complete and submit Standard Form LLL, (Disclosure Form to Report Lobbying, in accordance with its instructions, attached and identified as Standard Exhibit E-I.)
3. The undersigned shall require that the language of this certification be included in the award document for sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Vendor Name: Deloitte Consulting LLP

4/5/19  
Date

  
Name: Gregory Spino  
Title: Managing Director



**CERTIFICATION REGARDING DEBARMENT, SUSPENSION  
AND OTHER RESPONSIBILITY MATTERS**

The Vendor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Executive Office of the President, Executive Order 12549 and 45 CFR Part 76 regarding Debarment, Suspension, and Other Responsibility Matters, and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

**INSTRUCTIONS FOR CERTIFICATION**

1. By signing and submitting this proposal (contract), the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. If necessary, the prospective participant shall submit an explanation of why it cannot provide the certification. The certification or explanation will be considered in connection with the NH Department of Health and Human Services' (DHHS) determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when DHHS determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, DHHS may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the DHHS agency to whom this proposal (contract) is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549: 45 CFR Part 76. See the attached definitions.
6. The prospective primary participant agrees by submitting this proposal (contract) that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by DHHS.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," provided by DHHS, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or involuntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List (of excluded parties).
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and



information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal government, DHHS may terminate this transaction for cause or default.

**PRIMARY COVERED TRANSACTIONS**

11. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  - 11.1. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - 11.2. have not within a three-year period preceding this proposal (contract) been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or a contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - 11.3. are not presently indicted for otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (l)(b) of this certification; and
  - 11.4. have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
12. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal (contract).

**LOWER TIER COVERED TRANSACTIONS**

13. By signing and submitting this lower tier proposal (contract), the prospective lower tier participant, as defined in 45 CFR Part 76, certifies to the best of its knowledge and belief that it and its principals:
  - 13.1. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.
  - 13.2. where the prospective lower tier participant is unable to certify to any of the above, such prospective participant shall attach an explanation to this proposal (contract).
14. The prospective lower tier participant further agrees by submitting this proposal (contract) that it will include this clause entitled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion - Lower Tier Covered Transactions," without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

Vendor Name: Deloitte Consulting LLP

4/5/19  
Date

  
Name: Gregory Spino  
Title: Managing Director



**CERTIFICATION OF COMPLIANCE WITH REQUIREMENTS PERTAINING TO  
FEDERAL NONDISCRIMINATION, EQUAL TREATMENT OF FAITH-BASED ORGANIZATIONS AND  
WHISTLEBLOWER PROTECTIONS**

The Vendor identified in Section 1.3 of the General Provisions agrees by signature of the Contractor's representative as identified in Sections 1.11 and 1.12 of the General Provisions, to execute the following certification:

Vendor will comply, and will require any subgrantees or subcontractors to comply, with any applicable federal nondiscrimination requirements, which may include:

- the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. Section 3789d) which prohibits recipients of federal funding under this statute from discriminating, either in employment practices or in the delivery of services or benefits, on the basis of race, color, religion, national origin, and sex. The Act requires certain recipients to produce an Equal Employment Opportunity Plan;
- the Juvenile Justice Delinquency Prevention Act of 2002 (42 U.S.C. Section 5672(b)) which adopts by reference, the civil rights obligations of the Safe Streets Act. Recipients of federal funding under this statute are prohibited from discriminating, either in employment practices or in the delivery of services or benefits, on the basis of race, color, religion, national origin, and sex. The Act includes Equal Employment Opportunity Plan requirements;
- the Civil Rights Act of 1964 (42 U.S.C. Section 2000d, which prohibits recipients of federal financial assistance from discriminating on the basis of race, color, or national origin in any program or activity);
- the Rehabilitation Act of 1973 (29 U.S.C. Section 794), which prohibits recipients of Federal financial assistance from discriminating on the basis of disability, in regard to employment and the delivery of services or benefits, in any program or activity;
- the Americans with Disabilities Act of 1990 (42 U.S.C. Sections 12131-34), which prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation;
- the Education Amendments of 1972 (20 U.S.C. Sections 1681, 1683, 1685-86), which prohibits discrimination on the basis of sex in federally assisted education programs;
- the Age Discrimination Act of 1975 (42 U.S.C. Sections 6106-07), which prohibits discrimination on the basis of age in programs or activities receiving Federal financial assistance. It does not include employment discrimination;
- 28 C.F.R. pt. 31 (U.S. Department of Justice Regulations – OJJDP Grant Programs); 28 C.F.R. pt. 42 (U.S. Department of Justice Regulations – Nondiscrimination; Equal Employment Opportunity; Policies and Procedures); Executive Order No. 13279 (equal protection of the laws for faith-based and community organizations); Executive Order No. 13559, which provide fundamental principles and policy-making criteria for partnerships with faith-based and neighborhood organizations;
- 28 C.F.R. pt. 38 (U.S. Department of Justice Regulations – Equal Treatment for Faith-Based Organizations); and Whistleblower protections 41 U.S.C. §4712 and The National Defense Authorization Act (NDAA) for Fiscal Year 2013 (Pub. L. 112-239, enacted January 2, 2013) the Pilot Program for Enhancement of Contract Employee Whistleblower Protections, which protects employees against reprisal for certain whistle blowing activities in connection with federal grants and contracts.

The certificate set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government wide suspension or debarment.

Exhibit G

Vendor Initials

Certification of Compliance with requirements pertaining to Federal Nondiscrimination, Equal Treatment of Faith-Based Organizations and Whistleblower protections



In the event a Federal or State court or Federal or State administrative agency makes a finding of discrimination after a due process hearing on the grounds of race, color, religion, national origin, or sex against a recipient of funds, the recipient will forward a copy of the finding to the Office for Civil Rights, to the applicable contracting agency or division within the Department of Health and Human Services, and to the Department of Health and Human Services Office of the Ombudsman.

The Vendor identified in Section 1.3 of the General Provisions agrees by signature of the Contractor's representative as identified in Sections 1.11 and 1.12 of the General Provisions, to execute the following certification:

1. By signing and submitting this proposal (contract) the Vendor agrees to comply with the provisions indicated above.

Vendor Name: Deloitte Consulting LLP

4/5/19  
Date

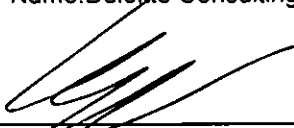
  
Name: Gregory Spino  
Title: Managing Director

Exhibit G

Vendor Initials GS

Certification of Compliance with requirements pertaining to Federal Nondiscrimination, Equal Treatment of Faith-Based Organizations and Whistleblower protections



**CERTIFICATION REGARDING ENVIRONMENTAL TOBACCO SMOKE**

Public Law 103-227, Part C - Environmental Tobacco Smoke, also known as the Pro-Children Act of 1994 (Act), requires that smoking not be permitted in any portion of any indoor facility owned or leased or contracted for by an entity and used routinely or regularly for the provision of health, day care, education, or library services to children under the age of 18, if the services are funded by Federal programs either directly or through State or local governments, by Federal grant, contract, loan, or loan guarantee. The law does not apply to children's services provided in private residences, facilities funded solely by Medicare or Medicaid funds, and portions of facilities used for inpatient drug or alcohol treatment. Failure to comply with the provisions of the law may result in the imposition of a civil monetary penalty of up to \$1000 per day and/or the imposition of an administrative compliance order on the responsible entity.

The Vendor identified in Section 1.3 of the General Provisions agrees, by signature of the Contractor's representative as identified in Section 1.11 and 1.12 of the General Provisions, to execute the following certification:

1. By signing and submitting this contract, the Vendor agrees to make reasonable efforts to comply with all applicable provisions of Public Law 103-227, Part C, known as the Pro-Children Act of 1994.

Vendor Name: Deloitte Consulting LLP

4/5/19  
Date

  
Name: Gregory Spino  
Title: Managing Director



**CERTIFICATION REGARDING THE FEDERAL FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT (FFATA) COMPLIANCE**

The Federal Funding Accountability and Transparency Act (FFATA) requires prime awardees of individual Federal grants equal to or greater than \$25,000 and awarded on or after October 1, 2010, to report on data related to executive compensation and associated first-tier sub-grants of \$25,000 or more. If the initial award is below \$25,000 but subsequent grant modifications result in a total award equal to or over \$25,000, the award is subject to the FFATA reporting requirements, as of the date of the award.

In accordance with 2 CFR Part 170 (Reporting Subaward and Executive Compensation Information), the Department of Health and Human Services (DHHS) must report the following information for any subaward or contract award subject to the FFATA reporting requirements:

1. Name of entity
2. Amount of award
3. Funding agency
4. NAICS code for contracts / CFDA program number for grants
5. Program source
6. Award title descriptive of the purpose of the funding action
7. Location of the entity
8. Principle place of performance
9. Unique identifier of the entity (DUNS #)
10. Total compensation and names of the top five executives if:
  - 10.1. More than 80% of annual gross revenues are from the Federal government, and those revenues are greater than \$25M annually and
  - 10.2. Compensation information is not already available through reporting to the SEC.

Prime grant recipients must submit FFATA required data by the end of the month, plus 30 days, in which the award or award amendment is made.

The Vendor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of The Federal Funding Accountability and Transparency Act, Public Law 109-282 and Public Law 110-252, and 2 CFR Part 170 (Reporting Subaward and Executive Compensation Information), and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

The below named Vendor agrees to provide needed information as outlined above to the NH Department of Health and Human Services and to comply with all applicable provisions of the Federal Financial Accountability and Transparency Act.

Vendor Name: Deloitte Consulting LLP

4/5/17  
Date

  
Name: Gregory Spino  
Title: Managing Director





**FORM A**

As the Vendor identified in Section 1.3 of the General Provisions, I certify that the responses to the below listed questions are true and accurate.

1. The DUNS number for your entity is: 002563455
2. In your business or organization's preceding completed fiscal year, did your business or organization receive (1) 80 percent or more of your annual gross revenue in U.S. federal contracts, subcontracts, loans, grants, sub-grants, and/or cooperative agreements; and (2) \$25,000,000 or more in annual gross revenues from U.S. federal contracts, subcontracts, loans, grants, subgrants, and/or cooperative agreements?

NO                       YES

If the answer to #2 above is NO, stop here

If the answer to #2 above is YES, please answer the following:

3. Does the public have access to information about the compensation of the executives in your business or organization through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C.78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986?

NO                       YES

If the answer to #3 above is YES, stop here

If the answer to #3 above is NO, please answer the following:

4. The names and compensation of the five most highly compensated officers in your business or organization are as follows:

Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____

**Vendor Instructions**

**Vendor Response Column:** Place a "Yes" if the current release of the software can fully support ALL the functionality described in the row, without special customization. A "Yes" can only be used if the delivery method is Standard (see delivery method instructions below). Otherwise, enter an "No"; A "No" can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).

**Criticality Column:**  
(M) Indicates a requirement that is "Mandatory". The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.  
(P) Indicates a requirement which is "Preferred". This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.  
(O) Indicates a requirement which is "Optional". This requirement is considered by the State to be one which useful or potentially useful but not a central feature of the Project.

**Delivery Method Column:**  
Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.

**Standard** – Feature/Function is included in the proposed system and available in the current software release.

**Future** – Feature/Function will be available in a future release. (Provide anticipated delivery date, version, and service release in the comment area.)

**Custom** – Feature/Function can be provided with custom modifications. (Respondent must provide estimated hours and average billing rate or flat cost for the software modification in the comment area. These cost estimates should add up to the total cost for software modifications found in the cost summary table in Section X of the RFP).

**Not Available/Not Proposing** – Feature/Function has not been proposed by the Vendor. (Provide brief description of why this functionality was not proposed.)

**Comments Column:**  
For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.

Working Sheet



<b>Vendor Instructions</b>			
<p><b>Vendor Response Column:</b> Place a “Yes” if the current release of the software can fully support ALL the functionality described in the row, without special customization. A “Yes” can only be used if the delivery method is Standard (see delivery method instructions below). Otherwise, enter an “No”; A “No” can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).</p>			
<p><b>Criticality Column:</b>                      (M) Indicates a requirement that is “Mandatory”. The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.                      (P) Indicates a requirement which is “Preferred”. This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.                      (O) Indicates a requirement which is “Optional”. This requirement is considered by the State to be one which useful or potentially useful but not a central feature of the Project.</p>			
<p><b>Delivery Method Column:</b>                      Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.</p> <p><b>Standard</b> – Feature/Function is included in the proposed system and available in the current software release.  <b>Future</b> – Feature/Function will be available in a future release. (Provide anticipated delivery date, version, and service release in the comment area.)  <b>Custom</b> – Feature/Function can be provided with custom modifications.                      (Respondent must provide estimated hours and average billing rate or flat cost for the software modification in the comment area. These cost estimates should add up</p>			



**Vendor Instructions**

to the total cost for software modifications found in the cost summary table in Section X of the RFP).

**Not Available/Not Proposing** – Feature/Function has not been proposed by the Vendor. (Provide brief description of why this functionality was not proposed.)

**Comments Column:**

For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.



1. BUSINESS REQUIREMENTS

BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<i>Functional</i>					
B1.1	Intentionally Left Blank				
B1.2	Design and implementation of data visualization standards via a style guide and example templates specifically leveraging existing toolsets and web portals currently in place at the state to create a consistent way for data to be organized and graphically displayed to meet both user design and user experience requirements.	M	Yes	Standard	Deloitte meets this requirement with HHS Interactive design standards. Deloitte’s solution includes data visualization standards and a style guide. Standards and style can be easily adjusted to align with the State’s dashboard design and user experience requirements and can be aligned with DHHS’s style guide standards for the in process EBI scope of work with all dashboards presented through Tableau.
B1.3	Create a method to inventory data sources associated with the building of the Opioid Crisis dashboard and an ongoing process to add to the inventory of the system and recommend a strategy for future use of data analytics and business intelligence toolsets as well as create a dashboard in which the source is tagged as internal or external (to the Department) and whether the data contains personally identified information (PII) or De-identified information (DII) in alignment with DHHS security and data governance policies	M	Yes	Standard	Deloitte’s solution includes a data source inventory template, which will be used to capture key metadata that includes but is not limited to Source Name, Agency/Vendor, Description, Data Classifications, Business Contact, Technical Contact, Data Model Link, Data Classifications etc. The template can be used as a source for Tableau to display the information on a dashboard. We can also implement this requirement using Informatica Enterprise Data Catalog or Informatica Metadata Manager bundled with the current licensing at DHHS/DoIT preference.



STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
B1.4	Provide professional services to augment internal capabilities associated with the following skill sets: Business analysis, use case development, user persona development, Data and statistical analysis generally, Data and statistical analysis specific to the opioid crisis, Data integration and transformation, Data visualization including geographical information system, Hardware architecture and design, Software configuration and training.	M	Yes	Standard	Deloitte meets this requirement with an analytics practice of over 5,000 experts and depth of experience with the current DHHS EBI architecture, tools, and the lines of businesses with which the DAP platform will orchestrate data aggregation and analysis.
B1.5	If the proposal is a cloud/hosted solution provide and establish hardware and software and/or cloud services for operation by the State needed to augment the Department's infrastructure.	M	Yes	Standard	The Google Cloud Platform (GCP) will be established during the project implementation with a support and subscription model which is sustainable by DHHS/DoIT as a complement to the on-site platform for social media data consumption and ML processing of that data.
B1.6	Implement no later than August 15, 2019 opioid dashboards based on requirements	M	Yes	Standard	Deloitte will work with DHHS to create and manage a mutually agreeable project plan that will allow for implementation of the Opioids dashboards determined as in-scope for Phase 1, by August 15, 2019.
B1.7	Provide a detailed description of how you would address charts included in the Introduction section	M	Yes	Standard	Our detailed description demonstrating how we will address the charts included in the introduction is previewed in our executive summary and elaborated in section D-1.1, Description of



STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
					Solution building upon our HHS Interactive Opioid Insights capabilities.
B1.8	Provide context sensitive "Help" screens/tips and dashboard instructions	P	Yes	Standard	Deloitte meets this requirement using Tableau's tooltip feature to address this requirement.
B1.9	Automated reports/notifications/alerts to users based on subscription or opt in/out functionality	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau's data-driven alerts feature to address this requirement. Users will be able to manage their notifications/alerts preferences with one click, directly from the email.
B1.10	Design, develop and implement a holistic Data Analytics Platform (DAP) that consolidates data from multiple, currently disparate Department, other State of New Hampshire and Federal sources, systems and formats to meet the needs of the state's opioid response and provide the foundation for all other needs of the Department programs.	M	Yes	Standard	Deloitte meets this requirement by extending the EBH Data Warehouse into a holistic data analytics repository that stores member data consolidated across disparate data sources. Informatica data integration and data quality software will be utilized to merge and consolidate from disparate data sources. This includes digital data that is provided with assistance from our teaming partner Google into DAP.
B2.1	Include support for the future use of advanced statistical analysis techniques, predictive analytics and machine learning	M	Yes	Standard	Deloitte meets this requirement with the proposed DAP solution architecture providing a foundation for the State to easily expand advanced analytical capabilities including predictive analytics and machine learning build using R and Python.



STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
B2.2	Be intuitive and easy to learn, understand, navigate and use,	M	Yes	Standard	Deloitte meets this requirement using visualizations and dashboard design methodology focusses on balancing simplicity, clarity and efficiency in creating designing dashboards that are intuitive, with simple navigation, minimum complexity and maximum ease of use. Our solution would build on the menu driven navigation model being established for the current EBI scope of work to provide enterprise access continuity.
B2.3	Provide and support average less than 5 seconds with a majority of 1 second query response times, with or without user customization,	P	Yes	Standard	Deloitte will employ system design and performance monitoring throughout the implementation to validate consistent response times are provided per expected or pre-defined levels across the DAP system tools.  For Databases based on summarized data, such as public facing summary dashboards; during design and testing Deloitte will work with the State to establish benchmarks for specific dashboards or types and queries and implement monitoring to identify any degradation in performance as usage increases and more data is added to the environment. Mutually agreeable times shall be established as a component of the project.
B2.4	Process and load datasets in a fast, smooth, efficient manner to meet no older 24 hour stale data	M	Yes	Standard	Deloitte's solution offers the capability to load data efficiently using Informatica meeting the requirements based on the assumption that the source systems can provide access to data on that frequency.





BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
B2.5	The selected vendor must leverage (where applicable for the vendor solution) current technologies in place at State of New Hampshire and provide recommendations for alternatives based on proposed strategy to include but not limited to: Oracle databases, Dimensionally modeled data marts, Extract, Transform, Load (ETL) software – Informatica, Statistical analysis tools/software and server – R Programming and RStudio Server/Connect, and Supplementary BI tools leveraging Tableau for dashboards which: Consolidate and arranges numbers, metrics and Department defined scorecards, Key Performance, and other, metrics, Can be tailored for specific roles and display metrics targeted for a single point of view, Includes a customizable interface, Includes the ability to pull real-time data	M	Yes	Standard	Deloitte proposed solution architecture leverages State’s existing IT infrastructure including Informatica PowerCenter, Informatica IDQ, Tableau, RStudio and the Oracle Database. Our system will also leverage the Tableau navigation model as well as the existing schemas.



STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
B2.6	Design, develop and implement an overarching data model, which: Combines appropriate data elements from various sources, as needed to achieve reporting and alert functions, Includes interfaces, source mapping and user interfaces; required to achieve data consolidation and build the DAP, Identifies current and future state of source systems and processes, Possesses the processing capabilities to provide large dataset analysis, including highly complex numerical analysis of textual, structured, non-structured, spatial and other data sources, Provide metadata tagging of data sources/elements, Allows fast and flexible data integration so that data sources are able to be integrated in the analytical environment and analyzed with limited advanced notice.	M	Yes	Standard	Deloitte's meets this requirement through the design, develop and implementation of a logical and physical dimensional data model to support the predictive analytics and dashboard needs. A Metadata repository will be created to identify and catalog all source data. The data provided by the State, along with the datasets Deloitte has identified, will be uploaded to the oracle data warehouse in the data tier allowing storage of both unstructured and structured information of the various datasets.
B2.7	Vendors must include a proposed architecture for the DAP, that includes an assessment of the current EBI for hardware or software components that are absent but necessary for success for the DAP (e.g., additional cores, Oracle	M	Yes	Standard	Deloitte's proposed system architecture provides a scalable data analytics platform that extends State's existing EBI platform to the state's opioid response and provides a foundation to support analytics needs for other Department programs such as SNAP, TANF etc.



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	Partitioning license), which integrates data from source systems and meets, or exceeds, the following minimal requirements:				
B2.8	Provides a framework for organization of data, information management and technology systems required to build and implement the system,	M	Yes	Standard	Deloitte meets this requirement through our proposed 3-tier architecture provides a scalable framework to organize, process and visualize the data and technology systems.
B2.9	Allows for data components of the architecture to include internal and external sources of structured and unstructured data users require to analyze the opioid crisis	M	Yes	Standard	Deloitte meets this requirement with a proposed system architecture including a data tier with the Informatica ETL processes to integrate multiple internal (existing EBI data) and external structured, un-structured and spatial data sources.
B2.10	Includes data integration, data cleansing and the development and implementation of data dimensional rules	M	Yes	Standard	Deloitte meets this requirement with a data governance framework that will define data cleansing processes and practices. Data integration and data dimensional rules will also be defined using Informatica to consume and cleanse data, including the data imported from Google.
<b>Technical</b>					
B3.1	Describes the conceptual and logical technology components required to present information to users and enable them to analyze the data and its impacts,	M	Yes	Standard	Deloitte meets this requirement, please refer to Deloitte responses for technical requirement B3.2 to B3.10



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B3.2	Allows for the ability to drill down on report data by varying levels of geographic, provider, program, service and client demographic details	M	Yes	Standard	Deloitte meets this requirement providing Opioids dashboards that are fully interactive allowing allow users to filter and drill down on demand by geographic hierarchy, provider, program, service and client demographic details using Tableau.
B3.3	Allow for the extraction of patterns and knowledge from large amounts of data,	M	Yes	Standard	Deloitte meets this requirement providing opioids predictive models configured to analyze large datasets based on the defined hypothesis and key predictors to detect hidden patterns thereby identifying high risk individuals. We accelerate this using our <u>At Risk</u> HHS Interactive Opioid Insight module.
B3.4	Provide predictive or statistical analysis model, based upon data type and attributes	P	Yes	Standard	Deloitte meets this requirement using our <u>At Risk</u> predictive analytical, statistical and risk model that will delivered and tailored based on NH's dimensional values and data types.
B3.5	Provides browser-based solution to support all major browsers.	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau for Dashboard development which supports all major browsers namely Google Chrome, Microsoft Edge, Internet Explorer, Mozilla Firefox, Firefox ESR and Apple Safari.



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B3.6	Internal multi-tenant sandbox to provide statistical analysis areas to look at data with access to the dimensional based data to design and develop visualizations on an ad-doc development-based methodology	M	Yes	Standard	Deloitte meets this requirement with an architecture that supports a multi-tenant production sandbox with user schemas for authorized users to combine production data with local datasets and leverage tools such as RStudio, Tableau etc. to design and develop predictive models and data visualizations on an ad hoc basis.
B3.7	Internal role-based authentication to provide view, modify and delete as well as external facing role-based solution with ability to define group or user defined access	M	Yes	Standard	Deloitte's solution will leverage Tableau Services Manager (TSM) to configure and manage role-based access control to define user groups, permissions such as view, modify and delete. Additionally, dashboards will also support role/user-based row-level data restrictions.
B3.8	Provide a methodology to track web traffic and report on number of viewers, number of this and/or other measures.	P	Yes	Standard	Deloitte meets this requirement using Google analytics out-of-box or DoIT's preferred tool for web traffic. In addition, we have proposed providing DHHS an additional web traffic source, Google search data for the broader population of New Hampshire which will aggregated and imported in the DAP for analysis and presentation.
B3.9	State Sizing and Growth Assumptions	M	Yes	Standard	Our solution assumes that the existing platform has sufficient storage and capacity to design and implement. If the machine learning modules require additional compute time during the DDI phase, the GCP will be available to support peak utilization using the credits provided by Google. This assumption is predicated on controlled usage of adhoc queries to contain power user access



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					using commonly accepted industry norms in collaboration with the DoIT Oracle DBA team.
B3.10	Develop capacity to make data and information available in meeting the Department's Federal Reporting requirements and necessary for Federal grant applications	M	Yes	Standard	Deloitte's solution will provide the foundation for data and tools to support Department's Federal Reporting requirements and necessary for Federal grant applications, including the Healing Grant if awarded to New Hampshire.
<b>SUBHEAD</b>					
B4.1	The new System must accommodate the anticipated number of users and workstations at each location. In order to support initial sizing expectations, prior to completion of capacity planning as part of this project, the State has estimated the first phase system must accommodate approximately 2,000 internal users (25% active users, 5% concurrent) in and for future use, 250,000 external users (10% active users, 2% concurrent) at this time, and all of these users are expected to have a workstation that will access the System. These initial estimates will be replaced with the finale user sizing in the Capacity Plan deliverable as part of the design phase. Workstations, network, servers, storage and WAN connectivity will be recommended by the vendor to	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments. The existing EBI infrastructure is being designed to meet these same requirements.</p> <p>Upon finalization of estimates, Deloitte will work with DHHS and DoIT to complete a capacity plan and validate hardware, software, and infrastructure requirements.</p> <p>The numbers of users, concurrent usage, and response time will be managed jointly throughout the project lifecycle in cooperation with DHHS and DoIT. The relationship between application development, usage, and infrastructure requires continual monitoring and planning across stakeholders, including DHHS and DoIT.</p>



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	ensure sizing to access and use the system.				
B4.2	The new shared infrastructure and functional capabilities need be designed to be operational 24 hours per day (hours to be determined by the state), 7 days per week, and 52 weeks per year. The centralized servers and resources and public facing Web site will be designed to be operational 7 days per week and 24 hours per day. No single disruption is anticipated to last longer than 8 hours. The System as a whole will be available for use 99 percent of the timeless mutually agreed and scheduled service/maintenance intervals.	M	Yes	Standard	The proposed application architecture would support this requirement and we will work with DHHS and DoIT to validate that the EBI infrastructure being re-used to support the solution to meet the uptime goals for the application.



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B4.3	The new System must support transparent failover capabilities using high-availability architectural elements.	M			The proposed application architecture supports clustering to provide failover. We will work with DHHS and DoIT to validate that the EBI infrastructure being re-used to support the solution can meet the failover capabilities.
B4.4	Specify all equipment (if any) required for the development and operations of the solutions and requirements defined in this RFP. The equipment will be comprised of industry standard and readily available components.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environment. Complementary advanced analytic components for digital data will reside in the Google Cloud Platform (GCP). The details of the GCP for the development and operations of the solutions is defined under section 1.1.12 of the response.
B4.5	Creating/viewing population-based or individual-based alerts and notifications	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau's data-driven alerts feature to address this requirement. Users will be able to manage their notifications/alerts preferences with one click, directly from the email.
B4.6	Subscribing/Un-subscribing to alerts/notifications of interest	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau's inbuilt Subscribe/ Un-subscribe functionality to manage alerts/notifications of interest.
B4.7	Sending notifications through preferred notification method	M	Yes	Standard	Deloitte meets this requirement leveraging the notification methods supported by Tableau.





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B4.8	Scheduling of distribution of reports and notifications based on user input via an "opt in" model	M	Yes	Standard	Alert owners can sign-up themselves and other users to receive alert emails in Tableau Server. Each recipient opt-out of alerts with one click, directly from email.
B4.9	Describe the proposed solution to meet 508 compliance and DoIT compliance requirements. The authentication and authorization solution must be ADA compliant.	M	Yes	Standard	Deloitte's proposed solution will leverage Tableau as the end user interface with inbuilt 508 compliance per the terms of the license and subscription agreements. We can provide the link to vendor's compliance Web site. Authorization will be provided through the existing DoIT active directory being used for the current EBI scope of work.
B4.10	Determining who originates and approves DAP investment proposals.	P	Yes	Standard	Deloitte meets this requirement through the data governance processes we will work with the State to establish and align with the DAP investment priorities and budget.
B4.11	Determining the approved technologies and products developers must use to build services.	M	Yes	Standard	Deloitte's proposed solution uses industry standard technologies and products to build services with capabilities to satisfy the system functional and technical requirements. The core development activities will be completed using developer capabilities provided by Oracle, Informatica and Tableau.



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B4.12	Defining the procedure for requesting permission to use a service.	M	Yes	Standard	Deloitte's project management policies will include processes for service/access requests using the Application Management Life cycle tool Atlassian JIRA and/or the DoIT ticket system at the States preference. Note: We advocate using Jira for application specific issues (defects, change requests, etc.) and DoIT system for infrastructure, user access, and outages with final distribution of usage to be jointly agreed upon by DoIT and DHHS.
B4.13	Identifying (and executing) what service and system testing is required before deploying a service enhancement.	M	Yes	Standard	Deloitte's Project plan will include standard service and system testing phases with clearly defined entry and exit criteria for every release including service enhancements.
B4.14	Promulgate policies, standards, and guidelines	M	Yes	Standard	Deloitte Project Management processes will be in line with the PMI project management policies, standards and guidelines as will data governance standards.
B4.15	Facilitation of processes	M	Yes	Standard	Deloitte will work with the State to facilitate Project Management processes as well as standard governance procedures from project inception through closure.
B4.16	Collection, analysis and visualization of metrics	M	Yes	Standard	Deloitte's proposed solution will enable collection, analysis and visualization of key metrics, as defined in the RFP requirements and demonstrated throughout our proposed solution.



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B4.17	Administer the integration metadata – for example, DAP metadata (such as Web Services Description Language) or business-to-business metadata (such as electronic data interchange/XML document standards).	M	Yes	Standard	Deloitte’s proposed solution will administer and maintain a Metadata repository/dictionary to identify and catalog all source data. We assume that DHHS will have acquired Informatica Enterprise Data Catalog or will elect to use the Informatica Metadata Manager which is bundled with the current license package and we would plan to use that tool to meet this requirement.  Information about of teaming partner Google’s processes can be found here: <a href="https://cloud.google.com/dataprep/docs/html/Insert-Metadata_57344600">https://cloud.google.com/dataprep/docs/html/Insert-Metadata_57344600</a>
B4.18	Monitor the associated governance procedures, through one or more repositories.	M	Yes	Standard	We assume that DHHS will have acquired Informatica Enterprise Data Catalog or will use Informatica Metadata Manager which is bundled with the current licensing and will use either to meet this requirement.
B4.19	Role-based Access and User Provisioning – Technology component that enables what information a particular user is authorized to access.	M	Yes	Standard	Deloitte’s proposed solution will provide access rights based on the job function and role, using the concepts of least-privilege and need-to-know to match access privileges to defined responsibilities. This would be completed through both Tableau and Oracle privilege management.



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B4.20	Users' access rights shall be based on what roles they play in the enterprise (State and Counties) and/or what groups they belong to for external entities.	M	Yes	Standard	The solution will enable user roles to be defined with the built-in reports and can be customized to display level of detail unique to each individual's role-set, for both internal and external users. Report and data access will be authenticated through Active Directory and controlled through Tableau and Oracle based on user roles and groups.
B4.21	Role-Based Access shall include the capability to enforce who can update data versus access and view only. Further, the update authority should be defined at the field level within a panel.	M	Yes	Standard	Deloitte will leverage Tableau's Site Roles feature to manage this requirement. Along with content permissions, the site role determines who can publish, interact with, or only view published content, or who can manage the site's users and administer the site itself. The tableau privilege management will be complemented by Oracle database privilege management.
B4.22	Authentication of user identities – Technology component that verifies the identities of those seeking to access client data. Shall include strong authentication supported by an appropriate infrastructure for identity and access management.	M	Yes	Standard	The proposed system leveraged the State active directory with the strong authentication standards defined and supported by DoIT.
B4.23	The solution must have a mechanism for Annual Reconciliation of users to determine if access is still needed.	M	Yes	Standard	The solution will leverage Tableau's admin functionality to reconcile and manage user access. We will work with DHHS and DoIT to establish a review process which could be modeled from New HEIGHTS or other existing system that manages annual reconciliation and sample auditing.



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B4.24	Configure, install and train on the existing Tableau environment to allow for the usage of R Programming	M	Yes	Standard	Deloitte will configure, install and train the users for usage of R programming based on the agreed strategy for training (Train-the-Trainer or end user training). User of R will have access to integrate data from Tableau or directly from the Oracle database and we will provide knowledge transfer on our solution components that use R positioning DHHS/DoIT to sustain and adapt the solution.
B4.25	Logging of activity – For financial, operational, and legal reasons, the solution must record all activities in a log, which must be searchable to allow administrators to identify any abnormal pattern of activity.	M	Yes	Standard	Deloitte’s proposed solution leverages the State’s existing environments and the existing COTS products, Informatica, Oracle and Tableau contain logs of all activity and administrator can search for abnormal activities as needed.
B4.26	The solution must include the capability to monitor activity continually according to a set of pre-defined rules, and to notify administrators when abnormal activity is detected	M	Yes	Standard	The applications being utilized provide logging for ingestion into the States Qradar application for alert management.



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B4.27	Authorization – Authorization shall provide access control through enforcement, and be used to determine the specific scope of access to grant to an identity. It must provide real-time access policy decisions and enforcement (based on identities, attributes, roles, rules, entitlements and so on). Users must be able to access only what their job functions allow them to access. For instance, if a person is a "manager," then he or she is granted the access necessary to create or edit a performance review; however, if a person is not a manager, then he or she should be able to review only his or her own performance review, and only at a specific stage of the review cycle. Web access management (WAM), externalized authorization management, identity-aware networks and digital rights management tools are examples of authorization technologies.	M			Deloitte's proposed solution leverages the State's existing environments including active directory for authentication and Tableau server administrator for fine grained roles-based access management completed by the Oracle privilege management.



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B4.28	Administration – Administration shall offer a means of performing identity-related tasks (for instance, adding a user account to a specific system). Administration tools must provide an automated means of performing identity-related work that would otherwise be performed by a human; examples include tasks such as creating, updating or deleting identities (including credentials and attributes), and administering access policies (rules and entitlements). User provisioning shall be considered a part of administration technology. Helpdesk agents shall have override capabilities to correct data and account errors.	M	NO	Standard	Deloitte’s proposed solution leverages the State’s existing environments including active directory for authentication and Tableau server administrator for fine grained roles-based access management completed by the Oracle privilege management. We assume that the provisioning management will be integrated with the DoIT ticket system for consolidated event management.
B4.29	Establishment of an agile State enterprise technology platform based on an DAP architecture	P	Yes	Standard	The proposed DAP architecture tools and methodology support agile and waterfall development depending on project specific needs and State preference.
B4.30	The selected vendor must work with Department to ensure strategic alignment between the deployed technology and the future-state business processes and operational model. This collaboration is to occur, at a minimum, through the following activities:	M	Yes	Standard	Deloitte’s Project Management team will work with the State leadership team to ensure strategic alignment between the deployed technology and the future-state business processes and operational model and if applicable the Healing Grant. We will do so by leveraging our knowledge the current EBI platform and proposed capabilities.



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B4.31	Work with Department Executive Leadership and project team to refine the overall vision for the project and to develop a strategic plan for managing change;	M	Yes	Standard	Deloitte's Project Management team will work with DHHS to establish a communication plan and strategy to strategic vision, governance and stakeholder engagement, including source system stakeholders.
B4.32	Cultivate ownership and teamwork among stakeholders at executive levels	P	Yes	Standard	Deloitte project leadership will facilitate recurring leadership meetings to review Project Management processes to manage accountability and teamwork. We will also work with DHHS to energize and engage stakeholders for the purpose of this project and the broader EBI/DAP goals of the Department.
B4.33	Define a change control process for considering and accepting or denying changes (policy, planning, design, processes, etc.) throughout the project	M	Yes	Standard	Deloitte's Project Management processes will include Change Management process via a Change Control Board to manage changes to following but not limited to scope, timeline and cost, while aligning with the overall strategic vision.
<b>Training</b>					
B5.1	Work with the Department to develop and deliver training as appropriate to State users	M	Yes	Standard	Deloitte's solution will include training for State users as defined in section 2.2, State Personnel and Training.





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B5.2	The System training, in addition to focusing on the navigation and use of the System, must also focus on how the System is integrated into the day-to-day work of end users including access level, new business processes and/or workflows that the System will support. Additionally, training for the usage of the back-end environment, Informatica and database dimensional design will be provided to a team consisting of State of New Hampshire database administrators, system administrators and business analysts responsible for the on-going maintenance and support of the system (outlined further in the Technical training section).	M	Yes	Standard	Deloitte's training plan will include functional training to the end users and technical training to the administrators and analysts to equip them for on-going maintenance and operation of the system. The training model includes shadowing of resources as well as formal training and computer-based trainings.  Our approach to training is elaborated on in section 2.2, State Personnel and Training.
B5.3	The selected vendor must provide the State Project Manager with documented evidence of each trainee's competence to operate the System and integrate its support in to their day-to-day work. Training must be of sufficient length to ensure adequate comprehension. Training must be provided "just in time" prior to deployment and must comprehensively address all System operations as well as security considerations.	M	Yes	Standard	Deloitte's training team will work with the trainees to train them on system (technical and functional) aspects of the implementation. The training sessions will be scheduled prior to transition with the system fully functional in the testing environment.  The training material and sessions will be documented with pre-defined acceptance and exit criteria. Our approach to training is elaborated on in section 2.2, State Personnel and Training.



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B5.4	The selected vendor must organize and provide formal orientation and training before System deployment, to the State development and operations staff so that they are able to manage and maintain the System.	M	Yes	Standard	The Deloitte training team will facilitate training sessions including kick-off, orientation and system training sessions. The State operations staff engaged in shadowing will have hands on experience prior to hand over.
B5.5	The Contractor will also involve the State's technical staff in any enhancements to the System to enable the staff to become familiar with the process.	M	Yes	Standard	During operations the State's technical staff will be integrated into the Deloitte team providing full transparency so they are able to engage and understand how changes/enhancements are integrated into the system.
B5.6	Effective training that will provide the required skills to use this new automated tool is critical to the successful implementation and use of the new System. The selected vendor must develop user training curricula, schedules, training materials and training evaluation materials. The selected vendor must maintain an online training environment that allows trainees to access the new System. The selected vendor must conduct face-to-face, hands-on, user training in logical groupings at regional locations determined by the State, and for managing all training planning and logistics.	M	Yes	Standard	Deloitte will develop training content/ material, schedule and facilitate training sessions, gather feedback to enhance training effectiveness and gather evaluation material. A repository of this content will be maintained and made available to the State for future use. Deloitte will work the State to create and manage a training calendar/ schedule based on the state's training needs listed in the requirement.  Our approach to training is elaborated on in section 2.2, State Personnel and Training.



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<i>Inventory and Migration</i>					
B6.1	The selected vendor shall develop a prioritized list of data sources to integrate and migrate into the Enterprise Data Warehouse. The selected vendor must identify and prioritize data sources required to support each implementation phase. Additionally, the selected vendor is required to integrate each respective data source into the Enterprise Data Warehouse. The following are the initial list of data sources to be migrated into the EDV and utilized to create the Opioid Crisis dashboard:	M	Yes	Standard	The data sources will be listed and prioritized depending on the requirement for each implementation phase to be integrated into the Enterprise Data Warehouse beginning with the interfaces defined in the RFP for phase 1. Should DHHS wish to reprioritize based on source system constraints or evolving goals, we would work with DHHS to rebalance priorities and plans.
B6.2	Medicaid and Comprehensive Health Care Information System (CHIS): Pharmacy, physical, behavioral health care claims and Medicaid and Commercial member data. Note, for Medicaid, while the data is currently being integrated under a separate effort, the vendor will be responsible for any additional modification relative to needed enhancements for opioid dashboards and will develop Medicaid related.	M	Yes	Standard	Deloitte will expand on its existing implementation to integrate the additional commercials claims data from the all payor database into the existing schema. One of engagement leads, Greg Spino has extensive experience with all payor claims data integration in a data warehouse.



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B6.3	Child protection investigations and findings including whether opioid or other substance use is possible factor in the case. Child Welfare System/DCYF Cases	M	Yes	Standard	Deloitte will integrate with the Child Welfare finding results including the capturing of opioid/substance use as a possible factor. We have extensive experience working with the Bridges team and will collaborate with them to extract the applicable data. In addition, we have integrated child welfare data into HHS Interactive and have a strong understanding of child welfare data.
B6.4	Automated Hospital Emergency Department Data (AHEDD): Statewide surveillance system collects real-time data from all 26 New Hampshire acute care hospital emergency departments to detect clusters or monitor potential health threats in the population such as respiratory illness during influenza season, injuries during snow storms, and drug overdoses during the current opioid crisis.)	M	Yes	Standard	The Deloitte solution will model and load these (AHEDD) data into the environment to support DAP. Our HHS Interactive solution also has a baseline Tableau dashboard to report on emergency admittance that would be extended using NH's data.
B6.5	Vital Records Data: Real time birth and mortality records certificates. Data collected by the NH Division of Vital Records for NH residents and births or deaths occurring in NH. NH resident out-of-state births are reported to NH through an interstate exchange agreement.	M	Yes	Standard	The Deloitte solution will integrate with the NH Division of Vital Records to get Vital records data on birth and mortality as part of the initial list of data sources to be migrated to the EDW extending the current EBI scope of work.



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B6.6	Medical Examiner Report drug overdose deaths data by Fentanyl (no other drugs), Fentanyl and Other Drugs (excluding heroin), Heroin (no other drugs), Heroin and Other Drugs (excluding fentanyl), Heroin and Fentanyl, Unknown Opioids, Other Opiates/Opioids determined by the Medical Examiner.	M	Yes	Standard	The Deloitte solution will work with the State to define the data needs and integrate this source into the DAP environment, which we assume will be enhanced by the NMS Labs test for fentanyl analogs recently approved by NH's Governor and Council. Our HHS Interactive solution also has a baseline Tableau dashboard to report on overdoses that would be extended using NH's data.
B6.7	Emergency Medical Services (EMS) Trauma Emergency Medical Services Information System (TEMSIS): medical responses on Naloxone administration incidents data and other overdose related responses.	M	Yes	Standard	The Deloitte solution will integrate with the Trauma Emergency Medical Services Information System (TEMSIS) to get medical responses on Naloxone administration incidents data as part of the initial list of data sources to be migrated to the EDW.
B6.8	Grant/State BDAS Treatment Services Web Information Technology System (WITS): An array of levels of care including outpatient, intensive outpatient, partial hospitalization, residential, withdrawal management, and peer and non-peer recovery support services for substance use disorders funded by state and grant funding (data includes diagnosis codes to distinguish opioid related treatment). WITS is vendor hosted using Microsoft SQL Server and will be	M	Yes	Standard	The Deloitte solution will integrate with the Grant/State BDAS Treatment Services to get data on Medication assisted treatment with Opioid/opiate, methamphetamine, & cocaine/crack admissions to state funded facilities, as part of the initial list of data sources to be migrated to the EDW.



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	implementing log shipping to deliver data for use in the EBI DAP and the opioid dashboards.				
B6.9	Population Data: Base data used for calculation of population based rates (e.g., crude, specific, and adjusted mortality rates).	M	Yes	Standard	The Deloitte solution will integrate population data used for calculation of population-based rates, as part of the initial list of data sources to be migrated to the EDW.
B6.10	NH Health WISDOM: Data access for public health indicators via interactive dashboards and community profiles. Customize and display data in maps, graphs, and tables related to the NH State Health Improvement Plan, NH Environmental Public Health Tracking Program, and the NH Occupational Health Surveillance Program.	M	Yes	Standard	The NH Health WISDOM application includes a number of opioid data sources and dashboard capabilities that overlap with the requirements of this RFP and our HHS Interactive solution. We will work DHHS and in specific the public health team to determine how best to carry forward the opioid specific intellectual capital of Wisdom strengthening public health utilization of the EBI and DAP platforms and extending existing investments to further empower analytics users and administrators.
B6.11	To help ensure that the selected vendor and the State Project team fully understand the extent of the work needed for data conversion, a detailed study of conversion issues	M	Yes	Standard	We will work with DHHS and source systems to develop a conversion and cleansing strategy for each interface iteratively during the design phase in advance of schema development. The results will



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	and requirements will be required of the selected vendor.				influence the design and define the conversion strategy and any potential issues.
B6.12	Conducting selected data source analysis to determine conversion requirements	M	Yes	Standard	Deloitte will analyze data from the selected data sources and review conversion/ mapping requirements with State project team during design sessions.
B6.13	Reviewing conversion analysis with the State Project team, prepare detailed data conversion plan (addressing manual and electronic data)	M	Yes	Standard	Deloitte will document a Detailed data conversion plan and the conversion requirements and mappings will be documented and submitted for State review. Review sessions will be scheduled and facilitated by the Deloitte team.
B6.14	Defining strategies for verifying and/or correcting existing data	M	Yes	Standard	Deloitte's Data conversion plan will include strategies on validating data quality and cleansing/correcting existing data using the Informatica cleansing capabilities as required.
B6.15	Developing data conversion scripts and test data conversion scripts	M	Yes	Standard	The Deloitte Development and Testing teams will develop and test the Informatica ETL scripts to load data from source systems to the EBI Data warehouse.



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B6.16	In this task the selected vendor must address data migration issues and a plan must be in place to ensure the validation of all conversion routines and the accuracy and completeness of all data.	M	Yes	Standard	The Deloitte Data conversion plan will include standard handling of exceptions and data migration issues. A reconciliation report will be generated and shared with the State after processing of the Informatica ETL to validate accuracy and completeness of data loads.
<b>Data Governance</b>					
B7.1	Design and Implementation of a data governance strategy	M	Yes	Standard	Deloitte will design and implement a Data Governance Strategy (DGS) for the phase one scope of work that can be leveraged as a framework for subsequent EBI activities.
B7.2	A DAP initiative requires an infrastructure reference model that provides guidance for selecting technologies and products when implementing and deploying services. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):	M	Yes	Standard	Deloitte will employ a structured product selection process extending the methods used to select the current EBI platform components.





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B7.3	Defining methods to ensure that the services infrastructure supports robust, secure, scalable, and interoperable operations.	M	Yes	Standard	Deloitte's data governance strategy integrates data governance with data modeling (DM), enterprise architecture (EA) and business processes (BP), overriding inter-departmental and technical silos for greater visibility and control across domains.
B7.4	Identifying what are the approved or standard technologies and products for service development and deployment.	M	Yes	Standard	Deloitte will leverage the processes defined in the Data Governance Strategy to identify approved and/ or standard technologies and products for service development and deployment.
B7.5	Designing and implementing methods, patterns, and technologies that will be used to support security (role based authentication and management for access to data based on an automated approval process), reliability, transaction, and instrumentation requirements.	M	Yes	Standard	Our proposed solution leverages the existing platform carrying forward security, reliability and instrumentation requirements of the EBI platform and extending them for the DAP scope of work.



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B7.6	Determining who determines which technologies and products go onto the standards list.	M	Yes	Standard	Out data governance frameworks to be refined in cooperation with DHHS and DoIT outline the requisite guidelines to create an effective governance organization. The proposed governance structure has four strata; An executive/steering committee, a Data Governance Council (DGO), a cohort of Data Stewards, and a Data Governance Office (DGO). Each stratum has clear core responsibilities, and Deloitte will work together with the State establish the framework for Governance with DHHS and DoIT coordinating with and engaging the required sponsors and stakeholders.
B7.7	Defining who needs to approve future technology and product decisions as standards evolve in the future.	M	Yes	Standard	The Data governance framework will have a defined governance structure including an Executive Steering committee to review and approve future technology and product decisions.
B7.8	Service Design and Development	M	Yes	Standard	Service design and development will propagate the standards currently being developed in cooperation with DHHS and DoIT.
B7.9	Service design and development precepts delegate decisions about services to the appropriate architects and developers. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):	M	Yes	Standard	The governance to be established during start-up and elaborated on throughout the project life cycle will design the roles and authorities of DHHS, DoIT, vendor and other stakeholders to be observed throughout the project life cycle.



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B7.10	Defining a method(ology) to ensure that services are built the right way.	M	Yes	Standard	Deloitte’s Data Governance Framework will define processes, policies and standards to ensure that services are built the right way.
B7.11	Determining the appropriate types of models that must be implemented.	M	Yes	Standard	Deloitte will leverage the Data Governance Framework to ensure the right strata of individuals determine the appropriate type of models are implemented driven based on policies and standards.
B7.12	Identifying sign off or approval requirements for service models.	M	Yes	Standard	The Data Governance Framework will identify sign-off or approval requirements. We recommend usage of the current Jira install to manage the process and audit trail.
B7.13	Determining the design patterns that should be used to support DAP principles.	M	Yes	Standard	Deloitte will leverage the Data Governance Framework to ensure the right strata of individuals determine the design patterns that should be implemented driven based on policies and standards.
B7.14	Identifying sign off or approval requirements system or service design decisions.	M	Yes	Standard	The Data Governance Framework will identify sign-off or approval requirements. We recommend usage of the current Jira install to manage the process and audit trail.



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B7.15	Establishing technology standards for a future project.	M	Yes	Standard	Deloitte will leverage our Data Governance Framework and the lessons learned from the initial and current implementations to establish technology standards for a future project. The Data Governance Framework will be updated, as necessary, based on learnings.
B7.16	Determining technology selection sign off or approval requirements.	M	Yes	Standard	Deloitte will extend and improve upon the working relationship with DHHS and DoIT, including formal usage of technology sign-off and approval.
B7.17	Establishing standard designs for message formats.	M	Yes	Standard	Deloitte will work with DHHS and DoIT to establish a standard design for message formats.
B7.18	Determining interface sign off or approval procedures.	M	Yes	Standard	Deloitte's Data governance framework and the Agile Project Management Plan will define the interface sign off and approval procedures which will establish the format, protocol, and operational responsibilities.
B7.19	Defining the required testing for DAP projects.	M	Yes	Standard	The Testing plan will detail the testing requirements for the DAP project, including testing of all associated tiers and recommended full volume dress rehearsal (mock go-live) to validate source system inputs and DAP outputs at scale.
B7.20	Establishing completed project acceptance requirements and procedures.	M	Yes	Standard	Deloitte's Agile Project Management Plan and the cutover plan will establish completed project acceptance requirements and procedures.



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B7.21	Creating a "prototyping or early experience" capability to experiment with and design enhancements to rules-engines by the program group for review and approval prior to entering a more formal development, testing and release process.	M	Yes	Standard	Our solution includes machine learning capabilities that allow for prototyping and early experience for iterative refinement, review and approval. If DHHS intended this requirement to include provision of a "rules engine" like Oracles Policy management, Drools, or IBM I-log (ODM), we recommend the usage of the New HEIGHTS IBM ODM rules engine to leverage existing enterprise assets.
B7.22	Configuration and release management	M	Yes	Standard	We will extend the usage of GitHub to support configuration management.
B7.23	Configuration management precepts establish which developers or administrators are responsible for configuring a service and preparing it for production deployment. The Vendor must build on and extend New Hampshire's release management processes, or develop one if the existing process is mutually determined to be not suitable. Requirements in this area are to include the following:	M	Yes	Standard	Based on the ongoing experience and knowledge of New Hampshire's release management process, Deloitte will leverage existing processes to configuration and release management.
B7.24	Establishing objective criterion to ensure that services are stable upon production release.	M	Yes	Standard	Deloitte will develop a cutover plan and a go/ no-go checklist that will establish mutually agreed upon objective criterion to ensure that services are stable upon production release.



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B7.25	Defining entire deployable units including its dependencies.	M	Yes	Standard	Deloitte will leverage the Deployment plan to establish processed for defining entire deployable units including its dependencies.
B7.26	Defining who is responsible for creating and version managing configuration files and deployment packages.	M	Yes	Standard	Deloitte will work with the State to identify roles and responsibilities for configuration and deployment management and document in the Deployment plan.
B7.27	Establishing clear responsibilities and requirements for system testing, performance testing, and capacity planning.	M	Yes	Standard	Deloitte will work with the State to identify requirements, roles and responsibilities for system testing, performance testing, and capacity planning and document in the Testing plan.
B7.28	Defining the service staging and promotion process.	M	Yes	Standard	This will be captured and documented in the Deployment Plan.
B7.29	Defining and implementing services registration procedures.	M	Yes	Standard	Our solution is capable of supporting web services and if appropriate Mulesoft may be utilized dependent on source system capabilities and usage of flat files and web services.
B7.30	Defining what information must be captured pertaining to a service.	M	Yes	Standard	Deloitte will facilitate design sessions with the state to define what information must be captured from a service. This will be documented as part of systems documentation.



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B7.31	Defining service provision and instrumentation requirements.	M	Yes	Standard	Our proposed solution leverages the service provision and instrumentation provided through Tableau and Informatica.
B7.32	Establishing signs off or approvals required to migrate a service into production.	M	Yes	Standard	The Agile Project Management includes protocols to establish sign-off or approval processes related to migrating a service into production. We recommend usage of the current Jira install to manage the process and audit trail.
B7.33	Contract management	M	Yes	Standard	We anticipate working with DHHS and DoIT collaboratively during the development of requirements and design specifications based on the Memorandum's of Understanding (MOU's) we anticipate DHHS developing for the source systems.
B7.34	Contract management precepts shall define the policies and processes that potential service consumers use to obtain permission to access a service. The proposed DAP governance solution may extend the existing provisioning governance system if suitable, or build a new one as appropriate. The Vendor must design and implement precepts in the following areas:	M	Yes	Standard	See below
B7.35	Ensuring that new consumers do not crash the system through use, operation or load.	M	Yes	Standard	Deloitte's Testing plan will include load and performance testing based on the users expected to access the system and we will work with DoIT to establish safeguards in the Oracle database to protect against over usage. Our Team will work closely with DoIT to establish the appropriate



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					safeguards or database controls/thresholds to monitor usage spikes and determine appropriate actions.
B7.36	Establishing the procedures for requesting permission to use a service.	M	Yes	Standard	Deloitte will work with the State to establish Systems Interface Plan with procedures for requesting permission to use a service. Service Level Agreements will be established for services as part of the initial and future implementations.
B7.37	Identifying required information to request permission to use a service.	M	Yes	Standard	Deloitte's Systems Interface Plan will identify the required information to request permission to use a service including but not limited to frequency of access, load, data extracted, service level agreements, and support standard.
B7.38	Establishing an impact analysis to be performed before granting permission to new consumers.	M	Yes	Standard	Deloitte will work with the State to identify the type of analysis required before granting access.
B7.39	Determining appropriate sign offs or approvals to granting permissions to access the system.	M	Yes	Standard	Deloitte will work with the State to establish a formal approval process for internal and external user access to the system. These approvals will be documented for audit purposes. Access requests are probably best managed through the DoIT ticket system. Note: We advocate using Jira for application specific issues (defects, change





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					requests, etc.) and DoIT system for infrastructure, user access, and outages with final distribution of usage to be jointly agreed upon by DoIT and DHHS.
B7.40	Establishing a framework to negotiate service level agreements (SLAs) for use of the system.	M	Yes	Standard	The data governance framework will be utilized to establish a framework to negotiate service level agreements for use of the system.
B7.41	Defining and implementing SLAs be reported and enforced.	M	Yes	Standard	The plan will define a process for implementation of established SLAs.
B7.42	Establishing processes to address modifications or additional resources that may be required to support the SLAs.	M	Yes	Standard	We will collaborate with DHHS and DoIT to establish processes including but not limited to Service enhancements and additional resources required to support the SLAs across the entities responsible for system components and services.
B7.43	Defining appropriate testing practices and procedures that are required before a new consumer can be provisioned.	M	Yes	Standard	Deloitte will establish a framework for the different types of users including but not limited to users who can publish, interact with, or only view published content, or who can manage the site's users and administer the site itself. These different user roles will be tested for appropriate access by setting up test users with the respective roles.



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B7.44	Establishing a process to provision new consumers	M	Yes	Standard	Deloitte will establish a framework with different levels of user access, after working with the state, and establish a process to get them the appropriate access.
B7.45	Service monitoring and control	M	Yes	Standard	Please see B7.46 below.
B7.46	Service monitoring and control precepts must be designed and implemented in such a manner as to define responsibilities for issues related to operating a service. The Vendor may build on and extend or develop new service management and operations governance by defining and implementing precepts that address the following:	M	Yes	Standard	Through our deployment experience working with similar States, we recognize the amplified level of complexity associated with integrating data from multiple source systems outside of the sponsors direct domain. Our service monitoring controls and establishes protocols for management of the enterprise including source and subscribing systems.
B7.47	Establishing controls and reporting to ensure that services behave as expected.	M	Yes	Standard	Deloitte will leverage existing control to monitor services and/ or generate error log/ exception reporting to monitor the services.
B7.48	Defining instrumentation and reporting to track service consumption and utilization.	M	Yes	Standard	The majority of consumption will be completed through Tableau which has audit logging to track consumption complemented by the Oracle database logs and potentially Google analytics for Web site monitoring. For Web services, either Informatica or Mulesoft would be utilized and provide for the required logging.
B7.49	Establishing methods and reporting procedures to detect, eliminate and	M	Yes	Standard	The usage of the States active directory will pull forward the strengths of DoIT authentication system. Additionally, the application logs could be



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	prevent against unauthorized service access.				consolidated into the States Qradar application for alert management.
B7.50	Create tracking and reporting for service SLA compliance and violations.	M	Yes	Standard	Deloitte will collaborate with DHHS and DoIT to develop reporting for SLA Compliance and violations.
B7.51	Identification of notifications and escalation contacts and procedures for service issues and outages	M	Yes	Standard	The escalation procedures at part of our standard operations readiness planning and include protocols not only for the EBI/DAP, but also for integrated source systems with redundant call/escalation tree logic. Service outages would be reported through the DoIT ticket tracking system.
B7.52	Service monitoring and control capabilities must be built into the DAP runtime infrastructure. DAP governance standards must define where and how to use, report on and enhance SLAs.	M	Yes	Standard	On our enterprise data warehouse projects, we work with our clients doing similar work to determine which metrics are to be monitored and what tooling exists to support those measurements. We will collaborate with DoIT and DHHS to do the same for the DAP project.
B7.53	Incident management	M	Yes	Standard	In addition to setting incident management standards and processes, we recommend integrating incident control with the DoIT maintained ticketing system to track incidents and responsible parties.
B7.54	Incident management precepts shall define and implement responsibilities for monitoring and managing problems and issues that arise during the operation of the service. The Vendor must build on and extend or develop new incident management governance by implementing precepts	M	Yes	Standard	We propose extending the DoIT ticketing system and working with DoIT to develop a response structure that assists in identifying the pertinent parties for issue resolution based on roles (e.g. Oracle DBA, Tableau specialists, source system owner, etc.) based on symptoms for sustainable operations.



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	that cover the following (at a minimum):				
B7.55	Design and implementation of processes and procedures to manage incidents and failures	M	Yes	Standard	We recommend integrating incident control with the DoIT maintained ticketing system to track incidents and responsible parties and will work with DHHS and DoIT to establish the protocols for the supporting entities. If not able to leverage DoIT ticketing system then incidents, requests and failures will be tracked using the Jira application provided and designed by Deloitte with DHHS and DoIT.
B7.56	Definition/Identification of responsibilities for end-to-end service exception and fault tracking	M	Yes	Standard	The system design and operational readiness will define the logging, fault and exception functions that support the DAP and the roles and responsibilities for monitoring and root cause identification and correction.
B7.57	Definition/Identification of responsibilities for end-to-end service error identification and resolution.	M	Yes	Standard	See above.



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B7.58	Definition of the escalation path for SLA violations.	M	Yes	Standard	The escalation and notification process will be established for SLA standards, including the usage of tools (Jira/DoIT ticketing system) and protocol for elevating.
B7.59	Change management	M	Yes	Standard	Our change management methodology is defined in our response to topics 11 Project management, 20 Risk & Issue Management and 21 – Scope Control.
B7.60	Change control management precepts shall define and implement responsibilities for managing system enhancement requests and service versioning. The Vendor must build on and extend or develop and implement new change management governance by defining precepts that cover (at a minimum):	M	Yes	Standard	Our change management methodology is defined in our response to topics 11 Project management, 20 Risk & Issue Management and 21 – Scope Control.
B7.61	Implement a process to manage change requests and to ensure that enhancements do not introduce defects in the system.	M	Yes	Standard	Deloitte’s Agile Project Management Plan will include Change Management processes and guidelines. A change control board consisting of State and Deloitte project management will evaluate potential changes and prioritize to future releases based on criticality of change. Changes will be tracked through the existing Jira instance, including the approval to migrate based on test results.



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B7.62	Design and implement procedures for requesting service enhancements.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on the process for requesting service enhancements.
B7.63	Define what information is required when requesting a service enhancement.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on the information required while initiating a service enhancement including but not limited to scope and reason of change, effort estimate, criticality of enhancement, risk of not implementing the enhancement.
B7.64	Design an impact analysis process to be performed before a service enhancement request is accepted.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on the impact analysis process.
B7.65	Define sign off or approval requirements for service enhancement requests.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on sign-off or approval requirements for service enhancement requests. We recommend using Jira to track approvals and to provide the audit trail.
B7.66	Define roles, responsibilities and sequence of events pertaining to the implementation of an enhancement.	M	Yes	Standard	The Change Management plan will include steps after a service enhancement is approved by the Change Control Board and a future release version is identified.



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B7.67	Develop guidelines to assist the State in paying for or funding an enhancement.	M	Yes	Standard	Prioritization and funding is based on numerous variables including important, complexity, funding source, human capital, dependent entities and other similar factors. We will work DHHS to assist in understanding the factors as well implications for larger scale projects which may qualify for enhanced federal funding.
B7.68	Define recommended methods and a process for addressing enhancement requests associated with regulatory requirements.	M	Yes	Standard	This will also be addressed via the Change management process and the Change Control Board while managing overall scope and timelines of the implementation. In addition, Deloitte has a national HHS practice that tracks market activities and can assist in multi-state collaboration.
B7.69	Define methods to enable service versioning and version control/migration.	M	Yes	Standard	Versioning will be controlled using GitHub to complement the inherent controls of the stack components.
B7.70	Establish guidelines on how long should a previous version(s) of the service be maintained and subsequently retired.	M	Yes	Standard	Deloitte will work with the State to establish retention/ archive rules versioning, in general we recommend retaining version history for audit control purposes and historical reference for similar future efforts.
B7.71	Define what degree of service and system testing is required before deploying a service enhancement.	M	Yes	Standard	Deloitte will work with the state to review test coverage plan and identify exit criteria for testing of service enhancements. This will be documented in the Testing plan.



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B7.72	Establish leading practices to mitigate current consumer disruption when deploying an enhancement.	M	Yes	Standard	Deloitte will work with the state to review industry standard practices to mitigate user disruption during deployments. This will be documented in the Deployment plan and is standard operating procedure.
B7.73	Develop procedures to notify consumers of the enhancement or changes to the system.	M	Yes	Standard	The Communication plan will capture procedures to notify consumers of the upcoming system enhancements, ideally leveraging existing communication controls like Jira and the DoIT ticketing system.
B7.74	Develop and implement processes to fall back to a system previous version upon discovery of a critical defect.	M	Yes	Standard	Deloitte will identify and document rollback plan/strategy to fallback to older system version upon no-go of a planned service enhancement.
B7.75	Data Management	M	Yes	Standard	See below
B7.76	Design and Implementation of a data management strategy including data warehousing, data quality, and data integration capabilities. The strategy will incorporate current practices and the vendor will work with the current teams.	M	Yes	Standard	Deloitte's Data Governance Framework defines a data management strategy including but not limited to data warehousing, data quality and data integration capabilities.





2. APPLICATION -SOFTWARE

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<b>GENERAL SPECIFICATIONS</b>					
A1.1	Ability to access data using open standards access protocol (please specify supported versions in the comments field).	M	Yes	Standard	Informatica support multiple open standards access protocols and will be used to satisfy this requirement. If required, Mulesoft could also be utilized for data integration and supports numerous open standards.
A1.2	Data is available in commonly used format over which no entity has exclusive control, with the exception of National or International standards. Data is not subject to any copyright, patent, trademark or other trade secret regulation.	M	Yes	Standard	Our proposed solution uses commonly adapted data standards and does not include proprietary data formats.
A1.3	Web-based compatible and in conformance with the following W3C standards: HTML5, CSS 2.1, XML 1.1	M	Yes	Standard	The navigation application and Tableau will both be compatible with W3C standards: HTML5, CSS 2.1, XML 1.1 standard and we will use SortSite to validate the navigation application.
<b>APPLICATION SECURITY</b>					
A2.1	Verify the identity or authenticate all of the system client applications before allowing use of the system to prevent access to inappropriate or confidential data or services.	M	Yes	Standard	Deloitte will work with the State to determine and develop security protocols for the application leveraging The DoIT active directly and FTP services standards.



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A2.2	Verify the identity and authenticate all of the system's human users before allowing them to use its capabilities to prevent access to inappropriate or confidential data or services.	M	Yes	Standard	Deloitte will work with the state to determine and configure appropriate levels of user profiling and corresponding system access. Deloitte will only provide user access once the State has provided formal approval and will authenticate using the DoIT activate directory.
A2.3	Enforce unique user names for internal facing solution	M	Yes	Standard	User names and profile access will be unique for the internal-facing solution using the existing active directory structure to minimize the security risks associated with duplicate user names.
A2.4	Enforce complex passwords for Administrator Accounts in accordance with DoIT's statewide <i>User Account and Password Policy</i>	M	Yes	Standard	Deloitte will enforce complex passwords for Administrator accounts, and remain in accordance with DoIT's statewide policies, as displayed by Deloitte's current compliance with DoIT standards by using the DoIT active directory capability in our system.
A2.5	Enforce the use of complex passwords for general users using capital letters, numbers and special characters in accordance with DoIT's statewide User Account and Password Policy.	M	Yes	Standard	Deloitte will enforce complex passwords for general user accounts, and remain in accordance with DoIT's statewide policies, as displayed by Deloitte's current compliance with DoIT standards through usage of the States activity directory solution.



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A2.6	Encrypt passwords in transmission and at rest within the database.	M	Yes	Standard	Passwords will be encrypted through usage of the DoIT active directory which protects in transmission and at rest within the database.
A2.7	Establish ability to expire passwords after a definite period of time in accordance with DoIT's statewide User Account and Password Policy	M	Yes	Standard	Deloitte will establish the ability to expire passwords in accordance with DoIT's statewide policy, as displayed by Deloitte's current compliance with DoIT standards.
A2.8	Provide the ability to limit the number of people that can grant or change authorizations	M	Yes	Standard	Deloitte will work with the State to determine the number of people requiring the ability to grant or change authorization and develop user permission roles accordingly.
A2.9	Establish ability to enforce session timeouts during periods of inactivity.	M	Yes	Standard	Deloitte will work with the State to determine applicable inactivity periods and will incorporate session timeouts into the application which is configurable through Tableau and Informatica as well as Oracle.
A2.10	The application shall not store authentication credentials or sensitive data in its code.	M	Yes	Standard	The application will not store authentication credentials or sensitive data in code.
A2.11	Log all attempted accesses that fail identification, authentication and authorization requirements.	M	Yes	Standard	Failed access attempts will be logged in the States active directory which is integrated with QRadar.



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APPLICATION REQUIREMENTS					
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A2.12	The application shall log all activities to a central server to prevent parties to application transactions from denying that they have taken place.	M	Yes	Standard	Natively, the tableau, informatica and Oracle databases will log data access. Those logs can be aggregated into the States existing QRadar instance for application management.
A2.13	All logs must be kept for (6 months)	M	Yes	Standard	Deloitte will work with the State to determine archive and purge requirements for system security data and logs which is configurable through Tableau and Informatica for their respective logs as well as Qradar if utilized.
A2.14	The application must allow a human user to explicitly terminate a session. No remnants of the prior session should then remain.	M	Yes	Standard	Tableau will allow a user to end (exit) or logout from a session which will then be terminated.
A2.15	N/A	M	N/A	N/A	N/A
A2.16	The application Data shall be protected from unauthorized use when at rest	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments which encrypts data rest in the Oracle database.
A2.17	The application shall keep any sensitive Data or communications private from unauthorized individuals and programs.	M	Yes	Standard	Deloitte will work with the state to determine and implement user access roles and permission levels, to keep sensitive data and communications private from unauthorized individuals and programs.



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A2.18	Subsequent application enhancements or upgrades shall not remove or degrade security requirements	M	Yes	Standard	In the event of future application enhancements or upgrades, Deloitte will work with the State to determine any corresponding security enhancements or upgrades without degrading or removing security features already in place. We recommend the Jira workflow be established to include a security validation task for enhancements and upgrades.
A2.19	Use change management documentation and procedures	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management processes and guidelines.
A2.20	Web Services : The service provider shall use Web services exclusively to interface with the State's data in near real time when possible.	M	Yes	Standard	Informatica can support web services with a plug-in and in addition, the State has the option of leveraging the existing Mulesoft enterprise platform for web services integration. We will work with DHHS to evaluate each interface the source system options for data integration and timing to minimize data latency.



3. TESTING

TESTING					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>APPLICATION SECURITY TESTING</b>					
T1.1	All components of the Software shall be reviewed and tested to ensure they protect the State's Web site and its related Data assets.	M	Yes	Standard	An application vulnerability scan will be completed to validate compliance with industry benchmarks.
T1.2	The Vendor shall be responsible for providing documentation of security testing, as appropriate. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability.	M	Yes	Standard	Both application vulnerability and penetration testing will be completed to complement the user control and permissions established through re-use of existing infrastructure.
T1.3	Provide evidence that supports the fact that Identification and Authentication testing has been recently accomplished; supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users	M	Yes	Standard	As part of the Testing Plan we will work with DoIT to validate logging for active directory.
T1.4	Test for Access Control; supports the management of permissions for logging onto a computer or network	M	Yes	Standard	The Testing Plan will include checks for all user permission roles and access controls established.
T1.5	Test for encryption; supports the encoding of data for security purposes, and for the ability to access the data in a decrypted format from required tools.	M	Yes	Standard	Encryption will be managed through the server platform, Oracle database, Tableau FTP server, and Informatica/Mulesoft which are being extended for this project.



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TESTING					
State Requirements			Vendor:		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
T1.6	Test the Intrusion Detection; supports the detection of illegal entrance into a computer system	M	Yes	Standard	The Intrusion Detection using penetration testing will be integrated by default with the broader DoIT testing for access to the on-premise infrastructure. We will also perform application penetration testing for the DAP using Metasploit.
T1.7	Test the Verification feature; supports the confirmation of authority to enter a computer system, application or network	M	Yes	Standard	The proposed solution will use the State's active directory which is tested and validated.
T1.8	Test the User Management feature; supports the administration of computer, application and network accounts within an organization.	M	Yes	Standard	Accounts will be managed using the DoIT active directory which will be validated through the test plan.
T1.9	Test Role/Privilege Management; supports the granting of abilities to users or groups of users of a computer, application or network	M	Yes	Standard	The Testing Plan will verify successful implementation of user access roles as determined by the State and implemented through Tableau for end users with complementary security through Oracle.
T1.10	Test Audit Trail Capture and Analysis; supports the identification and monitoring of activities within an application or system	M	Yes	Standard	The Testing Plan will include verification of Audit Trail Capture and Analysis capabilities.
T1.11	Test Input Validation; ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.	M	Yes	Standard	The Testing Plan will include application vulnerability management scanning against the application prior to go live using HP Fortify for code scanning and penetration test using Metasploit.



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Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
T.1.1 2	For web applications, ensure the application has been tested and hardened to prevent critical application security flaws. ( At a minimum, the application shall be tested against all flaws outlined in the Open Web Application Security Project (OWASP) Top Ten ( <a href="http://www.owasp.org/index.php/OWASP_Top_Ten_Project">http://www.owasp.org/index.php/OWASP_Top_Ten_Project</a> ))	M	Yes	Standard	The Web-based portion(s) of the application, as applicable, will be tested and prevent security flaws using HP Fortify for code scanning and penetration test using Metasploit.
T1.13	Provide the State with validation of 3rd party security reviews performed on the application and system environment. The review may include a combination of vulnerability scanning, penetration testing, static analysis of the source code, and expert code review (please specify proposed methodology in the comments field).	M	Yes	Standard	Deloitte's Advisory unit has performed 3 <sup>rd</sup> party validation for New Hampshire as approved by CMS and would perform the penetration and application vulnerability scans.
T1.14	Prior to the System being moved into production, the Vendor shall provide results of all security testing to the Department of Information Technology for review and acceptance.	M	Yes	Standard	The Testing Plan will include validations performed in multiple test regions prior to Production, and security testing results will be provided to the DoIT prior to production.
T1.15	Vendor shall provide documented procedure for migrating application modifications from the User Acceptance Test Environment to the Production Environment.	M	Yes	Standard	Deloitte will work with the State to establish protocols and procedures for the migration of application components from UAT environments to Production. We recommend approvals be captured using Jira for control and audit trail.

**STANDARD TESTING**





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TESTING					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
T2.1	The Vendor must test the software and the system using an industry standard and State approved testing methodology.	M	Yes	Standard	Deloitte's Testing Team will work with State resources to develop a Testing Plan in accordance with industry standards.
T2.2	The Vendor must perform application stress testing and tuning.	M	Yes	Standard	The Testing Plan will include stress testing and tuning on all application components as well as full volume "mock go live" testing.
T2.3	The Vendor must provide documented procedure for how to sync Production with a specific testing environment.	M	Yes	Standard	The configuration management plan will provide procedures for migrating changes through test environments into production.
T2.4	The vendor must define and test disaster recovery procedures.	M	Yes	Standard	Deloitte will work with the State to extend existing protocols for disaster recovery from the current EBI and assist with testing in collaboration with DoIT.



**4. HOSTING-CLOUD REQUIREMENTS**

HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>OPERATIONS</b>					
H1.1	Vendor shall provide an ANSI/TIA-942 Tier 3 Data Center or equivalent. A tier 3 data center requires 1) Multiple independent distribution paths serving the IT equipment, 2) All IT equipment must be dual-powered and fully compatible with the topology of a site's architecture and 3) Concurrently maintainable site infrastructure with expected availability of 99.982%	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments for PI and PHI and us such inherits the protections of the States data center.</p> <p>The Google platform is Fedramp certified and will only be used for de-identified data provided by Google from there digital search repository and if agreeable with the State a de-identified extract of the all payor claims database.</p> <p>The Google Cloud Platform has a 99.95% SLA, Google BigQuery Service, and the standard storage class of Google Cloud Storage have a 99.9% SLA except for the Durable Reduced Availability Storage class of Google Cloud Storage which has a 99% SLA.</p>
H1.2	Vendor shall maintain a secure hosting environment providing all necessary hardware, software, and Internet bandwidth to manage the application and support users with permission based logins.	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments. The data sourced from Google will be de-identified and will imported into the DAP consistent with other input data sources for end user access from the on-premise DAP.</p>
H1.3	The Data Center must be physically secured – restricted access to the site to personnel with controls such as biometric, badge, and others security solutions.	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments and physical controls.</p>



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	Policies for granting access must be in place and followed. Access shall only be granted to those with a need to perform tasks in the Data Center.				
H1.4	Vendor shall install and update all server patches, updates, and other utilities within 60 days of release from the manufacturer.	M	Yes	Standard	Deloitte will provide the mentioned system maintenance as it remains in accordance with the Vendor contract in cooperation with DoIT (e.g. Oracle).
H1.5	Vendor shall monitor System, security, and application logs.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments. Deloitte will monitor logs as part of system maintenance and support activities included within the scope of the contract.
H1.6	Vendor shall manage the sharing of data resources.	M	Yes	Standard	Deloitte will work with the State to determine policies surrounding data resource sharing and implement/follow the determined protocols.
H1.7	Vendor shall manage daily backups, off-site data storage, and restore operations.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments. Daily back-ups, off-site data storage, and restore operations will all be managed and documented in the Deployment Plan. The Google platform will not serve as the primary source of data which would require backup, although the platform is backed up as a GCP standard.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H1.8	The Vendor shall monitor physical hardware.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and DoIT monitors physical hardware.
H1.9	Remote access shall be customized to the State's business application. In instances where the State requires access to the application or server resources not in the DMZ, the Vendor shall provide remote desktop connection to the server through secure protocols such as a Virtual Private Network (VPN).	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and VPN network as required.
H1.10	The Vendor shall report any breach in security in conformance with State of NH RSA 359-C:20. Any person engaged in trade or commerce that is subject to RSA 358-A:3, I shall also notify the regulator which has primary regulatory authority over such trade or commerce. All other persons shall notify the New Hampshire attorney general's office.	M	Yes	Standard	Any breaches in security will be reported to the designated DAP security lead for DHHS.

**DISASTER RECOVERY**



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H2.1	Vendor shall have documented disaster recovery plans that address the recovery of lost State data as well as their own. Systems shall be architected to meet the defined recovery needs.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and supporting disaster recovery plans which will be extended to support this project. Our teaming partner Google's disaster recovery plans can be found here: <a href="https://cloud.google.com/solutions/dr-scenarios-for-data">https://cloud.google.com/solutions/dr-scenarios-for-data</a> . However, the GCP is a source system and will not be a primary data store for DHHS's defined source data.
H2.2	The disaster recovery plan shall identify appropriate methods for procuring additional hardware in the event of a component failure. In most instances, systems shall offer a level of redundancy so the loss of a drive or power supply will not be sufficient to terminate services however, these failed components will have to be replaced.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and we do not anticipate the acquisition of additional hardware unless DHHS/DoIT elect to modify the current disaster recovery plan which does not include a hot site.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H2.3	Vendor shall adhere to a defined and documented back-up schedule and procedure.	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing proposed solution. The Deployment Plan will document all back-up schedules will be jointly developed with DoIT.</p> <p>Google Cloud Platform has a 99.95% SLA, Google BigQuery Service, and the standard storage class of Google Cloud Storage have a 99.9% SLA except for the Durable Reduced Availability Storage class of Google Cloud Storage which has a 99% SLA.</p>
H2.4	Back-up copies of data are made for the purpose of facilitating a restore of the data in the event of data loss or System failure.	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments, including backup copies in cooperation with DoIT.</p>



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H2.5	Scheduled backups of all servers must be completed regularly. The minimum acceptable frequency is differential backup daily, and complete backup weekly.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments. The Deployment Plan will detail all scheduled server back-ups, which will at minimum occur daily for differential backup and weekly for complete backup as jointly agreed upon by DoIT.
H2.6	Tapes or other back-up media tapes must be securely transferred from the site to another secure location to avoid complete data loss with the loss of a facility.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and back-up media and storage.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H2.7	Data recovery – In the event that recovery back to the last backup is not sufficient to recover State Data, the Vendor shall employ the use of database logs in addition to backup media in the restoration of the database(s) to afford a much closer to real-time recovery. To do this, logs must be moved off the volume containing the database with a frequency to match the business needs.	M	Yes	Standard	Deloitte will work with the State to determine the frequency with which logs are moved to maintain the ability to perform near real-time recovery. Working with DoIT, we would have the option of recovering from the database logs. Because we use a staging area to maintain the EBI/DAP platform we would have the option of recovering from the staging areas if required.
HOSTING SECURITY					
H3.1	The Vendor shall employ security measures ensure that the State's application and data is protected and how the system will meet all Federal and State requirements currently in law and rules protecting sensitive personal health information, as outlined in the Health Insurance Portability and Accountability Act (HIPAA) and the more stringent Title 42 Code of Federal Regulations (CFR) Part 2:	M	Yes	Standard	Deloitte will work with the State, and the Data Governance Plan will document all standards for data management, usage, and protection in the application and tangential systems based on our extensive experience supporting the security requirements for PII/PHI across numerous State clients, including New Hampshire.  Our teaming partner Google's security approach can be found here: <a href="https://cloud.google.com/security/compliance/hipaa/">https://cloud.google.com/security/compliance/hipaa/</a> . However, we will not store PHI or PI on the GCP.





HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
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	(Confidentiality of Substance Use Disorder Patient Records regulation), as outlined by the Federal Substance Abuse Mental Health Services Administration (SAMHSA) and the Office of the National Coordinator for Health Information Technology (ONC)				
H3.2	If State data is hosted on multiple servers, data exchanges between and among servers must be encrypted.	M	Yes	Standard	The hosting will be contained on the on-premise DoIT platform with augmented data/capacity on the GCP which will be de-identified and encrypted.  Our teaming partner Google's encryption policies can be found here: <a href="https://cloud.google.com/kms/docs/encrypt-decrypt">https://cloud.google.com/kms/docs/encrypt-decrypt</a>
H3.3	All servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a whole, shall have aggressive intrusion-detection and firewall protection.	M	Yes	Standard	Deloitte will work with the State to leverage the existing DoIT infrastructure and to support version management for the application components introduced through the DAP.  Our teaming partner Google's compatibility protocols can be found here: <a href="https://cloud.google.com/blog/products/gcp/exploring-container-security-running-a-tight-ship-with-kubernetes-engine-1-10">https://cloud.google.com/blog/products/gcp/exploring-container-security-running-a-tight-ship-with-kubernetes-engine-1-10</a>



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H3.4	All components of the infrastructure shall be reviewed and tested to ensure they protect the State's hardware, software, and its related data assets. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide confidentiality, integrity and availability.	M	Yes	Standard	The Testing Plan will include verification of the new infrastructure components and will extend the current controls in place for the EBI components being leveraged.
H3.5	The Vendor shall ensure its complete cooperation with the State's Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure.	M	Yes	Standard	In the event of security vulnerability, Deloitte will cooperate and collaborate with the State's Chief Information Officer and all other related parties as it relates to our scope of work and responsibilities.
H3.6	The Vendor shall authorize the State to perform scheduled and random security audits, including vulnerability assessments, of the Vendor' hosting infrastructure and/or the application upon request.	M	Yes	Standard	Deloitte will work with the State to provide support and/or access to complete security audits and vulnerability assessments.



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HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H3.7	All servers and devices must have event logging enabled. Logs must be protected with access limited to only authorized administrators. Logs shall include System, Application, Web and Database logs.	M	Yes	Standard	Event logging will be enabled on all servers and devices. Deloitte will work with DHHS and DoIT to determine the user access roles that will have access to these logs, including Tableau and Informatica and with DoIT in specific for Oracle and active directory logging.
H3.8	Operating Systems (OS) and Databases (DB) shall be built and hardened in accordance with guidelines set forth by CIS, NIST or NSA	M	Yes	Standard	Both Operating Systems and Databases will extend the current Oracle platform supported and based on DoIT standards.
H3.9	The Vendor shall notify the State's Project Manager of any security breaches within two (2) hours of the time that the Vendor learns of their occurrence.	M	Yes	Standard	Deloitte will notify the State's Project Manager within the specified timeline of security breaches as defined in the Terms and Conditions of the contract.
H3.10	The Vendor shall be solely liable for costs associated with any breach of State data housed at their location(s) including but not limited to notification and any damages assessed by the courts.	M	Yes	Standard	Deloitte will be fully responsible for the costs incurred as a direct result of any breaches we cause, per the terms of the mutually agreeable contract for any breach of State data housed at our location.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H3.11	The cloud services if used will be FEDRAMP compliant	M	Yes	Standard	Our team partner Google's Cloud Platform is FEDRAMP Moderate, and will likely be FEDRAMP High by January 2019. The Informatica layer is FEDRAMP High will be used to lower information security layer needed before transfer to GCP. Additionally, only de-identified data will be housed on the GCP.
SERVICE LEVEL AGREEMENT					
H4.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M	Yes	Standard	Support and maintenance of the system will commence upon the effective date and extend through the end of the contract and any extensions thereof in accordance with the contract.
H4.2	The vendor shall maintain the hardware and Software in accordance with the specifications, terms, and requirements of the Contract, including providing, upgrades and fixes as required.	M	Yes	Standard	Deloitte will maintain the applicable software and hardware within the terms set forth in the Contract based on defined responsibilities shared between the vendor, DoIT and DHHS (e.g. DoIT maintains the EBI platform and network being leveraged s part of the DAP project.).
H4.3	The vendor shall repair or replace the hardware or software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M	Yes	Standard	The proposed solution utilizes hardware and software acquired by the State. We will collaborate with the State to support upgrades and execution of maintenance support agreements within the terms set forth in the Contract.



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State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H4.4	All hardware and software components of the Vendor hosting infrastructure shall be fully supported by their respective manufacturers at all times. All critical patches for operating systems, databases, web services, etc., shall be applied within sixty (60) days of release by their respective manufacturers.		Yes	Standard	The proposed solution utilizes hardware and software acquired by the State. We will collaborate with the State to support upgrades and execution of maintenance support agreements within the terms set forth in the Contract. The Google Cloud Platform (GCP) will be maintained by Google as a service.
H4.5	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST;	M	Yes	Standard	Deloitte technical support staff will be available to the Vendor through phone or email between the hours of 8:30am and 5:00pm EST Monday through Friday.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H4.6	<p>The Vendor shall conform to the specific deficiency class as described:</p> <ul style="list-style-type: none"> <li>o Class A Deficiency – Software – Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation – missing significant portions of information or unintelligible to State; Non Software – Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency – Software – important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation – portions of information are missing but not enough to make the document unintelligible; Non Software – Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency – Software – minimal, cosmetic</li> </ul>	M	Yes	Standard	Deloitte will conform to the specified deficiency classes when assessing potential solution defects-



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	in nature, minimal effect on System, low priority and/or user can use System; Written Documentation – minimal changes required and of minor editing nature; Non Software – Services require only minor reworking and do not require re-performance of the Service.				



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State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H4.7	As part of the maintenance agreement, ongoing support issues shall be responded to according to the following: a. Class A Deficiencies – The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email/telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request; b. Class B & C Deficiencies – The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and	M	Yes	Standard	Deloitte will work with the State resources to provide maintenance of ongoing support issues per the terms of the contract.





HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
	Requirements of the Contract;				
H4.8	The hosting server for the State shall be available twenty-four (24) hours a day, 7 days a week except for during scheduled maintenance.	M	Yes	Standard	Deloitte will work with the State and DoIT to provide 24/7 access to the hosting server, except for scheduled maintenance windows.
H4.9	A regularly scheduled maintenance window shall be identified (such as weekly, monthly, or quarterly) at which time all relevant server patches and application upgrades shall be applied.	M	Yes	Standard	Deloitte will work with the State to determine scheduled maintenance windows and use the determined windows for server patches and application upgrades in conjunction with DoIT.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H4.10	If The Vendor is unable to meet the uptime requirement, The Vendor shall credit State's account in an amount based upon the following formula: (Total Contract Item Price/365) x Number of Days Contract Item Not Provided. The State must request this credit in writing.	M	Yes	Standard	In the event of a failure to meet a mutually agreed uptime requirement and where Deloitte is determined to be solely at fault, Deloitte will provide the State with credit in accordance with a mutually agreed credit formula which can be similar to the described requirement. However, we would like to clarify the baseline cost upon which the credit would be calculated, agree to a reasonable cap on the credit per month, and a grace period after go live where credits would not apply. Additionally, we would like to propose that the uptime requirement be calculated based on a monthly average achievement.
H4.11	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management processes and guidelines, including those related to notification and tracking of change requests. We recommend using the existing Jira instance for change requests and the DoIT ticketing system for critical outages consistent with State standards. If not able to leverage DoIT ticketing system then critical outages will be tracked using the Jira application provided and designed by Deloitte with DHHS and DoIT.
H4.12	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M	Yes	Standard	Deloitte will adhere to the stated definition of a critical outage and will work with the State to identify action plans in accordance with the protocols mentioned above.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H4.13	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: Server up-time; All change requests implemented, including operating system patches; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M	Yes	Standard	Deloitte will work with the State to determine a tracking methodology for repair/maintenance-related activities and will provide the State with quarterly reports on the requested metrics, including incidents tracked through the DoIT ticketing system for infrastructure maintenance and Jira for application defect tracking. If not able to leverage DoIT ticketing system then infrastructure maintenance will be tracked using the Jira application provided and designed by Deloitte with DHHS and DoIT.
H4.14	The Vendor will give two-business days prior notification to the State Project Manager of all changes/updates and provide the State with training due to the upgrades and changes.	M	Yes	Standard	Deloitte will provide the State with notification of two business days for all changes and updates and provide the State with training that results from the changes and updates.



5. SUPPORT & MAINTENANCE

SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
S1.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M	Yes	Standard	Support and maintenance for the system will commence on the Effective Date and extend through the end of the Contract term and any extensions thereof.
S1.2	Maintain the hardware and Software in accordance with the Specifications, terms, and requirements of the Contract, including providing, upgrades and fixes as required.	M	Yes	Standard	Hardware and software components of the application will be maintained in accordance with the Contract in cooperation with DoIT.
S1.3	Repair Software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M	Yes	Standard	In the event of repairs being necessitated, Deloitte will repair software components in accordance with the Contract specifications and responsibilities.
S1.4	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST;	M	Yes	Standard	Deloitte's technical support staff will be available to the Vendor through phone or email between the hours of 8:30am and 5:00pm EST Monday through Friday.



SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.5	The Vendor response time for support shall conform to the specific deficiency class as described below or as agreed to by the parties: o Class A Deficiency – Software – Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation – missing significant portions of information or unintelligible to State; Non Software – Services were inadequate and require re-performance of the Service. o Class B Deficiency – Software – important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation – portions of information are missing but not enough to make the document unintelligible; Non Software – Services were deficient, require reworking, but do not require re-performance of the Service. o Class C Deficiency – Software – minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation – minimal changes required and of minor editing nature; Non Software – Services require only minor reworking and do not require re-performance of the Service.	M			Response times for system deficiencies will align with the appropriate deficiency class as outlined.
S1.6	The Vendor shall make available to the State the latest program updates, general maintenance releases, selected functionality releases, patches, and Documentation that are generally offered to its customers, at no additional cost.	M	Yes	Standard	Program updates, general maintenance releases, and functionality releases/patches will be made available to the State as generally offered.



SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.7	For all maintenance Services calls, The Vendor shall ensure the following information will be collected and maintained: 1) nature of the Deficiency; 2) current status of the Deficiency; 3) action plans, dates, and times; 4) expected and actual completion time; 5) Deficiency resolution information, 6) Resolved by, 7) Identifying number i.e. work order number, 8) Issue identified by;	P	Yes	Standard	The stated information will be collected, tracked, and maintained for all maintenance calls in Jira.
S1.8	The Vendor must work with the State to identify and troubleshoot potentially large-scale System failures or Deficiencies by collecting the following information: 1) mean time between reported Deficiencies with the Software; 2) diagnosis of the root cause of the problem; and 3) identification of repeat calls or repeat Software problems.	P	Yes	Standard	Deloitte will work with the State to identify and troubleshoot potential large-scale system failures. This process will include collection of the mentioned information and tracking in Jira for accumulation of prior issues and resolution for future use



SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.9	As part of the Software maintenance agreement, ongoing software maintenance and support issues, shall be responded to according to the following or as agreed to by the parties: a. Class A Deficiencies – The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email/telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request; b. Class B & C Deficiencies –The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract; or as agreed between the parties	M	Yes	Standard	Ongoing software maintenance and support issues will be responded to in accordance with the defined deficiency classes or as agreed upon by the parties.
S1.10	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M	Yes	Standard	Deloitte’s Agile Project Management Plan will include Change Management processes and guidelines, including those related to notification and tracking of change requests in Jira.
S1.11	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M	Yes	Standard	Deloitte will adhere to the stated definition of a critical outage and will work with the State to identify action plans in accordance with protocols mentioned above and visibility and tracking using the DoIT ticket tracking for incidents.



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SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.12	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: All change requests implemented; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M	Yes	Standard	Deloitte will work with the State to track repair/maintenance-related activities and will provide the State with reports on the requested metrics, using the current Jira instance through on demand dashboards.
S1.13	The hosting server for the State shall be available twenty-four (24) hours a day, 7 days a week except for during scheduled maintenance.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and Deloitte will work with the State to align to this requirement.
S1.14	The Vendor will guide the State with possible solutions to resolve issues to maintain a fully functioning, hosted System.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and Deloitte will work with the State to align to this requirement.
S1.15	A regularly scheduled maintenance window shall be identified (such as weekly, monthly, or quarterly) at which time all relevant server patches and application upgrades shall be applied.	M	Yes	Standard	Working with the State Deloitte will define the required maintenance windows for the application, database, operating system and other similar components including regularly scheduled, upgrade, and as required maintenance.
S1.16	The Vendor will give two-business days prior notification to the State Project Manager of all changes/updates and provide the State with training due to the upgrades and changes.	M	Yes	Standard	Deloitte will meet this requirement by providing notification and knowledge transfer.





SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
SI.17	All hardware and software components of the Vendor hosting infrastructure shall be fully supported by their respective manufacturers at all times. All critical patches for operating systems, databases, web services, etc., shall be applied within sixty (60) days of release by their respective manufacturers.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and Deloitte will work with the State to align to this requirement.
SI.18	The Vendor shall provide the State with a personal secure FTP site to be used by the State for uploading and downloading files if applicable.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments including the secure FTP.



**6. PROJECT MANAGEMENT**

PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>PROJECT MANAGEMENT</b>					
P1.1	Vendor shall participate in an initial kick-off meeting to initiate the Project.	M	Yes	Standard	Deloitte's team will participate in an initial kick-off meeting for initiation of the project.
P1.2	Vendor shall provide Project Staff as specified in the RFP.	M	Yes	Standard	Deloitte's team will be comprised of individuals as specified in the RFP response.
P1.3	Vendor shall submit a finalized Work Plan within ten (10) days after Contract award and approval by Governor and Council. The Work Plan shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, critical events, task dependencies, and payment Schedule. The plan shall be updated no less than bi-weekly	M	Yes	Standard	Within the first ten days of contract award, Deloitte will update the project plan and maintain the project plan throughout the duration of the project.
P1.4	In addition to daily agile standups, vendor shall provide detailed written or online weekly written scorecard in dashboard format on the progress and status of the Project, and bi-weekly or other agreed upon period on funding and expenses including incurred to date	M	Yes	Standard	Deloitte will provide the State with detailed status reports on an agreed upon schedule, including expenses incurred (milestones) in year to date fashion.
P1.5	All user, technical, and System Documentation as well as Project Schedules, plans, status reports, and correspondence must be maintained as project documentation in Word format.	M	Yes	Standard	Documents will be maintained as project documentation. in a SharePoint repository accessible to DHHS for easy access and document version control.
P1.6	The selected vendor must define an integrated project management plan, which;		Yes	Standard	Deloitte will work with the State to develop an integrated project plan.



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PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.7	Includes cost estimates for specific work to be performed,		Yes	Standard	Cost estimates will be submitted as part of the response to this RFP.
P1.8	Defines Department Training as a component of the implementation plan,		Yes	Standard	The Deployment Plan and Training Plan will document procedures surrounding Department Training.
P1.9	Clearly defines the approach and methodology to be used in each phase of the project,		Yes	Standard	Deloitte's Agile Project Management Plan clearly defines our approach and methodology for all phases of the project.
P1.10	Includes a discovery, detailed requirements and prioritization component phase of the project,		Yes	Standard	Deloitte's Agile Project Management Plan includes a phase for discovery, detailed requirements gathering, and prioritization.
P1.11	The CORbi project will be managed using an agile agile approach while still maintaining requirements documents as product artifacts, allowing the organization to adapt and change as needed more efficiently and effectively in order to meet the business needs. The goals will be to provide a bi-weekly demonstration of work for review and planning for next steps. The new process will be based on the following scope as a baseline to the strategy:		Yes	Standard	Deloitte's Agile Project Management Plan will allow for bi-weekly demonstrations of work for review and planning for next steps and we look forward to jointly deploying and supporting the transition to agile and will bring agile experts as part of our delivery team. We will also work with DHHS to structure the milestone exhibits and approach to align with the agile delivery model.



PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.12	Team Formation: The Department in concert with the awarded vendor will identify the required team members for the duration of the product delivery. The team will consist of a product owner, scrum master, and other team members. There will be several teams based on the amount of features being worked on at any given time. Additionally, there will be operational teams to commit to and complete features associated with user stories and tasks to keep the system running as well as product enhancement teams to commit and complete features associated with user stories and tasks to meet the changes required by the business.		Yes	Standard	Deloitte has included a breakdown of the sprint activities and a Work Plan that define scope of activities included and will work with all State departments as appropriate within each sprint and phase of the project using the Agile team structure.  During the start-up of each sprint, we will work with DHHS and DoIT to identify the agile team members and rolls.
P1.13	Process: The awarded vendor will plan and implement a process similar to the following:		Yes	Standard	See below:
P1.14	Backlog Creation and refinement: The Product Owner working with team members and the business will create a prioritized backlog of work in the form of high level features. This will be an on-going process that must be completed prior to each Sprint Planning Meeting. Additionally, the Product Owner(s) will breakdown the features into prioritized user stories related to the originating features for use in the Sprint Planning meeting.		Yes	Standard	Deloitte's Project Management Plan includes creation and continuous refinement of a backlog that will be used in the Sprint Planning meetings to be recorded in Jira.



PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.15	Sprint Planning Meeting: This meeting will minimally consist of all team members facilitated by the Scrum Master and will be focused on clarifying the details of the prioritized backlog items, re-prioritizing as needed and obtaining commitment from the team to complete user stories from the backlog in the proposed sprint not to exceed 4 weeks with a preferred cadence of 2 weeks. Additionally the team will then create detailed tasks and commit to the items individually. The commitments will be managed using a KanBan tool to be provided by the vendor and agreed to by both parties for the teams use throughout the contract period.		Yes	Standard	Deloitte's Agile Project Management Plan includes usage of Sprint Planning meetings as described and using the Agile KanBan or Scrum process as jointly agreed upon, which can also be facilitated through Jira.
P1.16	Sprint: The sprint will consist of daily standup meetings (not to exceed 10 minutes) to discuss roadblocks, any clarification needs associated with work accomplished the previous day or planned for the current day, or other important items to the team. The team will work in concert with each other preferably within the same location and will require a meeting room provided by the awarded vendor for impromptu meetings to move tasks forward.		Yes	Standard	Deloitte's Agile Project Management Plan utilizes daily standup meetings throughout each project sprint.
P1.17	Sprint Review Meeting: Demonstrate working product associated with commitments from the sprint planning meeting. Communicate items to focus on in the next sprint.		Yes	Standard	Deloitte's Agile Project Management Plan includes Sprint Review Meetings to demonstrate and assess product progress and commit to future sprint items using the prioritized backlog.
P1.18	Daily Meeting: Consist of the team members that have committed to completing tasks in the sprint and will be no longer than 10 minutes answering the following questions:		Yes	Standard	Deloitte's Agile Project Management Plan includes Daily Meetings that function as the standup meetings mentioned above.



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PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.19	What did I complete yesterday?		Yes	Standard	Daily scrum meetings will address work completed the prior day.
P1.20	What am I doing today?		Yes	Standard	Daily scrum meetings will address work planned for the day.
P1.21	Are there any roadblocks keeping me from completing my commitments?		Yes	Standard	Daily scrum meetings will address blockers.
P1.22	Develop and obtain buy-in for a stakeholder and communication management plan and work with the Department to craft appropriate communication messages throughout the project		Yes	Standard	Deloitte will work with the State to develop a stakeholder and communication management plan.
P1.23	Conduct organizational assessments and gap analyses for the affected divisions and programs and facilitate the development of appropriate organizational structures and job descriptions		Yes	Standard	Deloitte will work with the State to identify and organizational gaps required to meet the project objectives.
P1.24	Work with the Department to define business processes, including use cases, workflows, and business rules		Yes	Standard	Deloitte will work with the State to develop use cases, workflows, and business rules required to deliver the project.
P1.25	The project must use agile-like software development principles and practices		Yes	Standard	Deloitte meets this requirement.



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Department of Health and Human Services

Data Analytics Platform for Opioid Crisis

**RFP 2019-043/RFP-2019-DPHS-19-DATAA**

**RFP ISSUED**.....Oct. 16, 2018

**VENDOR CONFERENCE**.....Oct. 30, 2018; 9:00 a.m. EST

**AT:** 129 Pleasant St., Concord, NH 03301

**STATE POINT of CONTACT**.....Brian Owens

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603-271-9634

**CONTRACT TYPE**.....<NOT TO EXCEED>

**PROPOSALS DUE**.....Dec. 10, 2028 2:00 p.m. EST



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## **1. INTRODUCTION**

- 1.1. The State of New Hampshire, acting through the Department of Health and Human Services (Department) is releasing this Request for Proposal (RFP) to procure a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.
- 1.2. Project Overview
  - 1.2.1. New Hampshire, like many states, is in the midst of responding to the opioid crisis. New Hampshire has been especially hard hit with one of the highest overdose rates in the country. At the same time the Department is limited in its capacity to manage the volume of information available throughout the state and nationally that relates to the opioid crisis. Data related to the opioid crisis in many respects presents the largest data management and analysis challenge of any issue faced not just by the Department but by the State as a whole.
  - 1.2.2. The Department maintains or has access to multiple systems that compile data on a variety of health and social issues that correlate with risk, progression, misuse and addiction to opioids and resulting health consequences, including overdose deaths. These systems organize and support various functional areas in delivering services to the citizens, as well as systems that capture information about the health and well-being of the general public. In addition, other NH state agencies and federal partners capture important data related to the opioid crisis. Improved use of data assets is essential to the Department's opioid response. Currently the primary extent of regular data reporting on opioids in New Hampshire is the monthly New Hampshire Drug Monitoring Initiative produced by the Department of Safety New Hampshire Information & Analysis Center (for a recent example, see <https://www.dhhs.nh.gov/dcbcs/bdas/documents/dmi-june-2018.pdf>).
  - 1.2.3. In aggregate, these systems maintain a large wealth of data and, historically, have been commissioned and operated to serve the purposes of varying Bureaus and Divisions within the Department and other state agencies and stakeholders outside the Department. Unlocking, consolidating and bringing this data into a holistic Data Analytics Platform (DAP), allows the Department to identify and drive meaningful change.

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- 1.2.4. The Department, in partnership with the Department of Information Technology, is currently underway with implementation of the initial components of an Enterprise Business Intelligence platform using Oracle, Informatica PowerCenter Advanced Edition, Informatica Data Quality Standard Edition, and Tableau with an expected implementation of the infrastructure by 12/31/18.
- 1.2.5. There is an opportunity to organize data into information, identify meaningful social applications and develop realistic, fact-based, evidence-supported policies and programs; focusing the Department on how to best address the current opioid crisis. This opportunity requires coordination, consideration and dedication in order to make use of data and analytical resources by putting in place a holistic solution, which makes use of advanced analytical tools, for use by all levels of resources including Department subject matter experts, data scientists/analysts, program managers, and executives, as well as stakeholders outside the Department. Health and Human Services and Department of Information Technology staff will work in concert with the awarded vendor to implement a solution that will be maintained and operated by the State of New Hampshire subsequent to acceptance of the completed work.
- 1.2.6. This RFP provides interested Vendors with the information needed to understand the desired Data Analytics Platform (DAP), assess the level of effort required to meet the defined requirements and to submit a proposal for consideration that:
  - 1.2.6.1. Enables the effective sharing, reuse, and governance of Enterprise Business and Technical Services through the deployment of the DAP;
  - 1.2.6.2. Enables the vision for an interoperable approach to the State's health and human services program data;
  - 1.2.6.3. Enables New Hampshire to replace the current Department data warehouse, which is a collection of unconnected data stores, with a true enterprise business intelligence DAP that will be developed and deployed through a phased approach for meeting the future technology needs of all of New Hampshire's DHHS programs as follows:

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- 1.2.6.3.1. Starting with the implementation of the essential technical components and capabilities to meet the State's functional needs for the opioid response, followed by the expansion of technical and functional capabilities to meet the needs of other Department programs;
- 1.2.6.3.2. Ensuring an agile design, development, and implementation approach to the Department enterprise DAP and opioid dashboard;
- 1.2.6.4. Strengthens data sharing, worker collaboration and decision support at all levels through a new Department Enterprise DAP driven by a robust governance model.
- 1.2.6.5. Ensuring that the proposed Department Enterprise DAP adhere to confidentiality and privacy requirements of state rules and state and federal laws, including, but not limited to; 42 CFR Part 2 and 45 CFR 160, 162 and 164.
- 1.2.7. The Department's intent is to evaluate the necessary software solution(s), implementation, maintenance and operations, and hosting services in the context of the RFP. The Department is interested in proposals that demonstrate a creative approach to meeting the requirements for the development of an Enterprise DAP, including a new Business Intelligence System and an Opioid Dashboard. This dashboard will be used for both external (anonymous) and internal (role-based) access and uses (e.g., Opioid Dashboard for both external (anonymous) and internal (role-based) access and uses.)
- 1.2.8. Prospective Vendors are encouraged to develop strategic partnerships in blending the capabilities and skills necessary to develop the best value solution for the Department.
- 1.2.9. The purpose of this RFP is to provide sufficient information to interested Vendors to prepare and submit proposals, presentations and demonstrations for consideration by the Department for:
  - 1.2.9.1. Designing, developing and implementing (DDI) the proposed Enterprise DAP and Business Intelligence System that will meet the known, expected, and future interoperability needs, integrated reporting, and shared analytics requirements of the Department and the State
  - 1.2.9.2. Project Management strategies to implement solutions in a short timeline

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- 1.2.9.3. Design and implementation of a State managed data governance and management model
- 1.2.9.4. Providing on-site user training and complete up-to-date operational, technical, and user documentation
- 1.2.9.5. Inventory, migration and training of key staff to perform the migration of existing data warehouse and reporting environment as it related to the Opioid dashboard data sources
- 1.2.9.6. Creation of an Opioid crisis dashboard leveraging multiple data sources to allow for real time information gathering (see Appendix D-1 for high-level requirements diagram)
- 1.2.9.7. Conducting a post-implementation review and sign off period
- 1.2.9.8. Hosting and/or on premise support for the proposed system during the phased DDI effort and proposed maintenance and operations costs for post full deployment if hosted
- 1.2.10. This RFP contains instructions governing the Proposals to be submitted and the material to be included herein; a description of the solution to be provided; general evaluation criteria; and other requirements to be met by each Proposal.
- 1.2.11. The DAP will facilitate analysis that will lead to:
  - 1.2.11.1. Strengthening the outcomes and value of the services provided by the Department
  - 1.2.11.2. Improving the care and well-being of individuals and families by enabling integrated analysis of intra-Departmental and State data
  - 1.2.11.3. Promoting a Department organizational structure that encourages working across traditional boundaries and embraces change
  - 1.2.11.4. The DAP will support the Department in achieving these objectives through:
    - 1.2.11.4.1. Data cleansing and quality improvement
    - 1.2.11.4.2. Integrating opioid-related data sets
    - 1.2.11.4.3. Integrating other Department data
    - 1.2.11.4.4. Improving system performance
    - 1.2.11.4.5. Creating semantic interoperability between disparate data sets

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- 1.2.11.4.6. Creating hardware and software architecture principals that will allow future scalability for additional data,
  - 1.2.11.4.7. Meta data management,
  - 1.2.11.4.8. Data governance, and
  - 1.2.11.4.9. Creating a system of consent and authorization so that protected health information, substance use disorder treatment information can be obtained, as needed, and revocations can be tracked.
- 1.2.11.5. The Department recognizes that a modern and contemporary information system is required to support the Department's response to the Opioid Crisis and improving Department programs' efficiencies, effectiveness, outcomes and quality of service.
- 1.2.11.6. High-Level Functionality for the Proposed System.
- 1.2.11.6.1. The proposed system is to have a DAP that enables service levels, future upgrades, replacement, and augmentation allowing the system to be incrementally modernized throughout its life span. This is required to enable the system to fit the future Department needs without a complete replacement.
- 1.2.11.7. The proposed system will continue to scale after the contract completion to incorporate future data sets. Future systems that will be integrated into the system as time and funding permits will include but not limited to:
- 1.2.11.7.1. Community Mental Health Services
  - 1.2.11.7.2. Illicit Drug Use Infectious Disease
  - 1.2.11.7.3. Injury Prevention
  - 1.2.11.7.4. Public Health Home Visiting
  - 1.2.11.7.5. United Healthcare Facilities Discharge Data Set (emergency department visits and inpatient discharges)
  - 1.2.11.7.6. Naloxone Distribution by Hubs
  - 1.2.11.7.7. Human Services Programs (e.g., SNAP, TANF)
  - 1.2.11.7.8. BRFS (Behavioral Risk Factor Surveillance System)

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- 1.2.11.7.9. YRBS (Youth Risk Behavior Survey)
- 1.2.11.7.10. NSDUH (National Survey on Drug Use and Health)
- 1.2.11.7.11. PRAMS (Perinatal Risk Assessment Monitoring System)
- 1.2.11.7.12. Prescription Drug Monitoring Program
- 1.2.11.7.13. New Hampshire Hospital Electronic Health Records
- 1.2.11.7.14. Housing, Employment Education
- 1.2.11.7.15. Criminal Justice
- 1.2.11.7.16. Prevention and Harm Reduction Programs
- 1.2.11.7.17. Suicide Prevention

1.2.12. Contract Award

The State plans to execute a Not to Exceed (NTE) \$2,278,642 Contract as a result of this RFP to include acquisition of necessary hardware and software to meet the deliverables of the proposed system. If an award is made, it shall be made based upon evaluation of the submitted Proposals in accordance with the review process outlined in Section 5: *Proposal Evaluation Process* below. The award will be based upon criteria, standards, and weighting identified in this RFP. The award may be awarded to a single or multiple vendors based upon evaluation of the submitted proposals.

1.2.13. Non-Exclusive Contract

Any resulting Contract from this RFP will be a Non-Exclusive Contract. The State reserves the right, at its discretion, to retain other Vendors to provide any of the Services or Deliverables identified under this procurement or make an award by item, part or portion of an item, group of items, or total Proposal. The Contractor shall not be responsible for any delay, act, or omission of such other Contractors, except that the Contractor shall be responsible for any delay, act, or omission of the other Contractors if such delay, act, or omission is caused by or due to the fault of the Contractor.

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If a Contract is awarded, the Vendor must obtain written consent from the State before any public announcement or news release is issued pertaining to any Contract award. Such permission, at a minimum, will be dependent upon approval of the Contract by Governor and Executive Council of the State of New Hampshire. A Contract award is contingent on approval by the Governor and Executive Council.

1.3. Contract Term

**Time is of the essence in the performance of a Vendor's obligations under the Contract.**

- 1.3.1. The Vendor shall be fully prepared to commence work within 10 days of contract approval by the G&C full execution of the Contract by the parties, and the receipt of required governmental approvals, including, but not limited to, Governor and Executive Council of the State of New Hampshire approval ("Effective Date").
- 1.3.2. The Vendor's initial term will begin on the Effective Date and extend through August, 31, 2019. The term may be extended up to four (4) years ("Extended Term") at the sole option of the State, subject to the parties prior written agreement on applicable fees for each extended term, up to but not beyond AUGUST, 31, 2023.
- 1.3.3. The Vendor shall commence work upon issuance of a Notice to Proceed by the State.
- 1.3.4. The State does not require the Vendor to commence work prior to the Effective Date; however, if the Vendor commences work prior to the Effective Date and a Notice to Proceed, such work shall be performed at the sole risk of the Vendor. In the event that the Contract does not become effective, the State shall be under no obligation to pay the Vendor for any costs incurred or Services performed; however, if the Contract becomes effective, all costs incurred prior to the Effective Date shall be paid under the terms of the Contract.
- 1.3.5. Contract Negotiations and Unsuccessful Bidder Notice
  - 1.3.5.1. If a Vendor is selected, the State will notify the selected Vendor in writing of their selection and the State's desire to enter into contract discussions. Until the State successfully completes discussions with the selected Vendor, all submitted Proposals remain eligible for selection by the State. In the event contract discussions are unsuccessful with the selected Vendor, the evaluation team may recommend another Vendor.

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1.3.5.2. In accordance with New Hampshire Statutes Chapter 21-G:37-a, no information shall be available to the public, the members of the general court or its staff, notwithstanding the provisions of RSA chapter 91-A: Access to Governmental Records and Meetings, concerning specific responses to this RFP, from the time the RFP is made public until the Contract is actually awarded, in order to protect the integrity of the public procurement process. This means unsuccessful Vendors shall not be notified until after the Governor and Executive Council have approved the resulting Contract. No information can be provided to non-selected Vendor until after Contracts are awarded, at which time non-selected applicants may submit a written request for more information about the reasons for not being selected and recommendations that may make future applications more effective. Such requests are not considered appeals. Once an applicant has submitted a letter, the State will attempt to accommodate such requests within a reasonable time.

**1.3.6. VENDOR ETHICS**

From the time this RFP is published until a contract is awarded, no bidder shall offer or give, directly or indirectly, any gift, expense reimbursement, or honorarium, as defined by RSA 15-B, to any elected official, public official, public employee, constitutional official, or family member of any such official or employee who will select, evaluate, or award the RFP. Any bidder that violates this section shall be subject to prosecution for an offense under RSA 640:2. Any bidder who has been convicted of an offense based on conduct in violation of RSA 21-G:38, which has not been annulled, or who is subject to a pending criminal charge for such an offense, shall be disqualified from bidding on this RFP and every such bidder shall be disqualified from bidding on any RFP or similar request for submission issued by any state agency.

**1.4. Subcontractors**

1.4.1. The Vendor shall identify all Subcontractors to be provided to deliver required Services subject to the terms and conditions of this RFP, including but not limited to, in Appendix H: *State of New Hampshire Terms and Conditions*, and Appendix H-25: *General Contract Requirements* herein.

1.4.2. The Vendor shall remain wholly responsible for performance of the entire Contract regardless of whether a Subcontractor is used. The State will consider the Vendor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from any Contract.



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## 2. SCHEDULE OF EVENTS

The following table provides the Schedule of Events for this RFP through Governor and Council approval and Notice to Proceed.

EVENT	DATE	TIME
RFP released to Vendors (on or about)	Oct., 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 18, 2018	9:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor inquiries	Nov. 13, 2018	2:00 pm
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 17	8:30 am
Vendor Presentation & Demo (2 hours)	Dec. 17	1:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 18	8:30 am
Selection / Notification	Dec. 19	10:00 am

## 3. SOFTWARE, REQUIREMENTS AND DELIVERABLES

### 3.1. Software

Each Proposal must present Software that can fully support the required functionality listed in Appendix C: *System Requirements and Deliverables*.

### 3.2. Requirements

3.2.1. Appendix B: *Minimum Standards for Proposal Consideration*, compliance with System requirements, use of proposed <COTS/SAAS> Software, Vendor Implementation experience, and proposed Project Team.

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- 3.2.2. Appendix C: *System Requirements and Deliverables*, for scope of work, requirements and Deliverables.
- 3.2.3. Appendix D: *Topics for Mandatory Narrative Responses* for Software, technical, Services and Project Management topics.
- 3.2.4. Appendix E: *Standards for Describing Vendor Qualifications* including Vendor corporate qualifications, team organization and key staff, Project Manager, and other key staff candidates' qualifications.

### 3.3. Deliverables

The State classifies Deliverables into three (3) categories: Written Deliverables, Software Deliverables, and Non-Software Deliverables. Pricing and scheduling information requirements for these Deliverables are provided in Appendix F: *Pricing Worksheets*. A set of required Deliverables as well as a list of Requirements for these Deliverables is detailed in Appendix C: *System Requirements and Deliverables*. Appendix D: *Topics for Mandatory Narrative Responses* solicits responses, which will expound on the Vendors' understanding of the Implementation process, the manner of Service delivery and experience with similar projects related to the Software, technical Services, and Project Management topics.

## 4. INSTRUCTIONS

### 4.1. Proposal Submission, Deadline, and Location Instructions

- 4.1.1. Proposals submitted in response to this RFP must be received by the Department, no later than the time and date specified in Section 2: *Schedule of Events*. Proposals must be addressed to:

STATE OF NEW HAMPSHIRE  
Department of Health and Human Services  
c/o Brian Owens  
129 Pleasant St.  
CONCORD, NEW HAMPSHIRE 03301

- 4.1.2. Cartons containing Proposals must be clearly marked as follows:

STATE OF NEW HAMPSHIRE  
Department of Health and Human Services

RESPONSE TO  
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- 4.1.3. **Late submissions will not be accepted and will remain unopened.** Delivery of the Proposals shall be at the Vendors' expense. The time of receipt shall be considered when a Proposal has been officially documented by the Department, in accordance with its established policies, as having been received at the location designated above. The State accepts no responsibility for mislabeled mail. Any damage that may occur due to shipping shall be the Vendor's responsibility.
- 4.1.4. Vendors are permitted to submit only one (1) Proposal(s) in response to this RFP.
- 4.1.5. The State reserves the right to reject any and all Proposals and to waive informalities and minor irregularities in Proposals received and to accept any portion of a Proposal or all items bid if deemed in the best interest of the Secretary to do so.
- 4.1.6. All Proposals submitted in response to this RFP must consist of:
- 4.1.6.1. One (1) original and seven (7) clearly identified copies of the Proposal, including all required attachments,
  - 4.1.6.2. One (1) copy of the *Proposal Transmittal Form Letter* (described in Section 4.18.2: *Transmittal Form Letter*, herein) shall be signed by an official authorized to legally bind the Vendor and shall be marked "ORIGINAL."
  - 4.1.6.3. One (1) electronic copy on USB Flash Drive in MS WORD format.
- 4.1.7. The original and all copies shall be bound separately, delivered in sealed containers, and permanently marked as indicated above. A Vendor's disclosure or distribution of its Proposal other than to the State will be grounds for disqualification.

The cost Proposal must be labeled clearly and sealed separately from the main Proposal. Each cost Proposal (one (1) original and seven (7) copies must be bound separately.>

4.2. Proposal Inquiries

- 4.2.1. All inquiries concerning this RFP, including but not limited to, requests for clarifications, questions, and any changes to the RFP, shall be emailed, citing the RFP title, RFP number, page, section, and paragraph and submitted to the following RFP State Point of Contact:

Brian Owens

Department of Health and Human Services

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129 Pleasant St.

Concord, NH 03301

Telephone: 603-271-9634

Email: BRIAN.OWENS@DHHS.NH.GOV

4.2.2. During the Vendor Inquiry Period (see Section 2: Schedule of Events) Vendors are encouraged to submit questions via email; however, the State assumes no liability for assuring accurate/complete email transmission/receipt and is not responsible to acknowledge receipt.

4.2.3. Inquiries must be received by the RFP State Point of Contact (see above) no later than the conclusion of the Vendor Inquiry Period (see Section 2: *Schedule of Events*). Inquiries received later than the conclusion of the Vendor Inquiry Period shall not be considered properly submitted and may not be considered.

4.2.4. The State intends to issue official responses to properly submitted inquiries on or before the date specified in Section 2: *Schedule of Events*; however, this date may be subject to change at the State's discretion. The State may consolidate and/or paraphrase questions for sufficiency and clarity. The State may, at its discretion, amend this RFP on its own initiative or in response to issues raised by inquiries, as it deems appropriate. Oral statements, representations, clarifications, or modifications concerning the RFP shall not be binding upon the State. Official responses will be made in writing and posted as an addendum to the Department of Administrative Services website.

4.2.5. Restriction of Contact With State Employees

From the date of release of this RFP until an award is made and announced regarding the selection of a Vendor, all communication with personnel employed by or under Contract with the State regarding this RFP is forbidden unless first approved by the RFP State Point of Contact listed in Section 4.2: *Proposal Inquiries*. State employees have been directed not to hold conferences and/or discussions concerning this RFP with any Vendor during the selection process, unless otherwise authorized by the RFP State Point of Contact.

4.3. Vendor Conference

4.3.1. A non-mandatory Vendor Conference will be held at the following location on the date and at the time identified in Section 2: *Schedule of Events*:

Department of Health and Human Services

129 Pleasant St.

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Concord, NH 03301

- 4.3.2. All Vendors who intend to submit Proposals are encouraged to attend the Vendor Conference. Attendance by teleconference is permitted. Conference numbers will be emailed to registrants upon request. Vendors are requested to RSVP via email by the date identified in Section 2: *Schedule of Events*, indicating the number of individuals who will attend the Vendor Conference. Vendors are allowed to send a maximum number of 2 representatives.
- 4.3.3. Vendors will have an opportunity to ask questions about the RFP and the State will make a reasonable attempt to answer questions it deems appropriate. Questions may include, without limitation, a request for clarification of the RFP; a request for changes to the RFP; suggestions or changes to the RFP that could improve the RFP competition or lower the offered price; and to Review any applicable Documentation.
- 4.3.4. Vendors must email inquiries at least twenty-four (24) hours prior to the Vendor Conference. No responses will be given prior to the Vendor Conference. Oral answers will not be binding on the State. The State's final response to Vendor inquiries and any requested changes to terms and conditions raised during the Vendor Inquiry Period will be posted to the website by the date specified as the final State responses to Vendor inquiries as specified in Section 2: *Schedule of Events*. Vendors are responsible for any costs associated with attending the Vendor Conference.

#### 4.4. Alteration of RFP

The original RFP document is on file with the State of New Hampshire, Department of Administrative Services. Vendors are provided an electronic version of the RFP. Any alteration to this RFP or any file associated with this RFP is prohibited. Any such changes may result in a Proposal being rejected.

#### 4.5. RFP Addendum

The State reserves the right to amend this RFP at its discretion, prior to the Proposal submission deadline. Any addendum issued in response to the RFP will be posted to the Department of Administrative Services website. In the event of an Addendum to this RFP, the State, at its sole discretion, may extend the Proposal submission deadline, as it deems appropriate.

#### 4.6. Non-Collusion

The Vendor's signature on a Proposal submitted in response to this RFP guarantees that the prices, terms and conditions, and Services quoted have been established without collusion with other Vendors and without effort to preclude the State from obtaining the best possible competitive Proposal.

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4.7. Validity of Proposal

Proposals must be valid for one hundred and eighty (180) days following the deadline for submission of Proposals in Section 2: *Schedule of Events*, or until the Effective Date of any resulting Contract.

4.8. Property of the State

All material received in response to this RFP shall become the property of the State and will not be returned to the Vendor. Upon Contract award, the State reserves the right to use any information presented in any Proposal.

4.9. Confidentiality of a Proposal

A Proposal must remain confidential until the Effective Date of any resulting Contract as a result of this RFP. A Vendor's disclosure or distribution of Proposals other than to the State will be grounds for disqualification.

4.10. Public Disclosure

4.10.1. Subject to applicable law or regulations, the content of each Vendor's Proposal shall become public information upon the Effective Date of any resulting Contract.

4.10.2. Any information submitted as part of a response to this Request for Proposal (RFP) may be subject to public disclosure under RSA chapter 91-A: Access to Governmental Records and Meetings. In addition, in accordance with RSA chapter 21-G:37: Financial Information Regarding Requests for Bids and Proposals, any Contract entered into as a result of this RFP will be made accessible to the public online via the website Transparent NH (<http://www.nh.gov/transparentnh/>). Accordingly, business financial information and proprietary information such as trade secrets, business and financials models and forecasts, and proprietary formulas may be exempt from public disclosure under RSA chapter 91-A:5, IV: Exemptions. If you believe any information being submitted in response to a Request for Proposal, bid or information should be kept confidential as financial or proprietary information; you must specifically identify that information in a letter to the agency, and should mark/stamp the materials as such. Marking of the entire Proposal or entire sections of the Proposal (e.g. pricing) as confidential will neither be accepted nor honored. Notwithstanding any provision of this RFP to the contrary, Vendor pricing will be subject to disclosure upon approval of the Contract by Governor and Council.

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4.10.3. Generally, each Proposal shall become public information upon the approval of Governor and Council of the resulting Contract, as determined by the State, including but not limited to, RSA chapter 91-A: Access to Governmental Records and Meetings (Right to Know Law). The State will endeavor to maintain the confidentiality of portions of the Proposal that are clearly and properly marked confidential. If a request is made to the State to view portions of a Proposal that the Vendor has properly and clearly marked confidential, the State will notify the Vendor of the request and of the date and the State plans to release the records. A designation by the Vendor of information it believes exempt does not have the effect of making such information exempt. The State will determine the information it believes is properly exempted from disclosure. By submitting a Proposal, Vendors agree that unless the Vendor obtains a court order, at its sole expense, enjoining the release of the requested information, the State may release the requested information on the date specified in the State's notice without any liability to the Vendors.

#### 4.11. Security

4.11.1. The State must ensure that appropriate levels of security are implemented and maintained in order to protect the integrity and reliability of its Information Technology resources, information, and services. State resources, information, and services must be available on an ongoing basis, with the appropriate infrastructure and security controls to ensure business continuity and safeguard State networks, Systems and Data.

4.11.2. The State will evaluate the degree to which the proposed System is designed and architected to ensure the confidentiality and integrity of its valued asset, Data.

#### 4.12. Non-Commitment

Notwithstanding any other provision of this RFP, this RFP does not commit the State to award a Contract. The State reserves the right, at its sole discretion, to reject any and all Proposals, or any portions thereof, at any time; to cancel this RFP; and to solicit new Proposals under a new acquisition process.

#### 4.13. Proposal Preparation Cost

By submitting a Proposal, a Vendor agrees that in no event shall the State be either responsible for or held liable for any costs incurred by a Vendor in the preparation of or in connection with the Proposal, or for work performed prior to the Effective Date of a resulting Contract.

#### 4.14. Oral Presentations/Interviews and Discussion

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The State reserves the right to require Vendors to make oral presentations of their Proposals and/or to make available for oral presentations/interviews the IT consultants proposed to implement the COTS/SAAS application. All costs associated with oral presentations/interviews shall be borne entirely by the Vendor. Vendors may be requested to provide demonstrations of their proposed Systems as part of their presentations.

#### 4.15. Required Contract Terms and Conditions

By submitting a Proposal, the Vendor agrees that the State of New Hampshire terms and conditions, contained in Appendix H: *State of New Hampshire Terms and Conditions* herein, shall form the basis of any Contract resulting from this RFP. In the event of any conflict between the State's terms and conditions and any portion of the Vendor's Proposal, the State's terms and conditions shall take precedence and supersede any and all such conflicting terms and conditions contained in the Vendor's Proposal.

#### 4.16. Proposal Format

Proposals should follow the following format:

- 4.16.1.1. The Proposal should be provided in a three-ring binder.
- 4.16.1.2. The Proposal should be printed on white paper with dimensions of 8.5 by 11 inches with right and left margins of one (1) inch.
- 4.16.1.3. The Proposal should also be submitted electronically via CD.
- 4.16.1.4. The Proposal should use Times New Roman font with a size no smaller than eleven (11).
- 4.16.1.5. Each page of the Proposal should include a page number and the number of total pages and identification of the Vendor in the page footer.
- 4.16.1.6. Tabs should separate each section of the Proposal.
- 4.16.1.7. Exceptions for paper and font sizes are permissible for: graphical exhibits, which may be printed on white paper with dimensions of 11 by 17 inches; and material in appendices.

#### 4.17. Proposal Organization

Proposals should adhere to the following outline and should not include items not identified in the outline.

- 4.17.1. Cover Page
- 4.17.2. Transmittal Form Letter
- 4.17.3. Table of Contents



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- 4.17.4. Section I: Executive Summary
  - 4.17.5. Section II: Glossary of Terms and Abbreviations
  - 4.17.6. Section III: Responses to Requirements and Deliverables
  - 4.17.7. Section IV: Narrative Responses
  - 4.17.8. Section V: Corporate Qualifications
  - 4.17.9. Section VI: Qualifications of key Vendor staff
  - 4.17.10. Section VII: Cost Proposal
  - 4.17.11. Section VIII: Copy of the RFP and any signed Addendum (a) -  
*<required in original Proposal only>*
  - 4.17.12. Section IX: Appendix
- 4.18. Proposal Content
- 4.18.1. Cover Page
    - 4.18.1.1. The first page of the Vendor's Proposal should be a cover page containing the following text:  
  
STATE OF NEW HAMPSHIRE  
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
  
RESPONSE TO DHHS RFP 2019-043/RFP-2019-DPHS-19-DATAA  
DATA ANALYTICS PLATFORM FOR OPIOID CRISIS
    - 4.18.1.2. The cover page should also include the Vendor's name, contact person, contact telephone number, address, city, State, zip code, fax number, and email address.
  - 4.18.2. Transmittal Form Letter

The Vendor must submit signed Transmittal Form Letter with their response using the Transmittal Form Letter Template provided herewith. Any electronic alteration to this Transmittal Form Letter is prohibited. Any such changes may result in a Proposal being rejected.

***Remainder of this page intentionally left blank***

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State of New Hampshire Proposal Transmittal Form Letter

Company Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

**To:** NH DHHS State Point of Contact: BRIAN OWENS \_\_\_\_\_

Telephone 603-271-9634

Email: BRIAN.OWENS@DHHS.nh.gov

**RE:** Proposal Invitation Name: DATA ANALYTICS PLATFORM FOR OPIOID CRISIS

Proposal Number: 2019-043/RFP-2019-DPHS-19-DATAA

Proposal Due Date and Time: <MONTH- DAY- YEAR> AT <TIME>

Dear Sir:

Company Name: \_\_\_\_\_ hereby offers to sell to the State of New Hampshire the Services indicated in RFP NH DHHS RFP 2019-043/RFP-2019-DPHS-19-DATAA DATA ANALYTICS PLATFORM FOR OPIOID CRISIS at the price(s) quoted in Vendor Response Section VII: *Cost Proposal*, and Appendix F: *Pricing Worksheets*, in complete accordance with all conditions of this RFP and all Specifications set forth in the RFP and in the State of New Hampshire Terms and Conditions outlined in RFP Appendix H: *State of New Hampshire Terms and Conditions*.

Company Signor: \_\_\_\_\_ is authorized to legally obligate

Company Name: \_\_\_\_\_

We attest to the fact that:

The company has reviewed and agreed to be bound by all RFP terms and conditions including but not limited to Appendix H: *State of New Hampshire Terms and Conditions*, which shall form the basis of any Contract resulting from this RFP; No new terms and conditions have been added and no existing terms and conditions have been deleted in this RFP Proposal.

The Proposal is effective for a period of 180 days or until the Effective Date of any resulting Contract.

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The prices quoted in the Proposal were established without collusion with other eligible Vendors and without effort to preclude the State of New Hampshire from obtaining the best possible competitive price; and

The Vendor has read and included a copy of RFP-2019-043/RFP-2019-DPHS-19-DATAA and any subsequent signed Addendum (a).

Our official point of contact is

\_\_\_\_\_

Title

\_\_\_\_\_

Telephone

\_\_\_\_\_

Email

\_\_\_\_\_

Authorized

\_\_\_\_\_

Signature

\_\_\_\_\_

Printed

\_\_\_\_\_

Authorized

\_\_\_\_\_

Signature

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4.18.3. Table of Contents

The Vendor must provide a table of contents with corresponding page numbers relating to its Proposal. The table of contents must conform to the outline provided in Section 4.17: *Proposal Organization*, but should provide detail, e.g., numbering, level of detail.

4.18.4. Section I: Executive Summary

The executive summary, which must not exceed five (5) pages, must identify how the Vendor satisfies the minimum standards for consideration, which are described in Appendix B: *Minimum Standards for Proposal Consideration*, to this Request for Proposals. The executive summary will also provide an overview of the Vendor's proposed Solution and Services. Vendors are encouraged to highlight those factors that they believe distinguish their Proposal.

4.18.5. Section II: Glossary of Terms and Abbreviations

The Vendor must provide a glossary of all terms, acronyms, and abbreviations used in its Proposal.

4.18.6. Section III: Responses to System Requirements and Deliverables

4.18.6.1. System requirements are provided in Appendix C: *System Requirements and Deliverables*.

4.18.6.2. Using the response tables in Appendix C: *System Requirements and Deliverables*, the Vendor must document the ability to meet the Requirements and Deliverables of this RFP.

4.18.7. Section IV: Narrative Responses

Section IV solicits narrative responses describing the Software, Technical, Services and Project Management topics defined for this RFP Project. Appendix D: *Topics for Mandatory Narrative Responses* is organized into sections, which correspond to the different deliverables and aspects of the scoring process of the Proposal. Discussion of each topic must begin on a new page.

4.18.8. Section V: Corporate Qualifications

Section V should provide corporate qualifications of all firms proposed to participate in the Project. Specific information to be provided is described in Appendix E: *Standards for Describing Vendor Qualifications - Section E-1: Required Information on Corporate Qualifications*.

4.18.9. Section VI: Qualifications of key Vendor staff

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This Proposal section must be used to provide required information on key Vendor staff. Specific information to be provided is described in Appendix E: *Standards for Describing Vendor Qualifications - Sections: E-2: Team Organization and Designation of Key Vendor Staff; E-3: Candidates for Project Manager; and E-4: Candidates for Key Vendor Staff Roles.*

4.18.10. Section VII: Cost Proposal

The Cost Proposal must describe the proposed cost of the Vendor Proposal based on and reflected by the inclusion of the completed tables listed in Appendix F: *Pricing Worksheets*;

**NOTE:** *Section VII Cost Proposal, must become public information and as such shall not be made confidential or proprietary. Proposals submitted with all or part of the Section VII labeled confidential or proprietary shall not be considered response and shall not be accepted.*

4.18.11. Section VIII: Copy of the RFP and any signed Addendum (a)

**NOTE: Required in original Proposal only.**

4.18.12. **SECTION IX: APPENDIX-** This section provided for extra materials as referenced in Appendix D: *Topics for Mandatory Narrative Responses* such as Product Literature, Ad Hoc/Federal Reporting, Interface Standards, Testing (For UAT Plan) and Status Meetings and Reports.

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## **5. PROPOSAL EVALUATION PROCESS**

### **5.1. Scoring Proposals**

- 5.1.1. Each Proposal will be evaluated and considered with regard to the Solution and Services proposed, qualifications of the Vendor and any Subcontractors, experience and qualifications of proposed candidates, and cost.
- 5.1.2. If the State, determines to make an award, the State will issue an intent to award notice to a Vendor based on these evaluations. Should the State be unable to reach agreement with the selected Vendor during Contract discussions, the State may then undertake Contract discussions with the second preferred Vendor and so on. Such discussions may continue at the sole option of the State, until an agreement is reached, or all Proposals are rejected.
- 5.1.3. The State will use a scoring scale of **1000** points, which shall be applied to the Solution as a whole. Points will be distributed among the following factors:
  - 5.1.3.1. 200 points – Proposed Software Solution;
  - 5.1.3.2. 250 points – Vendor's Technical, Service and Project Management Experience;
  - 5.1.3.3. 100 points – Vendor Company;
  - 5.1.3.4. 200 points – Staffing Qualifications;
  - 5.1.3.5. 250 points – Solution Cost (Rates and Pricing); and
  - 5.1.3.6. 1000 points – Total Possible Score.

### **5.2. Rights of the State in Evaluating Proposals**

The State reserves the right to:

- 5.2.1. Consider any source of information including but not limited to: State employees, Internet research and rating agencies, in evaluating Proposals;
- 5.2.2. Omit any planned evaluation step if, in the State's view, the step is not needed;
- 5.2.3. At its sole discretion, reject any and all Proposals at any time; and
- 5.2.4. Open Contract discussions with the second highest scoring Vendor, if the State is unable to reach an agreement on Contract terms with the highest scoring Vendor.

### **5.3. Planned Evaluations**

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The State plans to use the following process:

- 5.3.1. Initial screening;
- 5.3.2. Preliminary scoring of the Proposals;
- 5.3.3. Oral interviews and product demonstrations; and
- 5.3.4. Final evaluation of Proposals.

5.4. Initial Screening

The State will conduct an initial screening step to verify Vendor compliance with submission requirements and to confirm that the Proposal satisfies the conditions defined in Appendix B: *Minimum Standards for Proposal Consideration*. A Proposal that fails to satisfy either submission requirements or minimum standards may be rejected without further consideration.

5.4.1. Preliminary Scoring of Proposals

The State will establish an evaluation team to initially score Proposals and conduct reference checks.

5.4.2. Oral Interviews and Product Demonstrations

**Preliminary scores from the initial evaluation of the Proposals will be used to select Vendors to invite to oral interviews and product demonstrations.**

5.4.2.1. The purpose of oral interviews and product demonstrations is to clarify and expound upon information provided in the written Proposals. Vendors are prohibited from altering the basic substance of their Proposals during the oral interviews and product demonstrations.

5.4.2.2. For each invited Vendor, the oral interview and product demonstrations will be two (2) hours in length. A highly structured agenda will be used for oral interviews and product demonstrations to ensure standard coverage of each invited Vendor. Information gained from oral interviews and product demonstrations will be used to refine scores assigned from the initial review of the Proposals.

5.4.3. Best and Final Offer

The State will not be requesting a Best and Final Offer.

5.4.4. Final Evaluation

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The State will conduct final evaluations as a culmination of the entire process of reviewing Vendor Proposals and information gathering. Reference and background checks will be made for finalist or finalists as appropriate. After making a preliminary determination of award or awards, the State reserves the right to conduct site visits to a Vendor location and/or government site(s) that utilizes the Vendor Software.

### 5.5. Scoring Detail

The State will select a Vendor based upon the criteria and standards contained in this RFP.

#### 5.5.1. Scoring of the Proposed Software Solution

5.5.1.1. The Vendor's Proposed Software Solution will be allocated a maximum score of (200) points. The main purpose of this section is to measure how well the Solution meets the business needs of the Agency. The contribution of scoring team members representing all stakeholders will be critical in this section.

5.5.1.2. Factors include but are not limited to:

5.5.1.3. Vendors must include a proposed architecture for the DAP, which integrates data from source systems and meets, or exceeds, the following minimal requirements:

5.5.1.3.1. Provides a framework for organization of data, information management and technology systems required to build and implement the system,

5.5.1.3.2. Allows for data components of the architecture to include internal and external sources of structured and unstructured data users require to analyze the opioid crisis,

5.5.1.3.3. Includes data integration, data cleansing and the development and implementation of data dimensional rules,

5.5.1.3.4. Describes the conceptual and logical technology components required to present information to users and enable them to analyze the data and its impacts,

5.5.1.3.5. Allows for the ability to drill down on report data to varying layers of detail,

5.5.1.3.6. Allow for the extraction of patterns and knowledge from large amounts of data,



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- 5.5.1.3.7. Provide predictive analysis, based upon data,
- 5.5.1.3.8. Provides browser-based solution to support all major browsers.
- 5.5.1.4. **Software Architecture** –
  - 5.5.1.4.1. Consider the following statistics and growth assumptions as baseline requirements for the formulation of their proposal to the State and sizing of all technical elements (e.g., servers, storage, networking, software) that are required to deliver the system to the state.
  - 5.5.1.4.2. Specify all equipment (if any) required for the development and operations of the solutions and requirements defined in this RFP. The equipment will be comprised of industry standard and readily available components. Define all requirements and provide a Bill of Materials for all items that will be ordered and implemented upon review and agreement by the Department
  - 5.5.1.4.3. The overall infrastructure and equipment must be sized in accordance with planned use and be inclusive of all hardware, storage, networking, backup/restore, database, file system, monitors and other items as required to comprehensively support development and ongoing operations for all required environments.
- 5.5.1.5. **Application** – <NOTE: Is there a user group for the application? How long has it been in operation? What is its market share? Is cost of upgrade shared by user groups or the sole responsibility of the State? Is this included with the cost of Software Maintenance? How are future upgrades determined? These and other factors will help the State to understand the costs and opportunities of using this Software in the future. >
- 5.5.1.6. **Features** – <NOTE: How well does the Solution do the things the System needs to do? >
- 5.5.1.7. **Compatibility with State Systems** – <NOTE: The degree to which the System uses technologies similar to other State systems, ease of System modification, integration and data storage. >

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- 5.5.1.8. **User Friendliness/Usability and Efficiency** – <NOTE: How quickly can users perform a needed task? How easy is it to learn, is it intuitive? Is its navigation and interface similar to other Software used? How steep is the learning curve? >
- 5.5.1.9. Criteria for these scores will be found in but are not limited to:
  - 5.5.1.9.1. Proposal Section III: Responses to Requirements and Deliverables
  - 5.5.1.9.2. Attachment C-2: Requirements <NOTE: particularly business requirements>
  - 5.5.1.9.3. Proposal Section IV: Narrative Responses
  - 5.5.1.9.4. Vendor Presentation and Demonstration
- 5.5.2. **Scoring of Vendor Technical, Service, and Project Management Proposal**
  - 5.5.2.1. Vendor proposed Services will be allocated a maximum score of **(250)** points. <NOTE: In this section the State will score the technical merits of how the Vendor proposes to carry out the implementation and maintain the Solution. The Implementation of the Solution will require the Vendor to customize or configure the application to meet the requirements of the State, monitor and ensure its operation throughout the Warranty Period and, if maintenance is to be provided, to be a partner in the Solution's operation throughout its useful life. Technical details of the System, administrative procedures, how the Vendor manages its team, the Project and the technical environment will be critical. How compatible the Vendor's procedures and technologies are with the State contribute to an assessment of risk both in the short and long term.>
  - 5.5.2.2. Factors include but are not limited to:
  - 5.5.2.3. **Protection of Data** – <NOTE: The degree to which continuous operations are insured against unexpected problems.>
  - 5.5.2.4. **Compatibility with State IT Expertise and Training Approach** – < NOTE: What is the degree to which the System uses technologies which may be supported by State personnel.>

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- 5.5.2.5. **Project Execution** – < NOTE: Do company procedures facilitate: communication with the State, the early discovery and resolution of problems, efficient and effective operation through Implementation and an effective support structure of the System.>
- 5.5.2.6. **Project Management Competence** – < NOTE: Administrative, management quality control and oversight.>
- 5.5.2.7. **Ongoing Operations** – < NOTE: Post warranty operation and support.>
- 5.5.2.8. Criteria for these scores will be found in but are not limited to:
  - 5.5.2.8.1. Proposal Section III: Responses to Requirements and Deliverables
  - 5.5.2.8.2. Proposal Section IV: Narrative Responses
  - 5.5.2.8.3. Attachment C-2: Requirements
  - 5.5.2.8.4. Proposed Work Plan
  - 5.5.2.8.5. References
- 5.5.3. **Scoring of Vendor Company**
  - 5.5.3.1. Vendor Company qualifications will be allocated a maximum score of (100). It must be established that the Vendor Company is capable of carrying out the Project through Implementation, the Warranty Period and the maintenance period.
  - 5.5.3.2. Factors include but are not limited to:
    - 5.5.3.2.1. **How long in business** – <NOTE: A proven track record of operation for a number of years that the company will continue to support the System>.
    - 5.5.3.2.2. **How many years' experience with this product** – <NOTE: Demonstrated competence in working with the proposed product or Technology.>
    - 5.5.3.2.3. **Bench Strength and support structures** – <NOTE: The State will consider the depth of required technical skill within the company as well as the Vender's plan for knowledge transfer to State staff.>

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- 5.5.3.2.4. **References** – <NOTE: The measure of a company's worth is more accurate when made by a third party that has collaborated with the Vendor on a similar Project.>
- 5.5.3.2.5. **Litigation** – <NOTE: The relevance of involvement of the company in litigation will be considered.>
- 5.5.3.2.6. **Financial Strength** – <NOTE: Financial strength when measured by financial statements or a rating company is an indication of the company's ability to operate long term and through unexpected problems.>
- 5.5.3.2.7. Criteria for these scores will be found in but are not limited to:
  - 5.5.3.2.7.1. Proposal Section V: Corporate Qualifications
  - 5.5.3.2.7.2. Vendor Presentations
  - 5.5.3.2.7.3. References
  - 5.5.3.2.7.4. Financial Information

**5.5.4. Scoring of Vendor Staffing Qualifications**

- 5.5.4.1. Vendor Staff must have the training and experience to support the Vendor companies plans to implement and support the System. Vendor Company qualifications will be allocated a maximum score of (200)
- 5.5.4.2. Factors include but are not limited to:
  - 5.5.4.2.1. **Staff Training** – <NOTE: Staff must have relevant training to carry out the Project.>
  - 5.5.4.2.2. **Staff Certifications** – < NOTE: Staff may require specific Certification to support and configure needed equipment and Software.>
  - 5.5.4.2.3. **Staff Experience** – <Training and certification is important but experience with similar Projects will be a major contributor to a smooth Implementation.>

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5.5.4.2.4. **Size and composition of Vendor Team** – <Are there sufficient staff resources and sufficient qualifications and experience within the Vendor team to carry out the Project?>

5.5.4.2.5. Criteria for these scores will be found in but are not limited to:

5.5.4.2.5.1. Proposal Section V: Corporate Qualification

5.5.4.2.5.2. Proposal Section VI: Qualifications of Key Staff

5.5.4.2.5.3. Vendor Presentations

5.5.4.2.5.4. References

**5.5.5. Scoring the Software Solution Cost**

5.5.5.1. Vendor proposed Software Solution cost will be allocated a maximum score of (250) points. The State will consider the implementation services costs, provided in Tables F-1: *Activities/Deliverables/Milestones Pricing Worksheet*, F-4: *Software Licensing, Maintenance, and Support Pricing Worksheet* and, if appropriate, F-5: *Web Site Hosting, Maintenance, and Support Pricing Worksheet*. The cost information required in a Proposal is intended to provide a sound basis for comparing costs.

**<NOTE: THE FOLLOWING FORMULA WILL BE USED TO ASSIGN POINTS FOR COSTS:>**

**<NOTE: VENDOR'S COST SCORE= (LOWEST PROPOSED COST / VENDOR'S PROPOSED COST) TIMES**

**NUMBER OF MAXIMUM POINTS FOR SOLUTION COSTS DEFINED IN SECTION 5.1: SCORING PROPOSALS.>**

**<NOTE: FOR THE PURPOSE OF THIS FORMULA, THE LOWEST PROPOSED COST IS DEFINED AS THE LOWEST COST PROPOSED BY A VENDOR WHO FULFILLS THE MINIMUM QUALIFICATIONS.>**

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## **APPENDIX A: BACKGROUND INFORMATION**

### **1. A-1 Health and Human Services**

- 1.1. The Health and Human Services is responsible for the health, safety and well-being of the citizens of New Hampshire. DHHS provides services for individuals, children, families and seniors, and administers programs and services such as mental health, developmental disability, substance abuse, and public health.
- 1.2. The mission of the Health and Human Services is to join communities and families in providing opportunities for citizens to achieve health and independence
- 1.3. Project Overview/Justification
- 1.4. In addition to the Project Overview section included in the Introduction the Goals and Objectives for CORbi:
  - 1.4.1. Implement a Data Governance and Analytic Strategy to focus the organizations resources (human and funding) to increase the availability of information for informed decision making.
  - 1.4.2. Automate and consolidate disparate information systems to provide a single place for the citizens of New Hampshire to visually obtain information surrounding the Opioid crisis.

### **2. A-2 Department of Information Technology and Technology Status**

The Project will be conducted in cooperation with the New Hampshire Department of Information Technology (DoIT). DoIT coordinates the statewide Information Technology activities.

#### **2.1. A-2.1 Technical Architecture**

Components of the State's technical architecture include:

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- 2.1.1. State Network Environment: The State of New Hampshire operates a Metropolitan-Area-Network (MAN) in the City of Concord, NH using a combination of leased and owned fiber optic cable. State of New Hampshire locations outside of the Concord, NH main facility are connected via multiple wide-area networks using various technologies including Carrier Ethernet Services, Microwave Wireless and VPN Tunnels over the Internet. State Agency Networks have varying levels of integration and connectivity to the statewide core for resource sharing and centralized administration by the Department of Information Technology (DoIT). State agencies connect to the State's central core network location in Concord to facilitate access to e-mail, the Internet, and the State's financial applications. Direct support is provided for twenty-one partner agencies; other State agencies support their own networks, out-source the support, or use the resources of another agency.
- 2.1.2. Internet Access: The State of New Hampshire has purchased thru ARIN its own External IP Address Range and Autonomous System Number. The State advertises its External IP Space and Autonomous System Number to two different Internet Service Providers so as to provide failover in the event of a single ISP network failure.
- 2.1.3. The State uses VMWare for Windows server virtualization and virtual hosts are deployed at two separate State campus sites. VMWare provides a highly scalable and high availability environment for the State's many Agencies. If a virtual host fails, VMWare automatically fails over all of the virtual servers on that host to another host. The EMC Networker product is used to manage backups for this environment utilizing Data Domain as the disk to disk repository.
- 2.1.4. For the State's Oracle enterprise systems, an Oracle/Linux Solution (OVM) is used for the virtual environment. Similar to the windows environment, this Solution provides a highly scalable and high availability environment and also utilizes the EMC Networker and Data Domain backup Solution. Data Domain is also employed to meet the backup requirements within OVM.
- 2.1.5. The state's current Enterprise Business Intelligence platform consists of Oracle, Informatica PowerCenter Advanced Edition, Informatica Data Quality Standard Edition, and Tableau.

**2.2. A-2.2 Future Systems Environment**

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- 2.2.1. Future design and development efforts should conform to the emerging environment as defined by current information technology initiatives, the New Hampshire Statewide Strategic Information Technology Plan, and the State's e-Government Architecture Plan.
- 2.2.2. This environment is end user centric, utilizing the Internet and Web whenever possible, promoting electronic transactions, and centralized common services (security, e-payment, content search), where possible.

### **3. A-3 Related Documents Required**

Vendors are NOT required to submit these certificates with their Proposal. Vendors will be required to be a registered company in New Hampshire. The certificates will be requested from the selected Vendor prior to Contract approval.

- 3.1. Certificate of Good Standing/Authority (Appendix G-3–Item A) dated after April of the current year and available from the Department of State by calling (603) 271-3244 or (603) 271-3246. Forms are also available on: <http://sos.nh.gov/formslaws.aspx>
- 3.2. Certificate of Vote (Appendix G-3-Item B)
- 3.3. Proof of Insurance compliant with Appendix H: *State of New Hampshire Terms and Conditions*.

### **4. A-4 State Project Team**

State high-level staffing for the Project will include:

- Project Sponsor;
- State Project Manager;
- State IT Manager;
- Technical Support Team;
- Business Process Owners; and
- User Acceptance Testing Team.

#### **4.1. A-4.1 Project Sponsor**

The Project Sponsor, Lisa Morris and Katja Fox, will be responsible for securing financing and resources, addressing issues brought to his attention by the State Project Manager, and assisting the State Project Manager in promoting the Project throughout the State. The Project Sponsor or an appropriate designee will be available to resolve issues on a timely basis.



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**4.2. A-4.2. State Project Manager**

The State Project Manager from the Health and Human Services Project Management Office Project, will be responsible for everything that the Project does or fails to do, and has the primary responsibility for seeing to the Project's success.

- 4.2.1. The State Project Manager for Health and Human Services, will be responsible for working with the Health and Human Services staff, State IT Manager, and the Vendor to ensure appropriate execution of the contract. The State Project Manager will be primary point of contract for the Vendor and business user and will interact with the Vendor to address questions or concerns encountered by users as they arise.

Primary Responsibilities include:

- 4.2.1.1. Leading the Project;
- 4.2.1.2. Promoting the Project statewide;
- 4.2.1.3. Developing Project strategy and approach;
- 4.2.1.4. Engaging and managing all Vendors;
- 4.2.1.5. Managing significant issues and risks; and
- 4.2.1.6. Managing stakeholders' concerns.

**4.3. A-4.3 State IT Manager –**

The State IT Manager will provide IT support to the State Project Manager and be the liaison for State IT requirements.

**4.4. A-4.4 State technical support team**

The State's Technical Support Team supports the current Safety Database tracking software. During this project this team will serve as subject matter experts and will be heavily involved in early planning and design activities for the System Tracking replacement environment.

Primary responsibilities include:

- 4.4.1. Supporting the project as a technical resource and subject matter expert;
- 4.4.2. Assisting with data conversion planning and design;
- 4.4.3. Assisting with data clean-up prior to conversion; and
- 4.4.4. Assisting in the development of system security, operational support models, and system architecture planning activities.

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**4.5. A-4.5 Business Process Owners**

The State's Business Process Owners will serve as subject matter experts and will be heavily involved throughout all aspects of the implementation.

Primary responsibilities include:

- 4.5.1. Participate in gap analysis work sessions;
- 4.5.2. Serve as subject matter experts in regard to the current system and existing business processes;
- 4.5.3. Help define "to be" business processes;
- 4.5.4. Active involvement in testing activities; and
- 4.5.5. Serve as liaisons between business operational departments and the Vendor's project team.

**4.6. A-4.6 User Acceptance Testing (UAT) Team**

N/A

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## **APPENDIX B: MINIMUM STANDARDS FOR PROPOSAL CONSIDERATION**

A Proposal that fails to satisfy the requirements in this section may be rejected without further consideration.

### **1. B-1 Submission requirements**

- 1.1. The Proposal is date and time stamped before the deadline as defined in Section 2: *Schedule of Events*. The Vendor has sent the proper number of copies with the original version of the Proposal marked "ORIGINAL" and the copies marked "COPY" as defined in Section 4.1: *Proposal Submission, Deadline, and Location Instructions*.
- 1.2. The original Proposal includes a signed Transmittal Letter accepting all terms and conditions of the RFP without exception.
- 1.3. The proposed escrow agreement shall be submitted with the Vendor's Proposal for Review by the State.

### **2. B-2 Compliance with System Requirements**

System requirements and Deliverables are listed in Appendix C: *System Requirements and Deliverables* in this RFP. The proposed Vendor's Solution must be able to satisfy all mandatory requirements listed.

### **3. B-3 Current Use of Vendor Proposed Software – Current Implemented Sites of Vendor proposed Software or Solution <NOTE: IF APPLICABLE>**

Components that constitute the Vendor's proposed Software or Solution suite must be fully implemented and Operational in at least three (3) government entities comparable in size and complexity to the State of New Hampshire within the last four (4) years. The specific Vendor proposed Software version and functionality must be described.

4. **B-4 Vendor Implementation Service Experience** The Implementation Vendor must have completed the Vendor proposed Software or Solution Implementation for at least <three> (3) government clients comparable in size and complexity to the State of New Hampshire within the last <four> (4) years. The specific Vendor proposed Software or solution must be described.

### **5. B-5 Proposed Project Team**

The proposed Project Team must include individuals with substantial experience in:

- 5.1. Each of the disciplines relating to his or her stated project role.

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- 5.2. Implementing a system that meets the requirements outlined in this RFP.
- 5.3. The discipline of effective Agile Project Management.
- 5.4. The discipline of effective risk and issue management.
- 5.5. The discipline of data analysis, data mining, data modeling, data visualization, analytics and statistical analysis for like solutions.
- 5.6. The discipline of predictive and statistical analysis.
- 5.7. Operational support of government entities comparable in size and complexity.
- 5.8. Successful system roll-out.
- 5.9. Compliance with <Regulations or Publications etc.>
- 5.10. Effective use of software change management best practice.
- 5.11. Effective use of defect tracking tools that allow for reporting on test results.
- 5.12. System modification in order to satisfy unique needs of the Health and Human Services in New Hampshire.
- 5.13. Data privacy, data suppression (e.g. The discipline of data analysis, data mining, data modeling, data visualization, data privacy, data suppression, analytics and statistical analysis for like solutions.)
- 5.14. For the purpose of evaluating compliance with this requirement, the Vendor team is permitted to include Subcontractors.

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**APPENDIX C: SYSTEM REQUIREMENTS AND DELIVERABLES**

## APPENDIX C: SYSTEM REQUIREMENTS AND DELIVERABLES

### 1. C-1 SCOPE OF WORK

See Section 1.1 Project Overview

### 2. C-2 REQUIREMENTS

Vendors shall complete the requirements checklist (Table C-2 General Requirements Vendor Response Checklist). Table C-2 is included as an attachment to RFP 2019-043.

### 3. C-3 DELIVERABLES

Vendors shall complete the response checklist Table C-3 Deliverables Vendor Response Checklist.

#### 3.1. Table C-3 Deliverables Vendor Response Checklist

Reference	Activity, Deliverable, or Milestone	Deliverable Type	Projected Delivery Date
<b>PLANNING AND PROJECT MANAGEMENT</b>			
1	Conduct Project Kickoff Meeting	Non-Software	
2	Project Status Reports	Written	
3	Work Plan	Written	
4	Infrastructure Plan, including Software and Hardware requirements	Written	
5	Security Plan	Written	
6	Communications and Change Management Plan	Written	
7	Agile Project Management Plan	Written	
9	Systems Interface Plan and Design/Capability	Written	

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10	Testing Plan	Written	
11	Data Conversion Plan and Design	Written	
12	Deployment Plan	Written	
13	Comprehensive Training Plan and Curriculum	Written	
14	End User Support Plan	Written	
16	Documentation of Operational Procedures	Written	
<b>INSTALLATION</b>			
17	Provide Software Licenses if needed	Written	
18	Provide Fully Tested Data Conversion Software or solution	Software	
19	Provide Software Installed, Configured, and Operational to Satisfy State Requirements	Software	
<b>TESTING</b>			
20	Conduct continuous integration and continuous delivery testing plan	Non-Software	
22	Perform Production Tests	Non-Software	
23	Test In-Bound and Out-Bound Interfaces	Software	
24	Conduct System Performance (Load/Stress) Testing	Non-Software	
25	Certification of 3 <sup>rd</sup> Party Pen Testing and Application Vulnerability Scanning.	Non-Software	
<b>SYSTEM DEPLOYMENT</b>			

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26	Converted Data Loaded into Production Environment	Software	
28	Conduct Training	Non-Software	
29	Cutover to New Software and solution	Non-Software	
30	Provide Documentation	Written	
31	Execute Security Plan	Non-Software	
<b>OPERATIONS</b>			
32	Ongoing Hosting Support if applicable	Non-Software	
33	Ongoing Support & Maintenance if applicable	Software	
34	Conduct Project Exit Meeting	Non-Software	

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**APPENDIX D: TOPICS FOR MANDATORY AND NARRATIVE RESPONSES**

## APPENDIX D: TOPICS FOR MANDATORY NARRATIVE RESPONSES

This section provides a series of technical topics that the State of New Hampshire will consider in selecting a Solution for the Data Analytics Platform for Opioid Crisis. Vendors must limit narrative responses describing the Software, Technical, Services and Project Management topics defined for this Project. The following table identifies specific topics for narratives. A page limit is identified for each topic. If a response to a topic exceeds the page limit, the State will limit its consideration to the prescribed page limit.

This section provides a series of topics related to the proposed Software Solution described in RFP.

Topic	Page Limit
<b>D-1 Proposed Software Solution</b>	
Topic 1 – Description of Solution	10
Topic 2 – Software Architecture	7
Topic 3 – Data Governance and Management	10
Topic 4 – User Friendliness and Usability	10
Topic 5 – IT Standards	2
Topic 6 – Data Import/Export and Migration	7
<b>D-2 Technical, Services and Project Management Experience</b>	
<i>D-2.1 Security and Protection of Data</i>	
Topic 7 – System Security	10
Topic 8 – Backup and Recovery	2
Topic 9 – Assurance of Business Continuity	3
Topic 10 – Skills and Experience	10
Topic 11 – Project Management Methodology	10
<i>D-2.2 State Personnel and Training</i>	



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Topic	Page Limit
Topic 12 - User Training Approach	3
Topic 13 – Preparation of State Staff	3
<i>D-2.3 Project Execution</i>	
Topic 14 – Implementation Approach	10
Topic 15 – Testing	6
Topic 16– Migration Strategy	3
Topic 17 – Environment Setup	2
<i>D-2.4 Project Management Competence</i>	
Topic 18 - System Acceptance Criteria	6
Topic 19 - Status Meetings and Reports	3
Topic 20 - Risk and Issue Management	3
Topic 21 - Scope Control	2
Topic 22 - Quality Assurance Approach	6
Topic 23 - Work Plan	No Limit
<i>D-2.5 Ongoing Operations</i>	
Topic 24 – Hosted or On Premise System	5
Topic 25– Support and Maintenance	2

**1. D-1 PROPOSED SOFTWARE SOLUTION**

1.1. Topic 1 – Description of Solution

Response Page Limit: 10

The State will evaluate whether the proposed Solution includes the required features.

- 1.1.1. Provide a detailed description of your proposed Software Solution, including features and functionality.

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- 1.1.2. Describe the approach for design, development and implementation of the required solution functionality. Include this information for each functional requirements area: general system, business requirements, data governance, project management, training, migration and inventory and training.
- 1.1.3. Provide specific details of the implementation strategy to meet all functional requirements. Provide solution specific information including a web based demonstration of the solution. Generic and marketing description will be considered as insufficient responses. Additionally, the Vendor is to define their methodology for developing design-level use cases and workflows to meet all requirements.
- 1.1.4. As a part of the implementation strategy, identify and explain functionality implications associated with the phased implementation. All functionality may be leveraged for programs being implemented post acceptance of the final delivery of services. Define exception handling processes where appropriate as well as any dependencies on existing systems or components of the new Solution that are needed to provide the specified functionality.
- 1.1.5. Is your product used for a similar functionality at another State agency? If so, provide a description of the system and environment.
- 1.1.6. In what ways does your proposed Solution adhere to the business and technical requirements?
- 1.1.7. Is your product dependent on an existing solution not included in this proposal?
- 1.1.8. In what ways does your proposed solution improve our current enterprise data warehouse system capabilities?
- 1.1.9. In what ways does your proposed solution provide enhanced ease of use for both the inspectors and the administrative users?
- 1.1.10. Provide an appendix with sales literature describing the functionality of the proposed Software. Provide a table with references to pages in the appendix that describe functionality addressed for all appropriate topics for narrative responses.
- 1.1.11. How does your solution meet best practices surrounding a Development, Stage, Production environment requiring change management practices between environments while meeting a goal of continuous integration and continuous delivery? Environments required by the State are

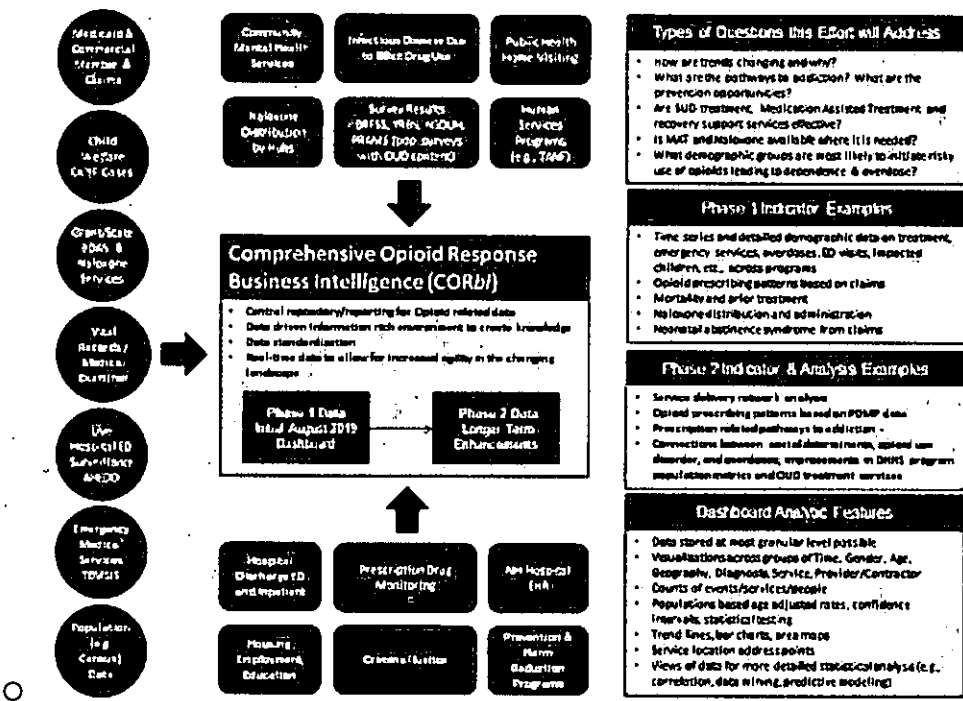
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- 1.1.11.1. Development
- 1.1.11.2. Testing
- 1.1.11.3. Training
- 1.1.11.4. Production
- 1.1.12. How does your solution address sizing requirements in accordance with planned use? Be inclusive of all hardware, storage, networking, backup/restore, database, file system, monitors and other items as required to comprehensively support the development and ongoing operational effort.
- 1.1.13. How does the solution address the ability to pull real-time data from multiple sources and display/track progress over time toward specific goals?
- 1.1.14. Provide examples of parameters in your presentation that are configurable by the end-user.
- 1.1.15. Describe the solutions drill-down capability that will support detail level data displays.
- 1.1.16. Describe the proposed solution's ability to provide static/historical and dynamic (i.e. real-time) reporting for all program and functional areas.
- 1.1.17. What types of built-in (pre-defined) and end-user definable (ad-hoc) reporting capabilities are included in the proposal?
- 1.1.18. What types of graphical data presentations (e.g., GIS) will the proposed solution offer?
- 1.1.19. How does the proposed solution provide user-defined reporting views / screens based upon different roles, security profiles, etc. of various stakeholders?
  - 1.1.19.1. How does configuration for this functionality occur within the proposed solution?
- 1.1.20. What is the proposed solution's capability for end-user report / data exportation at the report and raw data levels? The proposed solution will export to: Excel, CSV, XML, PDF as well as integrate with current technology solutions to include Tableau.
- 1.1.21. How will the solution allow for statistical analysis on population-based and client based information to drive service, program and overall business decisions?

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- 1.1.22. Describe the model summarizing your understanding of how the data relates to the focused population.
- 1.1.23. Describe the solutions and structure of data security (PHI or data suppression requirements) for external (anonymous) and internal (role-based) access and uses.
- 1.1.24. How will the solution allow for statistical analysis (e.g. R Programming) on population-based and client based information to drive service, program and overall business decisions?
- 1.1.25. Describe how your solution will be used to deliver an Opioid Crisis Dashboard based upon the following model:



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 <p>Medical &amp; Commercial Insurance Claims</p>	<p>Pharmacy, physical, behavioral health care claims for all NH Medicaid services and for most commercially insured population in New Hampshire. Medicaid member data will be integrated into the EDW data warehouse under a separate effort by Spring 2020. Commercial insurance data (which includes some Medicare Part D data) will need to be migrated to the EDW data warehouse as part of the Opioid Dashboard project.</p>	<p><b>General Data Considerations</b></p> <ul style="list-style-type: none"> <li>All data will be stored at the smallest level of granularity as possible given availability, technical &amp; legal considerations.</li> <li>Over time granularity will increase where barriers are an issue to providing granular data.</li> <li>Data is linked where possible (DHHS is currently storing up a master client index scheme in its data warehouse).</li> <li>Data will be standardized where possible.</li> <li>Phase 1 goal is analytically useful data, not individual person management data.</li> <li>Data will have separate levels of granularity for Public or Confidential display/access.</li> <li>Data that is already in the DHHS data warehouse will be used where as all possible, but new data will need to be added to the EDW.</li> <li>Non-record level data may be included in dashboards directly through non-EDW approaches.</li> <li>Data will generally be grouped for display using multiple grouping schemes (e.g., geography grouped by county, service area, public health region).</li> <li>Where meaningful, data should support address level geocoding (i.e., to specifically indicate a provider location).</li> </ul>
 <p>Child Welfare DCY Cases</p>	<p>Child protection investigations and findings including whether opioid or other substance use is possible factor in the case. Data currently in DCY's data warehouse.</p>	
 <p>Opioid State ODAS &amp; Non-ODAS Events</p>	<p>Treatment for substance use disorder through state funded facilities. An array of levels of care including outpatient, intensive outpatient, partial hospitalization, residential withdrawal management, and peer and non-peer recovery support services. Data must be migrated by the vendor to the EDW data warehouse as part of the Opioid Dashboard project.</p>	
 <p>Vital Records Medical Examiner</p>	<p>Drug overdose deaths data by fentanyl (the other drugs), Fentanyl and Other Drugs (including heroin), Heroin (the other drugs), Heroin and Other Drugs (excluding fentanyl), Heroin and Fentanyl, Unknown Opioids, Other Opioids/Opioids determined by the Medical Examiner. Vital records data based on ME findings is currently in DHHS data warehouse. Birth data will soon allow neonatal abstinence syndrome tracking.</p>	
 <p>State Hospitalized Surveillance AHEDD</p>	<p>State-wide surveillance system collects real-time data from all 26 New Hampshire acute care hospital emergency departments to detect clusters or monitor potential health threats in the population such as respiratory illness during influenza season, injuries during snow storms, and drug overdoses during the current opioid crisis.</p>	
 <p>Emergency Medical Services TEMSIS</p>	<p>Emergency medical response on New Hampshire administration incidents data. A data collection and analysis capability system that provides for the evaluation of the emergency medical and trauma services system (TEMSIS). Data (subject to approvals) must be migrated by the vendor to the EDW data warehouse as part of the Opioid Dashboard project.</p>	
 <p>Population by Census Data</p>	<p>Base data used for calculation of population based rates.</p>	

1.1.26. Address how your solution will address the following examples of functionality:

1.1.26.1. Examples on how holistic analysis of multiple data sets could be utilized

1.1.26.1.1. Identifying High Risk Individuals and Groups (demographics) by Area (geographic)

1.1.26.1.2. Utilizing data to mitigate risk and progression to misuse / targeting early intervention service to mitigate progression to addiction

Reference	Names / Purpose	Objective	Data Source	Owner
1	<p>Conducting syndromic analysis to identify <u>populations</u> most at Risk for Engaging in Substance Misuse.</p> <p>Utilizing multiple data sources to more strategically and efficiently target prevention strategies and programming toward high risk groups within youth, young adult, adult and older adult populations, residing in certain geographical areas, that put them at greater risk for initiating substance misuse and</p>	<p>Utilizing data to more effectively and efficiently target resources for prevention strategies &amp; programs that target populations and areas at greatest risk for</p>	<p>Vital Records                      OD Deaths                      TEMSIS                      AHEDD                      SVI                      NAS</p>	<p>SOS                      DOJ/OCME                      DOS/EMS                      DHHS                      DHHS                      DHHS                      DCYF</p>

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	progressing to misuse, addiction and related consequence	engaging in substance misuse to prevent progression and related familial, social and financial consequence to them, their communities and the state as whole.	data Child Protect. Crim. Just All Claims	DOS/Court DHHS
2	Identifying <u>individuals</u> already engaging in substance misuse but not yet meeting diagnostic criteria for addiction.  To utilize effective lower cost early intervention services to prevent progression to addiction and related consequence. Including fatal and non-fatal overdose, impacts on families and communities (including institutions), causing or exacerbating other behavioral health and or medical conditions and causing or exacerbating involvement with criminal justice, child welfare and or other social service systems.	Developing risk factor algorithms utilizing All Claims, DCFY, Hospital Discharge Data to analyze a host of co-morbid medical conditions (disease, accidents/injury) associated with substance misuse cross referencing with PII and DID level risk factor multipliers to target early intervention directed at these individuals to reduce risk and progression to SUD.	All Claims Child Protec. AHEDD  SVI	DHHS DHHS   DHHS

1.1.27. Utilizing data to mitigate the progression from risk to misuse and to addiction and death – Crisis Intervention / Case Management

Reference	Names / Purpose	Objective	Data Source	Owner
1	Identifying <u>Populations</u> at Risk for Opioid Overdose.  Reducing / preventing fatal and non-fatal Opioids (and polysubstance) overdose by	Using data to more strategically and efficiently reach out to groups at	Vital Records OD Deaths TEMSIS	SOS DOJ/OCME DOS/EMS

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	identifying high risk <u>groups</u>	greatest risk to prevent fatal and non-fatal opioid overdose	AHEDD	DPHS
2	Identifying <u>Individuals</u> at Risk for Opioid Overdose.  Reducing fatal and non-fatal Overdose by mitigating risk for <u>individuals</u> with multiple risk factors for opioid overdose	Identify and conducting crisis intervention / intensive case management services / Naloxone kits: targeting individuals at greatest risk for fatal and non-fatal opioid overdose	Same as above + PDMP and All Claims Data OTP Data	Same as above + BOP DHSS DHSS
3	Using data for Naloxone distribution to those at greatest risk for overdose  Reducing / preventing fatal and non-fatal Opioids overdose by making Naloxone directly available to individuals that are continuing illicit opioid use while receiving SUD treatment from Programs administered by BDAS / DHHS or from MAT services provided Opioid Treatment Programs (OTPs)	Using data to be more strategic and efficient in broadly distributing Naloxone Kits to groups at greatest risk and directly to individuals at greatest risk for opioid overdose	WITS IT system  Individual Overdose Risk Assessment data	DHHS  DHHS
4	Emerging Threats / Situational Awareness Reports	Utilizing multiple data sets for situational awareness and to identify emerging threats before there are outbreaks that pose a threat to health and safety	To be determined	

1.1.28. Utilizing Data to Inform Policy – Strategic Planning – Programming

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- 1.1.28.1. Data analysis outlined above can be utilized to identify categories (population level strategies, prevention, early intervention, SUD / MAT treatment, crisis intervention and recovery services) and types of integrated / coordinated services that will best meet the Department's overall quality and outcomes objectives
- 1.1.29. Determining the Effectiveness of Policies – Strategies and Services
  - 1.1.29.1. By particular elements (examples: Prescribing regulation, NH PDMP program, school based substance misuse prevention programs, SUD treatment Services, or at a systems level (the effectiveness of the system overall))
- 1.1.30. Utilizing data to report out on client demographics, provider process and quality data and client outcomes
  - 1.1.30.1. Client demographic data by provider process data (locations, type and quantity of services provided), quality and cost of services and client outcomes.
- 1.2. Topic 2 – Software Architecture
  - Response Page Limit: 7
  - The State will evaluate the degree to which the architecture can be supported over an extended period, including the ease of support.
  - Provide a description of the technical architecture of the proposed Solution.
  - 1.2.1. What are the benefits of your proposed platform?
  - 1.2.2. Is the proposed solution based upon a 3-tiered, browser-based architecture?
  - 1.2.3. Does any part of the proposed Solution require Software (other than a browser) to be installed on the client workstation? If yes, describe Software that must be installed and the access authorization level required to install it.
  - 1.2.4. What add-on or third-party Software is required to support the functionality desired by the State?
  - 1.2.5. What programming languages are used for development, configuration, and customization of the proposed Solution?
  - 1.2.6. What components of the Software, such as middleware, are proprietary?
  - 1.2.7. Is your solution dependent on open source software?



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- 1.2.8. What is the growth potential of the proposed System?
- 1.2.9. What is the timeframe for technical obsolescence of the proposed Software? (For the purpose of this question, the version of the proposed Software would be considered obsolete when support is no longer available.)
- 1.2.10. How will the proposed solution allow for end users to share dashboards to social media (e.g. Twitter, Facebook, Google+ or other social media websites)?

**1.3. Topic 3 – Data Governance and Management**

Response Page Limit: 10

The State will evaluate the degree to which the governance plan will be adopted and streamline as well as provide a Department and Statewide direction to keep pace with evolving demands.

Data Governance and Management should include but not be limited to the following:

- 1.3.1. How will your solution meet the departments needs to establish a robust governance structure for its strategic move to implement a managed infrastructure and enterprise Data Analytics Platform (DAP)?
- 1.3.2. How will this solution increase delivery of business benefits for New Hampshire, including faster time-to-market, lower costs, better consistency, and increased agility?
- 1.3.3. How will the solution change the planning, development, and operation of application systems, and require new methods of collaboration among project teams within the Department?
- 1.3.4. What will be the base structure of the Governance process and how will it ensure that the infrastructure, shared business and technical services being deployed will become shared assets across all the agencies in State of New Hampshire?
- 1.3.5. How will the solution address a systematic method for the Department to make decisions?
- 1.3.6. What will your process be to identify who has the authority to make decisions, establish the precepts (i.e., principles, policies, standards, and guidelines) that influence decisions?
- 1.3.7. How will the solution reduce risks and ensure that people accomplish the State's strategy, goals, and priorities?

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- 1.3.8. How will the solution implement, and subsequently optimize governance for compliance by balancing between directives that require interpretation (people make such decisions) and routine or repetitive directives (computer systems best perform these decisions)?
- 1.3.9. What tools and/or technologies will be required to enable DAP Governance within the State?
- 1.3.10. How will your solution provide a strategy that enables the State to document the roles and responsibilities, as well as provide the recommendations required staffing for the day to day design, development and implementation of the Department Enterprise DAP solution.
- 1.3.11. How will your solution address the Department's roles and responsibilities, as well as providing the required staffing for the day to day design, development and implementation of the Department Enterprise DAP solution?
- 1.3.12. How will your solution fill, leverage as well as, if applicable, re-define the following roles?
  - 1.3.12.1. Architects: seasoned professionals with a wide knowledge of the IT infrastructure, and have gone through long implementation cycles for complex business requirements. Architects are the "nervous system" of the DAP Competency Center and its permanent connection to the business; at the same time, sitting with the developers, architects stay involved in implementation issues, which keeps their vision up-to-date. Architects also play a key role with developers in selecting DAP and integration technologies for future projects.
  - 1.3.12.2. Developers: provide detailed internal applications knowledge. During the early stage of the DAP Competency Center, developers and architects must agree on the scope of decision making. More-senior developers typically provide day-to-day project management for DAP projects. Security skills are also necessary, especially when PII is involved. Statistical analysis skills are also necessary.

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- 1.3.12.3. Quality assurance (QA): responsible for testing the integration work being implemented. Although the QA staff should leverage its experience in application development projects, they will face different challenges when testing DAP and integration projects. The team will learn DAP and integration-specific QA skills (for example, exception testing for integration middleware message queue overflow).
- 1.3.12.4. Database Administrators should be included in the DAP Competency Center. Work streams three, four and five involve data integration from different sources. As the integration work beyond the three work streams differentiates further into multistep integration and composite applications, data modeling expertise and enterprise data knowledge will continue to be crucial, especially when complex entities, such as the single view of the citizen/consumer become established assets of the DAP Competency Center.
- 1.3.12.5. Operations and system administration staff should participate at least for the initial three to six months of the operation of the integrated solution. Once integration projects complete successfully, they will be moved into production. Because of the presence of development and QA staff in the DAP Competency Center, it will be easier to solve day-to-day issues, and the operation of the solution will be smoother. Operations staff in the DAP Competency Center must also agree to specific configuration management issues with other groups (for example, development, application Vendors and integration products), before the integrated solution is moved to production.

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- 1.3.12.6. Business analysts, or business-process owners, are required for the DAP Competency Center when business process management or business activity monitoring requirements are present and, in general, when the DAP Competency Center starts to demonstrate business value. Architects always sit between business and the IT department, while business analysts live in the business. Business analysts' involvement is crucial to DAP Competency Center activities, such as the definition of high-level, coarse granularity reusable services in a service-oriented architecture (DAP), or the setup of an electronic channel to exchange business information with state partners.
- 1.3.13. How will the proposed DAP governance solution provide decision-making guidance for all stages in the service lifecycle-from planning to retirement?
- 1.3.14. How will the solution address specific lifecycle stages and issues associated with the following?
  - 1.3.14.1. User Security Management Services
- 1.3.15. How will the solution ensure strategic alignment between the deployed technology and the future-state business processes and operational model?
- 1.3.16. What is the proposed change control process for considering and accepting or denying changes (policy, planning, design, processes, etc.) throughout the project?
- 1.3.17. How will the proposed solution develop and obtain buy-in for a stakeholder and communication management plan?
- 1.3.18. How will your methodology address organizational assessments and gap analyses for the affected divisions and programs and facilitate the development of appropriate organizational structures and job descriptions?

**1.4. Topic 4 – User Friendliness and Usability**

Response Page Limit: 10

The State values Software that is compatible with its intended user's ability to use it easily and successfully.

- 1.4.1. To what extent is the Software used in the proposed solution intuitive based on the likelihood that the user has experienced other applications with similar graphic user interfaces.

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- 1.4.2. How efficient is the Software in terms of the number of operations required to perform basic tasks.
- 1.4.3. How does the Vendor's proposed training process support the application.
- 1.4.4. How much time is required to make new users fully functional and able to input into the system?
- 1.4.5. Explain any function driven capabilities that exist in the proposed application.
- 1.4.6. How does the solution address advanced analysis such as predictive analysis, root cause analysis, actionable information to determine cost effectiveness, identification of "hotspotters" (clients in communities with multiple complex health conditions who are high-utilizers of care, services, etc.)?
- 1.4.7. How will a user guidance and/or help functions be developed into the system?

**1.5. Topic 5 – IT Standards**

Response Page Limit: 2

The State will evaluate the degree to which IT standards used in the Vendor provided product are compliant with other State Systems, or utilize existing State standards.

The proposed Solution must comply with Open Standards and Open Data Formats as mandated by RSA chapter 21-R: Open Standards (HB418 2012).

- 1.5.1. Describe the degree to which your solution complies with information technology standards mentioned on the State of NH web site: <http://www.nh.gov/doi/vendor>
- 1.5.2. Is the proposed application considered Open Source Software?
- 1.5.3. Does it comply with Open Standards, including but not limited to Open Data Formats?
- 1.5.4. Describe the degree to which the proposed Solution meets the requirements of RSA chapter 21-R:10, 21-R:11, 21-R:13.
- 1.5.5. Identify what industry standards are incorporated in to the Solution.
- 1.5.6. Identify whether standards employed are national in origin or are unique to the proposed Software.

**1.6. Topic 6 – Data Import/Export Standards and Migration**

Response Page Limit: 7

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The State will evaluate the ease of interfacing with our current Data import and export layouts for Data exchange.

The State anticipates that this system will expand to be leveraged and interfaced by any department within the state as well as external organizations based on approved and compliance based data sharing agreements. Describe the mechanisms and tools included in the proposed System to implement these interfaces. Be sure to address the following aspects of this topic:

- 1.6.1. What types of interfaces are possible with the proposed System (e.g., online, batch, etc.)?
- 1.6.2. What file and database formats can the solution receive?
- 1.6.3. What Data is available to other systems? What Data may be imported/updated from other systems and how is this managed?
- 1.6.4. What data (if any) isn't available for import/export and how is this managed?
- 1.6.5. What tools are provided with the System for the development of interfaces?
- 1.6.6. What scheduling tools are required for initiation of interfaces? Are these tools included with the proposed solution?
- 1.6.7. Are there any constraints upon the timing of batch interfaces?
- 1.6.8. Does the System employ standard definitions or file layouts for interfaces? If so, include a sample in an appendix.
- 1.6.9. What standard interface formats are used with the proposed Software? What degree of flexibility is available?.
- 1.6.10. How does your solution meet the objective of providing a seamless and productive environment for users.
- 1.6.11. How does your solution meet all mandatory State requirements and is consistent with the standards and requirements detailed in this RFP.
- 1.6.12. How does your solution meet the requirement of the provision of development, testing/verification, training, certification, and production environments to be used to develop, deploy, maintain, and operate the integrated system.
- 1.6.13. How will the proposed solution provide the State of New Hampshire the processes, tools and training to be able to continue the integration of data sources into the Data Analytics platform?

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## **2. D-2 Technical, Services and Project Management Experience**

### **2.1. D-2.1 Security and Protection of Data**

#### **2.1.1. Topic 7 – System Security**

Response Page limit: 10

The State will evaluate the degree to which System issues can be avoided.

Software Systems must be reliable, regardless of how they are delivered. The State's workers and citizens expect government Services and information to be reliable and available on an ongoing basis to ensure business continuity.

The State must ensure that appropriate levels of security are implemented and maintained in order to protect the integrity and reliability of its Information Technology resources, information, and Services. State resources, information, and Services must be available on an ongoing basis, with the appropriate infrastructure and security controls to ensure business continuity and safeguard State networks, Systems and Data.

The State will evaluate the degree to which the proposed System is designed and architected to ensure the confidentiality and integrity of its valued asset, Data.

2.1.1.1. Describe the System security design and architectural features incorporated into the proposed Software. At a minimum, discuss the following:

2.1.1.1.1. The identification and authentication methods used to ensure that users and any interfacing applications are identified and that their identities are properly verified.

2.1.1.1.2. The authorization methods used to ensure that users and client applications can only access Data and services for which they have been properly authorized.

2.1.1.1.3. The immunity methods used to ensure that unauthorized malicious programs (e.g., viruses, worms and Trojan horses) do not infect the application.

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- 2.1.1.1.4. The methods used to ensure that communications and Data integrity are not intentionally corrupted via unauthorized creation, modification or deletion.
- 2.1.1.1.5. The methods used to ensure that the parties to interactions with the application cannot later repudiate or rebut those interactions.
- 2.1.1.1.6. The Intrusion Detection methods used to ensure the detection, recording and review of attempted access or modification by unauthorized individuals.
- 2.1.1.1.7. The privacy methods used to ensure that confidential Data and sensitive communications are kept private.
- 2.1.1.1.8. The System maintenance methods used to ensure that System maintenance does not unintentionally disrupt the security mechanisms of the application or supporting hardware.
- 2.1.1.1.9. The testing methods conducted to load and stress test your Software or Solution to determine its ability to withstand Denial of Service (DoS) attacks.
- 2.1.1.1.10. The ability of your Software to be installed in a "locked-down" fashion so as to turn off unnecessary features (user accounts, operating System services, etc.) thereby reducing the Software's security vulnerabilities and attack surfaces available to System hackers and attackers.
- 2.1.1.1.11. The notification and escalation process in the event of an intrusion.
- 2.1.1.2. Describe the System assurance provisions incorporated into the proposed Software. At a minimum, discuss the following:
  - 2.1.1.2.1. What process or methodology is employed within the proposed Software to ensure Data integrity?



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2.1.1.2.2. To what degree does your approach rely on System assurance capabilities of the relational database management system (RDMS)?

2.1.1.2.3. If multiple databases are employed, what extra procedures are employed to ensure synchronization among databases?

2.1.2. Topic 8 – Backup and Recovery

Response Page Limit: 2

The State will evaluate the degree to which proposed backup and recovery processes protect mission-critical Data, ease of use of these processes, and impact of these processes on operation of the System.

The State seeks a sound backup and recovery provision as part of the Solution. Describe the tools used for backup and recovery of applications and Data. Describe the impact of the proposed backup process on the operation of the System. Also, address the following:

2.1.2.1. Use of and method for logging and journaling;

2.1.2.2. Single points of failure and recommended approaches for their elimination;

2.1.2.3. Approach to redundancy;

2.1.2.4. Please enumerate your high-level methodology for creation of a Disaster Recovery Plan; and

2.1.2.5. Impact of Software license fees.

2.1.3. The State believes that additional Software license fees solely related to redundancy for backup and recovery would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.

2.1.4. Topic 9 – Assurance of Business Continuity

Response Page Limit: 3

The State will evaluate the degree to which the proposed plan to assure business continuity mitigates risk to the State, and it's potential for Implementation (cost effective and easy to implement).

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- 2.1.4.1. The State intends to consider provision for assurance of business continuity as an optional component of the Solution. Please provide a plan for business continuity if a disaster occurs at the data center that is hosting the proposed Solution. This is an optional requirement and will be included or excluded depending on any additional cost associated with the plan.
- 2.1.4.2. The State believes that additional Software License fees solely related to redundancy for assurance of business continuity would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.
- 2.1.4.3. Please enumerate your high-level methodology for creation of a Business Continuity Plan.

2.1.5. Topic 10 – Skills and Experience

Response Page Limit: 10

The State will evaluate the degree to which the proposed Solution provides for the skills and experience to meet the requirements in this RFP.

- 2.1.5.1. Describe in detail the skills and experience that your vendor will bring to the State to assist in meeting the requirements and narrative included in this RFP.
- 2.1.5.2. Describe at least two (2) other solutions that you have completed that relates to the requirements for this RFP
- 2.1.5.3. Describe the manner in which users and system administrators can view transactional Data.
- 2.1.5.4. Please describe your experience with organizations similar to the Health and Human Services and discuss what historical data they have and have not converted/migrated into the new system.
- 2.1.5.5. How many years of historical data is typically converted in a project similar to this one? Describe how you will help Health and Human Services determine the right number of years to convert.

2.1.6. Topic 11 – Project Management Methodology

Response Page Limit: 5

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The State will evaluate the Vendor's approach to project management methodology.

- 2.1.6.1. Describe the methodologies used for organizing teams to implement solutions in an iterative Agile methodology.
- 2.1.6.2. Describe how your approach meets the requirements for project management and testing the security of the Software application and hosting environment.
- 2.1.6.3. How can you ensure the security and confidentiality of the State Data collected on the system?
- 2.1.6.4. What security validation Documentation will be shared with the State?
- 2.1.6.5. Do you use internal or external resources to conduct security testing?

**2.2. D-2.2 State Personnel and Training**

**2.2.1. Topic 12 – User Training Approach**

Response Page Limit: 3

The State will evaluate whether the training approach is likely to prepare users adequately to use the new System from the day of deployment, including maximum knowledge transfer to allow the State to conduct its own training in the future.

The State understands the importance of training for a successful Software Implementation. The State seeks a detailed discussion of training alternatives in addition to a recommended training approach.

- 2.2.1.1. Describe the process for an assessment of needs; identifying casual, power, and specialty users; developing a curriculum for each audience; and conducting, evaluating, and refining training courses.
- 2.2.1.2. Questions to address include, but are not limited to, the following:
  - 2.2.1.2.1. What type of training (instructor led vs. computer based) will be used for each purpose and why?
  - 2.2.1.2.2. What methods will be employed to evaluate training activities?
  - 2.2.1.2.3. How will training be coordinated with other user support activities?

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- 2.2.1.2.4. Will manuals be adequate to enable trained users to research answers to their own questions?
- 2.2.1.2.5. If the perception is that they are not adequate, can those manuals be quickly revised?
- 2.2.1.2.6. How will the State be prepared to conduct ongoing training after Implementation is completed?
- 2.2.1.2.7. Are training manuals on-line and maintained as part of a maintenance agreement?

2.2.2. Topic 13 - Preparation of State Staff

Response Page Limit: 3

The State will evaluate whether the provisions to prepare State staff participating in the Project will enable the staff to contribute appropriately.

- 2.2.2.1. Describe how State staff assigned to the Project Team will be prepared to contribute.
- 2.2.2.2. Provide an overview of Project Team interactions and dependencies between functions.

2.3. D-2.3 Project Execution

2.3.1. Topic 14 – Implementation Approach

Response Page Limit: 10

The State will evaluate the quality of analysis, reasonableness, and flexibility evident in the proposed Implementation approach.

Provide one or more feasible Implementation plans. For each plan provided:

- 2.3.1.1. Identify timeframes for major milestones, including timing for discontinuing legacy Systems if applicable;
- 2.3.1.2. Discuss cost implications of the plan, including implications on maintenance fees; and
- 2.3.1.3. Address the level of risk associated with the plan.
- 2.3.1.4. What are the highlights (key selling points) of your proposed approach?

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2.3.1.5. What makes your proposed implementation approach unique in consideration of your competitors?

2.3.1.6. To assist the State in evaluation of the Implementation Plan or plans discussed, identify the Implementation Plan used as a basis for the cost Proposal.

2.3.2. Topic 15 – Testing

Response Page Limit: 6 – Appendix Required

The State will evaluate the quality of support the Vendor will supply to assist State testing staff and the effectiveness of the proposed Defect tracking and resolution process. The ability of the State Project leadership to participate in analysis, classification, and establishment of priorities for suspected Defects will also be evaluated.

State staff will conduct Acceptance Testing, but support from the selected Vendor is required; refer to Appendix G-2: Testing. To define the type of support that will be provided, address the following questions:

2.3.2.1. Describe your testing methodology and include a proposed test plan.

2.3.2.2. Will configured Software be delivered in functional components for State Acceptance Testing?

2.3.2.3. How much time should the State allow to complete User Acceptance Testing of a component?

2.3.2.4. What test management and test driver tools will be employed in quality assurance testing prior to delivery of code to the State? Will these tools be available to the State for use in Acceptance Testing?

2.3.2.5. What support will be provided to prepare State staff during Acceptance Testing? How will on-site support for the State testing team be provided?

2.3.2.6. How will members of the testing team be prepared to test the configured Software?

2.3.2.7. What Documentation of configured Software will be available to the testing team?

2.3.2.8. Based on experience in similar Projects, how many and what types of Defects are likely to be encountered in Acceptance Testing? (Include metrics from other Projects to support this response.)

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- 2.3.2.9. How much time is available for comprehensive testing and correction of Defects prior to Implementation? Based on metrics from similar Projects, is it sufficient? (Provide information from other Projects to support this response.)
- 2.3.2.10. If frequency exceeds the expected level, what corrective actions will be instituted?
- 2.3.2.11. How quickly will a suspected Defect be investigated, and what classifications are planned for suspected Defects?
- 2.3.2.12. How quickly will Software Defects be corrected?
- 2.3.2.13. What specific Software tools will be used to isolate performance problems?
- 2.3.2.14. What tools will be used to document and track status of suspected Defects? -
- 2.3.2.15. Will these tools be available to the State after the Project is completed?
- 2.3.2.16. What role will the State play in classification and prioritization of Defects?
- 2.3.2.17. Will System performance be measured and documented using the State's infrastructure and Data? If yes, how?
- 2.3.2.18. Provide a sample User Acceptance Test Plan from a completed Project as an appendix.
- 2.3.2.19. Testing Prior to UAT:
  - 2.3.2.19.1. The State has a specific approach it generally requires for testing. Please read Appendix G2 (Testing Requirements) for this approach. Please describe your typical testing methodology and how challenging you feel it may be to adopt the State's standard.
  - 2.3.2.19.2. Utilize the first five pages of this topic to describe the approach you have proposed to testing. Be sure to cover as applicable:
    - 2.3.2.19.2.1. Installation and Environment Testing
    - 2.3.2.19.2.2. Unit Testing
    - 2.3.2.19.2.3. System Testing

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- 2.3.2.19.2.4. Regression Testing
- 2.3.2.19.2.5. Performance Tuning and Stress Testing
- 2.3.2.19.2.6. Data Conversion Testing and Data Validation
- 2.3.2.19.2.7. Security Review/Testing
- 2.3.2.19.3. What test management and test driver tools will be employed in quality assurance testing prior to delivery of code to the State? Will these tools be available to the State for use in Acceptance Testing?

2.3.3. Topic 16 – Migration Strategy

Response Page Limit: 3

The State will evaluate the degree to which the Vendor will ensure that Data conversion is effective and impacts State staff to the minimum extent possible.

- 2.3.3.1. It is our assumption that the Data Conversion/Migration Plan is a deliverable that will ultimately lay out the plan required to convert and migrate data from Health and Human Services systems to the new environment. Please discuss your high-level approach to carrying out data conversion/migration activities. Be sure to discuss software tools and processes used to support this effort.
- 2.3.3.2. Describe the approach that will be used for assessing Data quality and conducting Data cleansing prior to conversion. Please be sure to include whose responsibility it will be and the process you are proposing to deal with incomplete records in the legacy system.
- 2.3.3.3. Discuss the use of automated tools in Data conversion. When will automated tools be used? When will manual intervention be required?
  - 2.3.3.3.1. What data do you know will be challenging to convert/migrate and why? What special approach will you recommend as part of the planning document to help reduce the impact of this challenge on this project?

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- 2.3.3.3.2. Please discuss your approach to working with the Agency to document a data conversion/migration plan and process. Please also describe how you will determine how much historical data is available and what is appropriate to be made available within the new system.
- 2.3.3.3.3. Define expectations for State and Vendor roles during the development of the data conversion/migration plan and process.
- 2.3.3.3.4. What lessons learned can you share with us from other implementations that are important to understand as part of development of the data conversion/migration plan and process?

**2.3.4. Topic 17 – Environment Setup**

Response Page Limit: 2

The State will evaluate whether proposed environments are sufficient to satisfy Project needs, including phased Implementation.

- 2.3.4.1. Describe the different Software and hardware environments required for the concurrent development, testing, and production of the proposed Solution. Discuss how the proposed environments support the Implementation of the hosted Solution, including all necessary training.
- 2.3.4.2. The State believes that additional Software License fees solely related to establishing environments for normal development lifecycle would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.
- 2.3.4.3. Discuss how the proposed environments support the Implementation of the hosted Solution, including all necessary training.

**2.4. D2.4 Project Management Competence**

**2.4.1. Topic 18 – System Acceptance Criteria**

Response Page Limit: 6



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The State will evaluate whether proposed Acceptance criteria will assure the State that the new System is functioning effectively before being turned over for State for User Acceptance Testing.

2.4.1.1. Propose measurable criteria for State final Acceptance of the System.

2.4.1.2. Discuss how the proposed criteria serve the interest of the State.

2.4.2. Topic 19 – Status Meetings and Reports

Response Page Limit: 3 – Appendix Required

The State will evaluate the degree to which Project reporting will serve the needs of State Project leaders.

The State believes that effective communication and reporting are essential to Project success. At a minimum, the State expects the following:

2.4.2.1. Introductory Meeting: Participants will include Vendor Key Project Staff and State Project leaders from both the Health and Human Services and the Department of Information Technology. This meeting will enable leaders to become acquainted and establish any preliminary Project procedures.

2.4.2.2. Kickoff Meeting: Participants will include the State and Vendor Project Teams and major stakeholders. This meeting is to establish a sound foundation for activities that will follow.

2.4.2.3. Status Meetings: Participants will include, at a minimum, Vendor Project Manager and the State Project Manager. These meetings, which will be conducted at least biweekly, will address overall Project status and any additional topics needed to remain on Schedule and within budget. A status and error report from the Vendor will serve as the basis for discussion.

2.4.2.4. The Work Plan: must be Reviewed at each Status Meeting and updated, at minimum, on a biweekly basis, in accordance with the Contract.

2.4.2.5. Special Meetings: Need may arise for a special meeting with State leaders or Project stakeholders to address specific issues.

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- 2.4.2.6. Exit Meeting: Participants will include Project leaders from the Vendor and the State. Discussion will focus on lessons learned from the Project and on follow up options that the State may wish to consider.
- 2.4.2.7. The State expects the Vendor to prepare agendas for and minutes of meetings. Meeting will include an updated Work Plan. Drafting of formal presentations, such as a presentation for the kickoff meeting, will also be a Vendor responsibility.
- 2.4.2.8. Vendor shall submit status reports in accordance with the Schedule and terms of the Contract. All status reports shall be prepared in formats approved by the State. The Vendor's Project Manager shall assist the State's Project Manager, or itself produce reports related to Project Management as reasonably requested by the State, all at no additional cost to the State. Vendor shall produce Project status reports, which shall contain, at a minimum, the following:
  - 2.4.2.8.1. Project Status as it relates to Work Plan
  - 2.4.2.8.2. Deliverable status
  - 2.4.2.8.3. Accomplishments during weeks being reported
  - 2.4.2.8.4. Planned activities for the upcoming two (2) week period
  - 2.4.2.8.5. Future activities
  - 2.4.2.8.6. Issues and Concerns requiring resolution
  - 2.4.2.8.7. Report and remedies in case of falling behind Schedule
- 2.4.2.9. Be sure to cover the following:
  - 2.4.2.9.1. Timing, duration, recommended participants and agenda for the kickoff meeting;
  - 2.4.2.9.2. Frequency and standard agenda items for status meetings;
  - 2.4.2.9.3. Availability for special meetings; and
  - 2.4.2.9.4. Agenda for the exit meeting.

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2.4.2.10. As an appendix, provide an example of status reports prepared for another Project. Names of the Project and of any individuals involved may be removed.

2.4.2.11. As reasonably requested by the State, Vendor shall provide the State with information or reports regarding the Project. Vendor shall prepare special reports and presentations relating to Project Management, and shall assist the State in preparing reports and presentations, as reasonably requested by the State, all at no additional cost to the State.

2.4.3. Topic 20 – Risk and Issue Management

Response Page Limit: 3

The State will evaluate the extent to which the proposed approach will contribute to the timely identification and effective action on issues and risks. The State will also evaluate whether the approach recognizes and addresses appropriate State involvement in risk and issue management.

2.4.3.1. Provide proposed methodologies for risk and issue management. Discuss State and Vendor responsibilities. The State seeks a clear means to compare planned versus actual status, including percentages, at a sufficiently detailed level to ensure the State can adequately monitor the progress of the Project. Be sure to identify any essential time constraints on State actions. Escalation procedures will be defined in a Contract between the State and the Vendor.

2.4.4. Topic 21 – Scope Control

Response Page Limit: 2

The State will evaluate the degree to which proposed modifications in scope are scrutinized to ensure that only essential changes are approved. Evaluation will also address the quality and timeliness of information that will be available about a proposed scope change.

2.4.4.1. Suggest an approach for scope control. Describe how the approach has been employed effectively on another Project.

2.4.4.2. Demonstrate your firm's ability to manage scope creep by discussing tools and methodologies, as well as past Project experiences.

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2.4.5. Topic 22– Quality Assurance Approach

Response Page Limit: 6

The State will evaluate the degree to which proposed procedures will ensure that Deliverables require limited modification when submitted for approval.

2.4.5.1. The State has identified three categories of Deliverables:

2.4.5.1.1. Written Deliverables, such as a training plan;

2.4.5.1.2. Software Deliverables, such a configured Software module; and

2.4.5.1.3. Non-Software Deliverables, such as conduct of a training course.

2.4.5.2. Describe the methodology that will be employed to assure that each type of Deliverable is of high quality before submission for State consideration. Discussion should include but not be limited to:

2.4.5.2.1. Provision for State input to the general content of a Written Deliverable prior to production;

2.4.5.2.2. The standard for Vendor internal Review of a Written Deliverable prior to formal submission; and

2.4.5.2.3. Testing of Software Deliverables prior to submission for Acceptance Testing.

2.4.6. Topic 23 - Work Plan

Response Page Limit: None

The State will evaluate whether the Vendor's preliminary proposed Work Plan includes a description of the Schedule, tasks, Deliverables, major milestones, task dependencies, and a payment Schedule. The Work Plan shall also address resource allocations (both State and Vendor team members). This narrative should reflect current Project Management "best practices" and be consistent with narratives on other topics. The Software to be used to support the ongoing management of the Project should also be described in the Work Plan.

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The State sees a Work Plan as essential to reaching a comprehensive agreement with a Vendor. Consequently, the State will seek to refine the proposed Work Plan prior to Contract approval with the selected Vendor and to incorporate the refined Work Plan by reference into a Contract.

- 2.4.6.1. Provide a preliminary Work Plan depicting tasks, task dependencies, Schedule, milestones, Deliverables, and payment Schedule. Include the deliverables outlined in Appendix C (System Requirements and Deliverables) and include other deliverables that you, based on past experience, would recommend be developed on this project.
  - 2.4.6.2. Define both proposed Written and Software Deliverables. Include sufficient detail that the State will be able to identify departures from the Plan in sufficient time to seek corrective action. In particular, provide information about staffing.
  - 2.4.6.3. Describe all Deliverables to be produced in the Project. Ensure that all Deliverables and milestones are identified in the Work Plan. Identify and discuss the following:
    - 2.4.6.3.1. All assumptions upon which the Work Plan is based;
    - 2.4.6.3.2. Descriptions of recommended roles by activity and time required for both State and Vendor members of the Project Team;
    - 2.4.6.3.3. Assignments of members of the Vendor's team identified by role to specific tasks; and
    - 2.4.6.3.4. Critical success factors for the Project.
  - 2.4.6.4. Discuss how this Work Plan will be used and State access to Plan details including resource allocation.
  - 2.4.6.5. Discuss frequency for updating the Plan, at a minimum weekly and for every status meeting. Explain how the State will know whether the Project is on Schedule and within budget.
- 2.5. D2.5 Ongoing Operations
- 2.5.1. Topic 24 – Hosted System If Applicable
- Response Page limit: 5

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Describe the hosting plan including hardware and software platforms, software utilities, telecommunications resources, security measures and business continuity plans. Include a description of servers, computers, software, programming capability and other equipment and technical resources which will be used to design, develop, implement and maintain the application.

- 2.5.1.1. Provide the type and speed of the connection;
- 2.5.1.2. Information on redundancy;
- 2.5.1.3. Disaster recovery;
- 2.5.1.4. Security;
- 2.5.1.5. Interim staffing for peak help desk demand periods and transition to a permanent arrangement;
- 2.5.1.6. Development of a help desk knowledge base; and
- 2.5.1.7. Metrics based on help desk inquiries.

2.5.2. Topic 25 – Support and Maintenance If Applicable

Response Page Limit: 2

The State will evaluate whether the Vendor's proposed support and maintenance plan includes a description of the types and frequency of support, detailed maintenance tasks – including Scheduled maintenance and upgrades, and any other dependencies for on-going support and maintenance of the system. This narrative should reflect current “best practices” for these tasks.

- 2.5.2.1. For how many of your clients do you provide typical software maintenance and support in operational years and what percent of your clients does this represent?
- 2.5.2.2. For how many of your clients do you provide support and maintenance of the operational environment on behalf of the State and what percent of your clients does this represent?
- 2.5.2.3. What do you find to be the optimal amount of support?
- 2.5.2.4. Describe how general support and maintenance skills are transferred to State technical support personnel for knowledge sharing.
- 2.5.2.5. Describe how are support and maintenance issues are tracked detailing methodology and if any additional software is required.
- 2.5.2.6. Describe process for maintenance of the general knowledge base.

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- 2.5.2.7. Describe any particular procedures required to handle escalation and emergency calls.
- 2.5.2.8. Detail the plan for preventive maintenance and for upgrade installations.
- 2.5.2.9. Detail the types and frequency of support tasks required.

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## **APPENDIX E: STANDARDS FOR DESCRIBING VENDOR QUALIFICATIONS**

Vendor qualifications are important factors in selecting <CORbi Software and accompanying Implementation and follow on support Services. To facilitate evaluation of Vendor qualifications, the State seeks information about:

- Corporate qualifications of each Vendor proposed to participate in the Project;
- Proposed team organization and designation of key staff;
- Individual qualifications of candidates for the role of Project Manager; and
- Individual qualifications of candidates for other key staff roles.

This Appendix identifies specific information that must be submitted.

### **1. E-1 Required Information on Corporate Qualifications**

**Information is required on all Vendors who will participate in the Project. Vendors submitting a Proposal must identify any Subcontractor(s) to be used.**

#### **1.1. E-1.1 Vendor and Subcontractors**

The Vendor submitting a Proposal to this Project must provide the following information:

##### **1.1.1. E-1.1.1 Corporate Overview (2 page limit)**

Identify the proposed role of the firm on the Project. Describe the major business areas of the firm. Provide a high-level description of the firm's organization and staff size. Discuss the firm's commitment to the public sector, experience with this type of Project Implementation and experience in New Hampshire.

##### **1.1.2. E-1.1.2 Financial Strength**

###### **1.1.2.1. Provide at least one of the following:**

**1.1.2.1.1. The current Dunn & Bradstreet report on the firm; or**

**1.1.2.1.2. The firm's two most recent audited financial statements; and the firm's most recent un-audited, quarterly financial statement; or**



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1.1.2.1.3. The firm's most recent income tax return. For example, either a copy of the IRS Form 1065, U.S. Return of Partnership Income or Schedule E (IRS Form 1040) Supplemental Income and Loss (for partnerships and S corporations) OR, IRS Form 1120, U.S. Corporation Income Return. These forms are typically submitted when a Vendor does not have audited financial statements.

1.1.3. E-1.1.3 Litigation

Identify and describe any claims made by clients during the last ten (10) years. Discuss merits, current status and, if available, outcome of each matter.

1.1.4. E-1.1.4 Prior Project Descriptions (3 limited to 3 pages each)

Provide descriptions of no more than three (3) similar projects completed in the last < four (4) years. Each Project description should include:

1.1.4.1. An overview of the project covering type of client, objective, project scope, role of the firm and outcome;

1.1.4.2. Project measures including proposed cost, actual project cost, proposed project schedule and actual project schedule;

1.1.4.3. Names and contact information (name, title, address and current telephone number) for one or two references from the client; and

1.1.4.4. Names and project roles of individuals on the proposed team for the New Hampshire Project that participated in the project described.

1.1.5. E-1.1.5 Subcontractor Information

Vendors must provide information on any Subcontractors proposed to work on this Project. Required information shall include but not be limited to:

1.1.5.1. Identification of the proposed Subcontractor and a description of the major business areas of the firm and their proposed role on the Project;

1.1.5.2. A high-level description of the Subcontractor's organization and staff size;

1.1.5.3. Discussion of the Subcontractor's experience with this type of Project;

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- 1.1.5.4. Resumes of key personnel proposed to work on the Project; and
- 1.1.5.5. Two references from companies or organizations where they performed similar services (if requested by the State).

## **2. E-2 Team Organization and Designation of key Vendor staff**

Provide resumes of key personnel proposed to work on the Project and an organizational chart depicting the Vendor Project Team. This chart should identify key staff required from the Vendor, any Subcontractors, and the State.

Define the responsibilities and length of assignment for each of the roles depicted in the organizational chart. Identify the positions that should be designated key staff. Ensure that designation of key Vendor staff includes subject matter experts in the following areas:

- Data Analysis
- Data Analytics
- Data Quality
- Statistics
- Data Governance
- User Experience (UX) and User Interface (UI)
- Data Modeling
- Data Visualizations
- Project Management
- Training
- Data Migration

A single team member may be identified to fulfill the experience requirement in multiple areas.

### **2.1. E-2.1 State Staff Resource Worksheet**

Append a completed State Staff Resource Worksheet to indicate resources expected of organization. Expected resources must not exceed those outlined in Appendix A: *Background Information - Section A-4: State Project Team*. The required format follows.

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Table E-2: Proposed State Staff Resource Hours Worksheet

State Role	Initiation	Configuration	Implementation	Close Out	Total
Project Manager					
Position 1					
Position 2					
Position 3					
Position 4					
Position 5					
State Total					

**3. E-3 Candidates for Project Manager**

Although the State recognizes that staff availability is somewhat uncertain, qualifications of the Project Manager are particularly critical. Therefore, the State requires that the Project Manager be identified with some degree of certainty.

For the Project Manager candidate, provide a resume not to exceed five (5) pages in length addressing the following:

- 3.1. The candidate's educational background;
- 3.2. An overview of the candidate's work history;
- 3.3. The candidate's project experience, including project type, project role and duration of the assignment;
- 3.4. Any significant certifications held by or honors awarded to the candidate; and
- 3.5. At least three (3) references, with contact information, that can address the candidate's performance on past projects.

**4. E-4 Candidates for key Vendor staff Roles**

Provide a resume not to exceed ten (10) pages for each key Vendor staff position on the Project Team. Each resume should address the following:

- 4.1. The individual's educational background;
- 4.2. An overview of the individual's work history;

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- 4.3. The individual's project experience, including project type, project role and duration of the assignment;
- 4.4. Any significant certifications held by or honors awarded to the candidate; and
- 4.5. At least three (3) references, with contact information, that can address the individual's performance on past projects.

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## APPENDIX F: PRICING WORKSHEETS

A Vendor's Cost Proposal must be based on the worksheets formatted as described in this Appendix.

The Vendor must assume all reasonable travel and related expenses. All labor rates will be "Fully Loaded", including, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses.

### 1. F-1 Activities/Deliverables/Milestones Pricing Worksheet

The Vendor must include, within the Not-to-Exceed for IT service activities, tasks and preparation of required Deliverables, pricing for the Deliverables required based on the proposed approach, and methodology and tools. The following format must be used to provide this information.

*Table F-1: Activities/Deliverables/Milestones Pricing Worksheet <SAMPLE TABLE>*

	Activity, Deliverable, or Milestone	Deliverable Type	Projected Delivery Date	Price
<b>PLANNING AND PROJECT MANAGEMENT</b>				
1	Conduct Project Kickoff Meeting	Non-Software		
2	Project Status Reports	Written		
3	Work Plan	Written		
4	Infrastructure Plan, including Desktop and Network Configuration Requirements	Written		
5	Security Plan	Written		
6	Communications and Change Management Plan	Written		
7	Requirements Trace ability Matrix	Written		
8	Software Configuration Plan	Written		
9	Systems Interface Plan and Design/Capability	Written		

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10	Testing Plan	Written		
11	Data Conversion Plan and Design	Written		
12	Deployment Plan	Written		
13	Comprehensive Training Plan and Curriculum	Written		
14	End User Support Plan	Written		
15	Business Continuity Plan	Written		
16	Documentation of Operational Procedures	Written		
<b>INSTALLATION</b>				
17	Provide Software Licenses if needed	Written		
18	Provide Fully Tested Data Conversion Software	Software		
19	Provide Software Installed, Configured, and Operational to Satisfy State Requirements	Software		
<b>TESTING</b>				
20	Conduct Integration Testing	Non-Software		
21	Conduct User Acceptance Testing	Non-Software		
22	Perform Production Tests	Non-Software		
23	Test In-Bound and Out-Bound Interfaces	Software		
24	Conduct System Performance (Load/Stress) Testing	Non-Software		
25	Certification of 3 <sup>rd</sup> Party Pen Testing and Application Vulnerability Scanning	Non-Software		
<b>SYSTEM DEPLOYMENT</b>				

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26	Converted Data Loaded into Production Environment	Software		
27	Provide Tools for Backup and Recovery of all Applications and Data	Software		
28	Conduct Training	Non-Software		
29	Cutover to New Software	Non-Software		
30	Provide Documentation	Written		
31	Execute Security Plan	Non-Software		
<b>OPERATIONS</b>				
32	Ongoing Hosting Support	Non-Software		
33	Ongoing Support & Maintenance	Software		
34	Conduct Project Exit Meeting	Non-Software		

**2. F-2 Proposed Vendor Staff, Resource Hours and Rates Worksheet**

Use the Proposed Vendor Staff Position, Resource Hours and Rates Worksheet to indicate the individuals that will be assigned to the Project, hours and applicable rates. Names must be provided for individuals designated for key roles, but titles are sufficient for others. Information is required by phase.

*Table F-2: Proposed Vendor Staff, Resource Hours and Rates Worksheet*

Title	Name	Initiation	Implementation	Project Close out	Hourly Rate	Hours Rate X
Project Manager						
Data Analyst						
Database Specialist						
Scrum Master						

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Data Scientist						
Position #1						
Position #2						
Position #3						
<b>TOTALS</b>						

**3. F-3 Future Vendor Rates Worksheet**

The State may request additional Services from the selected Vendor and requires rates in the event that additional Service is required. The following format must be used to provide this information. "SFY" refers to State Fiscal Year. The New Hampshire State Fiscal Year runs from July 1 through June 30 of the following calendar year. Positions not identified in the Proposed Position Worksheet may be included in the Future Vendor Rates Worksheet.

*Table F-3: Future Vendor Rates Worksheet*

Position Title	SFY 201X	SFY 201X	SFY 201X	SFY 201X
Project Manager				
Position #1				
Position #2				
Position #3				



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**4. F-4 HARDWARE COST worksheet**

Table F-4: Hardware

Hardware Name	Initial Cost	Maintenance Support and Upgrades				
		Year 1	Year 2	Year 3	Year 4	Year 5

**5. F-5 Software Licensing, Maintenance, and Support Pricing Worksheet**

Table F-5: Software Licensing, Maintenance, and Support Pricing Worksheet

Software Name	Initial Cost	Maintenance Support and Upgrades				
		Year 1	Year 2	Year 3	Year 4	Year 5

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**6. F-6 Web Site Hosting, Maintenance, and Support Pricing Worksheet**

Table F-6: Web Site Hosting, Maintenance, and Support Pricing Worksheet

HOSTED SERVICES	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Web Site Hosting Fee						
Technical Support and updates						
Maintenance and Updates						
GRAND TOTAL						

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**APPENDIX G-1: SECURITY**

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## **1. APPENDIX G-1 SECURITY**

### **1.1. G-1.1 Application Security**

IT Security involves all functions pertaining to the securing of State Data and systems through the creation and definition of security policies, procedures and controls covering such areas as Identification, Authentication and non-repudiation. This shall include but is not limited to:

- 1.1.1. Develop Software applications based on industry best practices and incorporating information security throughout the Software development life cycle;
- 1.1.2. Perform a Code Review prior to release of the application to the State to move it into production. The code Review may be done in a manner mutually agreeable to the selected VENDOR and the State. Copies of the final, remediated results shall be provided to the State for Review and audit purposes;
- 1.1.3. Follow Change Control Procedures (CCP) relative to release of code;
- 1.1.4. Develop applications following security-coding guidelines as set forth by organizations such as, but not limited to Open Web Application Security Project (OWASP) Top 10, SANS Common Weakness Enumeration (CWE) Top 25 or CERT Secure Coding; and
- 1.1.5. Make available to the for review and audit purposes all Software development processes and require training for application developers on secure coding techniques.

### **1.2. G-1.2 PCI DSS Payment Application Data Security Standard (PA DSS)**

Whereas the Vendor provides a Commercial Off the Shelf (COTS) product used by the Health and Human Services, which transmits, processes or stores cardholder Data and therefore must meet PA-DSS validation requirements

Whereas the Vendor access to the production environment which transmits, processes or stores cardholder data and therefore is considered a "service provider" under Requirement 12.8 of the PCI DSS Compliance.

The Vendor agrees to the following provisions:

- 1.2.1. PCI DSS Payment Application Data Security Standard (PA DSS) - As the Vendor's product is part of the processing, transmission, and/or storage of cardholder Data it is hereby agreed that:
  - 1.2.1.1. Vendor agrees to participate in the Payment Card Security Standards Council (PCI) Payment Application Data Security Standards program (PA DSS);

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- 1.2.1.2. Vendor agrees to provide evidence of compliance with PA DSS prior to Contract approval; and
- 1.2.1.3. Vendor will immediately notify the NH DoIT Chief Information Security Officer if it learns its application is no longer PA DSS compliant and will immediately provide the DOIT of the steps being taken to remediate the non-compliance status. In no event should Vendor's notification to the DoIT be later than seven (7) calendar days after Vendor learns it is no longer PA DSS complaint.
- 1.2.2. PCI DSS Requirement 12.8, Service Provider – If the Vendor provides Services on the production environment used in the processing, transmission and/or storage of cardholder Data, it is hereby agreed that:
  - 1.2.2.1. Vendor agrees that it is responsible for the security of all cardholder Data that it obtains or possesses, including but not limited to the functions relating to storing, processing, and transmitting the cardholder Data;
  - 1.2.2.2. Vendor attests that, as of the Effective Date of this Amendment, it has complied with all applicable requirements to be considered PCI DSS compliant, and has performed the necessary steps to validate its compliance with the PCI DSS; and
  - 1.2.2.3. Vendor agrees to supply the current status of Vendor's PCI DSS compliance, and evidence of its most recent validation of compliance upon execution of this addendum to Agency. Vendor must supply to Agency an attestation of compliance at least annually.
  - 1.2.2.4. Vendor will immediately notify Agency if it learns that it is no longer PCI DSS compliant and will immediately provide Agency the steps being taken to remediate the non-compliance status. In no event shall Vendor's notification to Agency be later than seven (7) calendar days after Vendor learns it is no longer PCI DSS compliant.
  - 1.2.2.5. Vendor acknowledges that any indemnification provided for under the Contract referenced above applies to the failure of the Vendor to be and to remain PCI DSS compliant.

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**APPENDIX G-2: TESTING REQUIREMENTS**

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## **2. APPENDIX G-2 TESTING REQUIREMENTS**

All testing and Acceptance addressed herein shall apply to testing the System. This shall include planning, test scenario development, Data and System preparation for testing, and execution of Unit Testing, System integration testing, conversion/migration testing, installation testing, performance, and stress testing, Security Review and testing, and support of the State during User Acceptance Testing (UAT).

### **2.1. G-2.1 Test Planning and Preparation**

- 2.1.1. The overall Test Plan will guide all testing. The Vendor provided, State approved, Test Plan will include, at a minimum, identification, preparation, and Documentation of planned testing, a requirements traceability matrix, test variants, test scenarios, test cases, test scripts, test Data, test phases, unit tests, expected results, and a tracking method for reporting actual versus expected results as well as all errors and problems identified during test execution.
- 2.1.2. It is crucial that client training and testing activities not be abbreviated in order to meet Project Implementation Schedules. Therefore, the State requires that the testing activities be represented both in terms of effort and duration.
- 2.1.3. Vendors must disclose in their Proposals the scheduling assumptions used in regard to the Client resource efforts during testing.
- 2.1.4. State testing will commence upon the Vendor Project Manager's Certification, in writing, that the Vendor's own staff has successfully executed all prerequisite Vendor testing, along with reporting the actual testing results, prior to the start of any testing executed by State staff.
- 2.1.5. The State will commence its testing within five (5) business days of receiving Certification from the Vendor that the State's personnel have been trained and the System is installed, configured, complete, and ready for State testing. The testing will be conducted by the State in an environment independent from the Vendor's development environment. The Vendor must assist the State with testing in accordance with the Test Plan and the Work Plan, utilizing test and live Data to validate reports, and conduct stress and performance testing, at no additional cost.

### **2.2. G-2.2 Testing**

- 2.2.1. Testing begins upon completion of the Software configuration as required and user training according to the Work Plan. Testing ends upon issuance of a letter of UAT Acceptance by the State.

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2.2.2. Vendor must demonstrate that their testing methodology can be integrated with the State standard methodology described in Table G-2.2 State Recommended Testing Methodology.

2.3. Table G-2.2 State Recommended Testing Methodology, please propose your methodology and use the following as a guideline.

Reference	Topic	Guideline
1	Unit Testing	<p>Application components are tested on an individual basis to verify that the inputs, outputs, and processing logic of each application component functions without errors. Unit Testing is performed in either the development environment or a testing environment.</p> <p>The goal is to find errors in the smallest unit of Software. If successful, subsequent integration testing should only reveal errors related to the integration between application components.</p>
2	System Integration Testing	<ul style="list-style-type: none"> <li>a. Validates the integration between the individual unit application components and verifies that the new System meets defined requirements and supports execution of interfaces and business processes. The Systems Integration Test is performed in a test environment.</li> <li>b. Emphasizes end-to-end business processes and the flow of information across applications. It includes all key business processes and interfaces being implemented, confirms Data transfers with external parties, and includes the transmission or printing of all electronic and paper documents.</li> <li>c. The State will conduct System Integration Testing, utilizing scripts developed, as identified in the Test Plan, to validate the functionality of the System and its interfaces. The State will also use System Integration Testing to validate modifications, fixes and other System interactions with the Vendor supplied Software Solution.</li> </ul>
3	Conversion /Migration Validation Testing	The Conversion/Migration Validation Testing should replicate the entire flow of the converted Data through the Software Solution. As the Software Solution is interfaced to legacy or third-party applications, the testing verifies that the resulting converted legacy Data performs correctly.
4	Installation Testing	Application components are installed in the System test environment to test the installation routines and are refined for the eventual production environment. This activity serves as a dry run of the installation steps in preparation for configuring the production System.
5	User Acceptance	The User Acceptance Test (UAT) is a Verification process performed in a copy of the production environment. The User Acceptance Test verifies System

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	Testing (UAT)	<p>functionality against predefined Acceptance criteria that support the successful execution of approved business processes.</p> <ol style="list-style-type: none"> <li>a. The Vendor's Project Manager must certify in writing, that the Vendor's own staff has successfully executed all prerequisite Vendor testing, along with reporting the actual testing results prior to the start of any testing executed by State staff.</li> <li>b. The State will be presented with a State approved Test Plan, test scenarios, test cases, test scripts, test Data, and expected results, as well as written Certification of the Vendor's having completed the prerequisite tests, prior to the State staff involvement in any testing activities.</li> <li>c. UAT will also serve as a performance and stress test of the System. It may cover any aspect of the new System, including administrative procedures such as backup and recovery. The results of the UAT provide evidence that the new System meets the User Acceptance criteria as defined in the Work Plan</li> </ol> <p>Upon successful conclusion of UAT and successful System deployment, the State will issue a letter of UAT Acceptance and the respective Warranty Period shall commence as described in Appendix H: <i>State of New Hampshire Terms and Conditions</i> - Section H-25.10.1: <i>Warranty Period</i>.</p>
6	Performance Tuning and Stress Testing	<p>Vendor shall develop and document hardware and Software configuration and tuning of System infrastructure as well as assist and direct the State's System Administrators and Database Administrators in configuring and tuning the infrastructure to support the Software throughout the Project</p> <p>Performance Tuning and Stress Testing</p> <p><u>Scope</u></p> <p>The scope of performance testing shall measure the system level metrics critical for the development of the applications infrastructure and operation of the applications in the production environment. It will include the measurement of response rates of the application for end-user transactions and resource utilization (of various servers and network) under various load conditions. These response rates shall become the basis for changes and retesting until optimum system performance is achieved.</p> <p>The application transactions shall be identified with specific roles and selected transactions shall be recorded for the performance measurements. These will be compared to baselines to determine if object and/or system performance increases as changes are made.</p> <p>Performance testing shall consider the full scope of the application infrastructure with emphasis on the most heavily used or shared transactions. Performance testing of the application will profile the identified user transactions and assist in the identifying performance gaps to improve the most critical parts of the</p>



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		<p>applications.</p> <p>Performance testing and tuning shall occur in the final production environment and shall use a copy of the final production database to provide the best results.</p> <p>Vendor must lead this effort. Responsibilities include identifying appropriate tunable parameters and their default and recommended settings, developing scripts, which accurately reflect business load and coordinating reporting of results.</p> <p><u>Test types</u></p> <p>Performance testing shall use two different types of tests to determine the stability of the application. They are baseline tests and load tests</p> <p><u>Baseline Tests:</u> Baseline tests shall collect performance Data and load analysis by running scripts where the output is broken down into business transactions or functions. The test is like a single user executing a defined business transaction. During baseline testing, each individual script is run to establish a baseline for transaction response time, throughput and other user-based metrics. Usually each business transaction is executed multiple times during a single test run to obtain an average for the user-based metrics required for the performance testing evaluations. It must be noted that changes made to the code after baseline testing is completed will skew the results collected to date. All effort will be made to provide a code test base that is tested in the environment for problems prior to the establishment of the baseline, which are used in future testing and tuning efforts. Any changes introduced into the environment after performance testing has started can compromise the accuracy of the results and will force a decision to be made whether baseline results need to be recreated.</p> <p><u>Load Tests:</u> Load testing will determine if the behavior of a system can be sustained over a long period of time while running under expected conditions. Load tests helps to verify the ability of the application environment under different load conditions based on workload distribution. System response time and utilization is measured and recorded.</p> <p><u>Tuning</u></p> <p>Tuning will occur during both the development of the application and load testing. Tuning is the process whereby the application performance is maximized. This can be the result of making code more efficient during development as well as making tuning parameter changes to the environment.</p> <p>For infrastructure tuning, parameters will be identified for all components prior to undertaking the load testing efforts. This should include a list of the variables,</p>
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	<p>their definitions, the default settings, range of acceptable settings and the settings as testing begins. This will permit the team to identify the areas of most potential gain and a starting point. Tuning is a process which is repeated until the team feels that the systems are running at or near optimum performance.</p> <p><u>Implementing Performance and Stress Test</u></p> <p>Performance and Stress test Tools must be provided by the Vendor for this effort. Consideration must be given to licensing with respect to continued use for Regression Testing. If the Vendor is familiar with open source low/no cost tools for this purpose those tools should be identified in your response.</p> <p><u>Scheduling Performance and Stress Testing</u></p> <p>Vendor shall perform test planning. The steps for planning include identification of application functionality as well as what percentage of normal daily use is represented by each function. This information will become the foundation for scripting so that tests closely represent what loads in production will look like.</p> <p>Vendor shall provide definition and expectations from testing. This definition should include who is in charge of testing and coordinating results, anticipated run times, logs required for tracking, their locations and which technician is responsible to track and provide them following each test to the team.</p> <p>Initial test runs shall be completed to establish that the tests and Data sets can be run to completion without errors. The ratio of types of transactions which makeup the test shall be Reviewed prior to the beginning of testing and then again once testing has begun to make sure that testing accurately reflects the system performing in production.</p> <p>Initial tests shall be used to establish a baseline from which all subsequent tests will be compared. Tests will be considered for baseline status once two of them have been run within 2% of each other in key and overall performance areas. No changes to the test scripts or Data sets (with the exception of restores after each test) can be done to the test environment once tuning has begun so as to not damage the comparison to baseline results. The systems must be restarted prior to each test run to assure all cache is cleaned out. All effort will be made to run these tests at a time when system and network infrastructure utilization doesn't impact the results. Tests will be run in close proximity to our infrastructure to eliminate the public network from our environment.</p> <p>Post test reporting and result assessment will be Scheduled following each test. The team will compare these results to the baseline and a determination must be made to make additional changes to the parameter being tuned or return to the prior configuration and select another parameter to tune while keeping in mind that significant changes to any one parameter may require the retesting of some</p>
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		<p>others. Careful work on identifying dependencies up front should minimize this impact.</p> <p>If Defects are identified in the application during testing, they will be recorded; however, changes to the application code should be avoided if possible so as not to affect baseline comparisons. If a change to the application is required new baselines will be established (and possibly the execution of prior tests to validate changes with the new application) before testing can continue.</p> <p>When performing capacity testing against a GUI the focus will be on the ability of the interface to respond to user input.</p> <p>During stress/load testing the tester will attempt to stress or load an aspect of the system to the point of failure. The goal being to determine weak points in the system architecture. The tester will identify peak load conditions at which the program will fail to handle required processing loads within required time spans.</p> <p>During Performance testing the tester will design test case scenarios to determine if the system meets the stated performance criteria (i.e. A Login request shall be responded to in 1 second or less under a typical daily load of 1000 requests per minute.). In both cases, the tester will determine the capacity of the system under a known set of conditions.</p>
7	Regression Testing	<p>As a result, of the user testing activities, problems will be identified that require correction. The State will notify the Vendor of the nature of the testing failures in writing. The Vendor will be required to perform additional testing activities in response to State and/or user problems identified from the testing results.</p> <p>Regression Testing means selective re-testing to detect faults introduced during the modification effort, both to verify that the modifications have not caused unintended adverse effects, and to verify that the modified and related (possibly affected) System components still meet their specified requirements.</p> <ol style="list-style-type: none"> <li>a. For each minor failure of an Acceptance Test, the Acceptance Period shall be extended by corresponding time defined in the Test Plan.</li> <li>b. The Vendor shall notify the State no later than five (5) business days from the Vendor's receipt of written notice of the test failure when the Vendor expects the corrections to be completed and ready for retesting by the State. The Vendor will have up to five (5) business days to make corrections to the problem unless specifically extended in writing by the State.</li> <li>c. When a programming change is made in response to a problem identified during user testing, a Regression Test Plan should be</li> </ol>

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		<p>developed by the Vendor based on the understanding of the program and the change being made to the program. The Test Plan has two objectives:</p> <ol style="list-style-type: none"> <li>1. Validate that the change/update has been properly incorporated into the program; and</li> <li>2. Validate that there has been no unintended change to the other portions of the program.</li> </ol> <p>d. The Vendor will be expected to:</p> <ol style="list-style-type: none"> <li>1. Create a set of test conditions, test cases, and test data that will validate that the change has been incorporated correctly;</li> <li>2. Create a set of test conditions, test cases, and test data that will validate that the unchanged portions of the program still operate correctly; and</li> <li>3. Manage the entire cyclic process.</li> </ol> <p>e. The Vendor will be expected to execute the Regression Test, provide actual testing results, and certify its completion in writing to the State prior to passing the modified Software application to the users for retesting.</p> <p>In designing and conducting such Regression Testing, the Vendor will be required to assess the risks inherent to the modification being implemented and weigh those risks against the time and effort required for conducting the Regression Tests. In other words, the Vendor will be expected to design and conduct Regression Tests that will identify any unintended consequences of the modification while taking into account Schedule and economic considerations.</p> <p>In their Proposals Vendors must acknowledge their responsibilities for regression testing as described in this section.</p>				
8	Security Review and Testing	<p>IT Security involves all functions pertaining to the securing of State Data and Systems through the creation and definition of security policies, procedures and controls covering such areas as Identification, Authentication and non-repudiation.</p> <p>All components of the Software shall be Reviewed and tested to ensure they protect the State's hardware and Software and its related Data assets.</p> <table border="1" data-bbox="652 1683 1528 1889"> <tr> <td data-bbox="652 1683 954 1747">Service Component</td> <td data-bbox="954 1683 1528 1747">Defines the set of capabilities that:</td> </tr> <tr> <td data-bbox="652 1747 954 1889">Identification and Authentication.</td> <td data-bbox="954 1747 1528 1889">Supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users.</td> </tr> </table>	Service Component	Defines the set of capabilities that:	Identification and Authentication.	Supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users.
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Identification and Authentication.	Supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users.					

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			Access Control	Supports the management of permissions for logging onto a computer or network.
			Encryption	Supports the encoding of Data for security purposes
			Intrusion Detection	Supports the detection of illegal entrance into a computer system,
			Verification	Supports the confirmation of authority to enter a computer system, application or network.
			Digital Signature	Guarantees the unaltered state of a file.
			User Management	Supports the administration of computer, application and network accounts within an organization.
			Role/Privilege Management	Supports the granting of abilities to users or groups of users of a computer, application or network.
			Audit Trail Capture and Analysis	Supports the identification and monitoring of activities within an application or system.
			Input Validation	Ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.
		<p>In their Proposal, the Vendors must acknowledge their responsibilities for security testing. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability. Tests shall, at a minimum, cover each of the service components. Test procedures shall include 3<sup>rd</sup> party Penetration Tests (pen test) or code analysis and review.</p> <p>Prior to the System being moved into production, the Vendor shall provide results of all security testing to the Department of Information Technology for Review and Acceptance. All Software and hardware shall be free of malicious code (malware).</p>		
9	Penetration Testing	<p>1. Implement a methodology for penetration testing that includes the following:</p>		

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		<ul style="list-style-type: none"> <li>a. Is based on industry-accepted penetration testing approaches (for example, NIST SP800-115);</li> <li>b. Includes coverage for the entire CDE perimeter and critical systems;</li> <li>c. Includes testing from both inside and outside the network;</li> <li>d. Includes testing to validate any segmentation and scope-reduction controls;</li> <li>e. Defines application-layer penetration tests to include, at a minimum, the vulnerabilities listed in <u>PCI DSS Compliance: Requirement 6.5</u>;</li> <li>f. Defines network-layer penetration tests to include components that support network functions as well as Operating Systems;</li> <li>g. Includes Review and consideration of threats and vulnerabilities experienced in the last 12 months; and</li> <li>h. Specifies retention of penetration testing results and remediation activities results.</li> </ul> <ul style="list-style-type: none"> <li>2. Perform external penetration testing at least annually and after any significant infrastructure or application upgrade or modification (such as an operating system upgrade, a sub-network added to the environment, or a web server added to the environment).</li> <li>3. Perform internal penetration testing at least annually and after any significant infrastructure or application upgrade or modification (such as an operating system upgrade a sub-network added to the environment, or a web server added to the environment):</li> <li>4. Exploitable vulnerabilities found during penetration testing are corrected and testing is repeated to verify the corrections</li> <li>5. If segmentation is used to isolate the CDE from other networks, perform penetration tests at least annually and after any changes to segmentation controls/methods to verify that the segmentation methods are Operational and effective, and isolate all out-of-scope systems from in-scope systems.</li> </ul>
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**APPENDIX G-3: CERTIFICATES**

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### **3. APPENDIX G-3: CERTIFICATES**

#### **3.1. A. Certificate of Good Standing**

As a condition of Contract award, the Vendor, if required by law, must furnish a Certificate of Authority/Good Standing dated after April 1, 2018, from the Office of the Secretary of State of New Hampshire. If your company is not registered, an application form may be obtained from:

Secretary of State  
State House Annex  
25 Capitol Street  
Concord, New Hampshire 03301  
603-271-3244

If your company is registered, a Certification thereof may be obtained from the Secretary of State.

*<Note: Sovereign states or their agencies may be required to submit suitable substitute Documentation concerning their existence and authority to enter into a Contract>*

#### **3.2. B. Certificate of Authority/Vote**

The Certificate of Authority/Vote authorizes, by position, a representative(s) of your corporation to enter into an Agreement or amendment with the State of New Hampshire. This ensures that the person signing the Agreement is authorized as of the date he or she is signing it to enter into Agreements for that organization with the State of New Hampshire

The officer's signature must be either notarized or include a corporate seal that confirms the title of the person authorized to sign the Agreement. The date the Board officer signs must be on or after the date the amendment is signed. The date the notary signs must match the date the Board officer signs.

You may use your own format for the Certificate of Authority/Vote as long as it contains the necessary language to authorize the Agreement signatory to enter into Agreements and amendments with the State of New Hampshire as of the date they sign.

##### **3.2.1. B.1 CERTIFICATE OF AUTHORITY/VOTE CHECKLIST**

###### **3.2.1.1. B.1.1 SOURCE OF AUTHORITY**

Authority must come from the governing body, either:

**3.2.1.1.1. A majority voted at a meeting; or**

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3.2.1.1.2. The body provided unanimous consent in writing; or

3.2.1.1.3. The organization's policy or governing document.

3.2.2. B.1.2 SOURCE OF AUTHORITY WAS IN EFFECT ON DAY AGREEMENT OR AMENDMENT WAS SIGNED

Certificate must show that the person signing the Contract had authority when they signed the Agreement or Amendment, either:

3.2.2.1. Authority was granted the same day as the day the Agreement or Amendment was signed; or

3.2.2.2. Authority was granted after the day the Agreement or amendment was signed and the governing body ratifies and accepts the earlier execution; or

3.2.2.3. Authority was granted prior to the day the Agreement or amendment was signed and it has not been amended or repealed as of the day the Contract was signed.

3.2.3. B.1.3 APPROPRIATE PERSON SIGNED THE CERTIFICATE

The person signing the certificate may be the same person signing the Agreement or Amendment only if the certificate states that the person is the sole director (for corps) or sole member (for LLCs).

3.3. C. Certificate of Insurance

3.3.1. C.1 Comprehensive general liability insurance against all claims of bodily injury, death or property damage (\$1,000,000 per occurrence and \$2,000,000 aggregate)

3.3.2. C.1.2 Certificate Holder must be: State of NH, <AGENCY NAME>, Commissioner, <AGENCY ADDRESS>, Concord, NH, 03301

3.4. Workers Compensation

3.4.1. D.1 Workers Compensation coverage may be indicated on the insurance form described above.

3.4.1.1. D.1.2 Workers Compensation coverage must comply with State of NH RSA 281-A

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**APPENDIX H: STATE OF NEW HAMPSHIRE TERMS AND CONDITIONS**

**APPENDIX H – STATE OF NEW HAMPSHIRE TERMS AND CONDITIONS**

FORM NUMBER P-37 (version 5/8/15)

**AGREEMENT**

The State of New Hampshire and the Vendor hereby mutually agree as follows:

**GENERAL PROVISIONS**

1.1 State Agency Name		1.2 State Agency Address	
1.3 Contractor Name		1.4 Contractor Address	
1.5 Contractor Phone Number	1.6 Account Number	1.7 Completion Date	1.8 Price Limitation
1.9 Contracting Officer for State Agency		1.10 State Agency Telephone Number	
1.11 Contractor Signature		1.12 Name and Title of Contractor Signatory	
1.13 Acknowledgement: State of _____, County of _____ On _____, before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public or Justice of the Peace  <div style="text-align: center;">[Seal]</div>			
1.13.2 Name and Title of Notary or Justice of the Peace			

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1.14 State Agency Signature  Date:	1.15 Name and Title of State Agency
1.16 Approval by the N.H. Department of Administration, Division of Personnel (if applicable) By: _____ Director, On: _____	
1.17 Approval by the Attorney General (Form, Substance and Execution) (if applicable) By: _____ On: _____	
1.18 Approval by the Governor and Executive Council (if applicable) By: _____ On: _____	

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**2. EMPLOYMENT OCONTRACTOR/SERVICES TO BE PERFORMED.** The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

**3. EFFECTIVE DATE/COMPLETION OF SERVICES.**

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.18, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.14 ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any prices incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

**4. CONDITIONAL NATURE OF AGREEMENT.**

Notwithstanding any provision of this Agreement to the

contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

**5. CONTRACT PRICE/PRICE LIMITATION/PAYMENT.**

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

**6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.**

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6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. This may include the requirement to utilize auxiliary aids and services to ensure that persons with communication disabilities, including vision, hearing and speech, can communicate with, receive information from, and convey information to the Contractor. In addition, the Contractor shall comply with all applicable copyright laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

#### 7. PERSONNEL.

7.1 The Contractor shall at its own expense provide all

personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

#### 8. EVENT OF DEFAULT/REMEDIES.

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

- 8.1.1 failure to perform the Services satisfactorily or on schedule;
- 8.1.2 failure to submit any report required hereunder; and/or
- 8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2. Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

- 8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two(2) days after giving the Contractor notice of termination;

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- 8.2.2. give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;
- 8.2.3. set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or
- 8.2.4. treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

**9. DATA/ACCESS/CONFIDENTIALITY/  
PRESERVATION.**

9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

10. **TERMINATION.** In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

11. **CONTRACTOR'S RELATION TO THE STATE.** In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

**12.ASSIGNMENT/DELEGATION  
/SUBCONTRACTS.**

The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice and consent of the State. None of the Services shall be subcontracted by the Contractor without the prior written notice and consent of the State.

13. **INDEMNIFICATION.** The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

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**14. INSURANCE.**

14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate ; and

14.1.2 special cause of loss coverage form covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than thirty (30) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation or modification of the policy.

**15. WORKERS' COMPENSATION.**

15.1 By signing this agreement, the Contractor agrees,

certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A (*Workers' Compensation*).

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

16. **WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

17. **NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

18. **AMENDMENT.** This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no such approval is required under the circumstances pursuant to State law, rule or policy.

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**19. CONSTRUCTION OF AGREEMENT AND TERMS.**

This Agreement shall be construed in accordance with the

laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party.

**20. THIRD PARTIES.** The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

**21. HEADINGS.** The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

**22. SPECIAL PROVISIONS.** Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

**23. SEVERABILITY.** In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

**24. ENTIRE AGREEMENT.** This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

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## **25. APPENDIX H-25: GENERAL CONTRACT REQUIREMENTS**

### **25.1. H-25.1 State of NH Terms and Conditions and Contract Requirements**

The Contract terms set forth in Appendix H: *State of New Hampshire Terms and Conditions* shall constitute the core for any Contract resulting from this RFP.

### **25.2. H-25.2 Vendor Responsibilities**

25.2.1. The Vendor shall be solely responsible for meeting all requirements, and terms and conditions specified in this RFP, its Proposal, and any resulting Contract, regardless of whether or not it proposes to use any Subcontractor.

25.2.2. The Vendor may subcontract Services subject to the provisions of the RFP, including but not limited to, the terms and conditions in Appendix H: *State of New Hampshire Terms and Conditions*. The Vendor must submit with its Proposal all information and documentation relating to the Subcontractor necessary to fully respond to the RFP, which must include terms and conditions consistent with this RFP. The Vendor shall remain wholly responsible for performance of the entire Contract regardless of whether a Subcontractor is used. The State will consider the Vendor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from any Contract.

### **25.3. H-25.3 Project Budget/Price Limitation**

The State has funds budgeted for this Project, subject to Appendix H: *State of New Hampshire Terms and Conditions*, P-37, General Provision - Section 4: *Conditional Nature of Agreement*, and P-37, General Provision - Section 5: *Contract Price/Price Limitation/Payment*.

### **25.4. H-25.4 State Contracts**

The State of New Hampshire intends to use, wherever possible, existing statewide software and hardware Contracts to acquire supporting Software and hardware.

### **25.5. H-25.5 Vendor Staff**

25.5.1. In the Proposal the Vendor shall assign and identify a Project Manager and key Vendor staff, in accordance with the Requirements and Deliverables of Appendix C: *System Requirements and Deliverables* and Appendix E: *Standards for Describing Vendor Qualifications*.



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- 25.5.2. The Vendor's selection of a Project Manager will be subject to the prior approval of the State. The State's approval process may include, without limitation, at the State's discretion, Review of the proposed Project Manager's resume, qualifications, references and background checks, and an interview. The Vendor's Project Manager must be qualified to perform the obligations required of the position under the Contract, have full authority to make binding decisions, and shall function as the Vendor's representative for all administrative and management matters. The Project Manager must be available to promptly respond during Normal Working Hours within two (2) hours to inquiries from the State, and be at the site as needed. The Vendor must use his or her best efforts on the Project.
- 25.5.3. The Vendor shall not change key Vendor staff and Project Manager commitments (collectively referred to as "Project Staff") unless such replacement is necessary due to sickness, death, termination of employment, or unpaid leave of absence. Any such changes to the Vendor's Project Staff shall require the prior written approval of the State. Replacement Project Staff shall have comparable or greater skills with regard to performance of the Project as the staff being replaced and be subject to the provisions of this RFP and any resulting Contract.
- 25.5.4. The State, at its sole expense, may conduct reference and background checks on the Vendor's Project Staff. The State shall maintain the confidentiality of reference and background screening results. The State reserves the right to reject the Vendor's Project Staff as a result of such reference and background checks. The State also reserves the right to require removal or reassignment of the Vendor's Key Project Staff found unacceptable to the State.
- 25.5.5. Notwithstanding anything to the contrary, the State shall have the option to terminate the Contract, at its discretion, if it is dissatisfied with the Vendor's replacement Project Staff.
- 25.6. H-25.6 Work Plan
- 25.6.1. Vendor shall submit a preliminary Work Plan in its Proposal. The Work Plan shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, major milestones, task dependencies, and payment Schedule. A final Work Plan will be due five (5) business days after Contract award upon approval by Governor and Executive Council.

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- 25.6.2. The Vendor shall update the Work Plan as necessary, but no less than every two weeks to accurately reflect the status of the Project, including without limitation, the Schedule, tasks, Deliverables; major milestones, task dependencies, and payment Schedule. Any updates to the Work Plan shall require the written approval of the State prior to final incorporation into the Contract.
  - 25.6.3. Unless otherwise agreed in writing by the State, changes to the Work Plan shall not relieve the Vendor from liability to the State for any damages resulting from the Vendor's failure to perform its obligations under the Contract, including without limitation, performance in accordance with the Schedule.
  - 25.6.4. In the event of a delay in the Schedule, the Vendor must immediately notify the State in writing. The written notification will identify the nature of the delay, i.e., specific actions or inactions of the Vendor or State causing the problem; its estimated duration period to reconciliation; specific actions that need to be taken to correct the problem; and the expected Schedule affect the Project.
  - 25.6.5. In the event the Vendor requires additional time to correct Deficiencies, the Schedule shall not change unless previously agreed in writing by the State, except that the Schedule shall automatically extend on a day-to-day basis to the extent that the delay does not result from Vendor's failure to fulfill its obligations under the Contract. To the extent that the State's execution of its major tasks takes longer than described in the Work Plan, the Schedule shall automatically extend on a day-to-day basis.
  - 25.6.6. Notwithstanding anything to the contrary, the State shall have the option to terminate the Contract for default, at its discretion, if it is dissatisfied with the Vendor's Work Plan or elements within the Work Plan.
- 25.7. H-25.7            Change Orders
- 25.7.1. The State may make changes or revisions at any time by written Change Order. Within five (5) business days of a Vendor's receipt of a Change Order, the Vendor shall advise the State, in detail, of any impact on cost (e.g., increase or decrease), the Schedule, or the Work Plan.

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- 25.7.2. A Vendor may request a change within the scope of the Contract by written Change Order, identifying any impact on cost, the Schedule, or the Work Plan. The State shall attempt to respond to a Vendor's requested Change Order within five (5) business days. The State, which includes the requesting Agency and the Department of Information Technology, must approve all Change Orders in writing. The State shall be deemed to have rejected the Change Order if the parties are unable to reach an Agreement in writing.
- 25.7.3. All Change Order requests from a Vendor to the State, and the State Acceptance of a Vendor's estimate for a State requested change, will be acknowledged and responded to, either Acceptance or rejection, in writing. If accepted, the Change Order(s) shall be subject to the Contract amendment process, as determined to apply by the State.

**25.8. H-25.7 Deliverables**

The Vendor shall provide the State with the Deliverables and Services in accordance with the time frames in the Work Plan. All Deliverables shall be subject to the State's Acceptance as set forth in Appendix H: *State of New Hampshire Terms and Conditions - Section H-25.9: Testing and Acceptance*, herein. Upon its submission of a Deliverable, the Vendor represents that it has performed its obligations under the Contract associated with the Deliverable.

By unconditionally accepting a Deliverable, the State reserves the right to reject any and all Deliverables in the event the State detects any Deficiency in the System, in whole or in part, through completion of all Acceptance Testing, including but not limited to, Software/System Acceptance Testing, and any extensions thereof.

For each denial of Acceptance, the Acceptance Period may be extended, at the option of the State, by the corresponding time required to correct the Deficiency, retest or Review.

**25.8.1. H-25.7.1 Written Deliverables Review**

The State will Review the Written Deliverables for an Acceptance Period of five (5) business days after receiving written Certification from the Vendor that the Written Deliverable is final, complete, and ready for Review. The State will notify the Vendor in writing of its Acceptance or Non-Acceptance of a Deliverable by the end of the five (5) day Review Period. If any Deficiencies exist, the State will notify the Vendor in writing of the Deficiency and the Vendor must correct the Deficiency within five (5) business days of receiving notice from the State at no charge to the State. Upon receipt of the corrected Deliverable, the State will have five (5) business days to Review the corrected Written Deliverable and notify the Vendor in writing of its Acceptance or rejection thereof.

**25.8.2. H-25.7.2 Software Deliverables Review**

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Described in Section H-25.9: *Testing and Acceptance, herein.*

25.8.3. H-25.7.3 Non-Software Deliverables Review

The State will Review Non-Software Deliverables to determine whether any Deficiency exists and notify the Vendor in writing of its Acceptance or non-acceptance of the Non-Software Deliverable. The Vendor must correct the Deficiencies within five (5) business days, or within the period identified in the Work Plan, as applicable. Following correction of the Deficiency, the State will notify the Vendor in writing of its Acceptance or rejection of the Deliverable.

25.9. H-25.8 Licenses

The State has defined the Software License grant rights, terms and conditions, and has documented the evaluation criteria.

25.9.1. H-25.8.1 Software License Grant

The Software License shall grant the State a worldwide, perpetual, irrevocable, non-exclusive, non-transferable, limited license to use the Software and its associated Documentation, subject to the terms of the Contract.

The State may allow its agents and Vendors to access and use the Software, and in such event, the State shall first obtain written Agreement from such agents and Vendors that each shall abide by the terms and conditions set forth herein.

25.9.2. H-25.8.2 Software and Documentation Copies

The Vendor shall provide the State with a sufficient number of hard copy versions of the Software's associated Documentation and one (1) electronic version in Microsoft WORD and PDF format. The State shall have the right to copy the Software and its associated Documentation for its internal business needs. The State agrees to include copyright and proprietary notices provided to the State by the Vendor on such copies.

25.9.3. H-25.8.3 Restrictions

Except as otherwise permitted under the Contract, the State agrees not to:

- 25.9.3.1. Remove or modify any program markings or any notice of Vendor's proprietary rights;
- 25.9.3.2. Make the programs or materials available in any manner to any third party for use in the third party's business operations, except as permitted herein; or
- 25.9.3.3. Cause or permit reverse engineering, disassembly or recompilation of the programs.

25.9.4. H-25.8.4 Title

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The Vendor must hold the right to allow the State to use the Software or hold all title, right, and interest (including all ownership and intellectual property rights) in the Software and its associated Documentation.

25.9.5. H-25.8.5 Third Party

The Vendor shall identify all third party contracts to be provided under the Contract with the Vendor's Proposal. The terms in any such contracts must be consistent with this RFP and any resulting Contract, including, but not limited to Appendix H: *State of New Hampshire Terms and Conditions - General Provisions Form P-37*.

25.10.H-25.9 Testing and Acceptance

The State requires that an integrated and coherent approach to complete System testing, Security Review and Testing; Deficiency correction, Acceptance, and training, and that Warranty Services be provided to ensure a successful Project.

In its Proposal, the Vendor is to include its proposed Test Plan methodology and any scheduling assumptions used regarding the client resource efforts required during testing. After Contract award, the Vendor will be required to customize its proposed Test Plan methodology to reflect the needs of the Project and include the details of its Test Plan methodology in the detailed Work Plan (the first Project Deliverable). A separate Test Plan and set of test materials will be prepared for each Software function or module.

In addition, the Vendor will provide a mechanism for reporting actual test results vs. expected results and for the resolution and tracking of all errors and problems identified during test execution. The Vendor will also provide training as necessary to the State staff responsible for test activities.

See Appendix G-1 for Testing Requirements

25.10.1.H-25.9.1 Remedies

- 25.10.1.1. If the Vendor fails to correct a Deficiency within the period of time allotted by the State, the Vendor shall be deemed to have committed an Event of Default, pursuant Appendix H: *State of New Hampshire Terms and Conditions - P-37, General Provisions - Section 8: Event of Default/Remedies*, and H-25.14: *Termination*, and the State Shall have the right, at its option, to pursue the remedies in Section H-25.14.1: *Termination for Default* as well as to return the Vendor's product and receive a refund for all amounts paid to the Vendor, including but not limited to, applicable license fees, within ninety (90) days of notification to the Vendor of the State's refund request

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25.10.1.2. Notwithstanding any provision of the Contract, the State's option to terminate the Contract and pursue the stated remedies will remain in effect until the Vendor completes the Contract to the satisfaction of the State.

25.10.2.H-25.9.2 System Acceptance

Upon completion of the Warranty Period, the State will issue a Letter of Final System Acceptance.

25.11.H-25.10 Warranty

25.11.1.H-25.10.1 Warranty Period

The Warranty Period will initially commence upon the State issuance of a Letter of Acceptance for UAT and will continue for ninety (90) days. If within the last thirty (30) calendar days of the Warranty Period, the System Software fails to operate as specified, the Warranty Period will cease, the Vendor will correct the Deficiency, and a thirty (30) calendar day Warranty Period will begin. Any further Deficiencies with the Software must be corrected and run fault free for thirty (30) days.

25.11.2.H-25.10.2 Warranties

25.11.2.1. H-25.10.2.1 System

The Vendor shall warrant that the System must operate to conform to the Specifications, terms, and requirements of the Contract.

25.11.2.2. H-25.10.2.2 Software

The Vendor shall warrant that the Software is properly functioning within the System, compliant with the requirements of the Contract, and will operate in accordance with the Specifications. Software shall be archived and or version controlled through the use of Harvest Software.

25.11.2.3. H-25.10.2.3 Non-Infringement

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The Vendor shall warrant that it has good title to, or the right to allow the State to use all Services, equipment, and Software provided under this Contract, and that such Services, equipment, and Software ("Material") do not violate or infringe any patent, trademark, copyright, trade name or other intellectual property rights or misappropriate a trade secret of any third party.

25.11.2.4. H-25.10.2.4 Viruses; Destructive Programming

The Vendor shall warrant that the Software will not contain any viruses, destructive programming, or mechanisms designed to disrupt the performance of the Software in accordance with the Specifications.

25.11.2.5. H-25.10.2.5 Compatibility

The Vendor shall warrant that all System components, including any replacement or upgraded System Software components provided by the Vendor to correct Deficiencies or as an Enhancement, shall operate with the rest of the System without loss of any functionality.

25.11.2.6. H-25.10.2.6 Professional Services

The Vendor shall warrant that all Services provided under the Contract will be provided in a professional manner in accordance with industry standards and that Services will comply with performance standards.

25.11.3. H-25.10.3 Warranty Services

The Vendor shall agree to maintain, repair, and correct Deficiencies in the System Software, including but not limited to the individual modules or functions, during the Warranty Period at no additional cost to the State, in accordance with the Specifications and terms and requirements of the Contract, including without limitation, correcting all errors, and Defects and Deficiencies; eliminating viruses or destructive programming; and replacing incorrect, Defective or Deficient Software and Documentation.

Warranty Services shall include, without limitation, the following:

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- 25.11.3.1. Maintain the System Software in accordance with the Specifications, terms, and requirements of the Contract;
- 25.11.3.2. Repair or replace the System Software or any portion thereof so that the System operates in accordance with the Specifications, terms, and requirements of the Contract;
- 25.11.3.3. The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, twenty four (24) hours per day and seven (7) days a week with an email / telephone response within two (2) hours of request, with assistance response dependent upon issue severity;
- 25.11.3.4. On-site additional Services within four (4) business hours of a request;
- 25.11.3.5. Maintain a record of the activities related to Warranty Repair or maintenance activities performed for the State; and
- 25.11.3.6. For all Warranty Services calls, the Vendor shall ensure the following information will be collected and maintained:
  - 25.11.3.6.1. Nature of the Deficiency;
  - 25.11.3.6.2. Current status of the Deficiency;
  - 25.11.3.6.3. Action plans, dates, and times;
  - 25.11.3.6.4. Expected and actual completion time;
  - 25.11.3.6.5. Deficiency resolution information;
  - 25.11.3.6.6. Resolved by;
  - 25.11.3.6.7. Identifying number i.e. work order number; and
  - 25.11.3.6.8. Issue identified by.
- 25.11.3.7. The Vendor must work with the State to identify and troubleshoot potentially large-scale Software failures or Deficiencies by collecting the following information:
  - 25.11.3.7.1. Mean time between reported Deficiencies with the Software;
  - 25.11.3.7.2. Diagnosis of the root cause of the problem; and
  - 25.11.3.7.3. Identification of repeat calls or repeat Software problems.



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- 25.11.3.8. All Deficiencies found during the Warranty Period and all Deficiencies found with the Warranty Releases shall be corrected by the Vendor no later than five (5) business days, unless specifically extended in writing by the State, at no additional cost to the State.
- 25.11.3.9. If in the Event of Default, the Vendor fails to correct the Deficiency within the allotted period of time (see above), the State shall have the right, at its option: 1) declare the Vendor in default, terminate the Contract, in whole or in part, without penalty or liability to the State; 2) return the Vendor's product and receive a refund for all amounts paid to the Vendor, including but not limited to, applicable license fees within ninety (90) days of notification to the Vendor of the State's intent to request a refund; 3) and to pursue its remedies available at law or in equity.
- 25.11.3.10. Notwithstanding any provision of the Contract, the State's option to terminate the Contract and pursue the remedies above will remain in effect until satisfactory completion of the full Warranty Period.

**25.12. H-25.11 Ongoing Software Maintenance and Support Levels**

The Vendor shall maintain and support the system in all material respects as described in the applicable program Documentation after delivery and the Warranty Period of ninety (90) days through the completion of the Contract term.

The Vendor will not be responsible for maintenance or support for Software developed or modified by the State.

**25.12.1. H-25.11.1 Maintenance Releases**

The Vendor shall make available to the State the latest program updates, general maintenance releases, selected functionality releases, patches, and Documentation that are generally offered to its customers, at no additional cost.

**25.12.2. H-25.11.2 Vendor Responsibility**

The Vendor shall be responsible for performing on-site or remote technical support in accordance with the Contract Documents, including without limitation the requirements, terms, and conditions contained herein.

As part of the Software maintenance Agreement, ongoing Software maintenance and support levels, including all new Software releases, shall be responded to according to the following:

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- 25.12.2.1. a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request;
- 25.12.2.2. b. Class B & C Deficiencies –The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action;
- 25.12.3. The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract;
- 25.12.4. The Vendor shall maintain a record of the activities related to warranty repair or maintenance activities performed for the State;
- 25.12.5. For all maintenance Services calls, the Vendor shall ensure the following information will be collected and maintained:
  - 25.12.5.1. Nature of the Deficiency;
  - 25.12.5.2. Current status of the Deficiency;
  - 25.12.5.3. Action plans, dates, and times;
  - 25.12.5.4. Expected and actual completion time;
  - 25.12.5.5. Deficiency resolution information;
  - 25.12.5.6. Resolved by;
  - 25.12.5.7. Identifying number i.e. work order number; and
  - 25.12.5.8. Issue identified by.
- 25.12.6. The Vendor must work with the State to identify and troubleshoot potentially large-scale System failures or Deficiencies by collecting the following information: 1) mean time between reported Deficiencies with the Software; 2) diagnosis of the root cause of the problem; and 3) identification of repeat calls or repeat Software problems.

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25.12.7. If the Vendor fails to correct a Deficiency within the allotted period of time Stated above, the Vendor shall be deemed to have committed an Event of Default, pursuant to Appendix H: *State of New Hampshire Terms and Conditions* - Section H-25.14.1: *Termination for Default*, and the State shall have the right, at its option, to pursue the remedies in H-25.14: *Termination*, as well as to return the Vendor's product and receive a refund for all amounts paid to the Vendor, including but not limited to, applicable license fees, within ninety (90) days of notification to the Vendor of the State's refund request

25.13. H-25.12 Administrative Specifications

25.13.1. H-25.12.1 Travel Expenses

The State will not be responsible for any travel or out of pocket expenses incurred in the performance of the Services.

The Vendor must assume all travel and related expenses by "fully loading" the proposed labor rates to include, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses.

25.13.2. H-25.11.2 Shipping and Delivery Fee Exemption

The State will not pay for any shipping or delivery fees unless specifically itemized in the Contract.

25.13.3. H-25.12.3 Project Workspace and Office Equipment

The State agency will work with the Vendor to determine the requirements for providing all necessary workspace and office equipment, including desktop computers for the Vendor's staff. If a Vendor has specific requirements, they must be included in the Vendor's Proposal.

25.13.4. H-25.12.4 Work Hours

Vendor personnel shall provide Services between the Work Hours of <8:00 a.m. and 5:00 p.m. EST, eight (8) hour days, forty (40) hour weeks>, excluding State of New Hampshire holidays. Changes to this Schedule may be made upon Agreement with the State Project Manager.

25.13.5. H-25.12.5 Access/Cooperation

As applicable, and reasonably necessary, and subject to the applicable State and federal laws and regulations and restrictions imposed by third parties upon the State, the State will provide the Vendor with access to all program files, libraries, personal computer-based systems, software packages, network systems, security systems, and hardware as required to complete the contracted Services.

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The State will use reasonable efforts to provide approvals, authorizations, and decisions reasonably necessary to allow the Vendor to perform its obligations under the Contract.

25.13.6.H-25.12.6 State-Owned Documents and Data

The Vendor shall provide the State access to all Documents, State Data, materials, reports, and other work in progress relating to the Contract ("State Owned Documents"). Upon expiration or termination of the Contract with the State, Vendor shall turn over all State-owned Documents, State Data, material, reports, and work in progress relating to this Contract to the State at no additional cost to the State. State-Owned Documents must be provided in both printed and electronic format.

25.13.7.H-25.12.7 Intellectual Property

<NOTE: MAY NEED TO BE CHANGED - WORDING DEPENDS ON THE OWNERSHIP STATUS OF ANY CUSTOM CODE DEVELOPED>

Title, right, and interest (including all ownership and intellectual property rights) in the Software, and its associated Documentation, shall remain with the Department of Health and Human Services.

Upon successful completion and/or termination of the Implementation of the Project, Health and Human Services shall own and hold all, title, and rights in any solution modifications <Custom Code> developed in connection with performance of obligations under the Contract, or modifications to the Vendor provided Software, and their associated Documentation including any and all performance enhancing operational plans and the Vendors' special utilities. The Vendor shall license back to the State the right to produce, publish, or otherwise use such Software, source code, object code, modifications, reports, and Documentation developed under the Contract.

In no event shall the Vendor be precluded from developing for itself, or for others, materials that are competitive with, or similar to Custom Software, modifications developed in connection with performance of obligations under the Contract. In addition, the Vendor shall be free to use its general knowledge, skills, experience, and any other ideas, concepts, know-how, and techniques that are acquired or used in the course of its performance under this Agreement.

25.13.8.H-25.12.8 IT Required Work Procedures

All work done must conform to standards and procedures established by the Department of Information Technology and the State.

25.13.9.H-25.12.9 Computer Use

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In consideration for receiving access to and use of the computer facilities, network, licensed or developed Software, Software maintained or operated by any of the State entities, systems, equipment, Documentation, information, reports, or Database Administrator of any kind (hereinafter "Information"), Vendor understands and agrees to the following rules:

- 25.13.9.1. Every Authorized User has the responsibility to assure the protection of information from unauthorized access; misuse, theft, damage, destruction, modification, or disclosure;
- 25.13.9.2. That information shall be used solely for conducting official State business, and all other use or access is strictly forbidden including, but not limited to, personal, or other private and non-State use and that at no time shall Vendor access or attempt to access any information without having the express authority to do so;
- 25.13.9.3. That at no time shall Vendor access or attempt to access any information in a manner inconsistent with the approved policies, procedures, and /or Agreements relating to system entry/access;
- 25.13.9.4. That all Software Licensed, developed, or being evaluated by the State cannot be copied, shared, distributed, sub-licensed, modified, reverse engineered, rented, or sold, and that at all times Vendor must use utmost care to protect and keep such Software strictly confidential in accordance with the license or any other Agreement executed by the State. Only equipment or Software owned, licensed, or being evaluated by the State, can be used by the Vendor. Personal Software (including but not limited to palmtop sync Software) shall not be installed on any equipment; and
- 25.13.9.5. That if the Vendor is found to be in violation of any of the above-stated rules, the User may face removal from the State Contract, and/or criminal or civil prosecution, if the act constitutes a violation of law.

25.13.10. H-25.12.10 Email Use

Mail and other electronic communication messaging systems are State of New Hampshire property and are to be used for business purposes only. Email is defined as "internal email systems" or "State-funded email systems." Vendors understand and agree that use of email shall follow State standard policy (available upon request).

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25.13.11. H-25-12.11 Internet/Intranet Use

The Internet/Intranet is to be used for access to and distribution of information in direct support of the business of the State of New Hampshire according to State standard policy (available upon request).

25.13.12. H-25.12.12 Regulatory/Governmental Approvals

Any Contract awarded under the RFP shall be contingent upon the Vendor obtaining all necessary and applicable regulatory or other governmental approvals.

25.13.13. H-25.12.13 Force Majeure

25.13.13.1. Neither Vendor nor the State shall be responsible for delays or failures in performance resulting from events beyond the control of such party and without fault or negligence of such party. Such events shall include, but not be limited to, acts of God, strikes, lock outs, riots, and acts of War, epidemics, acts of Government, fire, power failures, nuclear accidents, earthquakes, and unusually severe weather.

25.13.13.2. Except in the event of the foregoing, Force Majeure events shall not include Vendor's inability to hire or provide personnel needed for the Vendor's performance under the Contract.

25.13.14. H-25.12.14 Confidential Information

25.13.14.1. In performing its obligations under the Contract, the Vendor may gain access to information of the State, including Confidential Information. "State Confidential Information" shall include, but not be limited to, information exempted from public disclosure under New Hampshire RSA chapter 91-A: Access to Public Records and Meetings (see e.g. RSA chapter 91-A: 5 Exemptions). The Vendor shall not use the State Confidential Information developed or obtained during the performance of, or acquired, or developed by reason of the Contract, except as is directly connected to and necessary for the Vendor's performance under the Contract.

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- 25.13.14.2. The Vendor agrees to maintain the confidentiality of and to protect from unauthorized use, disclosure, publication, and reproduction (collectively "release"), all State Confidential Information of the State that becomes available to the Vendor in connection with its performance under the Contract, regardless of its form.
- 25.13.14.3. Subject to applicable federal or State laws and regulations, Confidential Information shall not include information which: (i) shall have otherwise become publicly available other than as a result of disclosure by the receiving party in Breach hereof; (ii) was disclosed to the receiving party on a non-confidential basis from a source other than the disclosing party, which the receiving party believes is not prohibited from disclosing such information as a result of an obligation in favor of the disclosing party; (iii) is developed by the receiving party independently of, or was known by the receiving party prior to, any disclosure of such information made by the disclosing party; or (iv) is disclosed with the written consent of the disclosing party. A receiving party also may disclose Confidential Information to the extent required by an order of a court of competent jurisdiction.
- 25.13.14.4. Any disclosure of the State's information shall require prior written approval of the State. The Vendor shall immediately notify the State if any request, subpoena or other legal process is served upon the Vendor regarding the State's Confidential Information, and the Vendor shall cooperate with the State in any effort it undertakes to contest the request, the subpoena or other legal process, at no additional cost to the State.
- 25.13.14.5. In the event of unauthorized use or disclosure of the State's Confidential Information, the Vendor shall immediately notify the State, and the State shall immediately be entitled to pursue any remedy at law and in equity, including, but not limited to injunctive relief.

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25.13.14.6. Insofar as the Vendor seeks to maintain the confidentiality of its confidential or proprietary information, the Vendor must clearly identify in writing the information it claims to be confidential or proprietary. The Vendor acknowledges that the State is subject to the Right to Know Law, RSA chapter 91-A. The State shall maintain the confidentiality of the identified Confidential Information insofar as it is consistent with applicable State or federal laws or regulations, including but not limited to, RSA chapter 91-A. In the event the State receives a request for the information identified by the Vendor as confidential, the State shall notify the Vendor and specify the date the State will be releasing the requested information. At the request of the State, the Vendor shall cooperate and assist the State with the collection and Review of the Vendor's information, at no additional expense to the State. Any effort to prohibit or enjoin the release of the information shall be the Vendor's sole responsibility and at the Vendor's sole expense. If the Vendor fails to obtain a court order enjoining the disclosure, the State shall release the information on the date specified in the State's notice to the Vendor without any State liability to the Vendor.

25.13.14.7. This Contract Agreement, Appendix H: State of New Hampshire Terms and Conditions - Section H-25.12.14: Confidential Information shall survive the termination or conclusion of a Contract.

25.13.15. H-25.12.14 Data Breach

In the event of a Data Breach, the Vendor shall comply with provisions of NH RSA 359-C.

25.14. H-25.13 Pricing

25.14.1. H-25.13.1 Activities/Deliverables/Milestones Dates and Pricing

The Vendor must include, within the fixed price for IT service activities, tasks, and preparation of required Deliverables, pricing for the Deliverables required based on the proposed approach, and methodology and tools. A fixed price must be provided for each Deliverable. Pricing worksheets are provided in Appendix F: *Pricing Worksheets*.

25.14.2. H-25.13.2 Software Licensing, Maintenance, Enhancements, and Support Pricing



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- 25.14.2.1. The Vendor must provide the minimum Software support and Services through Software Licensing, maintenance, Enhancements, and support as detailed in Section H-25.11: Ongoing Software Maintenance and Support Levels.
- 25.14.2.2. For Software Licensing, maintenance, and support costs, complete a worksheet including all costs in the table. A worksheet is provided in Appendix F: *Pricing Worksheets*, under Table F-4: *Software Licensing, Maintenance, and Support Pricing Worksheet*, and Table F-5: *Web Site Hosting, Maintenance, and Support Pricing Worksheet*.
- 25.14.3. H-25.13.3 Invoicing
  - 25.14.3.1. The Vendor shall submit correct invoices to the State for all amounts to be paid by the State. All invoices submitted shall be subject to the State's written approval, which shall not be unreasonably withheld. The Vendor shall only submit invoices for Services or Deliverables as permitted by the Contract. Invoices must be in a format as determined by the State and contain detailed information, including without limitation: itemization of each Deliverable and identification of the Deliverable for which payment is sought, and the Acceptance date triggering such payment; date of delivery and/or installation; monthly maintenance charges; any other Project costs or retention amounts if applicable.
  - 25.14.3.2. Upon acceptance of a properly documented invoice, the State will pay the invoice within thirty (30) days of invoice issuance. Invoices will not be backdated and shall be promptly dispatched.
  - 25.14.3.3. If the State receives an invoice and the amount on the invoice is calculated incorrectly, the State shall notify the Vendor of the alleged error prior to the due date of such payment. The State and the Vendor agree to use commercially reasonable efforts to resolve the invoicing error within fifteen (15) days from such notification to the Vendor. The State shall promptly pay upon resolution of such dispute or within such fifteen (15) day period of an agreed-upon amount, whichever is later, and no late charges shall apply to that amount or the originally invoiced amount.
- 25.14.4. H-25.13.4 Overpayments to the Vendor

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The Vendor shall promptly, but no later than fifteen (15) business days, pay the State the full amount of any overpayment or erroneous payment upon discovery or notice from the State.

25.14.5.H-25.13.5 Credits

The State may apply credits due to the State, arising out of this Contract, against the Vendor's invoices with appropriate information attached.

25.14.6.H-25.13.6 Records Retention and Access Requirements

25.14.6.1. The Vendor shall agree to the conditions of all applicable State and federal laws and regulations, which are incorporated herein by this reference, regarding retention and access requirements, including without limitation, retention policies consistent with the Federal Acquisition Regulations (FAR) Subpart 4.7 Vendor Records Retention.

25.14.6.2. The Vendor and its Subcontractors shall maintain books, records, documents, and other evidence of accounting procedures and practices, which properly and sufficiently reflect all direct and indirect costs, invoiced in the performance of their respective obligations under the Contract. The Vendor and its Subcontractors shall retain all such records for three (3) years following termination of the Contract, including any extensions. Records relating to any litigation matters regarding the Contract shall be kept for one (1) year following the termination of all litigation, including the termination of all appeals or the expiration of the appeals period.

25.14.6.3. Upon prior notice and subject to reasonable time frames, all such records shall be subject to inspection, examination, audit and copying by personnel so authorized by the State and federal officials so authorized by law, rule, regulation or Contract, as applicable. Access to these items will be provided within Merrimack County of the State of New Hampshire, unless otherwise agreed by the State. Delivery of and access to such records shall be at no cost to the State during the three (3) year period following termination of the Contract and one (1) year term following litigation relating to the Contract, including all appeals or the expiration of the appeal period. The Vendor shall include the record retention and Review requirements of this section in any of its subcontracts.

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25.14.6.4. The State agrees that books, records, documents, and other evidence of accounting procedures and practices related to the Vendor's cost structure and profit factors shall be excluded from the State's Review unless the cost or any other Services or Deliverables provided under the Contract is calculated or derived from the cost structure or profit factors.

25.14.7. H-25.13.7 Accounting Requirements

The Vendor shall maintain an accounting system in accordance with generally accepted accounting principles. The costs applicable to the Contract shall be ascertainable from the accounting system and the Vendor shall maintain records pertaining to the Services and all other costs and expenditures.

25.15. H-25.14 Termination

25.15.1. H-25.14.1 Termination for Default

25.15.1.1. Any one or more of the following acts or omissions of the Vendor shall constitute an Event of Default hereunder ("Event of Default"):

25.15.1.1.1. a. Failure to perform the Services satisfactorily or on Schedule;

25.15.1.1.2. b. Failure to submit any report required; and/or

25.15.1.1.3. c. To perform any other covenant, term or condition of the Contract.

25.15.1.2. Upon the occurrence of any Event of Default, the State may take any one or more, or all, of the following actions:

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- 25.15.1.2.1. Unless otherwise provided in the Contract, the State shall provide the Vendor written notice of default and require it to be remedied within, in the absence of a greater or lesser Specification of time, within thirty (30) days from the date of notice, unless otherwise indicated within by the State ("Cure Period"). If the Vendor fails to cure the default within the Cure Period, the State may terminate the Contract effective two (2) days after giving the Vendor notice of termination, at its sole discretion, treat the Contract as Breached and pursue its remedies at law or in equity or both;
- 25.15.1.2.2. Give the Vendor a written notice specifying the Event of Default and suspending all payments to be made under the Contract and ordering that the portion of the Contract price which would otherwise accrue to the Vendor during the period from the date of such notice until such time as the State determines that the Vendor has cured the Event of Default shall never be paid to the Vendor;
- 25.15.1.2.3. Set off against any other obligations the State may owe to the Vendor any damages the State suffers by reason of any Event of Default;
- 25.15.1.2.4. Treat the Contract as breached and pursue any of its remedies at law or in equity, or both; and
- 25.15.1.2.5. Procure Services that are the subject of the Contract from another source and the Vendor shall be liable for reimbursing the State for the replacement Services, and all administrative costs directly related to the replacement of the Contract and procuring the Services from another source, such as costs of competitive bidding, mailing, advertising, applicable fees, charges or penalties, and staff time costs; all of which shall be subject to the limitations of liability set forth in the Contract.

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- 25.15.1.3. In the Event of Default by the State, the Vendor shall provide the State with written notice of default, and the State shall cure the default within thirty (30) days.
- 25.15.1.4. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive termination or Contract Conclusion.
- 25.15.1.5. This section H-25.14 shall survive termination or Contract Conclusion.
- 25.15.2. H-25.14.2 Termination for Convenience
  - 25.15.2.1. The State may, at its sole discretion, terminate the Contract for convenience, in whole or in part, by thirty (30) days written notice to the Vendor. In the event of such termination for convenience, the State shall pay the Vendor the agreed upon price, if separately stated, for Deliverables for which Acceptance has been given by the State. Amounts for Services or Deliverables provided prior to the date of termination for which no separate price is stated will be paid, in whole or in part, generally in accordance with Appendix F: *Pricing Worksheets*.
  - 25.15.2.2. During the thirty (30) day period, the Vendor shall wind down and cease its Services as quickly and efficiently as reasonably possible, without performing unnecessary Services or activities and by minimizing negative effects on the State from such winding down and cessation of Services.
- 25.15.3. H-25.14.3 Termination for Conflict of Interest
  - 25.15.3.1. The State may terminate the Contract by written notice if it determines that a conflict of interest exists, including but not limited to, a violation by any of the parties hereto of applicable laws regarding ethics in public acquisitions and procurement and performance of Contracts.

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- 25.15.3.2. In such case, the State shall be entitled to a pro-rated refund of any current development, support and maintenance costs. The State shall pay all other Contracted payments that would have become due and payable if the Vendor did not know, or reasonably did not know, of the conflict of interest.
- 25.15.3.3. In the event the Contract is terminated as provided above pursuant to a violation by the Vendor, the State shall be entitled to pursue the same remedies against the Vendor as it could pursue in the event of a default of the Contract by the Vendor.
- 25.15.4. H-25.14.4 Termination Procedure
  - 25.15.4.1. Upon termination of the Contract, the State, in addition to any other rights provided in the Contract, may require the Vendor to deliver to the State any property, including without limitation, Software and Written Deliverables, for such part of the Contract as has been terminated.
  - 25.15.4.2. After receipt of a notice of termination, and except as otherwise directed by the State, Vendor shall:
    - 25.15.4.2.1. Stop work under the Contract on the date, and to the extent specified, in the notice;
    - 25.15.4.2.2. Promptly, but in no event longer than thirty (30) days after termination, terminate its orders and subcontracts related to the work which has been terminated and settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the State to the extent required, which approval or ratification shall be final for the purpose of this Section;
    - 25.15.4.2.3. Take such action as the State directs, or as necessary to preserve and protect the property related to the Contract which is in the possession of Vendor and in which State has an interest;

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25.15.4.2.4. Transfer title to the State and deliver in the manner, at the times, and to the extent directed by the State, any property which is required to be furnished to State and which has been accepted or requested by the State; and

25.15.4.2.5. Provide written Certification to the State that Vendor has surrendered to the State all said property.

**25.16. H-25.15      Limitation of Liability**

**25.16.1. H-25.15.1    State**

25.16.1.1. Subject to applicable laws and regulations, in no event shall the State be liable for any consequential, special, indirect, incidental, punitive, or exemplary damages. Subject to applicable laws and regulations, the State's liability to the Vendor shall not exceed the total Contract price set forth in Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Section 1.8: Price Limitation*.

25.16.1.2. Notwithstanding the foregoing and any provision of this Contract to the contrary, in no event does the State waive its sovereign immunity or any applicable defenses or immunities.

**25.16.2. H-25.15.2    The Vendor**

Subject to applicable laws and regulations, in no event shall the Vendor be liable for any consequential, special, indirect, incidental, punitive or exemplary damages and the Vendor's liability to the State shall not exceed two times (2X) the total Contract price set forth in Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Section 1.8: Price Limitation*. Notwithstanding the foregoing, the limitation of liability shall not apply to the Vendor's indemnification obligations set forth in Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Section 1.8: Price Limitation*, and Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Sections 13: Indemnification*, and confidentiality obligations in Section H-25.12.14: *Confidential Information*, and Data Breach obligations in Section H-25.12.15: *Data Breach* which shall be unlimited.

**25.16.3. H-25.15.3    State's Immunity**

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Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive termination or Contract Conclusion.

**25.16.4.H.25.15.4 Survival**

This Contract Agreement, Section H-25.15: Limitation of Liability shall survive termination or Contract Conclusion.

**25.17.H-25.16 Change of Ownership**

In the event that the Vendor should change ownership for any reason whatsoever, the State shall have the option of continuing under the Contract with the Vendor, its successors or assigns for the full remaining term of the Contract; continuing under the Contract with the Vendor, its successors or assigns for such period of time as determined necessary by the State; or immediately terminate the Contract without liability to the Vendor, its successors or assigns.

**25.18.H-25.17 Assignment, Delegation and Subcontracts**

25.18.1.The Vendor shall not assign, delegate, subcontract, or otherwise transfer any of its interest, rights, or duties under the Contract without the prior written consent of the State. Such consent will not be unreasonably withheld. Any attempted transfer, assignment, delegation, or other transfer made without the State's prior written consent shall be null and void and may constitute an Event of Default at the sole discretion of the State.

25.18.2.The Vendor shall remain wholly responsible for performance of the entire Contract regardless of whether assignees, delegates, Subcontractors or other transferees ("Assigns") are used, unless otherwise agreed to in writing by the State and the Assigns fully assumes in writing any and all obligations and liabilities under the Contract from the Effective Date. In the absence of a written assumption of full obligations and liabilities of the Contract, any permitted assignment, delegation, subcontract or other transfer shall neither relieve the Vendor of any of its obligations under the Contract nor shall it affect any remedies available to the State against the Vendor that may arise from any Event of Default of the provisions of the Contract. The State will consider the Vendor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from the Contract.

**25.19.H-25.18 Dispute Resolution**



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Prior to the filing of any formal proceedings with respect to a dispute (other than an action seeking injunctive relief with respect to intellectual property rights or Confidential Information), the party believing itself aggrieved (the "Invoking Party") shall call for progressive management involvement in the dispute negotiation by written notice to the other party. Such notice shall be without prejudice to the Invoking Party's right to any other remedy permitted by this Agreement.

**25.20. H-25.19**      **Venue and Jurisdiction**

The Contract shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successor and assigns. Any action on the Contract may only be brought in the State of New Hampshire Merrimack County Superior Court.

**25.21. H-25.20**      **Project Holdback**

The State will withhold 10% of the agreed Deliverables pricing tendered by the Vendor in this engagement until successful completion of the Warranty Period as defined in Appendix H: State of New Hampshire Terms and Conditions - Section H-25.10.1: Warranty Period.

**25.22. H-25.21**      **Escrow of Code**

Vendor will enter into a source and configuration code escrow Agreement, with a State approved escrow agent. The proposed escrow Agreement shall be submitted with the Vendor's Proposal for Review by the State. The escrow Agreement requires the Vendor to put the Vendor Software source and configuration code in escrow. The source code shall be released to the State if one of the following events has occurred:

- 25.22.1. The Vendor has made an assignment for the benefit of creditors;
- 25.22.2. The Vendor institutes or becomes subject to a liquidation or bankruptcy proceeding of any kind;
- 25.22.3. A receiver or similar officer has been appointed to take charge of all or part of the Vendor's assets;
- 25.22.4. The Vendor or its Subcontractor terminates its maintenance and operations support Services for the State for the Software or has ceased supporting and maintaining the Software for the State, whether due to its ceasing to conduct business generally or otherwise, except in cases where the termination or cessation is a result of the non-payment or other fault of the State;
- 25.22.5. Vendor defaults under the Contract; or

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25.22.6. Vendor ceases its on-going business operations or that portion of its business operations relating to the licensing and maintenance of the Software.

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**TERMS AND DEFINITIONS**

The following general contracting terms and definitions apply except as specifically noted elsewhere in this document.

Acceptance	Notice from the State that a Deliverable has satisfied Acceptance Test or Review.
Acceptance Letter	An Acceptance Letter provides notice from the State that a Deliverable has satisfied Acceptance Tests or Review.
Acceptance Period	The timeframe during which the Acceptance Test is performed.
Acceptance Test Plan	The Acceptance Test Plan provided by the Vendor and agreed to by the State that describes at a minimum, the specific Acceptance process, criteria, and Schedule for Deliverables.
Acceptance Test and Review	Tests performed to determine that no Defects exist in the application Software or the System.
Access Control	Supports the management of permissions for logging onto a computer or network.
Agreement	A Contract duly executed and legally binding.
Appendix	Supplementary material that is collected and appended at the back of a document.
Audit Trail Capture and Analysis	Supports the identification and monitoring of activities within an application or system.
Authorized User	The Vendor's employees, Contractors, Subcontractors or other agents who need to access the State's Personal Data to enable the Contractor to perform the Services required.
Best and Final Offer (BAFO)	For negotiated procurements, a Vendor's final offer following the conclusion of discussions.
Breach or Breach of Security	Unlawful and unauthorized acquisition of unencrypted computerized Data that materially compromises the security, confidentiality or integrity of personal information maintained by a person or commercial entity.
Business Hours	Vendor personnel shall work normal business hours between

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	8:00 a.m. and 5:00 p.m. EST, eight (8) hour days, forty (40) hour weeks, excluding State of New Hampshire holidays. Changes to this Schedule may be made upon agreement with the State Project Manager.
CCP	Change Control Procedures
Certification	The Vendor's written declaration with full supporting and written Documentation (including without limitation test results as applicable) that the Vendor has completed development of the Deliverable and certified its readiness for applicable Acceptance Testing or Review.
Change Control	Formal process for initiating changes to the proposed Solution or process once development has begun.
Change Order	Formal Documentation prepared for a proposed change in the Specifications.
Completion Date	End date for the Contract. (See Contract Agreement, P-37 General Provisions, Block 1.7)
Confidential Information	Information required to be kept Confidential from unauthorized disclosure <i>under the Contract</i> .
Contract	An Agreement between the State of New Hampshire and a Vendor, which creates binding obligations for each party to perform as specified in the Contract Documents.
Contract Agreement	Part 1, 2, and 3. The Documentation consisting of the P-37 General Provisions, IT Provisions, and the Exhibits which represents the understanding and acceptance of the reciprocal legal rights and duties of the parties with respect to the Scope of Work.
Contract Conclusion	Refers to the conclusion of the Contract, for any reason, including but not limited to, the successful Contract completion, termination for convenience, or termination for default.
Contract Documents	Documents that comprise this Contract. (See Part 2, IT Provisions – Section 1.1)
Contract Managers	The persons identified by the State and the Vendor who shall be responsible for all Contractual authorization and administration of the Contract. These responsibilities shall include but not be limited to processing Contract Documentation, obtaining executive approvals, tracking costs and payments, and representing the parties in all Contract

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	administrative activities.
Contract Price	The total, not to exceed amount to be paid by the State to the Contractor for product and Services described in the Contract Agreement. This amount is listed in Part 1, P-37 General Provisions – Section 1.8: <i>Price Limitation</i> , as well as Part 3, Exhibit B – Paragraph 2: <i>Contract Price</i> .
Contractor	The Contractor and its employees, subcontractors, agents and affiliates who are providing the Services agreed to under the Contract.
Contracted Vendor/Vendor	The Vendor whose Proposal or quote was awarded the Contract with the State and who is responsible for the Services and Deliverables of the Contract.
Conversion/Migration Validation Test	A test to ensure that a Data conversion process correctly takes Data from a legacy system and successfully converts it to form that can be used by the new system.
COTS	Commercial Off the Shelf Software.
CR	Change Request
Cure Period	The thirty (30) day period following written notification of a default within which a Contracted Vendor must cure the default identified.
Custom Code	Code developed by the Vendor specifically for this Project for the State of New Hampshire.
Custom Software	Software developed by the Vendor specifically for this Project for the State of New Hampshire.
Data	State's records, files, forms, Data and other documents or information, in either electronic or paper form, that will be used /converted by the Vendor during the Contract Term.
Data Breach	The unauthorized access by a non-authorized persons(s) that results in the use, disclosure or theft of the State's unencrypted Non-Public Data.
DBA	Database Administrator
Deficiencies/Defects	A failure, Deficiency, or Defect in a Deliverable resulting in a Deliverable, the Software, or the System, not conforming to its Specifications.

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	<p>Class A Deficiency – <i>Software</i> - Critical, does not allow System to operate, no work around, demands immediate action; <i>Written Documentation</i> - missing significant portions of information or unintelligible to State; <i>Non Software</i> - Services were inadequate and require re-performance of the Service.</p> <p>Class B Deficiency – <i>Software</i> - important, does not stop operation and/or there is a work around and user can perform tasks; <i>Written Documentation</i> - portions of information are missing but not enough to make the document unintelligible; <i>Non Software</i> - Services were Deficient, require reworking, but do not require re-performance of the Service.</p> <p>Class C Deficiency – <i>Software</i> - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; <i>Written Documentation</i> - minimal changes required and of minor editing nature; <i>Non Software</i> - Services require only minor reworking and do not require re-performance of the Service.</p>
Deliverable	A Deliverable is any Written, Software, or NonSoftware Deliverable (letter, report, manual, book, other), provided by the Contractor to the State or under the terms of a Contract requirement.
Department	An agency of the State
Department of Information Technology (DoIT)	The Department of Information Technology established under <u>RSA chapter 21-R</u> by the Legislature effective September 5, 2008.
Digital Signature	Certification that guarantees the unaltered state of a file, also known as "code signing".
Documentation	All information that describes the installation, operation, and use of the Software, either in printed or electronic format.
Effective Date	The Contract and all obligations of the parties hereunder shall become effective on the date the Governor and the Executive Council of the State of New Hampshire approves the Contract.
Encryption	Supports the transformation of Data for security purposes.
Enhancements	Updates, additions, modifications to, and new releases for the Software, and all changes to the Documentation as a

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	result of Enhancements, including, but not limited to, Enhancements produced by Change Orders.
Event of Default	Any one or more of the following acts or omissions of a Vendor shall constitute an Event of Default hereunder ("Event of Default"): <ul style="list-style-type: none"> <li>a. Failure to perform the Services satisfactorily or on Schedule;</li> <li>b. Failure to submit any report required; and/or</li> <li>c. Failure to perform any other covenant, term or condition of the Contract.</li> </ul>
Firm Fixed Price Contract	A Firm Fixed Price Contract provides a price that is not subject to increase, i.e., adjustment on the basis of the Vendor's cost experience in performing the Contract.
Fully Loaded	Rates are inclusive of all allowable expenses, including, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses.
GAAP	Generally Accepted Accounting Principles.
Governor and Executive Council	The New Hampshire Governor and Executive Council.
GUI	Graphical user interface.
Harvest	Software to archive and/or control versions of Software.
Identification and Authentication	Supports obtaining information about those parties attempting to log on to a system or application for security purposes and the validation of those users.
Implementation	The process for making the System fully Operational for processing the Data.
Implementation Plan	Sets forth the transition from development of the System to full operation, and includes without limitation, training, business and technical procedures.
Information Technology (IT)	Refers to the tools and processes used for the gathering, storing, manipulating, transmitting, sharing, and sensing of information including, but not limited to, Data processing, computing, information systems, telecommunications, and various audio and video technologies.
Input Validation	Ensure that the value entered by users or provided by other applications meets the size, type and format expected.

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	Protecting the application from cross site scripting, SQL injection, buffer overflow, etc.
Intrusion Detection	Supports the detection of illegal entrance into a computer system.
Invoking Party	In a dispute, the party believing itself aggrieved.
Key Project Staff	Personnel identified by the State and by the Contracted Vendor as essential to work on the Project.
Licensee	The State of New Hampshire
Non-Exclusive Contract	A Contract executed by the State that does not restrict the State from seeking alternative sources for the Deliverables or Services provided under the Contract.
Non-Public Information	Data, other than Personal Data, that is not subject to distribution to the public as public information. It is deemed to be sensitive and confidential by the State because it contains information that is exempt by statute, ordinance or administrative rule from access by the general public as public information.
Non-Software Deliverables	Deliverables that are not Software Deliverables or Written Deliverables, e.g., meetings, help support, Services, other.
Notice to Proceed (NTP)	The State Contract Manager's written direction to the Vendor to begin work on the Contract on a given date and time.
Open Data Formats	A Data format based on an underlying Open Standard.
Open Source Software	Software that guarantees the user unrestricted use of the Software as defined in <u>RSA chapter 21-R:10</u> and <u>RSA chapter 21-R:11</u> .
Open Standards	Specifications for the encoding and transfer of computer Data that is defined in <u>RSA chapter 21-R:10</u> and <u>RSA chapter 21-R:13</u> .
Operating System	System is fully functional, all Data has been loaded into the System, is available for use by the State in its daily operations.
Operational	Operational means that the System is operating and fully functional, all Data has been loaded; the System is available for use by the State in its daily operations, and the State has issued an Acceptance Letter.



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Order of Precedence	The order in which Contract/Documents control in the event of a conflict or ambiguity. A term or condition in a document controls over a conflicting or ambiguous term or condition in a document that is lower in the Order of Precedence.
Personal Data	Data that includes information relating to a person that identifies the person by name and has any of the following Personally Identifiable Information (PII): government-issued identification numbers (e.g., Social Security, driver's license, passport); financial account information, including account number, credit or debit card numbers; or Protected Health Information (PHI) relating to a person.
Project	The planned undertaking regarding the entire subject matter of an RFP and Contract and the activities of the parties related hereto.
Project Team	The group of State employees and Contracted Vendor's personnel responsible for managing the processes and mechanisms required such that the Services are procured in accordance with the Work Plan on time, on budget and to the required Specifications and quality.
Project Managers	The persons identified who shall function as the State's and the Vendor's representative with regard to Review and Acceptance of Contract Deliverables, invoice sign off, and Review and approval of Change Requests (CR) utilizing the Change Control Procedures (CCP).
Project Staff	State personnel assigned to work with the Vendor on the Project.
Proposal	The submission from a Vendor in response to the Request for a Proposal or Statement of Work.
Regression Test Plan	A plan integrated into the Work Plan used to ascertain whether fixes to Defects have caused errors elsewhere in the application/process.
Review	The process of Reviewing Deliverables for Acceptance.
Review Period	The period set for Review of a Deliverable. If none is specified then the Review Period is five (5) business days.
RFP (Request for Proposal)	A Request For Proposal solicits Proposals to satisfy State functional requirements by supplying Data processing product and/or Service resources according to specific terms and conditions.

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Role/Privilege Management	Supports the granting of abilities to users or groups of users of a computer, application or network.
Schedule	The dates described in the Work Plan for deadlines for performance of Services and other Project events and activities under the Contract.
Services	The work or labor to be performed by the Vendor on the Project as described in the Contract.
Software	All Custom Software and COTS Software provided by the Vendor under the Contract.
Software-as-a-Service (SaaS)	The capability provided to the State to use the Contractor's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin-client interface such as a Web browser (e.g., Web-based email) or a program interface. The State does not manage or control the underlying cloud infrastructure including network, servers, Operating Systems, storage or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.
Software Deliverables	All Custom Software and COTS Software and Enhancements.
Software License	Licenses provided to the State under this Contract.
Solution	The Solution consists of the total Solution, which includes, without limitation, Software and Services, addressing the requirements and terms of the Specifications. The off-the-shelf Software and configured Software customized for the State provided by the Vendor in response to this RFP.
Specifications	The written Specifications that set forth the requirements which include, without limitation, this RFP, the Proposal, the Contract, any performance standards, Documentation, applicable State and federal policies, laws and regulations, State technical standards, subsequent State-approved Deliverables, and other Specifications and requirements described in the Contract Documents. The Specifications are, by this reference, made a part of the Contract as though completely set forth herein.
State	STATE is defined as: State of New Hampshire

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	<p>&lt;AGENCY &gt;</p> <p>&lt;Address&gt;</p> <p>&lt;City, State, Zip&gt;</p> <p>Reference to the term "State" shall include applicable agencies.</p>
Statement of Work (SOW)	A Statement of Work clearly defines the basic requirements and objectives of a Project. The Statement of Work also defines a high level view of the architecture, performance and design requirements, the roles and responsibilities of the State and the Vendor. The Contract Agreement SOW defines the results that the Vendor remains responsible and accountable for achieving.
State's Confidential Records	State's information regardless of its form that is not subject to public disclosure under applicable state and federal laws and regulations, including but not limited to <u>RSA chapter 91-A: Access to Governmental Records and Meetings</u> .
State Data	All Data created or in any way originating with the State, and all Data that is the output of computer processing of or other electronic manipulation of any Data that was created by or in any way originated with the State, whether such Data or output is stored on the State's hardware, the Contractor's hardware or exists in any system owned, maintained or otherwise controlled by the State or by the Contractor.
State Fiscal Year (SFY)	The New Hampshire State Fiscal Year extends from July 1 <sup>st</sup> through June 30 <sup>th</sup> of the following calendar year.
State Project Leader	State's representative with regard to Project oversight.
State's Project Manager (PM)	State's representative with regard to Project Management and technical matters. Agency Project Managers are responsible for Review and Acceptance of specific Contract Deliverables, invoice sign off, and Review and approval of a Change Request (CR).
Subcontractor	A person, partnership, or company not in the employment of, or owned by, the Vendor, which is performing Services under this Contract under a separate Contract with or on behalf of the Vendor.
System	All Software, specified hardware, and interfaces and extensions, integrated and functioning together in accordance with the Specifications.

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TBD	To Be Determined
Technical Authorization	Direction to a Vendor, which fills in details, clarifies, interprets, or specifies technical requirements. It must be: <ol style="list-style-type: none"> <li>1. Consistent with Statement of Work within statement of Services;</li> <li>2. not constitute a new assignment; and</li> <li>3. not change the terms, documents of Specifications of the SOW.</li> </ol>
Test Plan	A plan, integrated in the Work Plan, to verify the code (new or changed) works to fulfill the requirements of the Project. It may consist of a timeline, a series of tests and test Data, test scripts and reports for the test results as well as a tracking mechanism.
Term	Period of the Contract from the Effective Date through termination.
Transition Services	Services and support provided when the Contracted Vendor is supporting system changes.
UAT	User Acceptance Test.
Unit Test	Developers create their own test Data and test scenarios to verify the code they have created or changed functions properly as defined.
User Acceptance Testing (UAT)	Tests done by knowledgeable business users who are familiar with the scope of the Project. They create/develop test cases to confirm the System was developed according to specific user requirements. The test cases and scripts/scenarios should be mapped to business requirements outlined in the user requirements documents.
User Management	Supports the administration of computer, application and network accounts within an organization.
Vendor/ Contracted Vendor	The Vendor whose Proposal or quote was awarded the Contract with the State and who is responsible for the Services and Deliverables of the Contract.
Verification	Supports the confirmation of authority to enter a computer system, application or network.
Virtual Private Network (VPN)	Extends a private network across a public network, and

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	enables users to send and receive Data across shared or public networks as if their computing devices were directly connected to the private network
Warranty Period	A period of coverage during which the Contracted Vendor is responsible for providing a guarantee for products and Services delivered as defined in the Contract.
Warranty Releases	Code releases that are done during the Warranty Period.
Warranty Services	The Services to be provided by the Vendor during the Warranty Period.
Work Plan	The overall plan of activities for the Project created in accordance with the Contract. The plan and delineation of tasks, activities and events to be performed and Deliverables to be produced under the Project as specified in Appendix C: <i>System Requirements and Deliverables</i> . The Work Plan shall include a detailed description of the Schedule, tasks/activities, Deliverables, critical events, task dependencies, and the resources that would lead and/or participate on each task.
Written Deliverables	Non-Software written Deliverable Documentation (letter, report, manual, book, other) provided by the Vendor either in paper or electronic format.



**SPECIAL PROVISIONS**

Contractors Obligations: The Contractor covenants and agrees that all funds received by the Contractor under the Contract shall be used only as payment to the Contractor for services provided to eligible individuals and, in the furtherance of the aforesaid covenants, the Contractor hereby covenants and agrees as follows:

1. **Compliance with Federal and State Laws:** If the Contractor is permitted to determine the eligibility of individuals such eligibility determination shall be made in accordance with applicable federal and state laws, regulations, orders, guidelines, policies and procedures.
2. **Time and Manner of Determination:** Eligibility determinations shall be made on forms provided by the Department for that purpose and shall be made and remade at such times as are prescribed by the Department.
3. **Documentation:** In addition to the determination forms required by the Department, the Contractor shall maintain a data file on each recipient of services hereunder, which file shall include all information necessary to support an eligibility determination and such other information as the Department requests. The Contractor shall furnish the Department with all forms and documentation regarding eligibility determinations that the Department may request or require.
4. **Fair Hearings:** The Contractor understands that all applicants for services hereunder, as well as individuals declared ineligible have a right to a fair hearing regarding that determination. The Contractor hereby covenants and agrees that all applicants for services shall be permitted to fill out an application form and that each applicant or re-applicant shall be informed of his/her right to a fair hearing in accordance with Department regulations.
5. **Gratuities or Kickbacks:** The Contractor agrees that it is a breach of this Contract to accept or make a payment, gratuity or offer of employment on behalf of the Contractor, any Sub-Contractor or the State in order to influence the performance of the Scope of Work detailed in Exhibit A of this Contract. The State may terminate this Contract and any sub-contract or sub-agreement if it is determined that payments, gratuities or offers of employment of any kind were offered or received by any officials, officers, employees or agents of the Contractor or Sub-Contractor.
6. **Retroactive Payments:** Notwithstanding anything to the contrary contained in the Contract or in any other document, contract or understanding, it is expressly understood and agreed by the parties hereto, that no payments will be made hereunder to reimburse the Contractor for costs incurred for any purpose or for any services provided to any individual prior to the Effective Date of the Contract and no payments shall be made for expenses incurred by the Contractor for any services provided prior to the date on which the individual applies for services or (except as otherwise provided by the federal regulations) prior to a determination that the individual is eligible for such services.
7. **Conditions of Purchase:** Notwithstanding anything to the contrary contained in the Contract, nothing herein contained shall be deemed to obligate or require the Department to purchase services hereunder at a rate which reimburses the Contractor in excess of the Contractors costs, at a rate which exceeds the amounts reasonable and necessary to assure the quality of such service, or at a rate which exceeds the rate charged by the Contractor to ineligible individuals or other third party funders for such service. If at any time during the term of this Contract or after receipt of the Final Expenditure Report hereunder, the Department shall determine that the Contractor has used payments hereunder to reimburse items of expense other than such costs, or has received payment in excess of such costs or in excess of such rates charged by the Contractor to ineligible individuals or other third party funders, the Department may elect to:
  - 7.1. Renegotiate the rates for payment hereunder, in which event new rates shall be established;
  - 7.2. Deduct from any future payment to the Contractor the amount of any prior reimbursement in excess of costs;



- 7.3. Demand repayment of the excess payment by the Contractor in which event failure to make such repayment shall constitute an Event of Default hereunder. When the Contractor is permitted to determine the eligibility of individuals for services, the Contractor agrees to reimburse the Department for all funds paid by the Department to the Contractor for services provided to any individual who is found by the Department to be ineligible for such services at any time during the period of retention of records established herein.

**RECORDS: MAINTENANCE, RETENTION, AUDIT, DISCLOSURE AND CONFIDENTIALITY:**

- 8. **Maintenance of Records:** In addition to the eligibility records specified above, the Contractor covenants and agrees to maintain the following records during the Contract Period:
  - 8.1. **Fiscal Records:** books, records, documents and other data evidencing and reflecting all costs and other expenses incurred by the Contractor in the performance of the Contract, and all income received or collected by the Contractor during the Contract Period, said records to be maintained in accordance with accounting procedures and practices which sufficiently and properly reflect all such costs and expenses, and which are acceptable to the Department, and to include, without limitation, all ledgers, books, records, and original evidence of costs such as purchase requisitions and orders, vouchers, requisitions for materials, inventories, valuations of in-kind contributions, labor time cards, payrolls, and other records requested or required by the Department.
  - 8.2. **Statistical Records:** Statistical, enrollment, attendance or visit records for each recipient of services during the Contract Period, which records shall include all records of application and eligibility (including all forms required to determine eligibility for each such recipient), records regarding the provision of services and all invoices submitted to the Department to obtain payment for such services.
  - 8.3. **Medical Records:** Where appropriate and as prescribed by the Department regulations, the Contractor shall retain medical records on each patient/recipient of services.
- 9. **Audit:** Contractor shall submit an annual audit to the Department within 60 days after the close of the agency fiscal year. It is recommended that the report be prepared in accordance with the provision of Office of Management and Budget Circular A-133, "Audits of States, Local Governments, and Non Profit Organizations" and the provisions of Standards for Audit of Governmental Organizations, Programs, Activities and Functions, issued by the US General Accounting Office (GAO standards) as they pertain to financial compliance audits.
  - 9.1. **Audit and Review:** During the term of this Contract and the period for retention hereunder, the Department, the United States Department of Health and Human Services, and any of their designated representatives shall have access to all reports and records maintained pursuant to the Contract for purposes of audit, examination, excerpts and transcripts.
  - 9.2. **Audit Liabilities:** In addition to and not in any way in limitation of obligations of the Contract, it is understood and agreed by the Contractor that the Contractor shall be held liable for any state or federal audit exceptions and shall return to the Department, all payments made under the Contract to which exception has been taken or which have been disallowed because of such an exception.
- 10. **Confidentiality of Records:** All information, reports, and records maintained hereunder or collected in connection with the performance of the services and the Contract shall be confidential and shall not be disclosed by the Contractor, provided however, that pursuant to state laws and the regulations of the Department regarding the use and disclosure of such information, disclosure may be made to public officials requiring such information in connection with their official duties and for purposes directly connected to the administration of the services and the Contract; and provided further, that the use or disclosure by any party of any information concerning a recipient for any purpose not directly connected with the administration of the Department or the Contractor's responsibilities with respect to purchased services hereunder is prohibited except on written consent of the recipient, his attorney or guardian.



Notwithstanding anything to the contrary contained herein the covenants and conditions contained in the Paragraph shall survive the termination of the Contract for any reason whatsoever.

11. **Reports: Fiscal and Statistical:** The Contractor agrees to submit the following reports at the following times if requested by the Department.
  - 11.1. **Interim Financial Reports:** Written interim financial reports containing a detailed description of all costs and non-allowable expenses incurred by the Contractor to the date of the report and containing such other information as shall be deemed satisfactory by the Department to justify the rate of payment hereunder. Such Financial Reports shall be submitted on the form designated by the Department or deemed satisfactory by the Department.
  - 11.2. **Final Report:** A final report shall be submitted within thirty (30) days after the end of the term of this Contract. The Final Report shall be in a form satisfactory to the Department and shall contain a summary statement of progress toward goals and objectives stated in the Proposal and other information required by the Department.
12. **Completion of Services: Disallowance of Costs:** Upon the purchase by the Department of the maximum number of units provided for in the Contract and upon payment of the price limitation hereunder, the Contract and all the obligations of the parties hereunder (except such obligations as, by the terms of the Contract are to be performed after the end of the term of this Contract and/or survive the termination of the Contract) shall terminate, provided however, that if, upon review of the Final Expenditure Report the Department shall disallow any expenses claimed by the Contractor as costs hereunder the Department shall retain the right, at its discretion, to deduct the amount of such expenses as are disallowed or to recover such sums from the Contractor.
13. **Credits:** All documents, notices, press releases, research reports and other materials prepared during or resulting from the performance of the services of the Contract shall include the following statement:
  - 13.1. The preparation of this (report, document etc.) was financed under a Contract with the State of New Hampshire, Department of Health and Human Services, with funds provided in part by the State of New Hampshire and/or such other funding sources as were available or required, e.g., the United States Department of Health and Human Services.
14. **Prior Approval and Copyright Ownership:** All materials (written, video, audio) produced or purchased under the contract shall have prior approval from DHHS before printing, production, distribution or use. The DHHS will retain copyright ownership for any and all original materials produced, including, but not limited to, brochures, resource directories, protocols or guidelines, posters, or reports. Contractor shall not reproduce any materials produced under the contract without prior written approval from DHHS.
15. **Operation of Facilities: Compliance with Laws and Regulations:** In the operation of any facilities for providing services, the Contractor shall comply with all laws, orders and regulations of federal, state, county and municipal authorities and with any direction of any Public Officer or officers pursuant to laws which shall impose an order or duty upon the contractor with respect to the operation of the facility or the provision of the services at such facility. If any governmental license or permit shall be required for the operation of the said facility or the performance of the said services, the Contractor will procure said license or permit, and will at all times comply with the terms and conditions of each such license or permit. In connection with the foregoing requirements, the Contractor hereby covenants and agrees that, during the term of this Contract the facilities shall comply with all rules, orders, regulations, and requirements of the State Office of the Fire Marshal and the local fire protection agency, and shall be in conformance with local building and zoning codes, by-laws and regulations.
16. **Equal Employment Opportunity Plan (EEOP):** The Contractor will provide an Equal Employment Opportunity Plan (EEOP) to the Office for Civil Rights, Office of Justice Programs (OCR), if it has received a single award of \$500,000 or more. If the recipient receives \$25,000 or more and has 50 or





more employees, it will maintain a current EEOP on file and submit an EEOP Certification Form to the OCR, certifying that its EEOP is on file. For recipients receiving less than \$25,000, or public grantees with fewer than 50 employees, regardless of the amount of the award, the recipient will provide an EEOP Certification Form to the OCR certifying it is not required to submit or maintain an EEOP. Non-profit organizations, Indian Tribes, and medical and educational institutions are exempt from the EEOP requirement, but are required to submit a certification form to the OCR to claim the exemption. EEOP Certification Forms are available at: <http://www.ojp.usdoj/about/ocr/pdfs/cert.pdf>.

- 17. **Limited English Proficiency (LEP):** As clarified by Executive Order 13166, Improving Access to Services for persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination on the basis of limited English proficiency (LEP). To ensure compliance with the Omnibus Crime Control and Safe Streets Act of 1968 and Title VI of the Civil Rights Act of 1964, Contractors must take reasonable steps to ensure that LEP persons have meaningful access to its programs.
- 18. **Pilot Program for Enhancement of Contractor Employee Whistleblower Protections:** The following shall apply to all contracts that exceed the Simplified Acquisition Threshold as defined in 48 CFR 2.101 (currently, \$150,000)

CONTRACTOR EMPLOYEE WHISTLEBLOWER RIGHTS AND REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS (SEP 2013)

- (a) This contract and employees working on this contract will be subject to the whistleblower rights and remedies in the pilot program on Contractor employee whistleblower protections established at 41 U.S.C. 4712 by section 828 of the National Defense Authorization Act for Fiscal Year 2013 (Pub. L. 112-239) and FAR 3.908.
- (b) The Contractor shall inform its employees in writing, in the predominant language of the workforce, of employee whistleblower rights and protections under 41 U.S.C. 4712, as described in section 3.908 of the Federal Acquisition Regulation.
- (c) The Contractor shall insert the substance of this clause, including this paragraph (c), in all subcontracts over the simplified acquisition threshold.

- 19. **Subcontractors:** DHHS recognizes that the Contractor may choose to use subcontractors with greater expertise to perform certain health care services or functions for efficiency or convenience, but the Contractor shall retain the responsibility and accountability for the function(s). Prior to subcontracting, the Contractor shall evaluate the subcontractor's ability to perform the delegated function(s). This is accomplished through a written agreement that specifies activities and reporting responsibilities of the subcontractor and provides for revoking the delegation or imposing sanctions if the subcontractor's performance is not adequate. Subcontractors are subject to the same contractual conditions as the Contractor and the Contractor is responsible to ensure subcontractor compliance with those conditions.

When the Contractor delegates a function to a subcontractor, the Contractor shall do the following:

- 19.1. Evaluate the prospective subcontractor's ability to perform the activities, before delegating the function
- 19.2. Have a written agreement with the subcontractor that specifies activities and reporting responsibilities and how sanctions/revocation will be managed if the subcontractor's performance is not adequate
- 19.3. Monitor the subcontractor's performance on an ongoing basis



- 19.4. Provide to DHHS an annual schedule identifying all subcontractors, delegated functions and responsibilities, and when the subcontractor's performance will be reviewed
- 19.5. DHHS shall, at its discretion, review and approve all subcontracts.

If the Contractor identifies deficiencies or areas for improvement are identified, the Contractor shall take corrective action.

**DEFINITIONS**

As used in the Contract, the following terms shall have the following meanings:

**COSTS:** Shall mean those direct and indirect items of expense determined by the Department to be allowable and reimbursable in accordance with cost and accounting principles established in accordance with state and federal laws, regulations, rules and orders.

**DEPARTMENT:** NH Department of Health and Human Services.

**FINANCIAL MANAGEMENT GUIDELINES:** Shall mean that section of the Contractor Manual which is entitled "Financial Management Guidelines" and which contains the regulations governing the financial activities of contractor agencies which have contracted with the State of NH to receive funds.

**PROPOSAL:** If applicable, shall mean the document submitted by the Contractor on a form or forms required by the Department and containing a description of the Services to be provided to eligible individuals by the Contractor in accordance with the terms and conditions of the Contract and setting forth the total cost and sources of revenue for each service to be provided under the Contract.

**UNIT:** For each service that the Contractor is to provide to eligible individuals hereunder, shall mean that period of time or that specified activity determined by the Department and specified in Exhibit B of the Contract.

**FEDERAL/STATE LAW:** Wherever federal or state laws, regulations, rules, orders, and policies, etc. are referred to in the Contract, the said reference shall be deemed to mean all such laws, regulations, etc. as they may be amended or revised from the time to time.

**CONTRACTOR MANUAL:** Shall mean that document prepared by the NH Department of Administrative Services containing a compilation of all regulations promulgated pursuant to the New Hampshire Administrative Procedures Act. NH RSA Ch 541-A, for the purpose of implementing State of NH and federal regulations promulgated thereunder.

**SUPPLANTING OTHER FEDERAL FUNDS:** The Contractor guarantees that funds provided under this Contract will not supplant any existing federal funds available for these services.



**REVISIONS TO GENERAL PROVISIONS**

1. Subparagraph 4 of the General Provisions of this contract, Conditional Nature of Agreement, is replaced as follows:
  4. **CONDITIONAL NATURE OF AGREEMENT.**  
 Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including without limitation, the continuance of payments, in whole or in part, under this Agreement are contingent upon continued appropriation or availability of funds, including any subsequent changes to the appropriation or availability of funds affected by any state or federal legislative or executive action that reduces, eliminates, or otherwise modifies the appropriation or availability of funding for this Agreement and the Scope of Services provided in Exhibit A, Scope of Services, in whole or in part. In no event shall the State be liable for any payments hereunder in excess of appropriated or available funds. In the event of a reduction, termination or modification of appropriated or available funds, the State shall have the right to withhold payment until such funds become available, if ever. The State shall have the right to reduce, terminate or modify services under this Agreement immediately upon giving the Contractor notice of such reduction, termination or modification. The State shall not be required to transfer funds from any other source or account into the Account(s) identified in block 1.6 of the General Provisions, Account Number, or any other account, in the event funds are reduced or unavailable.
  
2. Subparagraph 10 of the General Provisions of this contract, Termination, is amended by adding the following language:
  - 10.1 The State may terminate the Agreement at any time for any reason, at the sole discretion of the State, 30 days after giving the Contractor written notice that the State is exercising its option to terminate the Agreement.
  - 10.2 In the event of early termination, the Contractor shall, within 15 days of notice of early termination, develop and submit to the State a Transition Plan for services under the Agreement, including but not limited to, identifying the present and future needs of clients receiving services under the Agreement and establishes a process to meet those needs.
  - 10.3 The Contractor shall fully cooperate with the State and shall promptly provide detailed information to support the Transition Plan including, but not limited to, any information or data requested by the State related to the termination of the Agreement and Transition Plan and shall provide ongoing communication and revisions of the Transition Plan to the State as requested.
  - 10.4 In the event that services under the Agreement, including but not limited to clients receiving services under the Agreement are transitioned to having services delivered by another entity including contracted providers or the State, the Contractor shall provide a process for uninterrupted delivery of services in the Transition Plan.
  - 10.5 The Contractor shall establish a method of notifying clients and other affected individuals about the transition. The Contractor shall include the proposed communications in its Transition Plan submitted to the State as described above.



**CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS**

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 et seq.), and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

**ALTERNATIVE I - FOR GRANTEES OTHER THAN INDIVIDUALS**

**US DEPARTMENT OF HEALTH AND HUMAN SERVICES - CONTRACTORS  
US DEPARTMENT OF EDUCATION - CONTRACTORS  
US DEPARTMENT OF AGRICULTURE - CONTRACTORS**

This certification is required by the regulations implementing Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 et seq.). The January 31, 1989 regulations were amended and published as Part II of the May 25, 1990 Federal Register (pages 21681-21691), and require certification by grantees (and by inference, sub-grantees and sub-contractors), prior to award, that they will maintain a drug-free workplace. Section 3017.630(c) of the regulation provides that a grantee (and by inference, sub-grantees and sub-contractors) that is a State may elect to make one certification to the Department in each federal fiscal year in lieu of certificates for each grant during the federal fiscal year covered by the certification. The certificate set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government wide suspension or debarment. Contractors using this form should send it to:

Commissioner  
NH Department of Health and Human Services  
129 Pleasant Street,  
Concord, NH 03301-6505

1. The grantee certifies that it will or will continue to provide a drug-free workplace by:
  - 1.1. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
  - 1.2. Establishing an ongoing drug-free awareness program to inform employees about
    - 1.2.1. The dangers of drug abuse in the workplace;
    - 1.2.2. The grantee's policy of maintaining a drug-free workplace;
    - 1.2.3. Any available drug counseling, rehabilitation, and employee assistance programs; and
    - 1.2.4. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
  - 1.3. Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
  - 1.4. Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will
    - 1.4.1. Abide by the terms of the statement; and
    - 1.4.2. Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
  - 1.5. Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph 1.4.2 from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency



has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

- 1.6. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph 1.4.2, with respect to any employee who is so convicted
    - 1.6.1.. Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
    - 1.6.2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
  - 1.7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6.
2. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant.

Place of Performance (street address, city, county, state, zip code) (list each location)

Check  if there are workplaces on file that are not identified here.

Contractor Name:

|

Date

Name:  
Title:



**CERTIFICATION REGARDING LOBBYING**

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Section 319 of Public Law 101-121, Government wide Guidance for New Restrictions on Lobbying, and 31 U.S.C. 1352, and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

US DEPARTMENT OF HEALTH AND HUMAN SERVICES - CONTRACTORS  
US DEPARTMENT OF EDUCATION - CONTRACTORS  
US DEPARTMENT OF AGRICULTURE - CONTRACTORS

Programs (indicate applicable program covered):

- \*Temporary Assistance to Needy Families under Title IV-A
- \*Child Support Enforcement Program under Title IV-D
- \*Social Services Block Grant Program under Title XX
- \*Medicaid Program under Title XIX
- \*Community Services Block Grant under Title VI
- \*Child Care Development Block Grant under Title IV

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement (and by specific mention sub-grantee or sub-contractor).
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement (and by specific mention sub-grantee or sub-contractor), the undersigned shall complete and submit Standard Form LLL, (Disclosure Form to Report Lobbying, in accordance with its instructions, attached and identified as Standard Exhibit E-I.)
3. The undersigned shall require that the language of this certification be included in the award document for sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Contractor Name: \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name:  
Title:



**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Executive Office of the President, Executive Order 12549 and 45 CFR Part 76 regarding Debarment, Suspension, and Other Responsibility Matters, and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

**INSTRUCTIONS FOR CERTIFICATION**

1. By signing and submitting this proposal (contract), the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. If necessary, the prospective participant shall submit an explanation of why it cannot provide the certification. The certification or explanation will be considered in connection with the NH Department of Health and Human Services' (DHHS) determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when DHHS determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, DHHS may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the DHHS agency to whom this proposal (contract) is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549: 45 CFR Part 76. See the attached definitions.
6. The prospective primary participant agrees by submitting this proposal (contract) that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by DHHS.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," provided by DHHS, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or involuntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List (of excluded parties).
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and

Exhibit F – Certification Regarding Debarment, Suspension Contractor Initials \_\_\_\_\_

And Other Responsibility Matters

Page 1 of 2

Date \_\_\_\_\_



information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

- 10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal government, DHHS may terminate this transaction for cause or default.

**PRIMARY COVERED TRANSACTIONS**

- 11. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  - 11.1. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - 11.2. have not within a three-year period preceding this proposal (contract) been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or a contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - 11.3. are not presently indicted for otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (11)(b) of this certification; and
  - 11.4. have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- 12. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal (contract).

**LOWER TIER COVERED TRANSACTIONS**

- 13. By signing and submitting this lower tier proposal (contract), the prospective lower tier participant, as defined in 45 CFR Part 76, certifies to the best of its knowledge and belief that it and its principals:
  - 13.1. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.
  - 13.2. where the prospective lower tier participant is unable to certify to any of the above, such prospective participant shall attach an explanation to this proposal (contract).
- 14. The prospective lower tier participant further agrees by submitting this proposal (contract) that it will include this clause entitled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion - Lower Tier Covered Transactions," without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

Contractor Name: \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name:  
Title:





**CERTIFICATION OF COMPLIANCE WITH REQUIREMENTS PERTAINING TO  
FEDERAL NONDISCRIMINATION, EQUAL TREATMENT OF FAITH-BASED ORGANIZATIONS AND  
WHISTLEBLOWER PROTECTIONS**

The Contractor identified in Section 1.3 of the General Provisions agrees by signature of the Contractor's representative as identified in Sections 1.11 and 1.12 of the General Provisions, to execute the following certification:

Contractor will comply, and will require any subgrantees or subcontractors to comply, with any applicable federal nondiscrimination requirements, which may include:

- the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. Section 3789d) which prohibits recipients of federal funding under this statute from discriminating, either in employment practices or in the delivery of services or benefits, on the basis of race, color, religion, national origin, and sex. The Act requires certain recipients to produce an Equal Employment Opportunity Plan;
- the Juvenile Justice Delinquency Prevention Act of 2002 (42 U.S.C. Section 5672(b)) which adopts by reference, the civil rights obligations of the Safe Streets Act. Recipients of federal funding under this statute are prohibited from discriminating, either in employment practices or in the delivery of services or benefits, on the basis of race, color, religion, national origin, and sex. The Act includes Equal Employment Opportunity Plan requirements;
- the Civil Rights Act of 1964 (42 U.S.C. Section 2000d, which prohibits recipients of federal financial assistance from discriminating on the basis of race, color, or national origin in any program or activity);
- the Rehabilitation Act of 1973 (29 U.S.C. Section 794), which prohibits recipients of Federal financial assistance from discriminating on the basis of disability, in regard to employment and the delivery of services or benefits, in any program or activity;
- the Americans with Disabilities Act of 1990 (42 U.S.C. Sections 12131-34), which prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation;
- the Education Amendments of 1972 (20 U.S.C. Sections 1681, 1683, 1685-86), which prohibits discrimination on the basis of sex in federally assisted education programs;
- the Age Discrimination Act of 1975 (42 U.S.C. Sections 6106-07), which prohibits discrimination on the basis of age in programs or activities receiving Federal financial assistance. It does not include employment discrimination;
- 28 C.F.R. pt. 31 (U.S. Department of Justice Regulations – OJJDP Grant Programs); 28 C.F.R. pt. 42 (U.S. Department of Justice Regulations – Nondiscrimination; Equal Employment Opportunity; Policies and Procedures); Executive Order No. 13279 (equal protection of the laws for faith-based and community organizations); Executive Order No. 13559, which provide fundamental principles and policy-making criteria for partnerships with faith-based and neighborhood organizations;
- 28 C.F.R. pt. 38 (U.S. Department of Justice Regulations – Equal Treatment for Faith-Based Organizations); and Whistleblower protections 41 U.S.C. §4712 and The National Defense Authorization Act (NDAA) for Fiscal Year 2013 (Pub. L. 112-239, enacted January 2, 2013) the Pilot Program for Enhancement of Contract Employee Whistleblower Protections, which protects employees against reprisal for certain whistle blowing activities in connection with federal grants and contracts.

The certificate set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government wide suspension or debarment.

Exhibit G

Contractor Initials \_\_\_\_\_

Certification of Compliance with requirements pertaining to Federal Nondiscrimination, Equal Treatment of Faith-Based Organizations and Whistleblower protections



In the event a Federal or State court or Federal or State administrative agency makes a finding of discrimination after a due process hearing on the grounds of race, color, religion, national origin, or sex against a recipient of funds, the recipient will forward a copy of the finding to the Office for Civil Rights, to the applicable contracting agency or division within the Department of Health and Human Services, and to the Department of Health and Human Services Office of the Ombudsman.

The Contractor identified in Section 1.3 of the General Provisions agrees by signature of the Contractor's representative as identified in Sections 1.11 and 1.12 of the General Provisions, to execute the following certification:

1. By signing and submitting this proposal (contract) the Contractor agrees to comply with the provisions indicated above.

Contractor Name:

Date \_\_\_\_\_

Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Exhibit G

Contractor Initials \_\_\_\_\_

Certification of Compliance with requirements pertaining to Federal Nondiscrimination, Equal Treatment of Faith-Based Organizations and Whistleblower protections

Date \_\_\_\_\_



**CERTIFICATION REGARDING ENVIRONMENTAL TOBACCO SMOKE**

Public Law 103-227, Part C - Environmental Tobacco Smoke, also known as the Pro-Children Act of 1994 (Act), requires that smoking not be permitted in any portion of any indoor facility owned or leased or contracted for by an entity and used routinely or regularly for the provision of health, day care, education, or library services to children under the age of 18, if the services are funded by Federal programs either directly or through State or local governments, by Federal grant, contract, loan, or loan guarantee. The law does not apply to children's services provided in private residences, facilities funded solely by Medicare or Medicaid funds, and portions of facilities used for inpatient drug or alcohol treatment. Failure to comply with the provisions of the law may result in the imposition of a civil monetary penalty of up to \$1000 per day and/or the imposition of an administrative compliance order on the responsible entity.

The Contractor identified in Section 1.3 of the General Provisions agrees, by signature of the Contractor's representative as identified in Section 1.11 and 1.12 of the General Provisions, to execute the following certification:

- 1. By signing and submitting this contract, the Contractor agrees to make reasonable efforts to comply with all applicable provisions of Public Law 103-227, Part C, known as the Pro-Children Act of 1994.

Contractor Name:

Date

Name:  
Title:



Exhibit I

**HEALTH INSURANCE PORTABILITY ACT  
BUSINESS ASSOCIATE AGREEMENT**

The Contractor identified in Section 1.3 of the General Provisions of the Agreement agrees to comply with the Health Insurance Portability and Accountability Act, Public Law 104-191 and with the Standards for Privacy and Security of Individually Identifiable Health Information, 45 CFR Parts 160 and 164 applicable to business associates. As defined herein, "Business Associate" shall mean the Contractor and subcontractors and agents of the Contractor that receive, use or have access to protected health information under this Agreement and "Covered Entity" shall mean the State of New Hampshire, Department of Health and Human Services.

**(1) Definitions.**

- a. "Breach" shall have the same meaning as the term "Breach" in section 164.402 of Title 45, Code of Federal Regulations.
- b. "Business Associate" has the meaning given such term in section 160.103 of Title 45, Code of Federal Regulations.
- c. "Covered Entity" has the meaning given such term in section 160.103 of Title 45, Code of Federal Regulations.
- d. "Designated Record Set" shall have the same meaning as the term "designated record set" in 45 CFR Section 164.501.
- e. "Data Aggregation" shall have the same meaning as the term "data aggregation" in 45 CFR Section 164.501.
- f. "Health Care Operations" shall have the same meaning as the term "health care operations" in 45 CFR Section 164.501.
- g. "HITECH Act" means the Health Information Technology for Economic and Clinical Health Act, Title XIII, Subtitle D, Part 1 & 2 of the American Recovery and Reinvestment Act of 2009.
- h. "HIPAA" means the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191 and the Standards for Privacy and Security of Individually Identifiable Health Information, 45 CFR Parts 160, 162 and 164 and amendments thereto.
- i. "Individual" shall have the same meaning as the term "individual" in 45 CFR Section 160.103 and shall include a person who qualifies as a personal representative in accordance with 45 CFR Section 164.501(g).
- j. "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 CFR Parts 160 and 164, promulgated under HIPAA by the United States Department of Health and Human Services.
- k. "Protected Health Information" shall have the same meaning as the term "protected health information" in 45 CFR Section 160.103, limited to the information created or received by Business Associate from or on behalf of Covered Entity.



Exhibit I

- I. "Required by Law" shall have the same meaning as the term "required by law" in 45 CFR Section 164.103.
- m. "Secretary" shall mean the Secretary of the Department of Health and Human Services or his/her designee.
- n. "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 CFR Part 164, Subpart C, and amendments thereto.
- o. "Unsecured Protected Health Information" means protected health information that is not secured by a technology standard that renders protected health information unusable, unreadable, or indecipherable to unauthorized individuals and is developed or endorsed by a standards developing organization that is accredited by the American National Standards Institute.
- p. Other Definitions - All terms not otherwise defined herein shall have the meaning established under 45 C.F.R. Parts 160, 162 and 164, as amended from time to time, and the HITECH Act.

(2) Business Associate Use and Disclosure of Protected Health Information.

- a. Business Associate shall not use, disclose, maintain or transmit Protected Health Information (PHI) except as reasonably necessary to provide the services outlined under Exhibit A of the Agreement. Further, Business Associate, including but not limited to all its directors, officers, employees and agents, shall not use, disclose, maintain or transmit PHI in any manner that would constitute a violation of the Privacy and Security Rule.
- b. Business Associate may use or disclose PHI:
  - I. For the proper management and administration of the Business Associate;
  - II. As required by law, pursuant to the terms set forth in paragraph d. below; or
  - III. For data aggregation purposes for the health care operations of Covered Entity.
- c. To the extent Business Associate is permitted under the Agreement to disclose PHI to a third party, Business Associate must obtain, prior to making any such disclosure, (i) reasonable assurances from the third party that such PHI will be held confidentially and used or further disclosed only as required by law or for the purpose for which it was disclosed to the third party; and (ii) an agreement from such third party to notify Business Associate, in accordance with the HIPAA Privacy, Security, and Breach Notification Rules of any breaches of the confidentiality of the PHI, to the extent it has obtained knowledge of such breach.
- d. The Business Associate shall not, unless such disclosure is reasonably necessary to provide services under Exhibit A of the Agreement, disclose any PHI in response to a request for disclosure on the basis that it is required by law, without first notifying Covered Entity so that Covered Entity has an opportunity to object to the disclosure and to seek appropriate relief. If Covered Entity objects to such disclosure, the Business



Exhibit I

Associate shall refrain from disclosing the PHI until Covered Entity has exhausted all remedies.

- e. If the Covered Entity notifies the Business Associate that Covered Entity has agreed to be bound by additional restrictions over and above those uses or disclosures or security safeguards of PHI pursuant to the Privacy and Security Rule, the Business Associate shall be bound by such additional restrictions and shall not disclose PHI in violation of such additional restrictions and shall abide by any additional security safeguards.

**(3) Obligations and Activities of Business Associate.**

- a. The Business Associate shall notify the Covered Entity's Privacy Officer immediately after the Business Associate becomes aware of any use or disclosure of protected health information not provided for by the Agreement including breaches of unsecured protected health information and/or any security incident that may have an impact on the protected health information of the Covered Entity.
- b. The Business Associate shall immediately perform a risk assessment when it becomes aware of any of the above situations. The risk assessment shall include, but not be limited to:
  - o The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification;
  - o The unauthorized person used the protected health information or to whom the disclosure was made;
  - o Whether the protected health information was actually acquired or viewed
  - o The extent to which the risk to the protected health information has been mitigated.

The Business Associate shall complete the risk assessment within 48 hours of the breach and immediately report the findings of the risk assessment in writing to the Covered Entity.

- c. The Business Associate shall comply with all sections of the Privacy, Security, and Breach Notification Rule.
- d. Business Associate shall make available all of its internal policies and procedures, books and records relating to the use and disclosure of PHI received from, or created or received by the Business Associate on behalf of Covered Entity to the Secretary for purposes of determining Covered Entity's compliance with HIPAA and the Privacy and Security Rule.
- e. Business Associate shall require all of its business associates that receive, use or have access to PHI under the Agreement, to agree in writing to adhere to the same restrictions and conditions on the use and disclosure of PHI contained herein, including the duty to return or destroy the PHI as provided under Section 3 (I). The Covered Entity shall be considered a direct third party beneficiary of the Contractor's business associate agreements with Contractor's intended business associates, who will be receiving PHI



## Exhibit I

pursuant to this Agreement, with rights of enforcement and indemnification from such business associates who shall be governed by standard Paragraph #13 of the standard contract provisions (P-37) of this Agreement for the purpose of use and disclosure of protected health information.

- f. Within five (5) business days of receipt of a written request from Covered Entity, Business Associate shall make available during normal business hours at its offices all records, books, agreements, policies and procedures relating to the use and disclosure of PHI to the Covered Entity, for purposes of enabling Covered Entity to determine Business Associate's compliance with the terms of the Agreement.
- g. Within ten (10) business days of receiving a written request from Covered Entity, Business Associate shall provide access to PHI in a Designated Record Set to the Covered Entity, or as directed by Covered Entity, to an individual in order to meet the requirements under 45 CFR Section 164.524.
- h. Within ten (10) business days of receiving a written request from Covered Entity for an amendment of PHI or a record about an individual contained in a Designated Record Set, the Business Associate shall make such PHI available to Covered Entity for amendment and incorporate any such amendment to enable Covered Entity to fulfill its obligations under 45 CFR Section 164.526.
- i. Business Associate shall document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an individual for an accounting of disclosures of PHI in accordance with 45 CFR Section 164.528.
- j. Within ten (10) business days of receiving a written request from Covered Entity for a request for an accounting of disclosures of PHI, Business Associate shall make available to Covered Entity such information as Covered Entity may require to fulfill its obligations to provide an accounting of disclosures with respect to PHI in accordance with 45 CFR Section 164.528.
- k. In the event any individual requests access to, amendment of, or accounting of PHI directly from the Business Associate, the Business Associate shall within two (2) business days forward such request to Covered Entity. Covered Entity shall have the responsibility of responding to forwarded requests. However, if forwarding the individual's request to Covered Entity would cause Covered Entity or the Business Associate to violate HIPAA and the Privacy and Security Rule, the Business Associate shall instead respond to the individual's request as required by such law and notify Covered Entity of such response as soon as practicable.
- l. Within ten (10) business days of termination of the Agreement, for any reason, the Business Associate shall return or destroy, as specified by Covered Entity, all PHI received from, or created or received by the Business Associate in connection with the Agreement, and shall not retain any copies or back-up tapes of such PHI. If return or destruction is not feasible, or the disposition of the PHI has been otherwise agreed to in the Agreement, Business Associate shall continue to extend the protections of the Agreement, to such PHI and limit further uses and disclosures of such PHI to those purposes that make the return or destruction infeasible, for so long as Business



## Exhibit I

Associate maintains such PHI. If Covered Entity, in its sole discretion, requires that the Business Associate destroy any or all PHI, the Business Associate shall certify to Covered Entity that the PHI has been destroyed.

**(4) Obligations of Covered Entity**

- a. Covered Entity shall notify Business Associate of any changes or limitation(s) in its Notice of Privacy Practices provided to individuals in accordance with 45 CFR Section 164.520, to the extent that such change or limitation may affect Business Associate's use or disclosure of PHI.
- b. Covered Entity shall promptly notify Business Associate of any changes in, or revocation of permission provided to Covered Entity by individuals whose PHI may be used or disclosed by Business Associate under this Agreement, pursuant to 45 CFR Section 164.506 or 45 CFR Section 164.508.
- c. Covered entity shall promptly notify Business Associate of any restrictions on the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 CFR 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

**(5) Termination for Cause**

In addition to Paragraph 10 of the standard terms and conditions (P-37) of this Agreement the Covered Entity may immediately terminate the Agreement upon Covered Entity's knowledge of a breach by Business Associate of the Business Associate Agreement set forth herein as Exhibit I. The Covered Entity may either immediately terminate the Agreement or provide an opportunity for Business Associate to cure the alleged breach within a timeframe specified by Covered Entity. If Covered Entity determines that neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.

**(6) Miscellaneous**

- a. Definitions and Regulatory References. All terms used, but not otherwise defined herein, shall have the same meaning as those terms in the Privacy and Security Rule, amended from time to time. A reference in the Agreement, as amended to include this Exhibit I, to a Section in the Privacy and Security Rule means the Section as in effect or as amended.
- b. Amendment. Covered Entity and Business Associate agree to take such action as is necessary to amend the Agreement, from time to time as is necessary for Covered Entity to comply with the changes in the requirements of HIPAA, the Privacy and Security Rule, and applicable federal and state law.
- c. Data Ownership. The Business Associate acknowledges that it has no ownership rights with respect to the PHI provided by or created on behalf of Covered Entity.
- d. Interpretation. The parties agree that any ambiguity in the Agreement shall be resolved to permit Covered Entity to comply with HIPAA, the Privacy and Security Rule.





Exhibit I

- e. Segregation. If any term or condition of this Exhibit I or the application thereof to any person(s) or circumstance is held invalid, such invalidity shall not affect other terms or conditions which can be given effect without the invalid term or condition; to this end the terms and conditions of this Exhibit I are declared severable.
- f. Survival. Provisions in this Exhibit I regarding the use and disclosure of PHI, return or destruction of PHI, extensions of the protections of the Agreement in section (3) I, the defense and indemnification provisions of section (3) e and Paragraph 13 of the standard terms and conditions (P-37), shall survive the termination of the Agreement.

IN WITNESS WHEREOF, the parties hereto have duly executed this Exhibit I.

\_\_\_\_\_  
The State

\_\_\_\_\_  
Name of the Contractor

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Name of Authorized Representative

\_\_\_\_\_  
Name of Authorized Representative

\_\_\_\_\_  
Title of Authorized Representative

\_\_\_\_\_  
Title of Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



**CERTIFICATION REGARDING THE FEDERAL FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT (FFATA) COMPLIANCE**

The Federal Funding Accountability and Transparency Act (FFATA) requires prime awardees of individual Federal grants equal to or greater than \$25,000 and awarded on or after October 1, 2010, to report on data related to executive compensation and associated first-tier sub-grants of \$25,000 or more. If the initial award is below \$25,000 but subsequent grant modifications result in a total award equal to or over \$25,000, the award is subject to the FFATA reporting requirements, as of the date of the award.

In accordance with 2 CFR Part 170 (Reporting Subaward and Executive Compensation Information), the Department of Health and Human Services (DHHS) must report the following information for any subaward or contract award subject to the FFATA reporting requirements:

1. Name of entity
2. Amount of award
3. Funding agency
4. NAICS code for contracts / CFDA program number for grants
5. Program source
6. Award title descriptive of the purpose of the funding action
7. Location of the entity
8. Principle place of performance
9. Unique identifier of the entity (DUNS #)
10. Total compensation and names of the top five executives if:
  - 10.1. More than 80% of annual gross revenues are from the Federal government, and those revenues are greater than \$25M annually and
  - 10.2. Compensation information is not already available through reporting to the SEC.

Prime grant recipients must submit FFATA required data by the end of the month, plus 30 days, in which the award or award amendment is made.

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of The Federal Funding Accountability and Transparency Act, Public Law 109-282 and Public Law 110-252, and 2 CFR Part 170 (Reporting Subaward and Executive Compensation Information), and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

The below named Contractor agrees to provide needed information as outlined above to the NH Department of Health and Human Services and to comply with all applicable provisions of the Federal Financial Accountability and Transparency Act.

Contractor Name:

Date

Name:  
Title:



FORM A

As the Contractor identified in Section 1.3 of the General Provisions, I certify that the responses to the below listed questions are true and accurate.

1. The DUNS number for your entity is: \_\_\_\_\_
2. In your business or organization's preceding completed fiscal year, did your business or organization receive (1) 80 percent or more of your annual gross revenue in U.S. federal contracts, subcontracts, loans, grants, sub-grants, and/or cooperative agreements; and (2) \$25,000,000 or more in annual gross revenues from U.S. federal contracts, subcontracts, loans, grants, subgrants, and/or cooperative agreements?

\_\_\_\_\_ NO                      \_\_\_\_\_ YES

If the answer to #2 above is NO, stop here

If the answer to #2 above is YES, please answer the following:

3. Does the public have access to information about the compensation of the executives in your business or organization through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C.78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986?

\_\_\_\_\_ NO                      \_\_\_\_\_ YES

If the answer to #3 above is YES, stop here

If the answer to #3 above is NO, please answer the following:

4. The names and compensation of the five most highly compensated officers in your business or organization are as follows:

Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____

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DHHS Information Security Requirements



A. Definitions

The following terms may be reflected and have the described meaning in this document:

1. "Breach" means the loss of control, compromise, unauthorized disclosure, unauthorized acquisition, unauthorized access, or any similar term referring to situations where persons other than authorized users and for an other than authorized purpose have access or potential access to personally identifiable information, whether physical or electronic. With regard to Protected Health Information, "Breach" shall have the same meaning as the term "Breach" in section 164.402 of Title 45, Code of Federal Regulations.
2. "Computer Security Incident" shall have the same meaning "Computer Security Incident" in section two (2) of NIST Publication 800-61, Computer Security Incident Handling Guide, National Institute of Standards and Technology, U.S. Department of Commerce.
3. "Confidential Information" or "Confidential Data" means all confidential information disclosed by one party to the other such as all medical, health, financial, public assistance benefits and personal information including without limitation, Substance Abuse Treatment Records, Case Records, Protected Health Information and Personally Identifiable Information.

Confidential Information also includes any and all information owned or managed by the State of NH - created, received from or on behalf of the Department of Health and Human Services (DHHS) or accessed in the course of performing contracted services - of which collection, disclosure, protection, and disposition is governed by state or federal law or regulation. This information includes, but is not limited to Protected Health Information (PHI), Personal Information (PI), Personal Financial Information (PFI), Federal Tax Information (FTI), Social Security Numbers (SSN), Payment Card Industry (PCI), and or other sensitive and confidential information.

4. "End User" means any person or entity (e.g., contractor, contractor's employee, business associate, subcontractor, other downstream user, etc.) that receives DHHS data or derivative data in accordance with the terms of this Contract.
5. "HIPAA" means the Health Insurance Portability and Accountability Act of 1996 and the regulations promulgated thereunder.
6. "Incident" means an act that potentially violates an explicit or implied security policy, which includes attempts (either failed or successful) to gain unauthorized access to a system or its data, unwanted disruption or denial of service, the unauthorized use of a system for the processing or storage of data; and changes to system hardware, firmware, or software characteristics without the owner's knowledge, instruction, or consent. Incidents include the loss of data through theft or device misplacement, loss or misplacement of hardcopy documents, and misrouting of physical or electronic

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DHHS Information Security Requirements

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mail, all of which may have the potential to put the data at risk of unauthorized access, use, disclosure, modification or destruction.

7. "Open Wireless Network" means any network or segment of a network that is not designated by the State of New Hampshire's Department of Information Technology or delegate as a protected network (designed, tested, and approved, by means of the State, to transmit) will be considered an open network and not adequately secure for the transmission of unencrypted PI, PFI, PHI or confidential DHHS data.
8. "Personal Information" (or "PI") means information which can be used to distinguish or trace an individual's identity, such as their name, social security number, personal information as defined in New Hampshire RSA 359-C:19, biometric records, etc., alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name, etc.
9. "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. Parts 160 and 164, promulgated under HIPAA by the United States Department of Health and Human Services.
10. "Protected Health Information" (or "PHI") has the same meaning as provided in the definition of "Protected Health Information" in the HIPAA Privacy Rule at 45 C.F.R. § 160.103.
11. "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. Part 164, Subpart C, and amendments thereto.
12. "Unsecured Protected Health Information" means Protected Health Information that is not secured by a technology standard that renders Protected Health Information unusable, unreadable, or indecipherable to unauthorized individuals and is developed or endorsed by a standards developing organization that is accredited by the American National Standards Institute.

**I. RESPONSIBILITIES OF DHHS AND THE CONTRACTOR**

**A. Business Use and Disclosure of Confidential Information.**

1. The Contractor must not use, disclose, maintain or transmit Confidential Information except as reasonably necessary as outlined under this Contract. Further, Contractor, including but not limited to all its directors, officers, employees and agents, must not use, disclose, maintain or transmit PHI in any manner that would constitute a violation of the Privacy and Security Rule.
2. The Contractor must not disclose any Confidential Information in response to a

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**DHHS Information Security Requirements**

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request for disclosure on the basis that it is required by law, in response to a subpoena, etc., without first notifying DHHS so that DHHS has an opportunity to consent or object to the disclosure.

3. If DHHS notifies the Contractor that DHHS has agreed to be bound by additional restrictions over and above those uses or disclosures or security safeguards of PHI pursuant to the Privacy and Security Rule, the Contractor must be bound by such additional restrictions and must not disclose PHI in violation of such additional restrictions and must abide by any additional security safeguards.
4. The Contractor agrees that DHHS Data or derivative there from disclosed to an End User must only be used pursuant to the terms of this Contract.
5. The Contractor agrees DHHS Data obtained under this Contract may not be used for any other purposes that are not indicated in this Contract.
6. The Contractor agrees to grant access to the data to the authorized representatives of DHHS for the purpose of inspecting to confirm compliance with the terms of this Contract.

**II. METHODS OF SECURE TRANSMISSION OF DATA**

1. Application Encryption. If End User is transmitting DHHS data containing Confidential Data between applications, the Contractor attests the applications have been evaluated by an expert knowledgeable in cyber security and that said application's encryption capabilities ensure secure transmission via the internet.
2. Computer Disks and Portable Storage Devices. End User may not use computer disks or portable storage devices, such as a thumb drive, as a method of transmitting DHHS data.
3. Encrypted Email. End User may only employ email to transmit Confidential Data if email is encrypted and being sent to and being received by email addresses of persons authorized to receive such information.
4. Encrypted Web Site. If End User is employing the Web to transmit Confidential Data, the secure socket layers (SSL) must be used and the web site must be secure. SSL encrypts data transmitted via a Web site.
5. File Hosting Services, also known as File Sharing Sites. End User may not use file hosting services, such as Dropbox or Google Cloud Storage, to transmit Confidential Data.
6. Ground Mail Service. End User may only transmit Confidential Data via *certified* ground mail within the continental U.S. and when sent to a named individual.
7. Laptops and PDA. If End User is employing portable devices to transmit Confidential Data said devices must be encrypted and password-protected.
8. Open Wireless Networks. End User may not transmit Confidential Data via an open

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**DHHS Information Security Requirements**

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wireless network. End User must employ a virtual private network (VPN) when remotely transmitting via an open wireless network.

9. Remote User Communication. If End User is employing remote communication to access or transmit Confidential Data, a virtual private network (VPN) must be installed on the End User's mobile device(s) or laptop from which information will be transmitted or accessed.
10. SSH File Transfer Protocol (SFTP), also known as Secure File Transfer Protocol. If End User is employing an SFTP to transmit Confidential Data, End User will structure the Folder and access privileges to prevent inappropriate disclosure of information. SFTP folders and sub-folders used for transmitting Confidential Data will be coded for 24-hour auto-deletion cycle (i.e. Confidential Data will be deleted every 24 hours).
11. Wireless Devices. If End User is transmitting Confidential Data via wireless devices, all data must be encrypted to prevent inappropriate disclosure of information.

**III. RETENTION AND DISPOSITION OF IDENTIFIABLE RECORDS**

The Contractor will only retain the data and any derivative of the data for the duration of this Contract. After such time, the Contractor will have 30 days to destroy the data and any derivative in whatever form it may exist, unless, otherwise required by law or permitted under this Contract. To this end, the parties must:

**A. Retention**

1. The Contractor agrees it will not store, transfer or process data collected in connection with the services rendered under this Contract outside of the United States. This physical location requirement shall also apply in the implementation of cloud computing, cloud service or cloud storage capabilities, and includes backup data and Disaster Recovery locations.
2. The Contractor agrees to ensure proper security monitoring capabilities are in place to detect potential security events that can impact State of NH systems and/or Department confidential information for contractor provided systems.
3. The Contractor agrees to provide security awareness and education for its End Users in support of protecting Department confidential information.
4. The Contractor agrees to retain all electronic and hard copies of Confidential Data in a secure location and identified in section IV. A.2
5. The Contractor agrees Confidential Data stored in a Cloud must be in a FedRAMP/HITECH compliant solution and comply with all applicable statutes and regulations regarding the privacy and security. All servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a

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- whole, must have aggressive intrusion-detection and firewall protection.
- 6. The Contractor agrees to and ensures its complete cooperation with the State's Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure.

**B. Disposition**

1. If the Contractor will maintain any Confidential Information on its systems (or its sub-contractor systems), the Contractor will maintain a documented process for securely disposing of such data upon request or contract termination; and will obtain written certification for any State of New Hampshire data destroyed by the Contractor or any subcontractors as a part of ongoing, emergency, and or disaster recovery operations. When no longer in use, electronic media containing State of New Hampshire data shall be rendered unrecoverable via a secure wipe program in accordance with industry-accepted standards for secure deletion and media sanitization, or otherwise physically destroying the media (for example, degaussing) as described in NIST Special Publication 800-88, Rev 1, Guidelines for Media Sanitization, National Institute of Standards and Technology, U. S. Department of Commerce. The Contractor will document and certify in writing at time of the data destruction, and will provide written certification to the Department upon request. The written certification will include all details necessary to demonstrate data has been properly destroyed and validated. Where applicable, regulatory and professional standards for retention requirements will be jointly evaluated by the State and Contractor prior to destruction.
2. Unless otherwise specified, within thirty (30) days of the termination of this Contract, Contractor agrees to destroy all hard copies of Confidential Data using a secure method such as shredding.
3. Unless otherwise specified, within thirty (30) days of the termination of this Contract, Contractor agrees to completely destroy all electronic Confidential Data by means of data erasure, also known as secure data wiping.

**IV. PROCEDURES FOR SECURITY**

- A. Contractor agrees to safeguard the DHHS Data received under this Contract, and any derivative data or files, as follows:
1. The Contractor will maintain proper security controls to protect Department confidential information collected, processed, managed, and/or stored in the delivery of contracted services.
  2. The Contractor will maintain policies and procedures to protect Department confidential information throughout the information lifecycle, where applicable, (from creation, transformation, use, storage and secure destruction) regardless of the media used to store the data (i.e., tape, disk, paper, etc.).



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3. The Contractor will maintain appropriate authentication and access controls to contractor systems that collect, transmit, or store Department confidential information where applicable.
4. The Contractor will ensure proper security monitoring capabilities are in place to detect potential security events that can impact State of NH systems and/or Department confidential information for contractor provided systems.
5. The Contractor will provide regular security awareness and education for its End Users in support of protecting Department confidential information.
6. If the Contractor will be sub-contracting any core functions of the engagement supporting the services for State of New Hampshire, the Contractor will maintain a program of an internal process or processes that defines specific security expectations, and monitoring compliance to security requirements that at a minimum match those for the Contractor, including breach notification requirements.
7. The Contractor will work with the Department to sign and comply with all applicable State of New Hampshire and Department system access and authorization policies and procedures, systems access forms, and computer use agreements as part of obtaining and maintaining access to any Department system(s). Agreements will be completed and signed by the Contractor and any applicable sub-contractors prior to system access being authorized.
8. If the Department determines the Contractor is a Business Associate pursuant to 45 CFR 160.103, the Contractor will execute a HIPAA Business Associate Agreement (BAA) with the Department and is responsible for maintaining compliance with the agreement.
9. The Contractor will work with the Department at its request to complete a System Management Survey. The purpose of the survey is to enable the Department and Contractor to monitor for any changes in risks, threats, and vulnerabilities that may occur over the life of the Contractor engagement. The survey will be completed annually, or an alternate time frame at the Departments discretion with agreement by the Contractor, or the Department may request the survey be completed when the scope of the engagement between the Department and the Contractor changes.
10. The Contractor will not store, knowingly or unknowingly, any State of New Hampshire or Department data offshore or outside the boundaries of the United States unless prior express written consent is obtained from the Information Security Office leadership member within the Department.
11. Data Security Breach Liability. In the event of any security breach Contractor shall make efforts to investigate the causes of the breach, promptly take measures to prevent future breach and minimize any damage or loss resulting from the breach. The State shall recover from the Contractor all costs of response and recovery from

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**DHHS Information Security Requirements**

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the breach, including but not limited to: credit monitoring services, mailing costs and costs associated with website and telephone call center services necessary due to the breach.

12. Contractor must, comply with all applicable statutes and regulations regarding the privacy and security of Confidential Information, and must in all other respects maintain the privacy and security of PI and PHI at a level and scope that is not less than the level and scope of requirements applicable to federal agencies, including, but not limited to, provisions of the Privacy Act of 1974 (5 U.S.C. § 552a), DHHS Privacy Act Regulations (45 C.F.R. §5b), HIPAA Privacy and Security Rules (45 C.F.R. Parts 160 and 164) that govern protections for individually identifiable health information and as applicable under State law.
13. Contractor agrees to establish and maintain appropriate administrative, technical, and physical safeguards to protect the confidentiality of the Confidential Data and to prevent unauthorized use or access to it. The safeguards must provide a level and scope of security that is not less than the level and scope of security requirements established by the State of New Hampshire, Department of Information Technology. Refer to Vendor Resources/Procurement at <https://www.nh.gov/doi/vendor/index.htm> for the Department of Information Technology policies, guidelines, standards, and procurement information relating to vendors.
14. Contractor agrees to maintain a documented breach notification and incident response process. The Contractor will notify the State's Privacy Officer, and additional email addresses provided in this section, of any security breach within two (2) hours of the time that the Contractor learns of its occurrence. This includes a confidential information breach, computer security incident, or suspected breach which affects or includes any State of New Hampshire systems that connect to the State of New Hampshire network.
15. Contractor must restrict access to the Confidential Data obtained under this Contract to only those authorized End Users who need such DHHS Data to perform their official duties in connection with purposes identified in this Contract.
16. The Contractor must ensure that all End Users:
  - a. comply with such safeguards as referenced in Section IV A. above, implemented to protect Confidential Information that is furnished by DHHS under this Contract from loss, theft or inadvertent disclosure.
  - b. safeguard this information at all times.
  - c. ensure that laptops and other electronic devices/media containing PHI, PI, or PFI are encrypted and password-protected.
  - d. send emails containing Confidential Information only if encrypted and being sent to and being received by email addresses of persons authorized to receive such information.

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**DHHS Information Security Requirements**

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- e. limit disclosure of the Confidential Information to the extent permitted by law.
- f. Confidential Information received under this Contract and individually identifiable data derived from DHHS Data, must be stored in an area that is physically and technologically secure from access by unauthorized persons during duty hours as well as non-duty hours (e.g., door locks, card keys, biometric identifiers, etc.).
- g. only authorized End Users may transmit the Confidential Data, including any derivative files containing personally identifiable information, and in all cases, such data must be encrypted at all times when in transit, at rest, or when stored on portable media as required in section IV above.
- h. in all other instances Confidential Data must be maintained, used and disclosed using appropriate safeguards, as determined by a risk-based assessment of the circumstances involved.
- i. understand that their user credentials (user name and password) must not be shared with anyone. End Users will keep their credential information secure. This applies to credentials used to access the site directly or indirectly through a third party application.

Contractor is responsible for oversight and compliance of their End Users. DHHS reserves the right to conduct onsite inspections to monitor compliance with this Contract, including the privacy and security requirements provided in herein, HIPAA, and other applicable laws and Federal regulations until such time the Confidential Data is disposed of in accordance with this Contract.

**V. LOSS REPORTING**

The Contractor must notify the State's Privacy Officer, Information Security Office and Program Manager of any Security Incidents and Breaches within two (2) hours of the time that the Contractor learns of their occurrence.

The Contractor must further handle and report Incidents and Breaches involving PHI in accordance with the agency's documented Incident Handling and Breach Notification procedures and in accordance with 42 C.F.R. §§ 431.300 - 306. In addition to, and notwithstanding, Contractor's compliance with all applicable obligations and procedures, Contractor's procedures must also address how the Contractor will:

- 1. Identify Incidents;
- 2. Determine if personally identifiable information is involved in Incidents;
- 3. Report suspected or confirmed Incidents as required in this Exhibit or P-37;
- 4. Identify and convene a core response group to determine the risk level of Incidents and determine risk-based responses to Incidents; and

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5. Determine whether Breach notification is required, and, if so, identify appropriate Breach notification methods, timing, source, and contents from among different options, and bear costs associated with the Breach notice as well as any mitigation measures.

Incidents and/or Breaches that implicate PI must be addressed and reported, as applicable, in accordance with NH RSA 359-C:20.

**VI. PERSONS TO CONTACT**

- A. DHHS contact for Data Management or Data Exchange issues:

DHHSInformationSecurityOffice@dhhs.nh.gov

- B. DHHS contacts for Privacy issues:

DHHSPrivacyOfficer@dhhs.nh.gov

- C. DHHS contact for Information Security issues:

DHHSInformationSecurityOffice@dhhs.nh.gov

- D. DHHS contact for Breach notifications:

DHHSInformationSecurityOffice@dhhs.nh.gov

DHHSPrivacy.Officer@dhhs.nh.gov

Vendor Instructions	
<p><b>Vendor Response Column:</b></p> <p>"Yes" if the current release of the software can fully support ALL the functionality described in the row, without special customization. A "Yes" can only be used if the delivery method is Standard (see delivery method instructions below). Otherwise, enter an "No"; A "No" can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).</p>	Place a
<p><b>Criticality Column:</b></p> <p>(M) Indicates a requirement that is "Mandatory". The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.</p> <p>(P) Indicates a requirement which is "Preferred". This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.</p> <p>(O) Indicates a requirement which is "Optional". This requirement is considered by the State to be one which usefull or potentially usefull but not a central feature of the Project.</p>	
<p><b>Delivery Method Column:</b></p> <p>Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.</p> <p><b>Standard</b> - Feature/Function is included in the proposed system and available in the current software release.</p> <p><b>Future</b> - Feature/Function will be available in a future release. (Provide anticipated delivery date, version, and service release in the comment area.)</p> <p><b>Custom</b> - Feature/Function can be provided with custom modifications. (Respondent must provide estimated hours and average billing rate or flat cost for the software modification in the comment area. These cost estimates should add up to the total cost for software modifications found in the cost summary table in Section X of the RFP).</p> <p><b>Not Available/Not Proposing</b> - Feature/Function has not been proposed by the Vendor. (Provide brief description of why this functionality was not proposed.)</p>	
<p><b>Comments Column:</b></p> <p>For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.</p>	

### Vendor Instructions

**Vendor Response Column:**

Place a "Yes" if the current release of the software can fully support ALL the functionality described in the row, without special customization. A "Yes" can only be used if the delivery method is Standard (see delivery method instructions below).

Otherwise, enter an "No"; A "No" can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).

**Criticality Column:**

**(M)** Indicates a requirement that is "Mandatory". The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.

**(P)** Indicates a requirement which is "Preferred". This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.

**(O)** Indicates a requirement which is "Optional". This requirement is considered by the State to be one which usefull or potentially usefull but not a central feature of the Project.

**Delivery Method Column:**

Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.

**Standard** - Feature/Function is included in the proposed system and available in the current software release.

**Future** - Feature/Function will be available in a future release. (Provide anticipated delivery date, version, and service release in the comment area.)

**Custom** - Feature/Function can be provided with custom modifications. (Respondent must provide estimated hours and average billing rate or flat cost for the software modification in the comment area. These cost estimates should add up to the total cost for software modifications found in the cost summary table in Section X of the RFP).

**Not Available/Not Proposing** - Feature/Function has not been proposed by the Vendor. (Provide brief

**Comments Column:**

For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.


BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>Functional</b>					
B1.1	Intentionally Left Blank				
B1.2	Design and implementation of data visualization standards via a style guide and example templates specifically leveraging existing toolsets and web portals currently in place at the state to create a consistent way for data to be organized and graphically displayed to meet both user design and user experience requirements.	M			
B1.3	Create a method to inventory data sources associated with the building of the Opioid Crisis dashboard and an ongoing process to add to the inventory of the system and recommend a strategy for future use of data analytics and business intelligence toolsets as well as create a dashboard in which the source is tagged as internal or external (to the Department) and whether the data contains personally identified information (PII) or De-identified information (DII)	M			
B1.4	Provide professional services to augment internal capabilities associated with the following skill sets: Business analysis, use case development, user persona development, Data and statistical analysis generally, Data and statistical analysis specific to the opioid crisis, Data integration and transformation, Data visualization including geographical information system, Hardware architecture and design, Software configuration and training.	M			
B1.5	If the proposal is a cloud/hosted solution provide and establish hardware and software and/or cloud services for operation by the State needed to augment the Department's infrastructure.	M			
B1.6	Implement no later than August 15, 2019 opioid dashboards based on requirements	M			
B1.7	Provide a detailed description of how you would address charts included in the Introduction section	M			



B1.8	Provide context sensitive "Help" screens/tips and dashboard instructions	P			
B1.9	Automated reports/notifications/alerts to users based on subscription or opt in/out functionality	M			
B1.10	Design, develop and implement a holistic Data Analytics Platform (DAP) that consolidates data from multiple, currently disparate Department, other State of New Hampshire and Federal sources, systems and formats to meet the needs of the state's opioid response and provide the foundation for all other needs of the Department programs.	M			
B2.1	Include support for the future use of advanced statistical analysis techniques, predictive analytics and machine learning	M			
B2.2	Be intuitive and easy to learn, understand, navigate and use,	M			
B2.3	Provide and support average less than 5 seconds with a majority of 1 second query response times, with or without user customization,	P			
B2.4	Process and load datasets in a fast, smooth, efficient manner to meet no older 24 hour stale data	M			

<p>B2.5</p>	<p>The selected vendor must leverage (where applicable for the vendor solution) current technologies in place at State of New Hampshire and provide recommendations for alternatives based on proposed strategy to include but not limited to:                  Oracle databases, -                  Dimensionally modeled data marts,                  Extract, Transform, Load (ETL) software - Informatica,                  Statistical analysis tools/software and server - R Programming and RStudio Server/Connect, and                  Supplementary BI tools leveraging Tableau for dashboards which:                  Consolidate and arranges numbers, metrics and Department defined scorecards, Key Performance, and other, metrics,                  Can be tailored for specific roles and display metrics targeted for a single point of view,                  Includes a customizable interface,                  Includes the ability to pull real-time data</p>	<p>M</p>			
<p>B2.6</p>	<p>Design, develop and implement an overarching data model, which:                  Combines appropriate data elements from various sources, as needed to achieve reporting and alert functions,                  Includes interfaces, source mapping and user interfaces; required to achieve data consolidation and build the DAP,                  Identifies current and future state of source systems and processes,                  Possesses the processing capabilities to provide large dataset analysis, including highly complex numerical analysis of textual, structured, non-structured, spatial and other data sources,                  Provide metadata tagging of data sources/elements,                  Allows fast and flexible data integration so that data sources are able to be integrated in the analytical environment and analyzed with limited advanced notice.</p>	<p>M</p>			

B2.7	Vendors must include a proposed architecture for the DAP, which integrates data from source systems and meets, or exceeds, the following minimal requirements:	M			
B2.8	Provides a framework for organization of data, information management and technology systems required to build and implement the system,	M			
B2.9	Allows for data components of the architecture to include internal and external sources of structured and unstructured data users require to analyze the opioid crisis	M			
B2.10	Includes data integration, data cleansing and the development and implementation of data dimensional rules	M			
<b>Technical</b>					
B3.1	Describes the conceptual and logical technology components required to present information to users and enable them to analyze the data and its impacts,	M			
B3.2	Allows for the ability to drill down on report data by varying levels of geographic, provider, program, service and client demographic details	M			
B3.3	Allow for the extraction of patterns and knowledge from large amounts of data,	M			
B3.4	Provide predictive or statistical analysis model, based upon data type and attributes	P			
B3.5	Provides browser-based solution to support all major browsers.	M			
B3.6	Internal multi-tenant sandbox to provide statistical analysis areas to look at data with access to the dimensional based data to design and develop visualizations on an ad-doc development based methodology	M			
B3.7	Internal role based authentication to provide view, modify and delete as well as external facing role based solution with ability to define group or user defined access	M			
B3.8	Provide a methodology to track web traffic and report on number of viewers, number of this and/or other measures.	P			
B3.9	State Sizing and Growth Assumptions	M			

B3.10	Develop capacity to make data and information available in meeting the Department's Federal Reporting requirements and necessary for Federal grant applications	M			
<b>SUBHEAD</b>					
B4.1	The new System must accommodate the anticipated number of users and workstations at each location. In order to support initial sizing expectations, prior to completion of capacity planning as part of this project, the State has estimated the first phase system must accommodate approximately 2,000 internal users (25% active users, 5% concurrent) in and for future use, 250,000 external users (10% active users, 2% concurrent) at this time, and all of these users are expected to have a workstation that will access the System. These initial estimates will be replaced with the finale user sizing in the Capacity Plan deliverable as part of the design phase. Workstations, network, servers, storage and WAN connectivity will be recommended by the vendor to ensure sizing to access and utilize the system.	M			
B4.2	The new shared infrastructure and functional capabilities need be designed to be operational 24 hours per day (hours to be determined by the state), 7 days per week, and 52 weeks per year. The centralized servers and resources and public facing web site will be designed to be operational 7 days per week and 24 hours per day. No single disruption is anticipated to last longer than 8 hours. The System as a whole will be available for use 99 percent of the timeless mutually agreed and scheduled service/maintenance intervals.	M			
B4.3	The new System must support transparent failover capabilities using high-availability architectural elements.	M			
B4.4	Specify all equipment (if any) required for the development and operations of the solutions and requirements defined in this RFP. The equipment will be comprised of industry standard and readily available components.	M			
B4.5	Creating/viewing population-based or individual-based alerts and notifications	M			
B4.6	Subscribing/Un-subscribing to alerts/notifications of interest	M			
B4.7	Sending notifications through preferred notification method	M			

B4.8	Scheduling of distribution of reports and notifications based on user input via an "opt in" model	M			
B4.9	Describe the proposed solution to meet 508 compliance and DoIT compliance requirements. The authentication and authorization solution must be ADA compliant.	M			
B4.10	Determining who originates and approves DAP investment proposals.	P			
B4.11	Determining the approved technologies and products developers must use to build services.	M			
B4.12	Defining the procedure for requesting permission to use a service.	M			
B4.13	Identifying (and executing) what service and system testing is required before deploying a service enhancement.	M			
B4.14	Promulgate policies, standards, and guidelines	M			
B4.15	Facilitation of processes	M			
B4.16	Collection, analysis and visualization of metrics	M			
B4.17	Administer the integration metadata - for example, DAP metadata (such as Web Services Description Language) or business-to-business metadata (such as electronic data interchange/XML document standards).	M			
B4.18	Monitor the associated governance procedures, through one or more repositories.	M			
B4.19	Role-based Access and User Provisioning - Technology component that enables what information a particular user is authorized to access.	M			
B4.20	Users' access rights shall be based on what roles they play in the enterprise (State and Counties) and/or what groups they belong to for external entities.	M			
B4.21	Role-Based Access shall include the capability to enforce who can update data versus access and view only. Further, the update authority should be defined at the field level within a panel.	M			

B4.22	Authentication of user identities - Technology component that verifies the identities of those seeking to access client data. Shall include strong authentication supported by an appropriate infrastructure for identity and access management.	M			
B4.23	The solution must have a mechanism for Annual Reconciliation of users to determine if access is still needed.	M			
B4.24	Configure, install and train on the existing Tableau environment to allow for the usage of R Programming	M			
B4.25	Logging of activity - For financial, operational, and legal reasons, the solution must record all activities in a log, which must be searchable to allow administrators to identify any abnormal pattern of activity.	M			
B4.26	The solution must include the capability to monitor activity continually according to a set of pre-defined rules, and to notify administrators when abnormal activity is detected	M			
B4.27	Authorization - Authorization shall provide access control through enforcement, and be used to determine the specific scope of access to grant to an identity. It must provide real-time access policy decisions and enforcement (based on identities, attributes, roles, rules, entitlements and so on). Users must be able to access only what their job functions allow them to access. For instance, if a person is a "manager," then he or she is granted the access necessary to create or edit a performance review; however, if a person is not a manager, then he or she should be able to review only his or her own performance review, and only at a specific stage of the review cycle. Web access management (WAM), externalized authorization management, identity-aware networks and digital rights management tools are examples of authorization technologies.	M			

B4.28	Administration - Administration shall offer a means of performing identity-related tasks (for instance, adding a user account to a specific system). Administration tools must provide an automated means of performing identity-related work that would otherwise be performed by a human; examples include tasks such as creating, updating or deleting identities (including credentials and attributes), and administering access policies (rules and entitlements). User provisioning shall be considered a part of administration technology. Helpdesk agents shall have override capabilities to correct data and account errors.	M			
B4.29	Establishment of an agile State enterprise technology platform based on an DAP architecture	P			
B4.30	The selected vendor must work with Department to ensure strategic alignment between the deployed technology and the future-state business processes and operational model. This collaboration is to occur, at a minimum, through the following activities:	M			
B4.31	Work with Department Executive Leadership and project team to refine the overall vision for the project and to develop a strategic plan for managing change;	M			
B4.32	Cultivate ownership and teamwork among stakeholders at executive levels	P			
B4.33	Define a change control process for considering and accepting or denying changes (policy, planning, design, processes, etc.) throughout the project	M			
<b>Training</b>					
B5.1	Work with the Department to develop and deliver training as appropriate to State users	M			

85.2	<p>The System training, in addition to focusing on the navigation and use of the System, must also focus on how the System is integrated into the day-to-day work of end users including access level, new business processes and/or workflows that the System will support.</p> <p>Additionally, training for the usage of the back-end environment, informatica and database dimensional design will be provided to a team consisting of State of New Hampshire database administrators, system administrators and business analysts responsible for the on-going maintenance and support of the system (outlined further in the Technical training section).</p>	M			
85.3	<p>The selected vendor must provide the State Project Manager with documented evidence of each trainee's competence to operate the System and integrate its support in to their day-to-day work. Training must be of sufficient length to ensure adequate comprehension. Training must be provided "just in time" prior to deployment and must comprehensively address all System operations as well as security considerations.</p>	M			
85.4	<p>The selected vendor must organize and provide formal orientation and training before System deployment, to the State development and operations staff so that they are able to manage and maintain the System.</p>	M			
85.5	<p>The Contractor will also involve the State's technical staff in any enhancements to the System to enable the staff to become familiar with the process.</p>	M			



85.6	<p>Effective training that will provide the required skills to use this new automated tool is critical to the successful implementation and use of the new System. The selected vendor must develop user training curricula, schedules, training materials and training evaluation materials. The selected vendor must maintain an online training environment that allows trainees to access the new System. The selected vendor must conduct face-to-face, hands-on, user training in logical groupings at regional locations determined by the State, and for managing all training planning and logistics.</p>	M			
<b>Inventory and Migration</b>					
86.1	<p>The selected vendor shall develop a prioritized list of data sources to integrate and migrate into the Enterprise Data Warehouse. The selected vendor must identify and prioritize data sources required to support each implementation phase. Additionally, the selected vendor is required to integrate each respective data source into the Enterprise Data Warehouse. The following are the initial list of data sources to be migrated into the EDV and utilized to create the Opioid Crisis dashboard:</p>	M			
86.2	<p>Medicaid and Comprehensive Health Care Information System (CHIS): Pharmacy, physical, behavioral health care claims for all NH Medicaid services and for most commercially insured population in New Hampshire. Medicaid member data will be integrated into the EBI warehouse under a separate effort by Spring 2019.)</p>	M			
86.3	<p>Child protection investigations and findings including whether opioid or other substance use is possible factor in the case. Child Welfare System/DCYF Cases</p>	M			

86.4	Automated Hospital Emergency Department Data (AHEDD): State-wide surveillance system collects real-time data from all 26 New Hampshire acute care hospital emergency departments to detect clusters or monitor potential health threats in the population such as respiratory illness during influenza season, injuries during snow storms, and drug overdoses during the current opioid crisis.)	M			
86.5	Vital Records Data: Real time birth and mortality records certificates. Data collected by the NH Division of Vital Records for NH residents and births or deaths occurring in NH. NH resident out-of-state births are reported to NH through an interstate exchange agreement.	M			
86.6	Drug overdose deaths data by Fentanyl (no other drugs), Fentanyl and Other Drugs (excluding heroin), Heroin (no other drugs), Heroin and Other Drugs (excluding fentanyl), Heroin and Fentanyl, Unknown Opioids, Other Opiates/Opioids determined by the Medical Examiner. Medical Examiner Report	M			
86.7	Emergency Medical Services (EMS) Trauma Emergency Medical Services Information System (TEMSIS): medical responses on Naloxone administration incidents data. A data collection and analysis capability system that provides for the evaluation of the emergency medical and trauma services system (TEMSIS).	M			
86.8	Grant/State BDAS Treatment Services: Medication assisted treatment with Opioid/opiate, methamphetamine, & cocaine/crack admissions to state funded facilities. An array of levels of care including outpatient, intensive outpatient, partial hospitalization, residential, withdrawal management, and peer and non-peer recovery support services.	M			
86.9	Population Data: Base data used for calculation of population based rates.	M			

B6.10	NH Health WISDOM: Data access for public health indicators via interactive dashboards and community profiles. Customize and display data in maps, graphs, and tables related to the NH State Health Improvement Plan, NH Environmental Public Health Tracking Program, and the NH Occupational Health Surveillance Program.-	M			
B6.11	To help ensure that the selected vendor and the State Project team fully understand the extent of the work needed for data conversion, a detailed study of conversion issues and requirements will be required of the selected vendor.	M			
B6.12	Conducting selected data source analysis to determine conversion requirements	M			
B6.13	Reviewing conversion analysis with the State Project team, prepare detailed data conversion plan (addressing manual and electronic data)	M			
B6.14	Defining strategies for verifying and/or correcting existing data	M			
B6.15	Developing data conversion scripts and test data conversion scripts	M			
B6.16	In this task the selected vendor must address data migration issues and a plan must be in place to ensure the validation of all conversion routines and the accuracy and completeness of all data.	M			
<b>Data Governance</b>					
B7.1	Design and Implementation of a data governance strategy	M			
B7.2	A DAP initiative requires an infrastructure reference model that provides guidance for selecting technologies and products when implementing and deploying services. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):	M			
B7.3	Defining methods to ensure that the services infrastructure supports robust, secure, scalable, and interoperable operations.	M			
B7.4	Identifying what are the approved or standard technologies and products for service development and deployment.	M			

B7.5	Designing and implementing methods, patterns, and technologies that will be used to support security, reliability, transaction, and instrumentation requirements.	M			
B7.6	Determining who determines which technologies and products go onto the standards list.	M			
B7.7	Defining who needs to approve future technology and product decisions as standards evolve in the future.	M			
B7.8	Service Design and Development	M			
B7.9	Service design and development precepts delegate decisions about services to the appropriate architects and developers. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):	M			
B7.10	Defining a method(ology) to ensure that services are built the right way.	M			
B7.11	Determining the appropriate types of models that must be implemented.	M			
B7.12	Identifying sign off or approval requirements for service models.	M			
B7.13	Determining the design patterns that should be used to support DAP principles.	M			
B7.14	Identifying sign off or approval requirements system or service design decisions.	M			
B7.15	Establishing technology standards for a future project.	M			
B7.16	Determining technology selection sign off or approval requirements.	M			
B7.17	Establishing standard designs for message formats.	M			
B7.18	Determining interface sign off or approval procedures.	M			
B7.19	Defining the required testing for DAP projects.	M			
B7.20	Establishing completed project acceptance requirements and procedures.	M			
B7.21	Creating a "prototyping or early experience" capability to experiment with and design enhancements to rules-engines by the program group for review and approval prior to entering a more formal development, testing and release process.	M			

B7.22	Configuration and release management	M			
B7.23	Configuration management precepts establish which developers or administrators are responsible for configuring a service and preparing it for production deployment. The Vendor must build on and extend New Hampshire's release management processes, or develop one if the existing process is mutually determined to be not suitable. Requirements in this area are to include the following:	M			
B7.24	Establishing objective criterion to ensure that services are stable upon production release.	M			
B7.25	Defining entire deployable units including its dependencies.	M			
B7.26	Defining who is responsible for creating and version managing configuration files and deployment packages.	M			
B7.27	Establishing clear responsibilities and requirements for system testing, performance testing, and capacity planning.	M			
B7.28	Defining the service staging and promotion process.	M			
B7.29	Defining and implementing services registration procedures.	M			
B7.30	Defining what information must be captured pertaining to a service.	M			
B7.31	Defining service provision and instrumentation requirements.	M			
B7.32	Establishing signs off or approvals required to migrate a service into production.	M			
B7.33	Contract management	M			
B7.34	Contract management precepts shall define the policies and processes that potential service consumers use to obtain permission to access a service. The proposed DAP governance solution may extend the existing provisioning governance system if suitable, or build a new one as appropriate. The Vendor must design and implement precepts in the following areas:	M			
B7.35	Ensuring that new consumers don't crash the system through use, operation or load.	M			
B7.36	Establishing the procedures for requesting permission to use a service.	M			

B7.37	Identifying required information to request permission to use a service.	M			
B7.38	Establishing an impact analysis to be performed before granting permission to new consumers.	M			
B7.39	Determining appropriate sign offs or approvals to granting permissions to access the system.	M			
B7.40	Establishing a framework to negotiate service level agreements (SLAs) for use of the system.	M			
B7.41	Defining and implementing SLAs be reported and enforced.	M			
B7.42	Establishing processes to address modifications or additional resources that may be required to support the SLAs.	M			
B7.43	Defining appropriate testing practices and procedures that are required before a new consumer can be provisioned.	M			
B7.44	Establishing a process to provision new consumers	M			
B7.45	Service monitoring and control	M			
B7.46	Service monitoring and control precepts must be designed and implemented in such a manner as to define responsibilities for issues related to operating a service. The Vendor may build on and extend or develop new service management and operations governance by defining and implementing precepts that address the following:	M			
B7.47	Establishing controls and reporting to ensure that services behave as expected.	M			
B7.48	Defining instrumentation and reporting to track service consumption and utilization.	M			
B7.49	Establishing methods and reporting procedures to detect, eliminate and prevent against unauthorized service access.	M			
B7.50	Create tracking and reporting for service SLA compliance and violations.	M			
B7.51	Identification of notifications and escalation contacts and procedures for service issues and outages	M			
B7.52	Service monitoring and control capabilities must be built into the DAP runtime infrastructure. DAP governance standards must define where and how to use, report on and enhance SLAs.	M			
B7.53	Incident management	M			

B7.54	Incident management precepts shall define and implement responsibilities for monitoring and managing problems and issues that arise during the operation of the service. The Vendor must build on and extend or develop new incident management governance by implementing precepts that cover the following (at a minimum):	M			
B7.55	Design and implementation of processes and procedures to manage incidents and failures	M			
B7.56	Definition/Identification of responsibilities for end-to-end service exception and fault tracking	M			
B7.57	Definition/Identification of responsibilities for end-to-end service error identification and resolution.	M			
B7.58	Definition of the escalation path for SLA violations.	M			
B7.59	Change management	M			
B7.60	Change control management precepts shall define and implement responsibilities for managing system enhancement requests and service versioning. The Vendor must build on and extend or develop and implement new change management governance by defining precepts that cover (at a minimum):	M			
B7.61	Implement a process to manage change requests and to ensure that enhancements don't introduce defects in the system.	M			
B7.62	Design and implement procedures for requesting service enhancements.	M			
B7.63	Define what information is required when requesting a service enhancement.	M			
B7.64	Design an impact analysis process to be performed before a service enhancement request is accepted.	M			
B7.65	Define sign off or approval requirements for service enhancement requests.	M			
B7.66	Define roles, responsibilities and sequence of events pertaining to the implementation of an enhancement.	M			
B7.67	Develop guidelines to assist the State in paying for or funding an enhancement.	M			

B7.68	Define recommended methods and a process for addressing enhancement requests associated with regulatory requirements.	M			
B7.69	Define methods to enable service versioning and version control/migration.	M			
B7.70	Establish guidelines on how long should a previous version(s) of the service be maintained and subsequently retired.	M			
B7.71	Define what degree of service and system testing is required before deploying a service enhancement.	M			
B7.72	Establish leading practices to mitigate current consumer disruption when deploying an enhancement.	M			
B7.73	Develop procedures to notify consumers of the enhancement or changes to the system.	M			
B7.74	Develop and implement processes to fall back to a system previous version upon discovery of a critical defect.	M			
B7.75	Data Management	M			
B7.76	Design and Implementation of a data management strategy including data warehousing, data quality, and data integration capabilities. The strategy will incorporate current practices and the vendor will work with the current teams.	M			



APPLICATION REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>GENERAL SPECIFICATIONS</b>					
A1.1	Ability to access data using open standards access protocol (please specify supported versions in the comments field).	M			
A1.2	Data is available in commonly used format over which no entity has exclusive control, with the exception of National or International standards. Data is not subject to any copyright, patent, trademark or other trade secret regulation.	M			
A1.3	Web-based compatible and in conformance with the following W3C standards: HTML5, CSS 2.1, XML 1.1	M			
<b>APPLICATION SECURITY</b>					
A2.1	Verify the identity or authenticate all of the system client applications before allowing use of the system to prevent access to inappropriate or confidential data or services.	M			
A2.2	Verify the identity and authenticate all of the system's human users before allowing them to use its capabilities to prevent access to inappropriate or confidential data or services.	M			
A2.3	Enforce unique user names for internal facing solution	M			
A2.4	Enforce complex passwords for Administrator Accounts in accordance with DoIT's statewide <i>User Account and Password Policy</i>	M			
A2.5	Enforce the use of complex passwords for general users using capital letters, numbers and special characters in accordance with DoIT's statewide <i>User Account and Password Policy</i> .	M			
A2.6	Encrypt passwords in transmission and at rest within the database.	M			
A2.7	Establish ability to expire passwords after a definite period of time in accordance with DoIT's statewide <i>User Account and Password Policy</i>	M			
A2.8	Provide the ability to limit the number of people that can grant or change authorizations	M			
A2.9	Establish ability to enforce session timeouts during periods of inactivity.	M			
A2.10	The application shall not store authentication credentials or sensitive data in its code.	M			
A2.11	Log all attempted accesses that fail identification, authentication and authorization requirements.	M			
A2.12	The application shall log all activities to a central server to prevent parties to application transactions from denying that they have taken place.	M			

Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
A2.13	All logs must be kept for (6 months)	M			
A2.14	The application must allow a human user to explicitly terminate a session. No remnants of the prior session should then remain.	M			
A2.15		M			
A2.16	The application Data shall be protected from unauthorized use when at rest	M			
A2.17	The application shall keep any sensitive Data or communications private from unauthorized individuals and programs.	M			
A2.18	Subsequent application enhancements or upgrades shall not remove or degrade security requirements	M			
A2.19	Utilize change management documentation and procedures	M			

TESTING					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>APPLICATION SECURITY TESTING</b>					
T1.1	All components of the Software shall be reviewed and tested to ensure they protect the State's web site and its related Data assets.	M			
T1.2	The Vendor shall be responsible for providing documentation of security testing, as appropriate. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability.	M			
T1.3	Provide evidence that supports the fact that Identification and Authentication testing has been recently accomplished; supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users	M			
T1.4	Test for Access Control; supports the management of permissions for logging onto a computer or network	M			
T1.5	Test for encryption; supports the encoding of data for security purposes, and for the ability to access the data in a decrypted format from required tools.	M			
T1.6	Test the Intrusion Detection; supports the detection of illegal entrance into a computer system	M			
T1.7	Test the Verification feature; supports the confirmation of authority to enter a computer system, application or network	M			
T1.8	Test the User Management feature; supports the administration of computer, application and network accounts within an organization.	M			
T1.9	Test Role/Privilege Management; supports the granting of abilities to users or groups of users of a computer, application or network	M			
T1.10	Test Audit Trail Capture and Analysis; supports the identification and monitoring of activities within an application or system	M			
T1.11	Test Input Validation; ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.	M			
T.1.12	For web applications, ensure the application has been tested and hardened to prevent critical application security flaws. ( At a minimum, the application shall be tested against all flaws outlined in the Open Web Application Security Project (OWASP) Top Ten ( <a href="http://www.owasp.org/index.php/OWASP_Top_Ten_Project">http://www.owasp.org/index.php/OWASP_Top_Ten_Project</a> ))	M			

T1.13	Provide the State with validation of 3rd party security reviews performed on the application and system environment. The review may include a combination of vulnerability scanning, penetration testing, static analysis of the source code, and expert code review (please specify proposed methodology in the comments field).	M			
T1.14	Prior to the System being moved into production, the Vendor shall provide results of all security testing to the Department of Information Technology for review and acceptance.	M			
T1.15	Vendor shall provide documented procedure for migrating application modifications from the User Acceptance Test Environment to the Production Environment.	M			
<b>STANDARD TESTING</b>					
T2.1	The Vendor must test the software and the system using an industry standard and State approved testing methodology.	M			
T2.2	The Vendor must perform application stress testing and tuning.	M			
T2.3	The Vendor must provide documented procedure for how to sync Production with a specific testing environment.	M			
T2.4	The vendor must define and test disaster recovery procedures.	M			

HOSTING-CLOUD REQUIREMENTS					
State Requirements				Vendor	
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>OPERATIONS</b>					
H1.1	Vendor shall provide an ANSI/TIA-942 Tier 3 Data Center or equivalent. A tier 3 data center requires 1) Multiple independent distribution paths serving the IT equipment, 2) All IT equipment must be dual-powered and fully compatible with the topology of a site's architecture and 3) Concurrently maintainable site infrastructure with expected availability of 99.982%	M			
H1.2	Vendor shall maintain a secure hosting environment providing all necessary hardware, software, and Internet bandwidth to manage the application and support users with permission based logins.	M			
H1.3	The Data Center must be physically secured – restricted access to the site to personnel with controls such as biometric, badge, and others security solutions. Policies for granting access must be in place and followed. Access shall only be granted to those with a need to perform tasks in the Data Center.	M			
H1.4	Vendor shall install and update all server patches, updates, and other utilities within 60 days of release from the manufacturer.	M			
H1.5	Vendor shall monitor System, security, and application logs.	M			
H1.6	Vendor shall manage the sharing of data resources.	M			
H1.7	Vendor shall manage daily backups, off-site data storage, and restore operations.	M			
H1.8	The Vendor shall monitor physical hardware.	M			
H1.9	Remote access shall be customized to the State's business application. In instances where the State requires access to the application or server resources not in the DMZ, the Vendor shall provide remote desktop connection to the server through secure protocols such as a Virtual Private Network (VPN).	M			
H1.10	The Vendor shall report any breach in security in conformance with State of NH RSA 359-C:20. Any person engaged in trade or commerce that is subject to RSA 358-A:3, I shall also notify the regulator which has primary regulatory authority over such trade or commerce. All other persons shall notify the New Hampshire attorney general's office.	M			
<b>DISASTER RECOVERY</b>					

H2.1	Vendor shall have documented disaster recovery plans that address the recovery of lost State data as well as their own. Systems shall be architected to meet the defined recovery needs.	M			
H2.2	The disaster recovery plan shall identify appropriate methods for procuring additional hardware in the event of a component failure. In most instances, systems shall offer a level of redundancy so the loss of a drive or power supply will not be sufficient to terminate services however, these failed components will have to be replaced.	M			
H2.3	Vendor shall adhere to a defined and documented back-up schedule and procedure.	M			
H2.4	Back-up copies of data are made for the purpose of facilitating a restore of the data in the event of data loss or System failure.	M			
H2.5	Scheduled backups of all servers must be completed regularly. The minimum acceptable frequency is differential backup daily, and complete backup weekly.	M			
H2.6	Tapes or other back-up media tapes must be securely transferred from the site to another secure location to avoid complete data loss with the loss of a facility.	M			
H2.7	Data recovery – In the event that recovery back to the last backup is not sufficient to recover State Data, the Vendor shall employ the use of database logs in addition to backup media in the restoration of the database(s) to afford a much closer to real-time recovery. To do this, logs must be moved off the volume containing the database with a frequency to match the business needs.	M			
<b>HOSTING SECURITY</b>					
H3.1	The Vendor shall employ security measures ensure that the State's application and data is protected and how the system will meet all Federal and State requirements currently in law and rules protecting sensitive personal health information, as outlined in the Health Insurance Portability and Accountability Act (HIPAA) and the more stringent Title 42 Code of Federal Regulations (CFR) Part 2: (Confidentiality of Substance Use Disorder Patient Records regulation), as outlined by the Federal Substance Abuse Mental Health Services Administration (SAMHSA) and the Office of the National Coordinator for Health Information Technology (ONC)	M			
H3.2	If State data is hosted on multiple servers, data exchanges between and among servers must be encrypted.	M			

H3.3	All servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a whole, shall have aggressive intrusion-detection and firewall protection.	M			
H3.4	All components of the infrastructure shall be reviewed and tested to ensure they protect the State's hardware, software, and its related data assets. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide confidentiality, integrity and availability.	M			
H3.5	The Vendor shall ensure its complete cooperation with the State's Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure.	M			
H3.6	The Vendor shall authorize the State to perform scheduled and random security audits, including vulnerability assessments, of the Vendor' hosting infrastructure and/or the application upon request.	M			
H3.7	All servers and devices must have event logging enabled. Logs must be protected with access limited to only authorized administrators. Logs shall include System, Application, Web and Database logs.	M			
H3.8	Operating Systems (OS) and Databases (DB) shall be built and hardend in accordance with guidelines set forth by CIS, NIST or NSA	M			
H3.9	The Vendor shall notify the State's Project Manager of any security breaches within two (2) hours of the time that the Vendor learns of their occurrence.	M			
H3.10	The Vendor shall be solely liable for costs associated with any breach of State data housed at their location(s) including but not limited to notification and any damages assessed by the courts.	M			
H3.11	The cloud services if used will be FEDRAMP compliant	M			
<b>SERVICE LEVEL AGREEMENT</b>					
H4.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M			
H4.2	The vendor shall maintain the hardware and Software in accordance with the specifications, terms, and requirements of the Contract, including providing, upgrades and fixes as required.	M			
H4.3	The vendor shall repair or replace the hardware or software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M			

H4.4	All hardware and software components of the Vendor hosting infrastructure shall be fully supported by their respective manufacturers at all times. All critical patches for operating systems, databases, web services, etc, shall be applied within sixty (60) days of release by their respective manufacturers.				
H4.5	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST.	M			
H4.6	<p>The Vendor shall conform to the specific deficiency class as described:</p> <ul style="list-style-type: none"> <li>o Class A Deficiency - Software - Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation - missing significant portions of information or unintelligible to State; Non Software - Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency - Software - important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation - portions of information are missing but not enough to make the document unintelligible; Non Software - Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency - Software - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation - minimal changes required and of minor editing nature; Non Software - Services require only minor reworking and do not require re-performance of the Service.</li> </ul>	M			
H4.7	<p>As part of the maintenance agreement, ongoing support issues shall be responded to according to the following:</p> <ul style="list-style-type: none"> <li>a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request;</li> <li>b. Class B &amp; C Deficiencies –The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract;</li> </ul>	M			



H4.8	The hosting server for the State shall be available twenty-four (24) hours a day, 7 days a week except for during scheduled maintenance.	M			
H4.9	A regularly scheduled maintenance window shall be identified (such as weekly, monthly, or quarterly) at which time all relevant server patches and application upgrades shall be applied.	M			
H4.10	If The Vendor is unable to meet the uptime requirement, The Vendor shall credit State's account in an amount based upon the following formula: (Total Contract Item Price/365) x Number of Days Contract Item Not Provided. The State must request this credit in writing.	M			
H4.11	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M			
H4.12	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M			
H4.13	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: Server up-time; All change requests implemented, including operating system patches; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M			
H4.14	The Vendor will give two-business days prior notification to the State Project Manager of all changes/updates and provide the State with training due to the upgrades and changes.	M			



SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
S1.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M			
S1.2	Maintain the hardware and Software in accordance with the Specifications, terms, and requirements of the Contract, including providing, upgrades and fixes as required.	M			
S1.3	Repair Software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M			
S1.4	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST.	M			
S1.5	The Vendor response time for support shall conform to the specific deficiency class as described below or as agreed to by the parties: <ul style="list-style-type: none"> <li>o Class A Deficiency - Software - Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation - missing significant portions of information or unintelligible to State; Non Software - Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency - Software - important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation - portions of information are missing but not enough to make the document unintelligible; Non Software - Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency - Software - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation - minimal changes required and of minor editing nature; Non Software - Services require only minor reworking and do not require re-performance of the Service.</li> </ul>	M			
S1.6	The Vendor shall make available to the State the latest program updates, general maintenance releases, selected functionality releases, patches, and Documentation that are generally offered to its customers, at no additional cost.	M			

Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.7	For all maintenance Services calls, The Vendor shall ensure the following information will be collected and maintained: 1) nature of the Deficiency; 2) current status of the Deficiency; 3) action plans, dates, and times; 4) expected and actual completion time; 5) Deficiency resolution information, 6) Resolved by, 7) Identifying number i.e. work order number, 8) Issue identified by;	P			
S1.8	The Vendor must work with the State to identify and troubleshoot potentially large-scale System failures or Deficiencies by collecting the following information: 1) mean time between reported Deficiencies with the Software; 2) diagnosis of the root cause of the problem; and 3) identification of repeat calls or repeat Software problems.	P			
S1.9	As part of the Software maintenance agreement, ongoing software maintenance and support issues, shall be responded to according to the following or as agreed to by the parties: a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request; b. Class B & C Deficiencies -The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract; or as agreed between the parties	M			
S1.10	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M			
S1.11	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M			
S1.12	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: All change requests implemented; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M			

PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>PROJECT MANAGEMENT</b>					
P1.1	Vendor shall participate in an initial kick-off meeting to initiate the Project.	M			
P1.2	Vendor shall provide Project Staff as specified in the RFP.	M			
P1.3	Vendor shall submit a finalized Work Plan within ten (10) days after Contract award and approval by Governor and Council. The Work Plan shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, critical events, task dependencies, and payment Schedule. The plan shall be updated no less than <every two weeks.>	M			
P1.4	Vendor shall provide detailed <bi-weekly or monthly> status reports on the progress of the Project, which will include expenses incurred year to date.	M			
P1.5	All user, technical, and System Documentation as well as Project Schedules, plans, status reports, and correspondence must be maintained as project documentation. (Define how- WORD format- on-Line, in a common library or on paper)	M			
P1.6	The selected vendor must define an integrated project management plan, which;				
P1.7	Includes cost estimates for specific work to be performed,				
P1.8	Defines Department Training as a component of the implementation plan,				
P1.9	Clearly defines the approach and methodology to be used in each phase of the project,				
P1.10	Includes a discovery, detailed requirements and prioritization component phase of the project,				

P1.11	<p>The Department has historically followed a waterfall approach to enacting changes. This is usually accomplished by having requirements meetings, followed by vendor design based on the requirements, with a development, unit test, integration test, system test and regression testing. Finally ending up with a migration to production and training and post-production review. With this RFP the goal will be to adjust to a more agile approach, allowing the organization to adapt and change as needed more efficiently and effectively in order to meet the business needs. The goals will be to provide a bi-weekly demonstration of work for review and planning for next steps. The new process will be based on the following scope as a baseline to the strategy:</p>				
P1.12	<p>Team Formation: the Department in concert with the awarded vendor will identify the required team members for the duration of the product delivery. The team will consist of a product owner, scrum master, and other team members. There will be several teams based on the amount of features being worked on at any given time. Additionally, there will be operational teams to commit to and complete features associated with user stories and tasks to keep the system running as well as product enhancement teams to commit and complete features associated with user stories and tasks to meet the changes required by the business.</p>				
P1.13	<p>Process: The awarded vendor will plan and implement a process similar to the following:</p>				
P1.14	<p>Backlog Creation and refinement: The Product Owner working with team members and the business will create a prioritized backlog of work in the form of high level features. This will be an on-going process that must be completed prior to each Sprint Planning Meeting. Additionally, the Product Owner(s) will breakdown the features into prioritized user stories related to the originating features for use in the Sprint Planning meeting.</p>				

P1.15	Sprint Planning Meeting: This meeting will minimally consist of all team members facilitated by the Scrum Master and will be focused on clarifying the details of the prioritized backlog items, re-prioritizing as needed and obtaining commitment from the team to complete user stories from the backlog in the proposed sprint not to exceed 4 weeks with a preferred cadence of 2 weeks. Additionally the team will then create detailed tasks and commit to the items individually. The commitments will be managed using a KanBan tool to be provided by the vendor and agreed to by both parties for the teams use throughout the contract period.				
P1.16	Sprint: The sprint will consist of daily standup meetings (not to exceed 10 minutes) to discuss roadblocks, any clarification needs associated with work accomplished the previous day or planned for the current day, or other important items to the team. The team will work in concert with each other preferably within the same location and will require a meeting room provided by the awarded vendor for impromptu meetings to move tasks forward.				
P1.17	Sprint Review Meeting: Demonstrate working product associated with commitments from the sprint planning meeting. Communicate items to focus on in the next sprint.				
P1.18	Daily Meeting: Consist of the team members that have committed to completing tasks in the sprint and will be no longer than 10 minutes answering the following questions:				
P1.19	What did I complete yesterday?				
P1.20	What am I doing today?				
P1.21	Are there any roadblocks keeping me from completing my commitments?				
P1.22	Develop and obtain buy-in for a stakeholder and communication management plan and work with the Department to craft appropriate communication messages throughout the project				

P1.23	Conduct organizational assessments and gap analyses for the affected divisions and programs and facilitate the development of appropriate organizational structures and job descriptions				
P1.24	Work with the Department to define business processes, including use cases, workflows, and business rules				
P1.25	The project must utilize agile-like software development principles and practices				



Attachment #2, Agency RFP with Addendums

- Will not meet
- Will partially meet
- Wholly meet



**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #1**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

- Delete and replace Section 2, Schedule of Events, with the following:**

<b>EVENT</b>	<b>DATE</b>	<b>TIME</b>
RFP released to Vendors (on or about)	Oct., 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 30, 2018	10:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor inquiries	Nov. 13, 2018	2:00 pm
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 17	8:30 am
Vendor Presentation & Demo (2 hours)	Dec. 17	1:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 18	8:30 am
Selection / Notification	Dec. 19	10:00 am



**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #2**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. **Update the time of the Vendor Conference listed on the Cover page to read:**

Vendor Conference.....Oct. 30, 2018; **10:00 a.m. EST**



**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #3**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

- 1. Update the date for Proposals Due listed on the Cover page to read:**

Proposals Due.....**Dec. 10, 2018; 2:00 p.m. EST**



**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #4**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

- 1. Add Attachment C-2 to the Request for Proposals:**

<b>Vendor Instructions</b>	
<b>Vendor Response Column:</b>	Place a
<p><b>"Yes"</b> if the current release of the software can fully support ALL the functionality described in the row, without special customization. A "Yes" can only be used if the delivery method is Standard (see delivery method instructions below). Otherwise, enter an "No"; A "No" can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).</p>	
<b>Criticality Column:</b>	
<p><b>(M)</b> Indicates a requirement that is "Mandatory". The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.</p> <p><b>(P)</b> Indicates a requirement which is "Preferred". This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.</p> <p><b>(O)</b> Indicates a requirement which is "Optional". This requirement is considered by the State to be one which useful or potentially useful but not a central feature of the Project.</p>	
<b>Delivery Method Column:</b>	
<p>Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.</p> <p><b>Standard</b> - Feature/Function is included in the proposed system and available in the current software release.</p> <p><b>Future</b> - Feature/Function will be available in a future release. (Provide anticipated delivery date, version, and service release in the comment area.)</p> <p><b>Custom</b> - Feature/Function can be provided with custom modifications. (Respondent must provide estimated hours and average billing rate or flat cost for the software modification in the comment area. These cost estimates should add up to the total cost for software modifications found in the cost summary table in Section X of the RFP).</p> <p><b>Not Available/Not Proposing</b> - Feature/Function has not been proposed by the Vendor. (Provide brief description of why this functionality was not proposed.)</p>	
<b>Comments Column:</b>	
<p>For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.</p>	

BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>Functional</b>					
B1.1					
B1.2	Design and implementation of data visualization standards via a style guide and example templates specifically leveraging existing toolsets and web portals currently in place at the state to create a consistent way for data to be organized and graphically displayed to meet both user design and user experience requirements.				
B1.3	Create a method to inventory data sources associated with the building of the Opioid Crisis dashboard and an ongoing process to add to the inventory of the system and recommend a strategy for future use of data analytics and business intelligence toolsets as well as create a dashboard in which the source is tagged as internal or external (to the Department) and whether the data contains personally identified information (PII) or De-identified information (DII)				
B1.4	Provide professional services to augment internal capabilities associated with the following skill sets: Business analysis, use case development, user persona development, Data and statistical analysis generally, Data and statistical analysis specific to the opioid crisis, Data integration and transformation, Data visualization including geographical information system, Hardware architecture and design, Software configuration and training.				
B1.5	If the proposal is a cloud/hosted solution provide and establish hardware and software and/or cloud services for operation by the State needed to augment the Department's infrastructure.				
B1.6	Implement no later than August 15, 2019 opioid dashboards based on requirements				
B1.7	Provide a detailed description of how you would address charts included in the Introduction section				

B1.8	Provide context sensitive "Help" screens/tips and dashboard instructions				
B1.9	Automated reports/notifications/alerts to users based on subscription or opt in/out functionality				
B1.10	Design, develop and implement a holistic Data Analytics Platform (DAP) that consolidates data from multiple, currently disparate Department, other State of New Hampshire and Federal sources, systems and formats to meet the needs of the state's opioid response and provide the foundation for all other needs of the Department programs.				
B2.1	Include support for the future use of advanced statistical analysis techniques, predictive analytics and machine learning				
B2.2	Be intuitive and easy to learn, understand, navigate and use,				
B2.3	Provide and support average less than 5 seconds with a majority of 1 second query response times, with or without user customization,				
B2.4	Process and load datasets in a fast, smooth, efficient manner to meet no older 24 hour stale data				



<p>B2.5</p>	<p>The selected vendor must leverage (where applicable for the vendor solution) current technologies in place at State of New Hampshire and provide recommendations for alternatives based on proposed strategy to include but not limited to:                  Oracle databases,                  Dimensionally modeled data marts,                  Extract, Transform, Load (ETL) software - Informatica,                  Statistical analysis tools/software and server - R Programming and RStudio Server/Connect, and                  Supplementary BI tools leveraging Tableau for dashboards which:                  Consolidate and arranges numbers, metrics and Department defined scorecards, Key Performance, and other, metrics,                  Can be tailored for specific roles and display metrics targeted for a single point of view,                  Includes a customizable interface,                  Includes the ability to pull real-time data</p>				
<p>B2.6</p>	<p>Design, develop and implement an overarching data model, which:                  Combines appropriate data elements from various sources, as needed to achieve reporting and alert functions,                  Includes interfaces, source mapping and user interfaces; required to achieve data consolidation and build the DAP,                  Identifies current and future state of source systems and processes,                  Possesses the processing capabilities to provide large dataset analysis, including highly complex numerical analysis of textual, structured, non-structured, spatial and other data sources,                  Provide metadata tagging of data sources/elements,                  Allows fast and flexible data integration so that data sources are able to be integrated in the analytical environment and analyzed with limited advanced notice.</p>				

B2.7	Vendors must include a proposed architecture for the DAP, which integrates data from source systems and meets, or exceeds, the following minimal requirements:				
B2.8	Provides a framework for organization of data, information management and technology systems required to build and implement the system,				
B2.9	Allows for data components of the architecture to include internal and external sources of structured and unstructured data users require to analyze the opioid crisis,				
B2.10	Includes data integration, data cleansing and the development and implementation of data dimensional rules,				
<b>Technical</b>					
B3.1	Describes the conceptual and logical technology components required to present information to users and enable them to analyze the data and its impacts,				
B3.2	Allows for the ability to drill down on report data by varying levels of geographic, provider, program, service and client demographic details				
B3.3	Allow for the extraction of patterns and knowledge from large amounts of data,				
B3.4	Provide predictive or statistical analysis model, based upon data type and attributes				
B3.5	Provides browser-based solution to support all major browsers.				
B3.6	Internal multi-tenant sandbox to provide statistical analysis areas to look at data with access to the dimensional based data to design and develop visualizations on an ad-doc development based methodology				
B3.7	Internal role based authentication to provide view, modify and delete as well as external facing role based solution with ability to define group or user defined access				
B3.8	Provide a methodology to track web traffic and report on number of viewers, number of this and/or other measures.				
B3.9	State Sizing and Growth Assumptions				

B3.10	Develop capacity to make data and information available in meeting the Department's Federal Reporting requirements and necessary for Federal grant applications				
<b>SUBHEAD</b>					
B4.1	The new System must accommodate the anticipated number of users and workstations at each location. In order to support initial sizing expectations, prior to completion of capacity planning as part of this project, the State has estimated the first phase system must accommodate approximately 2,000 internal users (25% active users, 5% concurrent) in and for future use, 250,000 external users (10% active users, 2% concurrent) at this time, and all of these users are expected to have a workstation that will access the System. These initial estimates will be replaced with the finale user sizing in the Capacity Plan deliverable as part of the design phase. Workstations, network, servers, storage and WAN connectivity will be recommended by the vendor to ensure sizing to access and utilize the system.				
B4.2	The new shared infrastructure and functional capabilities need be designed to be operational 24 hours per day (hours to be determined by the state), 7 days per week, and 52 weeks per year. The centralized servers and resources and public facing web site will be designed to be operational 7 days per week and 24 hours per day. No single disruption is anticipated to last longer than 8 hours. The System as a whole will be available for use 99 percent of the timeless mutually agreed and scheduled service/maintenance intervals.				
B4.3	The new System must support transparent failover capabilities using high-availability architectural elements.				
B4.4	Specify all equipment (if any) required for the development and operations of the solutions and requirements defined in this RFP. The equipment will be comprised of industry standard and readily available components.				
B4.5	Creating/viewing population-based or individual-based alerts and notifications				
B4.6	Subscribing/Un-subscribing to alerts/notifications of interest				
B4.7	Sending notifications through preferred notification method				

B4.8	Scheduling of distribution of reports and notifications based on user input via an "opt in" model				
B4.9	Describe the proposed solution to meet 508 compliance and DoIT compliance requirements. The authentication and authorization solution must be ADA compliant.				
B4.10	Determining who originates and approves DAP investment proposals.				
B4.11	Determining the approved technologies and products developers must use to build services.				
B4.12	Defining the procedure for requesting permission to use a service.				
B4.13	Identifying (and executing) what service and system testing is required before deploying a service enhancement.				
B4.14	Promulgate policies, standards, and guidelines				
B4.15	Facilitation of processes				
B4.16	Collection, analysis and visualization of metrics				
B4.17	Administer the integration metadata - for example, DAP metadata (such as Web Services Description Language) or business-to-business metadata (such as electronic data interchange/XML document standards).				
B4.18	Monitor the associated governance procedures, through one or more repositories.				
B4.19	Role-based Access and User Provisioning - Technology component that enables what information a particular user is authorized to access.				
B4.20	Users' access rights shall be based on what roles they play in the enterprise (State and Counties) and/or what groups they belong to for external entities.				
B4.21	Role-Based Access shall include the capability to enforce who can update data versus access and view only. Further, the update authority should be defined at the field level within a panel.				

B4.22	Authentication of user identities - Technology component that verifies the identities of those seeking to access client data. Shall include strong authentication supported by an appropriate infrastructure for identity and access management.				
B4.23	The solution must have a mechanism for Annual Reconciliation of users to determine if access is still needed.				
B4.24	Configure, install and train on the existing Tableau environment to allow for the usage of R Programming				
B4.25	Logging of activity - For financial, operational, and legal reasons, the solution must record all activities in a log, which must be searchable to allow administrators to identify any abnormal pattern of activity.				
B4.26	The solution must include the capability to monitor activity continually according to a set of pre-defined rules, and to notify administrators when abnormal activity is detected				
B4.27	Authorization - Authorization shall provide access control through enforcement, and be used to determine the specific scope of access to grant to an identity. It must provide real-time access policy decisions and enforcement (based on identities, attributes, roles, rules, entitlements and so on). Users must be able to access only what their job functions allow them to access. For instance, if a person is a "manager," then he or she is granted the access necessary to create or edit a performance review; however, if a person is not a manager, then he or she should be able to review only his or her own performance review, and only at a specific stage of the review cycle. Web access management (WAM), externalized authorization management, identity-aware networks and digital rights management tools are examples of authorization technologies.				

B4.28	Administration - Administration shall offer a means of performing identity-related tasks (for instance, adding a user account to a specific system). Administration tools must provide an automated means of performing identity-related work that would otherwise be performed by a human; examples include tasks such as creating, updating or deleting identities (including credentials and attributes), and administering access policies (rules and entitlements). User provisioning shall be considered a part of administration technology. Helpdesk agents shall have override capabilities to correct data and account errors.				
B4.29	Establishment of an agile State enterprise technology platform based on an DAP architecture				
B4.30	The selected vendor must work with Department to ensure strategic alignment between the deployed technology and the future-state business processes and operational model. This collaboration is to occur, at a minimum, through the following activities:				
B4.31	Work with Department Executive Leadership and OIS to refine the overall vision for the project and to develop a strategic plan for managing change;				
B4.32	Cultivate ownership and teamwork among stakeholders at executive levels				
B4.33	Define a change control process for considering and accepting or denying changes (policy, planning, design, processes, etc.) throughout the project				
<b>Training</b>					
	Work with the Department to develop and deliver training as appropriate to State users				

	<p>The System training, in addition to focusing on the navigation and use of the System, must also focus on how the System is integrated into the day-to-day work of end users including access level, new business processes and/or workflows that the System will support.</p> <p>Additionally, training for the usage of the back-end environment, informatica and database dimensional design will be provided to a team consisting of State of New Hampshire database administrators, system administrators and business analysts responsible for the on-going maintenance and support of the system (outlined further in the Technical training section).</p>				
	<p>The selected vendor must provide the State Project Manager with documented evidence of each trainee's competence to operate the System and integrate its support in to their day-to-day work. Training must be of sufficient length to ensure adequate comprehension.</p> <p>Training must be provided "just in time" prior to deployment and must comprehensively address all System operations as well as security considerations.</p>				
	<p>The selected vendor must organize and provide formal orientation and training before System deployment, to the State development and operations staff so that they are enabled to manage and maintain the System.</p>				
	<p>The Contractor will also involve the State's technical staff in any enhancements to the System to enable the staff to become familiar with the process.</p>				

	<p>Effective training that will provide the required skills to use this new automated tool is critical to the successful implementation and use of the new System. The selected vendor must develop user training curricula, schedules, training materials and training evaluation materials. The selected vendor must maintain an online training environment that allows trainees to access the new System. The selected vendor must conduct face-to-face, hands-on, user training in logical groupings at regional locations determined by the State, and for managing all training planning and logistics.</p>				
<b>Inventory and Migration</b>					
	<p>The selected vendor shall develop a prioritized list of data sources to integrate and migrate into the Enterprise Data Warehouse. The selected vendor must identify and prioritize data sources required to support each implementation phase. Additionally, the selected vendor is required to integrate each respective data source into the Enterprise Data Warehouse. The following are the initial list of data sources to be migrated into the EDV and utilized to create the Opioid Crisis dashboard:</p>				
	<p>Medicaid and Comprehensive Health Care Information System (CHIS): Pharmacy, physical, behavioral health care claims for all NH Medicaid services and for most commercially insured population in New Hampshire. Medicaid member data will be integrated into the EBI warehouse under a separate effort by Spring 2019.)</p>				
	<p>Child protection investigations and findings including whether opioid or other substance use is possible factor in the case. Child Welfare System/DCYF Cases</p>				



	Automated Hospital Emergency Department Data (AHEDD): State-wide surveillance system collects real-time data from all 26 New Hampshire acute care hospital emergency departments to detect clusters or monitor potential health threats in the population such as respiratory illness during influenza season, injuries during snow storms, and drug overdoses during the current opioid crisis.)				
	Vital Records Data: Real time birth and mortality records certificates. Data collected by the NH Division of Vital Records for NH residents and births or deaths occurring in NH. NH resident out-of-state births are reported to NH through an interstate exchange agreement.				
	Drug overdose deaths data by Fentanyl (no other drugs), Fentanyl and Other Drugs (excluding heroin), Heroin (no other drugs), Heroin and Other Drugs (excluding fentanyl), Heroin and Fentanyl, Unknown Opioids, Other Opiates/Opioids determined by the Medical Examiner. Medical Examiner Report				
	Emergency Medical Services (EMS) Trauma Emergency Medical Services Information System (TEMSIS): medical responses on Naloxone administration incidents data. A data collection and analysis capability system that provides for the evaluation of the emergency medical and trauma services system (TEMSIS).				
	Grant/State BDAS Treatment Services: Medication assisted treatment with Opioid/opiate, methamphetamine, & cocaine/crack admissions to state funded facilities. An array of levels of care including outpatient, intensive outpatient, partial hospitalization, residential, withdrawal management, and peer and non-peer recovery support services.				
	Population Data: Base data used for calculation of population based rates.				

	NH Health WISDOM: Data access for public health indicators via interactive dashboards and community profiles. Customize and display data in maps, graphs, and tables related to the NH State Health Improvement Plan, NH Environmental Public Health Tracking Program, and the NH Occupational Health Surveillance Program.				
	To help ensure that the selected vendor and the State Project team fully understand the extent of the work needed for data conversion, a detailed study of conversion issues and requirements will be required of the selected vendor.				
	Conducting selected data source analysis to determine conversion requirements				
	Reviewing conversion analysis with the State Project team, prepare detailed data conversion plan (addressing manual and electronic data)				
	Defining strategies for verifying and/or correcting existing data				
	Developing data conversion scripts and test data conversion scripts				
	In this task the selected vendor must address data migration issues and a plan must be in place to ensure the validation of all conversion routines and the accuracy and completeness of all data.				
<b>Data Governance</b>					
	Design and Implementation of a data governance strategy				
	A DAP initiative requires an infrastructure reference model that provides guidance for selecting technologies and products when implementing and deploying services. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):				
	Defining methods to ensure that the services infrastructure supports robust, secure, scalable, and interoperable operations.				
	Identifying what are the approved or standard technologies and products for service development and deployment.				

	Designing and implementing methods, patterns, and technologies that will be used to support security, reliability, transaction, and instrumentation requirements.				
	Determining who determines which technologies and products go onto the standards list.				
	Defining who needs to approve future technology and product decisions as standards evolve in the future.				
	Service Design and Development				
	Service design and development precepts delegate decisions about services to the appropriate architects and developers. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):				
	Defining a method(ology) to ensure that services are built the right way.				
	Determining the appropriate types of models that must be implemented.				
	Identifying sign off or approval requirements for service models.				
	Determining the design patterns that should be used to support DAP principles.				
	Identifying sign off or approval requirements system or service design decisions.				
	Establishing technology standards for a future project.				
	Determining technology selection sign off or approval requirements.				
	Establishing standard designs for message formats.				
	Determining interface sign off or approval procedures.				
	Defining the required testing for DAP projects.				
	Establishing completed project acceptance requirements and procedures.				
	Creating a "prototyping or early experience" capability to experiment with and design enhancements to rules-engines by the program group for review and approval prior to entering a more formal development, testing and release process.				

	Configuration and release management				
	Configuration management precepts establish which developers or administrators are responsible for configuring a service and preparing it for production deployment. The Vendor must build on and extend New Hampshire's release management processes, or develop one if the existing process is mutually determined to be not suitable. Requirements in this area are to include the following:				
	Establishing objective criterion to ensure that services are stable upon production release.				
	Defining entire deployable units including its dependencies.				
	Defining who is responsible for creating and version managing configuration files and deployment packages.				
	Establishing clear responsibilities and requirements for system testing, performance testing, and capacity planning.				
	Defining the service staging and promotion process.				
	Defining and implementing services registration procedures.				
	Defining what information must be captured pertaining to a service.				
	Defining service provision and instrumentation requirements.				
	Establishing signs off or approvals required to migrate a service into production.				
	Contract management				
	Contract management precepts shall define the policies and processes that potential service consumers use to obtain permission to access a service. The proposed DAP governance solution may extend the existing provisioning governance system if suitable, or build a new one as appropriate. The Vendor must design and implement precepts in the following areas:				
	Ensuring that new consumers don't crash the system through use, operation or load.				
	Establishing the procedures for requesting permission to use a service.				

	Identifying required information to request permission to use a service.				
	Establishing an impact analysis to be performed before granting permission to new consumers.				
	Determining appropriate sign offs or approvals to granting permissions to access the system.				
	Establishing a framework to negotiate service level agreements (SLAs) for use of the system.				
	Defining and implementing SLAs be reported and enforced.				
	Establishing processes to address modifications or additional resources that may be required to support the SLAs.				
	Defining appropriate testing practices and procedures that are required before a new consumer can be provisioned.				
	Establishing a process to provision new consumers				
	Service monitoring and control				
	Service monitoring and control precepts must be designed and implemented in such a manner as to define responsibilities for issues related to operating a service. The Vendor may build on and extend or develop new service management and operations governance by defining and implementing precepts that address the following:				
	Establishing controls and reporting to ensure that services behave as expected.				
	Defining instrumentation and reporting to track service consumption and utilization.				
	Establishing methods and reporting procedures to detect, eliminate and prevent against unauthorized service access.				
	Create tracking and reporting for service SLA compliance and violations.				
	Identification of notifications and escalation contacts and procedures for service issues and outages				
	Service monitoring and control capabilities must be built into the DAP runtime infrastructure. DAP governance standards must define where and how to use, report on and enhance SLAs.				
	Incident management				

	Incident management precepts shall define and implement responsibilities for monitoring and managing problems and issues that arise during the operation of the service. The Vendor must build on and extend or develop new incident management governance by implementing precepts that cover the following (at a minimum):				
	Design and implementation of processes and procedures to manage incidents and failures				
	Definition/Identification of responsibilities for end-to-end service exception and fault tracking				
	Definition/Identification of responsibilities for end-to-end service error identification and resolution.				
	Definition of the escalation path for SLA violations.				
	Change management				
	Change control management precepts shall define and implement responsibilities for managing system enhancement requests and service versioning. The Vendor must build on and extend or develop and implement new change management governance by defining precepts that cover (at a minimum):				
	Implement a process to manage change requests and to ensure that enhancements don't introduce defects in the system.				
	Design and implement procedures for requesting service enhancements.				
	Define what information is required when requesting a service enhancement.				
	Design an impact analysis process to be performed before a service enhancement request is accepted.				
	Define sign off or approval requirements for service enhancement requests.				
	Define roles, responsibilities and sequence of events pertaining to the implementation of an enhancement.				
	Develop guidelines to assist the State in paying for or funding an enhancement.				

	Define recommended methods and a process for addressing enhancement requests associated with regulatory requirements.				
	Define methods to enable service versioning and version control/migration.				
	Establish guidelines on how long should a previous version(s) of the service be maintained and subsequently retired.				
	Define what degree of service and system testing is required before deploying a service enhancement.				
	Establish leading practices to mitigate current consumer disruption when deploying an enhancement.				
	Develop procedures to notify consumers of the enhancement or changes to the system.				
	Develop and implement processes to fall back to a system previous version upon discovery of a critical defect.				
	Data Management				
	Design and Implementation of a data management strategy including data warehousing, data quality, and data integration capabilities. The strategy will incorporate current practices and the vendor will work with the current teams.				

APPLICATION REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>GENERAL SPECIFICATIONS</b>					
A1.1	Ability to access data using open standards access protocol (please specify supported versions in the comments field).	M			
A1.2	Data is available in commonly used format over which no entity has exclusive control, with the exception of National or International standards. Data is not subject to any copyright, patent, trademark or other trade secret regulation.	M			
A1.3	Web-based compatible and in conformance with the following W3C standards: HTML5, CSS 2.1, XML 1.1	M			
<b>APPLICATION SECURITY</b>					
A2.1	Verify the identity or authenticate all of the system client applications before allowing use of the system to prevent access to inappropriate or confidential data or services.	M			
A2.2	Verify the identity and authenticate all of the system's human users before allowing them to use its capabilities to prevent access to inappropriate or confidential data or services.	M			
A2.3	Enforce unique user names for internal facing solution	M			
A2.4	Enforce complex passwords for Administrator Accounts in accordance with DoIT's statewide <i>User Account and Password Policy</i>	M			
A2.5	Enforce the use of complex passwords for general users using capital letters, numbers and special characters in accordance with DoIT's statewide <i>User Account and Password Policy</i> .	M			
A2.6	Encrypt passwords in transmission and at rest within the database.	M			
A2.7	Establish ability to expire passwords after a definite period of time in accordance with DoIT's statewide <i>User Account and Password Policy</i>	M			
A2.8	Provide the ability to limit the number of people that can grant or change authorizations	M			
A2.9	Establish ability to enforce session timeouts during periods of inactivity.	M			
A2.10	The application shall not store authentication credentials or sensitive data in its code.	M			
A2.11	Log all attempted accesses that fail identification, authentication and authorization requirements.	M			
A2.12	The application shall log all activities to a central server to prevent parties to application transactions from denying that they have taken place.	M			



Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
A2.13	All logs must be kept for (6 months)	M			
A2.14	The application must allow a human user to explicitly terminate a session. No remnants of the prior session should then remain.	M			
A2.15		M			
A2.16	The application Data shall be protected from unauthorized use when at rest	M			
A2.17	The application shall keep any sensitive Data or communications private from unauthorized individuals and programs.	M			
A2.18	Subsequent application enhancements or upgrades shall not remove or degrade security requirements	M			
A2.19	Utilize change management documentation and procedures	M			

TESTING					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>APPLICATION SECURITY TESTING</b>					
T1.1	All components of the Software shall be reviewed and tested to ensure they protect the State's web site and its related Data assets.	M			
T1.2	The Vendor shall be responsible for providing documentation of security testing, as appropriate. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability.	M			
T1.3	Provide evidence that supports the fact that Identification and Authentication testing has been recently accomplished; supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users	M			
T1.4	Test for Access Control; supports the management of permissions for logging onto a computer or network	M			
T1.5	Test for encryption; supports the encoding of data for security purposes, and for the ability to access the data in a decrypted format from required tools.	M			
T1.6	Test the Intrusion Detection; supports the detection of illegal entrance into a computer system	M			
T1.7	Test the Verification feature; supports the confirmation of authority to enter a computer system, application or network	M			
T1.8	Test the User Management feature; supports the administration of computer, application and network accounts within an organization.	M			
T1.9	Test Role/Privilege Management; supports the granting of abilities to users or groups of users of a computer, application or network	M			
T1.10	Test Audit Trail Capture and Analysis; supports the identification and monitoring of activities within an application or system	M			
T1.11	Test Input Validation; ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.	M			
T.1.12	For web applications, ensure the application has been tested and hardened to prevent critical application security flaws. ( At a minimum, the application shall be tested against all flaws outlined in the Open Web Application Security Project (OWASP) Top Ten ( <a href="http://www.owasp.org/index.php/OWASP_Top_Ten_Project">http://www.owasp.org/index.php/OWASP_Top_Ten_Project</a> ))	M			

T1.13	Provide the State with validation of 3rd party security reviews performed on the application and system environment. The review may include a combination of vulnerability scanning, penetration testing, static analysis of the source code, and expert code review (please specify proposed methodology in the comments field).	M			
T1.14	Prior to the System being moved into production, the Vendor shall provide results of all security testing to the Department of Information Technology for review and acceptance.	M			
T1.15	Vendor shall provide documented procedure for migrating application modifications from the User Acceptance Test Environment to the Production Environment.	M			
<b>STANDARD TESTING</b>					
T2.1	The Vendor must test the software and the system using an industry standard and State approved testing methodology.	M			
T2.2	The Vendor must perform application stress testing and tuning.	M			
T2.3	The Vendor must provide documented procedure for how to sync Production with a specific testing environment.	M			
T2.4	The vendor must define and test disaster recovery procedures.	M			

HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>OPERATIONS</b>					
H1.1	Vendor shall provide an ANSI/TIA-942 Tier 3 Data Center or equivalent. A tier 3 data center requires 1) Multiple independent distribution paths serving the IT equipment, 2) All IT equipment must be dual-powered and fully compatible with the topology of a site's architecture and 3) Concurrently maintainable site infrastructure with expected availability of 99.982%	M			
H1.2	Vendor shall maintain a secure hosting environment providing all necessary hardware, software, and Internet bandwidth to manage the application and support users with permission based logins.	M			
H1.3	The Data Center must be physically secured – restricted access to the site to personnel with controls such as biometric, badge, and others security solutions. Policies for granting access must be in place and followed. Access shall only be granted to those with a need to perform tasks in the Data Center.	M			
H1.4	Vendor shall install and update all server patches, updates, and other utilities within 60 days of release from the manufacturer.	M			
H1.5	Vendor shall monitor System, security, and application logs.	M			
H1.6	Vendor shall manage the sharing of data resources.	M			
H1.7	Vendor shall manage daily backups, off-site data storage, and restore operations.	M			
H1.8	The Vendor shall monitor physical hardware.	M			
H1.9	Remote access shall be customized to the State's business application. In instances where the State requires access to the application or server resources not in the DMZ, the Vendor shall provide remote desktop connection to the server through secure protocols such as a Virtual Private Network (VPN).	M			
H1.10	The Vendor shall report any breach in security in conformance with State of NH RSA 359-C:20. Any person engaged in trade or commerce that is subject to RSA 358-A:3, I shall also notify the regulator which has primary regulatory authority over such trade or commerce. All other persons shall notify the New Hampshire attorney general's office	M			
<b>DISASTER RECOVERY</b>					

H2.1	Vendor shall have documented disaster recovery plans that address the recovery of lost State data as well as their own. Systems shall be architected to meet the <u>defined recovery needs.</u>	M			
H2.2	The disaster recovery plan shall identify appropriate methods for procuring additional hardware in the event of a component failure. In most instances, systems shall offer a level of redundancy so the loss of a drive or power supply will not be sufficient to terminate services however, these failed components will have <u>to be replaced.</u>	M			
H2.3	Vendor shall adhere to a defined and documented back-up schedule and <u>procedure.</u>	M			
H2.4	Back-up copies of data are made for the purpose of facilitating a restore of the <u>data in the event of data loss or System failure.</u>	M			
H2.5	Scheduled backups of all servers must be completed regularly. The minimum acceptable frequency is differential backup daily, and complete backup weekly.	M			
H2.6	Tapes or other back-up media tapes must be securely transferred from the site to another secure location to avoid complete data loss with the loss of a facility.	M			
H2.7	Data recovery – In the event that recovery back to the last backup is not sufficient to recover State Data, the Vendor shall employ the use of database logs in addition to backup media in the restoration of the database(s) to afford a much closer to real-time recovery. To do this, logs must be moved off the volume containing the database with a frequency to match the business needs.	M			
<b>HOSTING SECURITY</b>					
H3.1	The Vendor shall employ security measures ensure that the State's application and data is protected and how the system will meet all Federal and State requirements currently in law and rules protecting sensitive personal health information, as outlined in the Health Insurance Portability and Accountability Act (HIPAA) and the more stringent Title 42 Code of Federal Regulations (CFR) Part 2: (Confidentiality of Substance Use Disorder Patient Records regulation), as outlined by the Federal Substance Abuse Mental Health Services Administration (SAMHSA) and the Office of the National Coordinator for Health Information Technology (ONC)	M			
H3.2	If State data is hosted on multiple servers, data exchanges between and among <u>servers must be encrypted.</u>	M			

H3.3	All servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a whole, shall have aggressive intrusion-detection and firewall protection.	M			
H3.4	All components of the infrastructure shall be reviewed and tested to ensure they protect the State's hardware, software, and its related data assets. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide confidentiality, integrity and availability.	M			
H3.5	The Vendor shall ensure its complete cooperation with the State's Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure.	M			
H3.6	The Vendor shall authorize the State to perform scheduled and random security audits, including vulnerability assessments, of the Vendor' hosting infrastructure and/or the application upon request.	M			
H3.7	All servers and devices must have event logging enabled. Logs must be protected with access limited to only authorized administrators. Logs shall include System, Application, Web and Database logs.	M			
H3.8	Operating Systems (OS) and Databases (DB) shall be built and hardend in accordance with guidelines set forth by CIS, NIST or NSA	M			
H3.9	The Vendor shall notify the State's Project Manager of any security breaches within two (2) hours of the time that the Vendor learns of their occurrence.	M			
H3.10	The Vendor shall be solely liable for costs associated with any breach of State data housed at their location(s) including but not limited to notification and any damages assessed by the courts.	M			
H3.11	The cloud services if used will be FEDRAMP compliant	M			
<b>SERVICE LEVEL AGREEMENT</b>					
H4.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M			
H4.2	The vendor shall maintain the hardware and Software in accordance with the specifications, terms, and requirements of the Contract, including providing, upgrades and fixes as required.	M			
H4.3	The vendor shall repair or replace the hardware or software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M			

H4.4	All hardware and software components of the Vendor hosting infrastructure shall be fully supported by their respective manufacturers at all times. All critical patches for operating systems, databases, web services, etc, shall be applied within sixty (60) days of release by their respective manufacturers.				
H4.5	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST.	M			
H4.6	The Vendor shall conform to the specific deficiency class as described: <ul style="list-style-type: none"> <li>o Class A Deficiency - Software - Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation - missing significant portions of information or unintelligible to State; Non Software - Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency - Software - important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation - portions of information are missing but not enough to make the document unintelligible; Non Software - Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency - Software - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation - minimal changes required and of minor editing nature; Non Software - Services require only minor reworking and do not require re-performance of the Service.</li> </ul>	M			
H4.7	As part of the maintenance agreement, ongoing support issues shall be responded to according to the following: <ul style="list-style-type: none"> <li>a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request;</li> <li>b. Class B &amp; C Deficiencies –The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract;</li> </ul>	M			

H4.8	The hosting server for the State shall be available twenty-four (24) hours a day, 7 days a week except for during scheduled maintenance.	M			
H4.9	A regularly scheduled maintenance window shall be identified (such as weekly, monthly, or quarterly) at which time all relevant server patches and application upgrades shall be applied.	M			
H4.10	If The Vendor is unable to meet the uptime requirement, The Vendor shall credit State's account in an amount based upon the following formula: (Total Contract Item Price/365) x Number of Days Contract Item Not Provided. The State must request this credit in writing.	M			
H4.11	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M			
H4.12	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M			
H4.13	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: Server up-time; All change requests implemented, including operating system patches; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M			
H4.14	The Vendor will give two-business days prior notification to the State Project Manager of all changes/updates and provide the State with training due to the upgrades and changes.	M			



SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
S1.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M			
S1.2	Maintain the hardware and Software in accordance with the Specifications, terms, and requirements of the Contract, including providing upgrades and fixes as required.	M			
S1.3	Repair Software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M			
S1.4	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST;	M			
S1.5	The Vendor response time for support shall conform to the specific deficiency class as described below or as agreed to by the parties: <ul style="list-style-type: none"> <li>o Class A Deficiency - Software - Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation - missing significant portions of information or unintelligible to State; Non Software - Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency - Software - important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation - portions of information are missing but not enough to make the document unintelligible; Non Software - Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency - Software - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation - minimal changes required and of minor editing nature; Non Software - Services require only minor reworking and do not require re-performance of the Service.</li> </ul>	M			
S1.6	The Vendor shall make available to the State the latest program updates, general maintenance releases, selected functionality releases, patches, and Documentation that are generally offered to its customers, at no additional cost.	M			

Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.7	For all maintenance Services calls, The Vendor shall ensure the following information will be collected and maintained: 1) nature of the Deficiency; 2) current status of the Deficiency; 3) action plans, dates, and times; 4) expected and actual completion time; 5) Deficiency resolution information, 6) Resolved by, 7) Identifying number i.e. work order number, 8) Issue identified by;	P			
S1.8	The Vendor must work with the State to identify and troubleshoot potentially large-scale System failures or Deficiencies by collecting the following information: 1) mean time between reported Deficiencies with the Software; 2) diagnosis of the root cause of the problem; and 3) identification of repeat calls or repeat Software problems.	P			
S1.9	As part of the Software maintenance agreement, ongoing software maintenance and support issues, shall be responded to according to the following or as agreed to by the parties: a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request; b. Class B & C Deficiencies -The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract; or as agreed between the parties	M			
S1.10	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M			
S1.11	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M			
S1.12	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: All change requests implemented; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M			

PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>PROJECT MANAGEMENT</b>					
P1.1	Vendor shall participate in an initial kick-off meeting to initiate the Project.	M			
P1.2	Vendor shall provide Project Staff as specified in the RFP.	M			
P1.3	Vendor shall submit a finalized Work Plan within ten (10) days after Contract award and approval by Governor and Council. The Work Plan shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, critical events, task dependencies, and payment Schedule. The plan shall be updated no less than <every two weeks.>	M			
P1.4	Vendor shall provide detailed <bi-weekly or monthly> status reports on the progress of the Project, which will include expenses incurred year to date.	M			
P1.5	All user, technical, and System Documentation as well as Project Schedules, plans, status reports, and correspondence must be maintained as project documentation. (Define how- WORD format- on-Line, in a common library or on pager)	M			
P1.6	The selected vendor must define an integrated project management plan, which;				
P1.7	Includes cost estimates for specific work to be performed,				
P1.8	Defines Department Training as a component of the implementation plan,				
P1.9	Clearly defines the approach and methodology to be used in each phase of the project,				
P1.10	Includes a discovery, detailed requirements and prioritization component phase of the project,				

P1.11	<p>The Department has historically followed a waterfall approach to enacting changes. This is usually accomplished by having requirements meetings, followed by vendor design based on the requirements, with a development, unit test, integration test, system test and regression testing. Finally ending up with a migration to production and training and post-production review. With this RFP the goal will be to adjust to a more agile approach, allowing the organization to adapt and change as needed more efficiently and effectively in order to meet the business needs. The goals will be to provide a bi-weekly demonstration of work for review and planning for next steps. The new process will be based on the following scope as a baseline to the strategy:</p>				
P1.12	<p>Team Formation: the Department in concert with the awarded vendor will identify the required team members for the duration of the product delivery. The team will consist of a product owner, scrum master, and other team members. There will be several teams based on the amount of features being worked on at any given time. Additionally, there will be operational teams to commit to and complete features associated with user stories and tasks to keep the system running as well as product enhancement teams to commit and complete features associated with user stories and tasks to meet the changes required by the business.</p>				
P1.13	<p>Process: The awarded vendor will plan and implement a process similar to the following:</p>				
P1.14	<p>Backlog Creation and refinement: The Product Owner working with team members and the business will create a prioritized backlog of work in the form of high level features. This will be an on-going process that must be completed prior to each Sprint Planning Meeting. Additionally, the Product Owner(s) will breakdown the features into prioritized user stories related to the originating features for use in the Sprint Planning meeting.</p>				

P1.15	Sprint Planning Meeting: This meeting will minimally consist of all team members facilitated by the Scrum Master and will be focused on clarifying the details of the prioritized backlog items, re-prioritizing as needed and obtaining commitment from the team to complete user stories from the backlog in the proposed sprint not to exceed 4 weeks with a preferred cadence of 2 weeks. Additionally the team will then create detailed tasks and commit to the items individually. The commitments will be managed using a KanBan tool to be provided by the vendor and agreed to by both parties for the teams use throughout the contract period.				
P1.16	Sprint: The sprint will consist of daily standup meetings (not to exceed 10 minutes) to discuss roadblocks, any clarification needs associated with work accomplished the previous day or planned for the current day, or other important items to the team. The team will work in concert with each other preferably within the same location and will require a meeting room provided by the awarded vendor for impromptu meetings to move tasks forward.				
P1.17	Sprint Review Meeting: Demonstrate working product associated with commitments from the sprint planning meeting. Communicate items to focus on in the next sprint.				
P1.18	Daily Meeting: Consist of the team members that have committed to completing tasks in the sprint and will be no longer than 10 minutes answering the following questions:				
P1.19	What did I complete yesterday?				
P1.20	What am I doing today?				
P1.21	Are there any roadblocks keeping me from completing my commitments?				
	Develop and obtain buy-in for a stakeholder and communication management plan and work with the Department to craft appropriate communication messages throughout the project				

Conduct organizational assessments and gap analyses for the affected divisions and programs and facilitate the development of appropriate organizational structures and job descriptions
Work with the Department to define business processes, including use cases, workflows, and business rules

The project must utilize agile-like software development principles and practices

Attachment #2, Agency RFP with Addendums

Will not meet  
Will partially meet  
Wholly meet



**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #5**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

- Delete and replace Section 2, Schedule of Events, with the following:**

<b>EVENT</b>	<b>DATE</b>	<b>TIME</b>
RFP released to Vendors (on or about)	Oct., 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 30, 2018	10:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor inquiries	Nov. 16, 2018	
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 17	8:30 am
Vendor Presentation & Demo (2 hours)	Dec. 17	1:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 18	8:30 am
Selection / Notification	Dec. 19	10:00 am





**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #6**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. **Delete and replace Section 4, Instructions, Sub-section 4.16 Proposal Format, Paragraph 4.16.1, Sub-paragraph 4.16.1.3, with the following:**

**4.16.1.3 The Proposal should also be submitted electronically via USB Flash Drive**

2. **Delete Section 5, Proposal Evaluation Process, Sub-section 5.5 Scoring Detail, Paragraph 5.5.1 Scoring of the Proposed Software Solution, Sub-paragraph 5.5.1.2**

3. **Delete and replace Section 2, D-2 Technical, Services and Project Management Experience, Sub-section 2.1, D-2.1 Security and Protection of Data, Paragraph 2.1.6, with the following:**

**2.1.6. Topic 11 – Project Management Methodology**

**Response Page Limit: 10**

**The State will evaluate the Vendor's approach to project management methodology.**

**2.1.6.1 Describe the methodologies used for organizing teams to implement solutions in an iterative Agile methodology.**

**2.1.6.2 Describe how your approach meets the requirements for project management and testing the security of the Software application and hosting environment.**

**2.1.6.3 How can you ensure the security and confidentiality of the State Data collected on the system?**

**2.1.6.4 What security validation Documentation will be shared with the State?**

**2.1.6.5 Do you use internal or external resources to conduct security testing?**



**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

- 4. Delete and replace Section 1, D-1 Proposed Software Solution, Sub-section 1.1 Topic 1 – Description of Solution, Paragraph 1.1.9, with the following:**

**1.1.9 In what ways does your proposed solution provide enhanced ease of use for administrative users?**

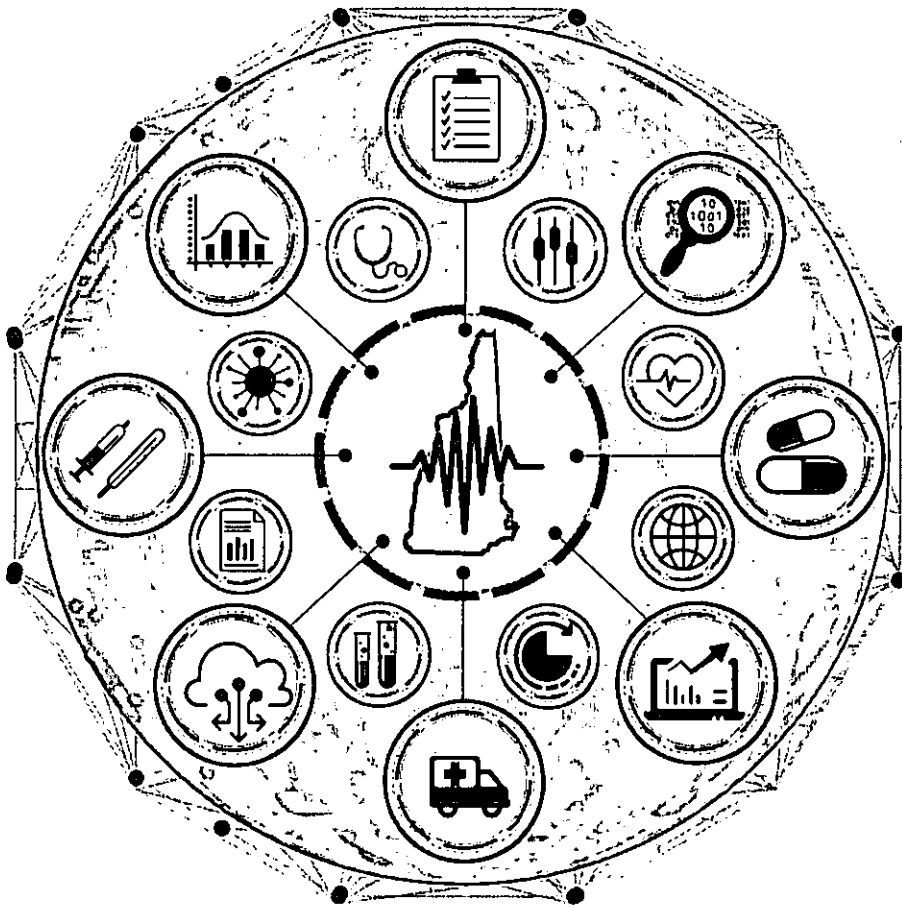
- 5. Delete and replace Section 2, Schedule of Events, with the following:**

<b>EVENT</b>	<b>DATE</b>	<b>TIME</b>
RFP released to Vendors (on or about)	Oct., 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 30, 2018	10:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor inquiries	Nov. 16, 2018	
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Jan. 3, 2019	
Vendor Presentation & Demo (2 hours)	Jan. 4, 2019	
Vendor Presentation & Demo (2 hours)	Jan. 7, 2019	
Selection / Notification	Jan. 11, 2019	



## State of New Hampshire

Department of Health and Human Services  
Response to DHHS RFP 2019-043/  
RFP-2019-DPHS-19-DATAA  
Data Analytics Platform for Opioid Crisis



**Submittal by:** Deloitte Consulting LLP  
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Attachment 3, Vendor Proposal



**Deloitte Consulting LLP**

7 Eagle Square #301, Concord,  
NH 03301, USA

December 10, 2018

State Of New Hampshire  
Department of Health and Human Services  
c/o Brian Owens  
129 Pleasant St.  
Concord, New Hampshire 03301

**Response to DHHS RFP 2019-043/RFP-2019-DPHS-19-DATAA**

Dear Mr. Owens:

Deloitte\* is pleased to submit this proposal to the New Hampshire Department of Health and Human Services in response to the Request for Proposal (RFP) for a **Data Analytics Platform for Opioid Crisis, DHHS RFP 2019-043/RFP-2019-DPHS-19-DATAA**.

We have reviewed the detailed requirements of your RFP and are submitting a proposal that we believe is responsive to your needs and required services.

Deloitte Consulting agrees that the State of New Hampshire terms and conditions, contained in Appendix H - State of New Hampshire Terms and Conditions, shall form the basis of any Contract resulting from this RFP. We would like to discuss some clarifications and additions to these terms, which would be similar to those contained in the recent contracts between Deloitte Consulting and the State of New Hampshire. The prices, terms and conditions, and services quoted were established without collusion with other Vendors and without effort to preclude the State from obtaining the best possible competitive proposal.

The State of New Hampshire and the Department of Health and Human Services are valued clients of Deloitte. We are a market leader in the services you require – through this response, we believe we can provide advanced analytics and data modeling services that will help New Hampshire provide innovative solutions to stemming the opioid epidemic.

Please contact me at (617) 448-9688 or [gpsino@deloitte.com](mailto:gpsino@deloitte.com) if you have any questions regarding our submission.

Sincerely,  
Deloitte Consulting LLP

By:  \_\_\_\_\_

Gregory Spino  
Managing Director

\* As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see [www.deloitte.com/us/about](http://www.deloitte.com/us/about) for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.



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Attachment 3, Vendor Proposal  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**





## Section I: Executive Summary

### Section I – Executive Summary

New Hampshire bucked the national trend with a lower than average increase in opioid deaths for 2017 as reported by the Centers for Disease Control. However, New Hampshire still ranks in the top six for opioid-related overdose deaths. The CDC reports deaths from synthetic opioids, other than methadone, continue to rise at alarming rates. Evolving usage of prescribed and increasingly-illicit opioids presents unique and complex challenges.

The hub-and-spoke model for treatment and the Sununu Center program for at-risk youth have the potential to turn the tide. Enriched data sources, like the NMS Labs test for fentanyl analogs, recently approved by NH’s Governor & Council, provide valuable insight. As prevention, treatment, and recovery models evolve, data driven decisions will aid targeting of scarce resources.

Knowing who, where, and how to intervene is essential to bending the opioid curve. Our demonstrated ability to integrate, aggregate, and analyze data sources in the EBI/DAP platform makes Deloitte a safe set of hands. Our HHS Interactive opioid machine learning models and dashboards used by commercial and public-sector clients offer DHHS proven capabilities. Our collaboration with Google offers DHHS out-of-the-box thinking to address two opioid analytics puzzles: data latency and access to population insight before citizens become treatment clients.

Should New Hampshire be selected by the National Institute of Health (NIH) as a Healing Grant awardee, our DAP solution will be a strong enabler of the State’s broader opioid strategy.

### Accelerated delivery using HHS Interactive Opioid Insights

Deloitte’s **HHS Interactive Opioid Insight** solution offers a strong foundation to deliver the DHHS vision for CORbi, including:



Indicators

Opioid-centric dashboards with drilldown capabilities provide visibility and trending for populations, demographics, drug management, network coverage, overdose, death, infant dependency, naloxone, and other similar indicators from multiple perspectives.



Benchmark

Interactive visualizations to understand opioid-related activity (diagnosis, procedures, prescription patterns, and mortality) with comparisons across NH counties and nationally to more effectively target services. Our benchmarking consumes 30+ publicly-accessible datasets from agencies such as the CDC and SAMSHA.

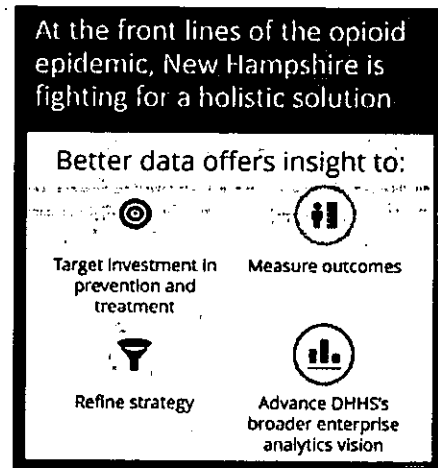


Figure I-1. Data Driven Decisions.





In addition to the phase one data sources identified by DHHS, we propose integration of Google Search data for opioid terms into DAP.

**72% of Americans Search when they are having a Health-Related Issue;**  
**1 in 20 Searches on Google is Health-Related;**  
**3000+ Health-Related Search Queries Per Second in the US.**

Most opioid analytics correlate latent data for death, overdose, MAT therapy, and other similar institutional events; this provides modest insight to a person’s journey and little opportunity to nudge behavior as it evolves. Ingestion of search and audience data will provide new insights using real-time data, including:

- Geographic Trending** – Aggregate “big picture” behavior trending by zip code-based on population opioid search data; this will help shape DHHS’s understanding of how citizens search for opioid resources and trending by zip code across the state.
- Audience Profiling** – Search data joined with de-identified Google data (search predicates, demographics, location, device, etc.) provides insight into audience groups and behaviors related to opioids; this gives DHHS greater insight into who is doing what and where. For example, do treatment search rates as a percentage of population vary by demographic, location (urban/rural), income, etc.?
- Nudging** – The nudge may likely be delivered as a Google.com advertisement (link) that would be displayed in response to the target search predicates. For example, a search for ‘Opioid Treatment’ in NH could result in an ad link to NH’s hub-and-spoke Web site landing page. The advertisement search data is also the key input to audience profiling.



Our health care data scientists’ machine learning models identify at-risk individuals. Results of these models have been validated and refined by comparing historical outcomes against prospective models to tune for accuracy. Our models are informed by our experience with federal, state, and private sector healthcare clients who share common goals with DHHS. Our models cover the spectrum from identification of risk to potential abuse to recovery.



The Google population profiling data and the *At-Risk* modeling described above will be combined to develop journey map insights. Audience profile data and de-identified data from the All Payors Claims Database (APCD) data will be ingested into a machine learning model on the Google Cloud Platform(GCP) to correlate audience behavior and healthcare outcomes, providing insights to influence behavior, ideally before an adverse event is presented in an institutional setting.



The solution proposed by Deloitte, including the integration of Google data and GCP machine learning, will be fully integrated into the existing EBI platform, maximizing leverage of DHHS’s investment and extending the EBI capability to include the new data sources and capabilities. Extending the EBI requires strong governance. We bring the experience and commitment to work with DHHS to establish strong and sustainable governance.

Integrating the existing EBI database provides DHHS a platform and capability to address current challenges and the flexibility to adapt, extend, and re-use as DHHS’s vision evolves. This approach is far more adaptable than a static or shrink-wrapped



solution similar to the Medstat product deployed for claims-specific analytics by DHHS several years ago. In those cases, the vendor owns the product that you just lease. You will be harnessing the full power of your platform, including the ability to tune and refine machine learning models, source data consumption, and dynamic reporting capabilities.

*Figure I-2. DAP aligned with DHHS investment and complemented by Opioid assets.*

## National and local experience to extend your EBI investment

We value our ongoing collaboration with DHHS and DoIT, understand your data and EBI platform, have vast national HHS and opioid experience, and, for the fourth year in a row, are Gartner's #1 ranked global leader in Data and Analytics.

### Cross-Sector opioid and advanced analytics experience

Over the last three years, Deloitte has established an opioid presence across the Government at the federal, state, and local levels with over 10 successful projects and 12+ publications. We are bringing together 50+ data sources for predictive artificial intelligence modeling.

With over 5,000 analytics practitioners, we bring deep experience helping organizations leverage one of their most important assets – their information. Deloitte also collaborates with industry leaders like Google, Tableau, Oracle, and Informatica to innovate and optimize.

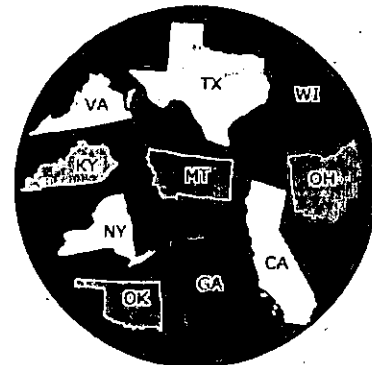
### Committed and innovative partnership with Google

Our partner, Google, is equally committed to solving the Opioid epidemic and will provide platform credits and human capital to collaborate with DHHS and Deloitte to deliver on this ground-breaking vision within the constraints of DHHS's fixed budget. The CDC pursued a similar strategy using opioid search data from Google advertising to evaluate program goals backed by survey data, and Project Jigsaw was able to identify a decision journey framework for radicalization and techniques to deter individuals from joining terrorist organizations. The Google results will be exported to the on-premise DAP and CORbi dashboards for end user access and usage across complementary DHHS EBI initiatives.

### Harmonizing our analytics capabilities with existing state initiatives

**Advanced Predictive Analytics.** We work with clients to integrate massive datasets and generate dashboards that detect patients at high risk for opioid addiction by analyzing trends in prescription, medical and social behavior. We provided analytics experience for the CDC Data Collation and Integration for Public Health Event Response (DCIPHER) platform to assist with surveillance and prevention efforts of the National Center for Injury Prevention and Control (NCIPC).

**Prescription Drug Monitoring Program (PDMP) Analytics.** In the Commonwealth of Pennsylvania, we tracked prescription patterns of patients, pharmacies, and providers at both an aggregated and individual level with Geographic Information System (GIS) modeling. We also conducted Medicaid data analysis to identify 'doctor-shopping'/pill mills.



*Figure I-3. Deloitte's wealth of HHS analytics experience.*



**At-Risk Prediction Modeling.** We have extensive experience developing predictive models for opioids. For example, CeltiCare Health and Centene worked with Deloitte to provide population assessments to identify opioid users who are at "high risk" for either Diversion or Overdose to share with providers for needed management of identified members (e.g., drug testing, additional therapy, care escalation, etc.).

### The "A" team with deep Data Analysis and Predictive Analytics experience

We are proposing **Sean Conlin** and **Greg Spino** as Engagement Leads, and **Jeff Walker** as the Project Manager. Sean has 20+ years of experience managing a wide array of advanced analytic projects. Sean serves as Deloitte's national leader in Cognitive Analytics and Machine Learning; he led our opioid work with Centene and is working with Dartmouth on the Healing Grant application. Greg has 20+ years of experience, including experience integrating claims and healthcare datasets with human services data in complex ecosystems. Jeff has over 14 years of experience designing and delivering public sector analytics platforms. Jeff and Greg both have deep experience with the DHHS's EBI architecture and extensive experience with data integration and Deloitte's HHS Interactive solution.

Complementing Sean, Greg, and Jeff is a team of data scientists, analytics specialists, and our Google partners. We will apply that experience to realize DHHS's vision, using data to improve outcomes for those struggling with opioid use disorders (OUDs). Our depth of national opioid and analytics experience, and knowledge of DHHS's environment, uniquely positions us to collaborate with DHHS and DoIT, and, if successful, New Hampshire's Healing grant partners.

### Our vision aligns with yours

Driving down opioid addiction and death rates is the single most important measure of project success. However, predicting who may become addicted, and under what circumstances, offers opportunities for earlier and effective interventions. Early detection saves unimaginable pain and suffering for New Hampshire families and communities. Understanding who, when, and how to bend the curve will be invaluable as DHHS and NH evolve and adapt to an ever-changing, deadly, and complex epidemic.

Our team is committed to the journey ahead. We believe we can help turn the tide on this epidemic by bringing together the right tools, capabilities, and people to collaborate with DHHS and DoIT. We will extend your existing investments in the EBI project, the potential Healing Grant, the hub-and-spoke network, Sununu center, and other initiatives by aligning with and helping to shape your vision. We bring opioid specific capabilities and new and innovative approaches, including cognitive machine learning models for opioids and pre-built opioid-specific dashboard and drill down capabilities.

We appreciate the complexities presented by the opioid challenge and the importance of collaborating with DHHS to build a solution uniquely designed for New Hampshire's data and goals. We recognize that through NH Wisdom and other similar initiatives you have invested intellectual capital in opioid analytics. We look forward to working with you to pull forward and build upon those capabilities, combining our collective intellectual capital and assets. We are committed to working shoulder-to-shoulder with DHHS and DoIT, providing knowledge transfer and enabling transparency throughout the project life cycle. The DAP solution offered by Deloitte will be one that DHHS and DoIT can maintain, extend, and re-use for today's needs and tomorrow requirements.

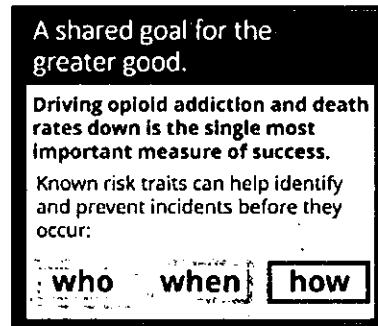


Figure I-3. Shared Vision.



## Appendix B: Minimum Standards for Proposal Consideration

RFP Requirements (Note: Deloitte accepts and meets the requirements as defined in the RFP and summarized below)	Reference Page
<b>B-1 Submission requirements</b>	
1.1. The Proposal is date and time stamped before the deadline as defined ...	Met
1.2. The original Proposal includes a signed Transmittal Letter accepting ...	Met. Yes, Attached Separately.
1.3. The proposed escrow agreement shall be submitted with the Vendor's ..	Page 638
<b>B-2 Compliance with System Requirements</b>	
System requirements and Deliverables are listed in Appendix C: System...	Page 23
<b>B-3 Current Use of Vendor Proposed Software – Current Implemented Sites of Vendor proposed Software or Solution</b>	
Components that constitute the Vendor's proposed Software or Solution suite.	Page 111 to Page 256
<b>B-4 Vendor Implementation Service Experience</b>	
Implementation Vendor must have completed the Vendor proposed Software	Page 257 to Page 270
<b>B-5 Proposed Project Team</b> The proposed Project Team must include individuals with substantial experience in	
5.1. Each of the disciplines relating to his or her stated project role.	Page 271 to Page 314
5.2. Implementing a system that meets the requirements outlined in this RFP.	Page 271 to Page 314
5.3. The discipline of effective Agile Project Management.	Page 271 to Page 314
5.4. The discipline of effective risk and issue management.	Page 271 to Page 314
5.5. The discipline of data analysis, data mining, data modeling, data ...	Page 271 to Page 314
5.6. The discipline of predictive and statistical analysis.	Page 271 to Page 314
5.7. Operational support of government entities comparable in size and complexity.	Page 271 to Page 314
5.8. Successful system roll-out.	Page 271 to Page 314
5.9. Compliance with <Regulations or Publications etc.	Page 271 to Page 314
5.10. Effective use of software change management best practice.	Page 271 to Page 314
5.11. Effective use of defect tracking tools that allow for reporting on test results.	Page 271 to Page 314
5.12. System modification in order to satisfy unique needs of the HHS in NH	Page 271 to Page 314
5.13. Data privacy, data suppression	Page 271 to Page 314
5.14. For the purpose of evaluating compliance with this requirement, the Vendor ..	Page 271 to Page 314

Figure I-4. Compliance cross reference to Deloitte response.



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## Section II: Glossary of Terms and Abbreviations

**Section II: Glossary of Terms and Abbreviations**  
 The Vendor must provide a glossary of all terms, acronyms, and abbreviations used in its Proposal.

Acronym	Definition
AAA	Agile for Advanced Analytics
ABL	Above the Baseline
ACA	American Counseling Association
ACPD	Academy for Continuous Professional Development
AD	Active Directory
ADDIE	Analysis, Design, Development, Implementation, and Evaluation
AHEDD	Automated Hospital Emergency Department Data System
AHIP	America's Health Insurance Plans
AES	Advanced Encryption Standard
AIM	Analytics and Information Management
AI	Artificial Intelligence
ALM	Application Life Cycle Management
ANT	Another Neat Tool
APCD	All-Payer Claims Database
APD	Advance Planning Document
API	Application Programming Interface
APM	Agile Project Management
ASIS	American Society for Information Science
ASM	Automatic Storage Management
AWS	Amazon Web-Services
BB	NAIC Public Debt Rating
BBB	NAIC Public Debt Rating
BC/DR	Business Continuity/Disaster Recovery
BCM	Business Continuity Management
BCP	Business Continuity Planning
BDAS	Bureau of Drug and Alcohol Services
BETH3 TAP	BETH3- Buildings (Facilities) –Equipment –Technology (IT Hardware/Software/Infrastructure) –Human Resources –3rdParties (Dependencies) TAP – Total Asset Protection
BI	Business Intelligence
BIS	Bureau of Indian Standards
BL	Baseline



Attachment 1 - STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

Acronym	Definition
BLD	Bld files
BMCO	Bureau of Medicaid Managed Care Operations
EA-BOM	Enterprise Architect-Business Operating Model
BP	Business Processes
BPR	Business Process Reengineering
BS	Bachelor of Science
CA	Chartered Accountant
CAL	Client Account Lead
CARES	Community Aging and Retirement Services
CBT	Computer-Based Training
CCB	Change Control Board
CCC	Course on Computer Concepts
CCMP	Communication and Change Management
CCNA	Cisco Certified Network Associate
CDC	Centers for Disease Control & Prevention
CDPH	California Department of Public Health
CFA	Chartered Financial Analyst
CFI	Corporate Finance Institute
CHS	Center for Health Solutions
CHFS	Cabinet for Health and Family Services
CI	Competitive Intelligence or Customer Intelligence
CJIS	Criminal Justice Information Services
CMMI	Capability Maturity Model Integration
CMR	Change Management Request
CMS	Center for Medicare and Medicaid Services
COBIT	Control Objectives for Information and Related Technology
COBOL	Common Business Oriented Language
COE	Center of Excellence
COTS	COTS
CPU	Central Processing Unit
CRM	Customer Relationship Manager
CSE	Child Support Enforcement
CSS	Cascading Style Sheets
CSV	Comma-separated Values
DAT	Digital Audio Tape
DAP	Data Analytics Platform





Attachment 1  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

Acronym	Definition
<b>DARPI</b>	The Division of Analysis, Research and Practice Integration
<b>DBA</b>	Database Administrator
<b>DBSCAN</b>	Density-based spatial clustering of applications with noise
<b>DC</b>	Deloitte Consulting
<b>DCIPHER</b>	Data Collation and Integration for Public Health Event Response
<b>DCYF</b>	Division for Children, Youth and Families
<b>DDI</b>	Development, Design and Implementation
<b>DED</b>	Deliverable Expectations Document
<b>DEV</b>	Development
<b>DG</b>	Data Governance
<b>DGO</b>	Data Governance Organization
<b>DGS</b>	Data Governance Strategy
<b>DHHS</b>	Department of Health and Human Services
<b>DHR</b>	Department of Human Resources
<b>DHS</b>	Department of Homeland Security
<b>DHSS</b>	Department of Health and Social Services
<b>DM</b>	Data Modeling
<b>DMAS</b>	Department of Medicaid Assistance Services
<b>DNS</b>	Domain Name System
<b>DOD</b>	Department of Defense
<b>DOH</b>	Department Of Health
<b>DoIT</b>	Department of Information Technology
<b>DoJ</b>	Department of Justice
<b>DPHS</b>	Division of Public Health Services
<b>DPW</b>	Department of Public Welfare
<b>DSS</b>	Decision Support System
<b>DUV</b>	Distribution of Usage Variances
<b>DW</b>	Data Warehouse
<b>EA</b>	Enterprise Architecture
<b>EBI</b>	Enterprise Business Intelligence
<b>ED</b>	Emergency Department
<b>EDI</b>	Electronic Data Interchange
<b>EDM</b>	Enterprise Data Management
<b>EDW/BI</b>	Enterprise Data Warehouse/Business Intelligence
<b>EMS</b>	Express Mail Service
<b>EOHHS</b>	Executive Office of Health and Human Services



Attachment 1  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

<b>Acronym</b>	<b>Definition</b>
<b>EPLC</b>	Enterprise Performance Life Cycle
<b>EPM</b>	Enterprise Performance Management
<b>ESB</b>	Enterprise Service Bus
<b>ESR</b>	Extended Support Release
<b>ETL</b>	Extract, Transform, Load
<b>EVD</b>	Deloitte’s Agile based Enterprise Value Delivery Methodology
<b>EVD for IM</b>	Deloitte’s Enterprise Value Delivery for Information Management
<b>FAHM</b>	Fellow, Academy for Healthcare Management
<b>FAQ</b>	Frequently Asked Questions
<b>FBI</b>	Federal Bureau of Investigation
<b>FDA</b>	Food and Drug Administration
<b>FFS</b>	Fee-for-service
<b>FISMA</b>	The Federal Information Security Management Act
<b>FNS</b>	Food and Nutrition Service
<b>FTP</b>	File Transfer Protocol
<b>GBM</b>	Gradient Boosting Machine
<b>GCP</b>	Google Cloud Platform
<b>GIS</b>	Geographic Information System
<b>GLM</b>	Generalized Linear Model
<b>GPS</b>	Government and Public Services
<b>HCBC</b>	Home and Community Based Care
<b>HCIA</b>	Health Care Innovation Awards
<b>HEIGHTS</b>	Help empowering individuals to get help transitioning to self-sufficiency
<b>HHS</b>	US Department of Health and Human Services
<b>HHVBP</b>	Home Health Value-Based Purchasing
<b>HIE</b>	Health Information Exchange
<b>HIPAA</b>	Health Insurance Portability and Accountability Act of 1996
<b>HITECH</b>	Health Information Technology for Economic and Clinical Health
<b>HITRUST</b>	The Health Information Trust Alliance
<b>HIV</b>	Human Immunodeficiency Virus
<b>HIX</b>	Health Insurance Exchange
<b>HP</b>	Hewlett-Packard
<b>HPE</b>	Hewlett Packard Enterprise
<b>HTML</b>	Hyper Text Markup Language
<b>HTTP</b>	Hyper Text Transfer Protocol
<b>HTTPS</b>	Hyper Text Transfer Protocol Secure



Attachment 5117 - **STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

Acronym	Definition
IAM	Identity and Access Management
IBM	International Business Machines
ICAM	Identity, Credentials and Access Management
ICD	Interface Control Document
ICF	Integrated Controls Framework
ID	Identification Data
IDC	International Data Corporation
IDO	Insights Driven Organization
IDQ	Informatica Data Quality
IDS	Intrusion Detection Systems
IE	Integrated Eligibility
IES	Integrated Eligibility System
IP	Internet Protocol
IPS	Intrusion Prevention Systems
IRS	Internal Revenue Service
ISO	International Organization for Standardization
ISS	Integration Services Solution
IT	Information Technology
ITF	Integrated Test Facility
ITIL	Information Technology Infrastructure Library
ITSM	IT Service Management
IV & V	Independent Verification and Validation
JAMA	Journal of the American Medical Association
JIRA	Proprietary issue tracking product
LDAP	Lightweight Directory Access Protocol
LLP	Limited Liability Partnership
LMS	Learning Management System
LTSS	Long-Term Services and Supports
MA	Massachusetts
MAT	Medication-Assisted Therapy
MAGI	Modified Adjusted Gross Income
MARS-E 2.0	Minimum Acceptable Risk Standards for Exchanges
MAT	Medication Assisted Treatment
MBA	Master of Business Administration
MCCM	Medicare Care Choices Model
MCI	Master Client Index



Attachment 10  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

Acronym	Definition
<b>MECT</b>	Medicaid Enterprise Certification Toolkit
<b>S/MIME</b>	Secure/ Multipurpose Internet Mail Extensions
<b>ML</b>	Machine Learning
<b>MLTC</b>	Managed Long-Term Care
<b>MMIS</b>	Medicaid Management Information System
<b>MOU</b>	Memorandum of Understand
<b>MS</b>	Microsoft
<b>MVP</b>	Minimum Viable Product
<b>NAIC</b>	National Association of Insurance Commissioners
<b>ND</b>	North Dakota
<b>NCHS</b>	National Center for Health Statistics
<b>NCIPC</b>	National Center for Injury Prevention and Control
<b>NECSES</b>	New England Child Support Enforcement System
<b>NH</b>	New Hampshire
<b>NIST SP</b>	National Institute of Standards and Technology
<b>NMS</b>	National Medical Services
<b>NPPES</b>	National Plan and Provider Enumeration System
<b>NY</b>	New York
<b>OCM</b>	Organizational Change Management
<b>O&amp;G</b>	Oil & Gas
<b>ODAR</b>	Office of Disability Adjudication and Review
<b>ODM</b>	Original Design Manufacturer
<b>ODS</b>	Operational Data Store
<b>OMAP</b>	Office of Medical Assistance Programs
<b>ONDIEH</b>	Office of Noncommunicable Diseases, Injury and Environmental Health
<b>OSO</b>	Office of Security Operations
<b>OT</b>	Organization Transformation
<b>OD</b>	Opioid Use Disorder
<b>PA</b>	Pennsylvania
<b>PAHM</b>	Professional, Academy for Healthcare Management
<b>PBM</b>	Pharmacy Benefit Management
<b>PC</b>	Project Controller
<b>PDF</b>	Portable Document Format
<b>PDMP</b>	Prescription Drug Monitoring Programs
<b>PHI</b>	Protected Health Information
<b>PI</b>	Personal Information



Attachment 11  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

<b>Acronym</b>	<b>Definition</b>
<b>PII</b>	Personally Identifiable Information
<b>PL</b>	Programming Language
<b>PLP</b>	Principle of Least Privilege
<b>PM</b>	Project Manager
<b>PMI</b>	Project Management Institute
<b>PMBOK</b>	Project Management Institute Body of Knowledge
<b>PMN</b>	Pre-manufacture Notice
<b>PMO</b>	Project Management Office
<b>PMP</b>	Project Management Professional
<b>PSP</b>	Principle of Separation of Privilege
<b>POV</b>	Point Of View
<b>PROD</b>	Production
<b>QA</b>	Quality Assurance
<b>QAM</b>	Quality Assurance and Monitoring
<b>QC</b>	Quality Control
<b>QRGs</b>	Quick Reference Guides
<b>RACI</b>	Responsible, Accountable, Consulted, Informed
<b>RAID</b>	Risk, Action Items, Issues and Decisions
<b>RBAC</b>	Role Based Access Control
<b>RCA</b>	Root Cause Analysis
<b>RDMS</b>	Relational Database Management System
<b>REST</b>	Representational State Transfer
<b>RFC</b>	Request for Change
<b>RFP</b>	Request for Proposal
<b>RFQ</b>	Request for Quotation
<b>RMAN</b>	Recovery Manager
<b>ROC</b>	Receiver Operating Characteristic
<b>ROI</b>	Return on Investment
<b>RPO</b>	Recovery Point Objective
<b>RSA</b>	Rivest, Shamir, & Adleman
<b>RTD</b>	Resubmission Turnaround Document
<b>RTM</b>	Requirement Traceability Matrix
<b>RTO</b>	Recovery Time Objective
<b>SAMSHA</b>	Substance Abuse and Mental Health Services Administration
<b>SAS</b>	Statistical Analysis System
<b>SAT</b>	System Acceptance Testing



Acronym	Definition
SBIRT	Screening, Brief Intervention, and Referral to Treatment
SDLC	Systems Development Life Cycle
SEIM	Security Event and Information Management
SFTP	Secure File Transfer Protocol
SI	Systems Integration
SIEM	Security Information and Events Management
SIT	System Integration Testing
SLA	Service Level Agreement
SME	Subject Matter Expert
SNAP	Supplemental Nutrition Assistance Program
SOA	Service-Oriented Architecture
SOAP	Simple Object Access Protocol
SOW	Statement of Work
SPI	Schedule Performance Indicator/Index
SPOF	Single Point of Failure
SQL	Structured Query Language
SSA	Social Security Administration
SSL	Secure Socket Layer
SYS	System
SUD	Substance Use Disorders
TARB	Technical Architectural Review Board
TANF	Temporary Assistance for Needy Families
TCCB	Technical Change Control Board
TDS	Team Diagnostic Survey
TEMSIS	Trauma Emergency Medical Services Information System
TIP	Trafficking-In-Persons
TLS/SSL	Transport Layer Security/ Secure Sockets Layer
TOAD	Database Management Toolset from Quest Software
TSA	Transportation and Security Administration
TSM	Tableau Services Manager
TTT	Training the Trainers
UAT	User Acceptance Testing
UI/UX	User Experience (UX) and User Interface (UI)
URL	Uniform Resource Locator
US	United States
USDC	US District Court



Acronym	Definition
VM	Virtual Machine
VPC	Virtual Private Cloud
WAF	Web Application Firewall
WAN	Wide Area Network
WISQARS	Web-based Injury Statistics Query and Reporting System
WSDL	Web Services Description Language
XML	Extensible Markup Language
XSS	Cross-Site-Scripting
GCP	Google Cloud Platform

*Figure II-5. Acronym definitions.*



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## Section III: Responses to Requirements and Deliverables

### C-2 Requirements

#### Section III: Responses to System Requirements and Deliverables

- 4.18.6.1. System requirements are provided in Appendix C: System Requirements and Deliverables.
- 4.18.6.2. Using the response tables in Appendix C: System Requirements and Deliverables, the Vendor must document the ability to meet the Requirements and Deliverables of this RFP.

#### Vendor Instructions

**Vendor Response Column:** Place a “Yes” if the current release of the software can fully support ALL the functionality described in the row, without special customization. A “Yes” can only be used if the delivery method is Standard (see delivery method instructions below). Otherwise, enter an “No”; A “No” can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).

**Criticality Column:**

**(M)** Indicates a requirement that is “Mandatory”. The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.

**(P)** Indicates a requirement which is “Preferred”. This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.

**(O)** Indicates a requirement which is “Optional”. This requirement is considered by the State to be one which usefull or potentially usefull but not a central feature of the Project.

**Delivery Method Column:**

Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.

**Standard** – Feature/Function is included in the proposed system and available in the current software release.

**Future** – Feature/Function will be available in a future release. (Provide anticipated delivery date, version, and service release in the comment area.)

**Custom** – Feature/Function can be provided with custom modifications. (Respondent must provide estimated hours and average billing rate or



flat cost for the software modification in the comment area. These cost estimates should add up to the total cost for software modifications found in the cost summary table in Section X of the RFP).

**Not Available/Not Proposing** – Feature/Function has not been proposed by the Vendor. (Provide brief description of why this functionality was not proposed.)

**Comments Column:**

For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.

Working Sheet

Vendor Instructions						
<p><b>Vendor Response Column:</b> Place a "Yes" if the current release of the software can fully support ALL the functionality described in the row, without special customization. A "Yes" can <b>only</b> be used if the delivery method is Standard (see delivery method instructions below). Otherwise, enter an "No"; A "No" can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).</p>						
<p><b>Criticality Column:</b>                      (M) Indicates a requirement that is "Mandatory". The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.                      (P) Indicates a requirement which is "Preferred". This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.                      (O) Indicates a requirement which is "Optional". This requirement is considered by the State to be one which usefull or potentially usefull but not a central feature of the Project.</p>						



**Vendor Instructions**

**Delivery Method Column:**

Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.

**Standard** – Feature/Function is included in the proposed system and available in the current software release.

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**Not Available/Not Proposing** – Feature/Function has not been proposed by the Vendor. (Provide brief description of why this functionality was not proposed.)

**Comments Column:**

For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.



**1. BUSINESS REQUIREMENTS**

<b>BUSINESS REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
<b>Functional</b>					
B1.1	Intentionally Left Blank				
B1.2	Design and implementation of data visualization standards via a style guide and example templates specifically leveraging existing toolsets and web portals currently in place at the state to create a consistent way for data to be organized and graphically displayed to meet both user design and user experience requirements.	M	Yes	Standard	Deloitte meets this requirement with HHS Interactive design standards. Deloitte's solution includes data visualization standards and a style guide. Standards and style can be easily adjusted to align with the State's dashboard design and user experience requirements and can be aligned with DHHS's style guide standards for the in process EBI scope of work with all dashboards presented through Tableau.
B1.3	Create a method to inventory data sources associated with the building of the Opioid Crisis dashboard and an ongoing process to add to the inventory of the system and recommend a strategy for future use of data analytics and business intelligence toolsets as well as create a dashboard in which the source is tagged as internal or external (to the Department) and whether the data contains personally identified information (PII) or De-identified information (DII)	M	Yes	Standard	Deloitte's solution includes a data source inventory template, which will be used to capture key metadata that includes but no limited to Source Name, Agency/Vendor, Description, Data Classifications, Business Contact, Technical Contact, Data Model Link, Data Classifications etc.  The template can be used as a source for Tableau to display the information on a dashboard. We can also implement this requirement using Informatica Enterprise Data Catalog or Informatica Metadata Manager bundled with the current licensing at DHHS/DoIT preference.



<b>BUSINESS REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
B1.4	Provide professional services to augment internal capabilities associated with the following skill sets: Business analysis, use case development, user persona development, Data and statistical analysis generally, Data and statistical analysis specific to the opioid crisis, Data integration and transformation, Data visualization including geographical information system, Hardware architecture and design, Software configuration and training.	M	Yes	Standard	Deloitte meets this requirement with an analytics practice of over 5,000 experts and depth of experience with the current DHHS EBI architecture, tools, and the lines of businesses with which the DAP platform will orchestrate data aggregation and analysis.
B1.5	If the proposal is a cloud/hosted solution provide and establish hardware and software and/or cloud services for operation by the State needed to augment the Department's infrastructure.	M	Yes	Standard	The Google Cloud Platform (GCP) will be established during the project implementation with a support and subscription model which is sustainable by DHHS/DoIT as a complement to the on-site platform for social media data consumption and ML processing of that data.
B1.6	Implement no later than August 15, 2019 opioid dashboards based on requirements	M	Yes	Standard	Deloitte will work with DHHS to create and manage a mutually agreeable project plan that will allow for implementation of the Opioids dashboards determined as in-scope for Phase 1, by August 15, 2019.
B1.7	Provide a detailed description of how you would address charts included in the Introduction section	M	Yes	Standard	Our detailed description demonstrating how we will address the charts included in the introduction is previewed in our executive summary and elaborated in section D-1.1, Description of



BUSINESS REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
					Solution building upon our HHS Interactive Opioid Insights capabilities.
B1.8	Provide context sensitive "Help" screens/tips and dashboard instructions	P	Yes	Standard	Deloitte meets this requirement using Tableau's tooltip feature to address this requirement.
B1.9	Automated reports/notifications/alerts to users based on subscription or opt in/out functionality	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau's data-driven alerts feature to address this requirement. Users will be able to manage their notifications/alerts preferences with one click, directly from the email.
B1.10	Design, develop and implement a holistic Data Analytics Platform (DAP) that consolidates data from multiple, currently disparate Department, other State of New Hampshire and Federal sources, systems and formats to meet the needs of the state's opioid response and provide the foundation for all other needs of the Department programs.	M	Yes	Standard	Deloitte meets this requirement by extending the EBI Data Warehouse into a holistic data analytics repository that stores member data consolidated across disparate data sources. Informatica data integration and data quality software will be utilized to merge and consolidate from disparate data sources. This includes digital data that is provided with assistance from our teaming partner Google into DAP.
B2.1	Include support for the future use of advanced statistical analysis techniques, predictive analytics and machine learning	M	Yes	Standard	Deloitte meets this requirement with the proposed DAP solution architecture providing a foundation for the State to easily expand advanced analytical capabilities including predictive analytics and machine learning build using R and Python.



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B2.2	Be intuitive and easy to learn, understand, navigate and use,	M	Yes	Standard	Deloitte meets this requirement using visualizations and dashboard design methodology focusses on balancing simplicity, clarity and efficiency in creating designing dashboards that are intuitive, with simple navigation, minimum complexity and maximum ease of use. Our solution would build on the menu driven navigation model being established for the current EBI scope of work to provide enterprise access continuity.
B2.3	Provide and support average less than 5 seconds with a majority of 1 second query response times, with or without user customization,	P	Yes	Standard	Deloitte will employ system design and performance monitoring throughout the implementation to validate consistent response times are provided per expected or pre-defined levels across the DAP system tools.
B2.4	Process and load datasets in a fast, smooth, efficient manner to meet no older 24 hour stale data	M	Yes	Standard	Deloitte's solution offers the capability to load data efficiently using Informatica meeting the requirements based on the assumption that the source systems can provide access to data on that frequency.



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B2.5	The selected vendor must leverage (where applicable for the vendor solution) current technologies in place at State of New Hampshire and provide recommendations for alternatives based on proposed strategy to include but not limited to: Oracle databases, Dimensionally modeled data marts, Extract, Transform, Load (ETL) software – Informatica, Statistical analysis tools/software and server – R Programming and RStudio Server/Connect, and Supplementary BI tools leveraging Tableau for dashboards which: Consolidate and arranges numbers, metrics and Department defined scorecards, Key Performance, and other, metrics, Can be tailored for specific roles and display metrics targeted for a single point of view, Includes a customizable interface, Includes the ability to pull real-time data	M	Yes	Standard	Deloitte proposed solution architecture leverages State's existing IT infrastructure including Informatica PowerCenter, Informatica IDQ, Tableau, RStudio and the Oracle Database. Our system will also leverage the Tableau navigation model as well as the existing schemas.





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B2.6	Design, develop and implement an overarching data model, which: Combines appropriate data elements from various sources, as needed to achieve reporting and alert functions, Includes interfaces, source mapping and user interfaces; required to achieve data consolidation and build the DAP, Identifies current and future state of source systems and processes, Possesses the processing capabilities to provide large dataset analysis, including highly complex numerical analysis of textual, structured, non-structured, spatial and other data sources, Provide metadata tagging of data sources/elements, Allows fast and flexible data integration so that data sources are able to be integrated in the analytical environment and analyzed with limited advanced notice.	M	Yes	Standard	Deloitte's meets this requirement through the design, develop and implementation of a logical and physical dimensional data model to support the predictive analytics and dashboard needs. A Metadata repository will be created to identify and catalog all source data. The data provided by the State, along with the datasets Deloitte has identified, will be uploaded to the oracle data warehouse in the data tier allowing storage of both unstructured and structured information of the various datasets.
B2.7	Vendors must include a proposed architecture for the DAP, which integrates data from source systems and meets, or exceeds, the following minimal requirements:	M	Yes	Standard	Deloitte's proposed system architecture provides a scalable data analytics platform that extends State's existing EBI platform to the state's opioid response and provides a foundation to support analytics needs for other Department programs such as SNAP, TANF etc.



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B2.8	Provides a framework for organization of data, information management and technology systems required to build and implement the system,	M	Yes	Standard	Deloitte meets this requirement through our proposed 3-tier architecture provides a scalable framework to organize, process and visualize the data and technology systems.
B2.9	Allows for data components of the architecture to include internal and external sources of structured and unstructured data users require to analyze the opioid crisis	M	Yes	Standard	Deloitte meets this requirement with a proposed system architecture including a data tier with the Informatica ETL processes to integrate multiple internal (existing EBI data) and external structured, un-structured and spatial data sources.
B2.10	Includes data integration, data cleansing and the development and implementation of data dimensional rules	M	Yes	Standard	Deloitte meets this requirement with a data governance framework that will define data cleansing processes and practices. Data integration and data dimensional rules will also be defined using Informatica to consume and cleanse data, including the data imported from Google.
<b>Technical</b>					
B3.1	Describes the conceptual and logical technology components required to present information to users and enable them to analyze the data and its impacts,	M	Yes	Standard	Deloitte meets this requirement, please refer to Deloitte responses for technical requirement B3.2 to B3.10
B3.2	Allows for the ability to drill down on report data by varying levels of geographic, provider, program, service and client demographic details	M	Yes	Standard	Deloitte meets this requirement providing Opioids dashboards that are fully interactive allowing allow users to filter and drill down on demand by geographic hierarchy, provider, program, service and client demographic details using Tableau.



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B3.3	Allow for the extraction of patterns and knowledge from large amounts of data,	M	Yes	Standard	Deloitte meets this requirement providing opioids predictive models configured to analyze large datasets based on the defined hypothesis and key predictors to detect hidden patterns thereby identifying high risk individuals. We accelerate this using our <b>At Risk</b> HHS Interactive Opioid Insight module.
B3.4	Provide predictive or statistical analysis model, based upon data type and attributes	P	Yes	Standard	Deloitte meets this requirement using our <b>At Risk</b> predictive analytical, statistical and risk model that will delivered and tailored based on NH's dimensional values and data types.
B3.5	Provides browser-based solution to support all major browsers.	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau for Dashboard development which supports all major browsers namely Google Chrome, Microsoft Edge, Internet Explorer, Mozilla Firefox, Firefox ESR and Apple Safari.
B3.6	Internal multi-tenant sandbox to provide statistical analysis areas to look at data with access to the dimensional based data to design and develop visualizations on an ad-doc development-based methodology	M	Yes	Standard	Deloitte meets this requirement with an architecture that supports a multi-tenant production sandbox with user schemas for authorized users to combine production data with local datasets and leverage tools such as RStudio, Tableau etc. to design and develop predictive models and data visualizations on an ad hoc basis.



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B3.7	Internal role-based authentication to provide view, modify and delete as well as external facing role-based solution with ability to define group or user defined access	M	Yes	Standard	Deloitte's solution will leverage Tableau Services Manager (TSM) to configure and manage role-based access control to define user groups, permissions such as view, modify and delete. Additionally, dashboards will also support role/user-based row-level data restrictions.
B3.8	Provide a methodology to track web traffic and report on number of viewers, number of this and/or other measures.	P	Yes	Standard	Deloitte meets this requirement using Google analytics out-of-box or DoIT's preferred tool for web traffic. In addition, we have proposed providing DHHS an additional web traffic source, Google search data for the broader population of New Hampshire which will aggregated and imported in the DAP for analysis and presentation.
B3.9	State Sizing and Growth Assumptions	M	Yes	Standard	Our solution assumes that the existing platform has sufficient storage and capacity to design and implement. If the machine learning modules require additional compute time during the DDI phase, the GCP will be available to support peak utilization using the credits provided by Google. This assumption is predicated on controlled usage of adhoc queries to contain power user access using commonly accepted industry norms in collaboration with the DoIT Oracle DBA team.
B3.10	Develop capacity to make data and information available in meeting the Department's Federal Reporting requirements and necessary for Federal grant applications	M	Yes	Standard	Deloitte's solution will provide the foundation for data and tools to support Department's Federal Reporting requirements and necessary for Federal grant applications, including the Healing Grant if awarded to New Hampshire.



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<b>SUBHEAD</b>					
B4.1	<p>The new System must accommodate the anticipated number of users and workstations at each location. In order to support initial sizing expectations, prior to completion of capacity planning as part of this project, the State has estimated the first phase system must accommodate approximately 2,000 internal users (25% active users, 5% concurrent) in and for future use, 250,000 external users (10% active users, 2% concurrent) at this time, and all of these users are expected to have a workstation that will access the System. These initial estimates will be replaced with the finale user sizing in the Capacity Plan, deliverable as part of the design phase.</p> <p>Workstations, network, servers, storage and WAN connectivity will be recommended by the vendor to ensure sizing to access and use the system.</p>	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments. The existing EBI infrastructure is being designed to meet these same requirements.</p> <p>Upon finalization of estimates, Deloitte will work with DHHS and DoIT to complete a capacity plan and validate hardware, software, and infrastructure requirements.</p>



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B4.2	The new shared infrastructure and functional capabilities need be designed to be operational 24 hours per day (hours to be determined by the state), 7 days per week, and 52 weeks per year. The centralized servers and resources and public facing Web site will be designed to be operational 7 days per week and 24 hours per day. No single disruption is anticipated to last longer than 8 hours. The System as a whole will be available for use 99 percent of the timeless mutually agreed and scheduled service/maintenance intervals.	M	Yes	Standard	The proposed application architecture would support this requirement and we will work with DHHS and DoIT to validate that the EBI infrastructure being re-used to support the solution to meet the uptime goals for the application.
B4.3	The new System must support transparent failover capabilities using high-availability architectural elements.	M			The proposed application architecture supports clustering to provide failover. We will work with DHHS and DoIT to validate that the EBI infrastructure being re-used to support the solution can meet the failover capabilities.
B4.4	Specify all equipment (if any) required for the development and operations of the solutions and requirements defined in this RFP. The equipment will be comprised of industry standard and readily available components.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environment. Complementary advanced analytic components for digital data will reside in the Google Cloud Platform (GCP). The details of the GCP for the development and operations of the solutions is defined under section 1.1.12 of the response.



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B4.5	Creating/viewing population-based or individual-based alerts and notifications	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau's data-driven alerts feature to address this requirement. Users will be able to manage their notifications/alerts preferences with one click, directly from the email.
B4.6	Subscribing/Un-subscribing to alerts/notifications of interest	M	Yes	Standard	Deloitte meets this requirement leveraging Tableau's inbuilt Subscribe/ Un-subscribe functionality to manage alerts/notifications of interest.
B4.7	Sending notifications through preferred notification method	M	Yes	Standard	Deloitte meets this requirement leveraging the notification methods supported by Tableau.
B4.8	Scheduling of distribution of reports and notifications based on user input via an "opt in" model	M	Yes	Standard	Alert owners can sign-up themselves and other users to receive alert emails in Tableau Server. Each recipient opt-out of alerts with one click, directly from email.



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B4.9	Describe the proposed solution to meet 508 compliance and DoIT compliance requirements. The authentication and authorization solution must be ADA compliant.	M	Yes	Standard	Deloitte's proposed solution will leverage Tableau as the end user interface with inbuilt 508 compliance per the terms of the license and subscription agreements. We can provide the link to vendor's compliance Web site. Authorization will be provided through the existing DoIT active directory being used for the current EBI scope of work.
B4.10	Determining who originates and approves DAP investment proposals.	P	Yes	Standard	Deloitte meets this requirement through the data governance processes we will work with the State to establish and align with the DAP investment priorities and budget.
B4.11	Determining the approved technologies and products developers must use to build services.	M	Yes	Standard	Deloitte's proposed solution uses industry standard technologies and products to build services with capabilities to satisfy the system functional and technical requirements. The core development activities will be completed using developer capabilities provided by Oracle, Informatica and Tableau.





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B4.12	Defining the procedure for requesting permission to use a service.	M	Yes	Standard	Deloitte's project management policies will include processes for service/access requests using the Application Management Life cycle tool Atlassian JIRA and/or the DoIT ticket system at the States preference. Note: We advocate using Jira for application specific issues (defects, change requests, etc.) and DoIT system for infrastructure, user access, and outages with final distribution of usage to be jointly agreed upon by DoIT and DHHS.
B4.13	Identifying (and executing) what service and system testing is required before deploying a service enhancement.	M	Yes	Standard	Deloitte's Project plan will include standard service and system testing phases with clearly defined entry and exit criteria for every release including service enhancements.
B4.14	Promulgate policies, standards, and guidelines	M	Yes	Standard	Deloitte Project Management processes will be in line with the PMI project management policies, standards and guidelines as will data governance standards.
B4.15	Facilitation of processes	M	Yes	Standard	Deloitte will work with the State to facilitate Project Management processes as well as standard governance procedures from project inception through closure.
B4.16	Collection, analysis and visualization of metrics	M	Yes	Standard	Deloitte's proposed solution will enable collection, analysis and visualization of key metrics, as defined in the RFP requirements and demonstrated throughout our proposed solution.



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B4.17	Administer the integration metadata – for example, DAP metadata (such as Web Services Description Language) or business-to-business metadata (such as electronic data interchange/XML document standards).	M	Yes	Standard	Deloitte’s proposed solution will administer and maintain a Metadata repository/dictionary to identify and catalog all source data. We assume that DHHS will have acquired Informatica Enterprise Data Catalog or will elect to use the Informatica Metadata Manager which is bundled with the current license package and we would plan to use that tool to meet this requirement.  Information about of teaming partner Google’s processes can be found here: <a href="https://cloud.google.com/dataprep/docs/html/Insert-Metadata_57344600">https://cloud.google.com/dataprep/docs/html/Insert-Metadata_57344600</a>
B4.18	Monitor the associated governance procedures, through one or more repositories.	M	Yes	Standard	We assume that DHHS will have acquired Informatica Enterprise Data Catalog or will use Informatica Metadata Manager which is bundled with the current licensing and will use either to meet this requirement.
B4.19	Role-based Access and User Provisioning – Technology component that enables what information a particular user is authorized to access.	M	Yes	Standard	Deloitte’s proposed solution will provide access rights based on the job function and role, using the concepts of least-privilege and need-to-know to match access privileges to defined responsibilities. This would be completed through both Tableau and Oracle privilege management.



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B4.20	Users' access rights shall be based on what roles they play in the enterprise (State and Counties) and/or what groups they belong to for external entities.	M	Yes	Standard	The solution will enable user roles to be defined with the built-in reports and can be customized to display level of detail unique to each individual's role-set, for both internal and external users. Report and data access will be authenticated through Active Directory and controlled through Tableau and Oracle based on user roles and groups.
B4.21	Role-Based Access shall include the capability to enforce who can update data versus access and view only. Further, the update authority should be defined at the field level within a panel.	M	Yes	Standard	Deloitte will leverage Tableau's Site Roles feature to manage this requirement. Along with content permissions, the site role determines who can publish, interact with, or only view published content, or who can manage the site's users and administer the site itself. The tableau privilege management will be complemented by Oracle database privilege management.
B4.22	Authentication of user identities – Technology component that verifies the identities of those seeking to access client data. Shall include strong authentication supported by an appropriate infrastructure for identity and access management.	M	Yes	Standard	The proposed system leveraged the State active directory with the strong authentication standards defined and supported by DoIT.
B4.23	The solution must have a mechanism for Annual Reconciliation of users to determine if access is still needed.	M	Yes	Standard	The solution will leverage Tableau's admin functionality to reconcile and manage user access. We will work with DHHS and DoIT to establish a review process which could be modeled from New HEIGHTS or other existing system that manages annual reconciliation and sample auditing.



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B4.24	Configure, install and train on the existing Tableau environment to allow for the usage of R Programming	M	Yes	Standard	Deloitte will configure, install and train the users for usage of R programming based on the agreed strategy for training (Train-the-Trainer or end user training). User of R will have access to integrate data from Tableau or directly from the Oracle database and we will provide knowledge transfer on our solution components that use R positioning DHHS/DoIT to sustain and adapt the solution.
B4.25	Logging of activity – For financial, operational, and legal reasons, the solution must record all activities in a log, which must be searchable to allow administrators to identify any abnormal pattern of activity.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and the existing COTS products, Informatica, Oracle and Tableau contain logs of all activity and administrator can search for abnormal activities as needed.
B4.26	The solution must include the capability to monitor activity continually according to a set of pre-defined rules, and to notify administrators when abnormal activity is detected	M	Yes	Standard	The applications being utilized provide logging for ingestion into the States Qradar application for alert management.



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B4.27	Authorization – Authorization shall provide access control through enforcement, and be used to determine the specific scope of access to grant to an identity. It must provide real-time access policy decisions and enforcement (based on identities, attributes, roles, rules, entitlements and so on). Users must be able to access only what their job functions allow them to access. For instance, if a person is a "manager," then he or she is granted the access necessary to create or edit a performance review; however, if a person is not a manager, then he or she should be able to review only his or her own performance review, and only at a specific stage of the review cycle. Web access management (WAM), externalized authorization management, identity-aware networks and digital rights management tools are examples of authorization technologies.	M			Deloitte's proposed solution leverages the State's existing environments including active directory for authentication and Tableau server administrator for fine grained roles-based access management completed by the Oracle privilege management.



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B4.28	Administration – Administration shall offer a means of performing identity-related tasks (for instance, adding a user account to a specific system). Administration tools must provide an automated means of performing identity-related work that would otherwise be performed by a human; examples include tasks such as creating, updating or deleting identities (including credentials and attributes), and administering access policies (rules and entitlements). User provisioning shall be considered a part of administration technology. Helpdesk agents shall have override capabilities to correct data and account errors.	M	NO	Standard	Deloitte’s proposed solution leverages the State’s existing environments including active directory for authentication and Tableau server administrator for fine grained roles-based access management completed by the Oracle privilege management. We assume that the provisioning management will be integrated with the DoIT ticket system for consolidated event management.
B4.29	Establishment of an agile State enterprise technology platform based on an DAP architecture	P	Yes	Standard	The proposed DAP architecture tools and methodology support agile and waterfall development depending on project specific needs and State preference.
B4.30	The selected vendor must work with Department to ensure strategic alignment between the deployed technology and the future-state business processes and operational model. This collaboration is to occur, at a minimum, through the following activities:	M	Yes	Standard	Deloitte’s Project Management team will work with the State leadership team to ensure strategic alignment between the deployed technology and the future-state business processes and operational model and if applicable the Healing Grant. We will do so by leveraging our knowledge the current EBI platform and proposed capabilities.



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B4.31	Work with Department Executive Leadership and project team to refine the overall vision for the project and to develop a strategic plan for managing change;	M	Yes	Standard	Deloitte's Project Management team will work with DHHS to establish a communication plan and strategy to strategic vision, governance and stakeholder engagement, including source system stakeholders.
B4.32	Cultivate ownership and teamwork among stakeholders at executive levels	P	Yes	Standard	Deloitte project leadership will facilitate recurring leadership meetings to review Project Management processes to manage accountability and teamwork. We will also work with DHHS to energize and engage stakeholders for the purpose of this project and the broader EBI/DAP goals of the Department.
B4.33	Define a change control process for considering and accepting or denying changes (policy, planning, design, processes, etc.) throughout the project	M	Yes	Standard	Deloitte's Project Management processes will include Change Management process via a Change Control Board to manage changes to following but not limited to scope, timeline and cost, while aligning with the overall strategic vision.
<b>Training</b>					
B5.1	Work with the Department to develop and deliver training as appropriate to State users	M	Yes	Standard	Deloitte's solution will include training for State users as defined in section 2.2, State Personnel and Training.



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B5.2	The System training, in addition to focusing on the navigation and use of the System, must also focus on how the System is integrated into the day-to-day work of end users including access level, new business processes and/or workflows that the System will support. Additionally, training for the usage of the back-end environment, informatica and database dimensional design will be provided to a team consisting of State of New Hampshire database administrators, system administrators and business analysts responsible for the on-going maintenance and support of the system (outlined further in the Technical training section).	M	Yes	Standard	Deloitte's training plan will include functional training to the end users and technical training to the administrators and analysts to equip them for on-going maintenance and operation of the system. The training model includes shadowing of resources as well as formal training and computer-based trainings.  Our approach to training is elaborated on in section 2.2, State Personnel and Training.
B5.3	The selected vendor must provide the State Project Manager with documented evidence of each trainee's competence to operate the System and integrate its support in to their day-to-day work. Training must be of sufficient length to ensure adequate comprehension. Training must be provided "just in time" prior to deployment and must comprehensively address all System operations as well as security considerations.	M	Yes	Standard	Deloitte's training team will work with the trainees to train them on system (technical and functional) aspects of the implementation. The training sessions will be scheduled prior to transition with the system fully functional in the testing environment.  The training material and sessions will be documented with pre-defined acceptance and exit criteria. Our approach to training is elaborated on in section 2.2, State Personnel and Training.





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B5.4	The selected vendor must organize and provide formal orientation and training before System deployment, to the State development and operations staff so that they are able to manage and maintain the System.	M	Yes	Standard	The Deloitte training team will facilitate training sessions including kick-off, orientation and system training sessions. The State operations staff engaged in shadowing will have hands on experience prior to hand over.
B5.5	The Contractor will also involve the State's technical staff in any enhancements to the System to enable the staff to become familiar with the process.	M	Yes	Standard	During operations the State's technical staff will be integrated into the Deloitte team providing full transparency so they are able to engage and understand how changes/enhancements are integrated into the system.
B5.6	Effective training that will provide the required skills to use this new automated tool is critical to the successful implementation and use of the new System. The selected vendor must develop user training curricula, schedules, training materials and training evaluation materials. The selected vendor must maintain an online training environment that allows trainees to access the new System. The selected vendor must conduct face-to-face, hands-on, user training in logical groupings at regional locations determined by the State, and for managing all training planning and logistics.	M	Yes	Standard	Deloitte will develop training content/ material, schedule and facilitate training sessions, gather feedback to enhance training effectiveness and gather evaluation material. A repository of this content will be maintained and made available to the State for future use. Deloitte will work the State to create and manage a training calendar/ schedule based on the state's training needs listed in the requirement.  Our approach to training is elaborated on in section 2.2, State Personnel and Training.



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<b>Inventory and Migration</b>					
B6.1	The selected vendor shall develop a prioritized list of data sources to integrate and migrate into the Enterprise Data Warehouse. The selected vendor must identify and prioritize data sources required to support each implementation phase. Additionally, the selected vendor is required to integrate each respective data source into the Enterprise Data Warehouse. The following are the initial list of data sources to be migrated into the EDV and utilized to create the Opioid Crisis dashboard:	M	Yes	Standard	The data sources will be listed and prioritized depending on the requirement for each implementation phase to be integrated into the Enterprise Data Warehouse beginning with the interfaces defined in the RFP for phase 1. Should DHHS wish to reprioritize based on source system constraints or evolving goals, we would work with DHHS to rebalance priorities and plans.
B6.2	Medicaid and Comprehensive Health Care Information System (CHIS): Pharmacy, physical, behavioral health care claims for all NH Medicaid services and for most commercially insured population in New Hampshire. Medicaid member data will be integrated into the EBI warehouse under a separate effort by Spring 2019.)	M	Yes	Standard	Deloitte will expand on its existing implementation to integrate the additional commercial claims data from the all payor database into the existing schema. One of engagement leads, Greg Spino has extensive experience with all payor claims data integration in a data warehouse.



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B6.3	Child protection investigations and findings including whether opioid or other substance use is possible factor in the case. Child Welfare System/DCYF Cases	M	Yes	Standard	Deloitte will integrate with the Child Welfare finding results including the capturing of opioid/substance use as a possible factor. We have extensive experience working with the Bridges team and will collaborate with them to extract the applicable data. In addition, we have integrated child welfare data into HHS Interactive and have a strong understanding of child welfare data.
B6.4	Automated Hospital Emergency Department Data (AHEDD): Statewide surveillance system collects real-time data from all 26 New Hampshire acute care hospital emergency departments to detect clusters or monitor potential health threats in the population such as respiratory illness during influenza season, injuries during snow storms, and drug overdoses during the current opioid crisis.)	M	Yes	Standard	The Deloitte solution will model and load these (AHEDD) data into the environment to support DAP. Our HHS Interactive solution also has a baseline Tableau dashboard to report on emergency admittance that would be extended using NH's data.
B6.5	Vital Records Data: Real time birth and mortality records certificates. Data collected by the NH Division of Vital Records for NH residents and births or deaths occurring in NH. NH resident out-of-state births are reported to NH through an interstate exchange agreement.	M	Yes	Standard	The Deloitte solution will integrate with the NH Division of Vital Records to get Vital records data on birth and mortality as part of the initial list of data sources to be migrated to the EDW extending the current EBI scope of work.



BUSINESS REQUIREMENTS					
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B6.6	Drug overdose deaths data by Fentanyl (no other drugs), Fentanyl and Other Drugs (excluding heroin), Heroin (no other drugs), Heroin and Other Drugs (excluding fentanyl), Heroin and Fentanyl, Unknown Opioids, Other Opiates/Opioids determined by the Medical Examiner. Medical Examiner Report	M	Yes	Standard	The Deloitte solution will work with the State to define the data needs and integrate this source into the DAP environment, which we assume will be enhanced by the NMS Labs test for fentanyl analogs recently approved by NH's Governor and Council. Our HHS Interactive solution also has a baseline Tableau dashboard to report on overdoses that would be extended using NH's data.
B6.7	Emergency Medical Services (EMS) Trauma Emergency Medical Services Information System (TEMSIS): medical responses on Naloxone administration incidents data. A data collection and analysis capability system that provides for the evaluation of the emergency medical and trauma services system (TEMSIS).	M	Yes	Standard	The Deloitte solution will integrate with the Trauma Emergency Medical Services Information System (TEMSIS) to get medical responses on Naloxone administration incidents data as part of the initial list of data sources to be migrated to the EDW.
B6.8	Grant/State BDAS Treatment Services: Medication assisted treatment with Opioid/opiate, methamphetamine, & cocaine/crack admissions to state funded facilities. An array of levels of care including outpatient, intensive outpatient, partial hospitalization, residential, withdrawal management, and peer and non-peer recovery support services.	M	Yes	Standard	The Deloitte solution will integrate with the Grant/State BDAS Treatment Services to get data on Medication assisted treatment with Opioid/opiate, methamphetamine, & cocaine/crack admissions to state funded facilities, as part of the initial list of data sources to be migrated to the EDW.



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B6.9	Population Data: Base data used for calculation of population based rates.	M	Yes	Standard	The Deloitte solution will integrate population data used for calculation of population-based rates, as part of the initial list of data sources to be migrated to the EDW.
B6.10	NH Health WISDOM: Data access for public health indicators via interactive dashboards and community profiles. Customize and display data in maps, graphs, and tables related to the NH State Health Improvement Plan, NH Environmental Public Health Tracking Program, and the NH Occupational Health Surveillance Program.	M	Yes	Standard	The NH Health WISDOM application includes a number of opioid data sources and dashboard capabilities that overlap with the requirements of this RFP and our HHS Interactive solution. We will work DHHS and in specific the public health team to determine how best to carry forward the intellectual capital of Wisdom and to strengthen public health utilization of the EBI and DAP platforms extending existing investments to further empower analytics users and administrators.
B6.11	To help ensure that the selected vendor and the State Project team fully understand the extent of the work needed for data conversion, a detailed study of conversion issues and requirements will be required of the selected vendor.	M	Yes	Standard	We will work with DHHS and source systems to develop a conversion and cleansing strategy for each interface iteratively during the design phase in advance of schema development. The results will influence the design and define the conversion strategy and any potential issues.
B6.12	Conducting selected data source analysis to determine conversion requirements	M	Yes	Standard	Deloitte will analyze data from the selected data sources and review conversion/ mapping requirements with State project team during design sessions.



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B6.13	Reviewing conversion analysis with the State Project team, prepare detailed data conversion plan (addressing manual and electronic data)	M	Yes	Standard	Deloitte will document a Detailed data conversion plan and the conversion requirements and mappings will be documented and submitted for State review. Review sessions will be scheduled and facilitated by the Deloitte team.
B6.14	Defining strategies for verifying and/or correcting existing data	M	Yes	Standard	Deloitte's Data conversion plan will include strategies on validating data quality and cleansing/correcting existing data using the Informatica cleansing capabilities as required.
B6.15	Developing data conversion scripts and test data conversion scripts	M	Yes	Standard	The Deloitte Development and Testing teams will develop and test the Informatica ETL scripts to covert data from source systems to the Enterprise Data warehouse.
B6.16	In this task the selected vendor must address data migration issues and a plan must be in place to ensure the validation of all conversion routines and the accuracy and completeness of all data.	M	Yes	Standard	The Deloitte Data conversion plan will include standard handling of exceptions and data migration issues. A reconciliation report will be generated after processing of the Informatica ETL to validate accuracy and completeness of conversion and ETL processing of data.
<b>Data Governance</b>					
B7.1	Design and Implementation of a data governance strategy	M	Yes	Standard	Deloitte will design and implement a Data Governance Strategy (DGS) for the phase one scope of work that can be leveraged as a framework for subsequent EBI activities.



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B7.2	A DAP initiative requires an infrastructure reference model that provides guidance for selecting technologies and products when implementing and deploying services. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):	M	Yes	Standard	Deloitte will employ a structured product selection process extending the methods used to select the current EBI platform components.
B7.3	Defining methods to ensure that the services infrastructure supports robust, secure, scalable, and interoperable operations.	M	Yes	Standard	Deloitte's data governance strategy integrates data governance with data modeling (DM), enterprise architecture (EA) and business processes (BP), overriding inter-departmental and technical silos for greater visibility and control across domains.
B7.4	Identifying what are the approved or standard technologies and products for service development and deployment.	M	Yes	Standard	Deloitte will leverage the processes defined in the Data Governance Strategy to identify approved and/ or standard technologies and products for service development and deployment.
B7.5	Designing and implementing methods, patterns, and technologies that will be used to support security, reliability, transaction, and instrumentation requirements.	M	Yes	Standard	Our proposed solution leverages the existing platform carrying forward security, reliability and instrumentation requirements of the EBI platform and extending them for the DAP scope of work.



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B7.6	Determining who determines which technologies and products go onto the standards list.	M	Yes	Standard	Out data governance frameworks to be refined in cooperation with DHHS and DoIT outline the requisite guidelines to create an effective governance organization. The proposed governance structure has four strata; An executive/steering committee, a Data Governance Council (DGO), a cohort of Data Stewards, and a Data Governance Office (DGO). Each stratum has clear core responsibilities, and Deloitte will work together with the State establish the framework for Governance with DHHS and DoIT coordinating with and engaging the required sponsors and stakeholders.
B7.7	Defining who needs to approve future technology and product decisions as standards evolve in the future.	M	Yes	Standard	The Data governance framework will have a defined governance structure including an Executive Steering committee to review and approve future technology and product decisions.
B7.8	Service Design and Development	M	Yes	Standard	Service design and development will propagate the standards currently being developed in cooperation with DHHS and DoIT.
B7.9	Service design and development precepts delegate decisions about services to the appropriate architects and developers. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):	M	Yes	Standard	The governance to be established during start-up and elaborated on throughout the project life cycle will design the roles and authorities of DHHS, DoIT, vendor and other stakeholders to be observed throughout the project life cycle.





BUSINESS REQUIREMENTS					
State Requirements			Vendor		
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B7.10	Defining a method(ology) to ensure that services are built the right way.	M	Yes	Standard	Deloitte's Data Governance Framework will define processes, policies and standards to ensure that services are built the right way.
B7.11	Determining the appropriate types of models that must be implemented.	M	Yes	Standard	Deloitte will leverage the Data Governance Framework to ensure the right strata of individuals determine the appropriate type of models are implemented driven based on policies and standards.
B7.12	Identifying sign off or approval requirements for service models.	M	Yes	Standard	The Data Governance Framework will identify sign-off or approval requirements. We recommend usage of the current Jira install to manage the process and audit trail.
B7.13	Determining the design patterns that should be used to support DAP principles.	M	Yes	Standard	Deloitte will leverage the Data Governance Framework to ensure the right strata of individuals determine the design patterns that should be implemented driven based on policies and standards.
B7.14	Identifying sign off or approval requirements system or service design decisions.	M	Yes	Standard	The Data Governance Framework will identify sign-off or approval requirements. We recommend usage of the current Jira install to manage the process and audit trail.



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B7.15	Establishing technology standards for a future project.	M	Yes	Standard	Deloitte will leverage our Data Governance Framework and the lessons learned from the initial and current implementations to establish technology standards for a future project. The Data Governance Framework will be updated, as necessary, based on learnings.
B7.16	Determining technology selection sign off or approval requirements.	M	Yes	Standard	Deloitte will extend and improve upon the working relationship with DHHS and DoIT, including formal usage of technology sign-off and approval.
B7.17	Establishing standard designs for message formats.	M	Yes	Standard	Deloitte will work with DHHS and DoIT to establish a standard design for message formats.
B7.18	Determining interface sign off or approval procedures.	M	Yes	Standard	Deloitte's Data governance framework and the Agile Project Management Plan will define the interface sign off and approval procedures which will establish the format, protocol, and operational responsibilities.
B7.19	Defining the required testing for DAP projects.	M	Yes	Standard	The Testing plan will detail the testing requirements for the DAP project, including testing of all associated tiers and recommended full volume dress rehearsal (mock go-live) to validate source system inputs and DAP outputs at scale.
B7.20	Establishing completed project acceptance requirements and procedures.	M	Yes	Standard	Deloitte's Agile Project Management Plan and the cutover plan will establish completed project acceptance requirements and procedures.



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B7.21	Creating a "prototyping or early experience" capability to experiment with and design enhancements to rules-engines by the program group for review and approval prior to entering a more formal development, testing and release process.	M	Yes	Standard	Our solution includes machine learning capabilities that allow for prototyping and early experience for iterative refinement, review and approval. If DHHS intended this requirement to include provision of a "rules engine" like Oracles Policy management, Drools, or IBM I-log (ODM), we recommend the usage of the New HEIGHTS IBM ODM rules engine to leverage existing enterprise assets.
B7.22	Configuration and release management	M	Yes	Standard	We will extend the usage of GitHub to support configuration management.
B7.23	Configuration management precepts establish which developers or administrators are responsible for configuring a service and preparing it for production deployment. The Vendor must build on and extend New Hampshire's release management processes, or develop one if the existing process is mutually determined to be not suitable. Requirements in this area are to include the following:	M	Yes	Standard	Based on the ongoing experience and knowledge of New Hampshire's release management process, Deloitte will leverage existing processes to configuration and release management.
B7.24	Establishing objective criterion to ensure that services are stable upon production release.	M	Yes	Standard	Deloitte will develop a cutover plan and a go/ no-go checklist that will establish mutually agreed upon objective criterion to ensure that services are stable upon production release.



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B7.25	Defining entire deployable units including its dependencies.	M	Yes	Standard	Deloitte will leverage the Deployment plan to establish processed for defining entire deployable units including its dependencies.
B7.26	Defining who is responsible for creating and version managing configuration files and deployment packages.	M	Yes	Standard	Deloitte will work with the State to identify roles and responsibilities for configuration and deployment management and document in the Deployment plan.
B7.27	Establishing clear responsibilities and requirements for system testing, performance testing, and capacity planning.	M	Yes	Standard	Deloitte will work with the State to identify requirements, roles and responsibilities for system testing, performance testing, and capacity planning and document in the Testing plan.
B7.28	Defining the service staging and promotion process.	M	Yes	Standard	This will be captured and documented in the Deployment Plan.
B7.29	Defining and implementing services registration procedures.	M	Yes	Standard	Our solution is capable of supporting web services and if appropriate Mulesoft may be utilized dependent on source system capabilities and usage of flat files and web services.
B7.30	Defining what information must be captured pertaining to a service.	M	Yes	Standard	Deloitte will facilitate design sessions with the state to define what information must be captured from a service. This will be documented as part of systems documentation.



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B7.31	Defining service provision and instrumentation requirements.	M	Yes	Standard	Our proposed solution leverages the service provision and instrumentation provided through Tableau and Informatica.
B7.32	Establishing signs off or approvals required to migrate a service into production.	M	Yes	Standard	The Agile Project Management includes protocols to establish sign-off or approval processes related to migrating a service into production. We recommend usage of the current Jira install to manage the process and audit trail.
B7.33	Contract management	M	Yes	Standard	We anticipate working with DHHS and DoIT collaboratively during the development of requirements and design specifications based on the Memorandum's of Understanding (MOU's) we anticipate DHHS developing for the source systems.
B7.34	Contract management precepts shall define the policies and processes that potential service consumers use to obtain permission to access a service. The proposed DAP governance solution may extend the existing provisioning governance system if suitable, or build a new one as appropriate. The Vendor must design and implement precepts in the following areas:	M	Yes	Standard	See below
B7.35	Ensuring that new consumers do not crash the system through use, operation or load.	M	Yes	Standard	Deloitte's Testing plan will include load and performance testing based on the users expected to access the system and we will work with DoIT to establish safeguards in the Oracle database to protect against over usage.



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B7.36	Establishing the procedures for requesting permission to use a service.	M	Yes	Standard	Deloitte will work with the State to establish Systems Interface Plan with procedures for requesting permission to use a service. Service Level Agreements will be established for services as part of the initial and future implementations.
B7.37	Identifying required information to request permission to use a service.	M	Yes	Standard	Deloitte's Systems Interface Plan will identify the required information to request permission to use a service including but not limited to frequency of access, load, data extracted, service level agreements, and support standard.
B7.38	Establishing an impact analysis to be performed before granting permission to new consumers.	M	Yes	Standard	Deloitte will work with the State to identify the type of analysis required before granting access.
B7.39	Determining appropriate sign offs or approvals to granting permissions to access the system.	M	Yes	Standard	Deloitte will work with the State to establish a formal approval process for internal and external user access to the system. These approvals will be documented for audit purposes. Access requests are probably best managed through the DoIT ticket system. Note: We advocate using Jira for application specific issues (defects, change requests, etc.) and DoIT system for infrastructure, user access, and outages with final distribution of usage to be jointly agreed upon by DoIT and DHHS.



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State Requirements			Vendor		
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B7.40	Establishing a framework to negotiate service level agreements (SLAs) for use of the system.	M	Yes	Standard	The data governance framework will be utilized to establish a framework to negotiate service level agreements for use of the system.
B7.41	Defining and implementing SLAs be reported and enforced.	M	Yes	Standard	The plan will define a process for implementation of established SLAs.
B7.42	Establishing processes to address modifications or additional resources that may be required to support the SLAs.	M	Yes	Standard	We will collaborate with DHHS and DoIT to establish processes including but not limited to Service enhancements and additional resources required to support the SLAs across the entities responsible for system components and services.
B7.43	Defining appropriate testing practices and procedures that are required before a new consumer can be provisioned.	M	Yes	Standard	Deloitte will establish a framework for the different types of users including but not limited to users who can publish, interact with, or only view published content, or who can manage the site's users and administer the site itself. These different user roles will be tested for appropriate access by setting up test users with the respective roles.
B7.44	Establishing a process to provision new consumers	M	Yes	Standard	Deloitte will establish a framework with different levels of user access, after working with the state, and establish a process to get them the appropriate access.
B7.45	Service monitoring and control	M	Yes	Standard	Please see B7.46 below.



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B7.46	Service monitoring and control precepts must be designed and implemented in such a manner as to define responsibilities for issues related to operating a service. The Vendor may build on and extend or develop new service management and operations governance by defining and implementing precepts that address the following:	M	Yes	Standard	Through our deployment experience working with similar States, we recognize the amplified level of complexity associated with integrating data from multiple source systems outside of the sponsors direct domain. Our service monitoring controls and establish protocols for management of the enterprise including source and subscribing systems.
B7.47	Establishing controls and reporting to ensure that services behave as expected.	M	Yes	Standard	Deloitte will leverage existing control to monitor services and/ or generate error log/ exception reporting to monitor the services.
B7.48	Defining instrumentation and reporting to track service consumption and utilization.	M	Yes	Standard	The majority of consumption will be completed through Tableau which has audit logging to track consumption complemented by the Oracle database logs and potentially Google analytics for Web site monitoring. For Web services, either Informatica or Mulesoft would be utilized and provide for the required logging.
B7.49	Establishing methods and reporting procedures to detect, eliminate and prevent against unauthorized service access.	M	Yes	Standard	The usage of the States active directory will pull forward the strengths of DoIT authentication system. Additionally, the application logs could be consolidated into the States Qradar application for alert management.
B7.50	Create tracking and reporting for service SLA compliance and violations.	M	Yes	Standard	Deloitte will collaborate with DHHS and DoIT to develop reporting for SLA Compliance and violations.





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B7.51	Identification of notifications and escalation contacts and procedures for service issues and outages	M	Yes	Standard	The escalation procedures at part of our standard operations readiness planning and include protocols not only for the EB/DAP, but also for integrated source systems with redundant call/escalation tree logic. Service outages would be reported through the DoIT ticket tracking system.
B7.52	Service monitoring and control capabilities must be built into the DAP runtime infrastructure. DAP governance standards must define where and how to use, report on and enhance SLAs.	M	Yes	Standard	On our enterprise data warehouse projects, we work with our clients doing similar work to determine which metrics are to be monitored and what tooling exists to support those measurements. We will collaborate with DoIT and DHHS to do the same for the DAP project.
B7.53	Incident management	M	Yes	Standard	In addition to setting incident management standards and processes, we recommend integrating incident control with the DoIT maintained ticketing system to track incidents and responsible parties.
B7.54	Incident management precepts shall define and implement responsibilities for monitoring and managing problems and issues that arise during the operation of the service. The Vendor must build on and extend or develop new incident management governance by implementing precepts that cover the following (at a minimum):	M	Yes	Standard	We propose extending the DoIT ticketing system and working with DoIT to develop a response structure that assists in identifying the pertinent parties for issue resolution based on roles (e.g. Oracle DBA, Tableau specialists, source system owner, etc.) based on symptoms for sustainable operations.
B7.55	Design and implementation of processes and procedures to manage incidents and failures	M	Yes	Standard	We recommend integrating incident control with the DoIT maintained ticketing system to track incidents and responsible parties and will work



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					with DHHS and DoIT to establish the protocols for the supporting entities.
B7.56	Definition/Identification of responsibilities for end-to-end service exception and fault tracking	M	Yes	Standard	The system design and operational readiness will define the logging, fault and exception functions that support the DAP and the roles and responsibilities for monitoring and root cause identification and correction.
B7.57	Definition/Identification of responsibilities for end-to-end service error identification and resolution.	M	Yes	Standard	See above.
B7.58	Definition of the escalation path for SLA violations.	M	Yes	Standard	The escalation and notification process will be established for SLA standards, including the usage of tools (Jira/DoIT ticketing system) and protocol for elevating.
B7.59	Change management	M	Yes	Standard	Our change management methodology is defined in our response to topics 11 Project management, 20 Risk & Issue Management and 21 – Scope Control.



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B7.60	Change control management precepts shall define and implement responsibilities for managing system enhancement requests and service versioning. The Vendor must build on and extend or develop and implement new change management governance by defining precepts that cover (at a minimum):	M	Yes	Standard	Our change management methodology is defined in our response to topics 11 Project management, 20 Risk & Issue Management and 21 – Scope Control.
B7.61	Implement a process to manage change requests and to ensure that enhancements do not introduce defects in the system.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management processes and guidelines. A change control board consisting of State and Deloitte project management will evaluate potential changes and prioritize to future releases based on criticality of change. Changes will be tracked through the existing Jira instance, including the approval to migrate based on test results.
B7.62	Design and implement procedures for requesting service enhancements.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on the process for requesting service enhancements.
B7.63	Define what information is required when requesting a service enhancement.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on the information required while initiating a service enhancement including but not limited to scope and reason of change; effort estimate, criticality of enhancement, risk of not implementing the enhancement.



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B7.64	Design an impact analysis process to be performed before a service enhancement request is accepted.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on the impact analysis process.
B7.65	Define sign off or approval requirements for service enhancement requests.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management Plan with details on sign-off or approval requirements for service enhancement requests. We recommend using Jira to track approvals and to provide the audit trail.
B7.66	Define roles, responsibilities and sequence of events pertaining to the implementation of an enhancement.	M	Yes	Standard	The Change Management plan will include steps after a service enhancement is approved by the Change Control Board and a future release version is identified.
B7.67	Develop guidelines to assist the State in paying for or funding an enhancement.	M	Yes	Standard	Prioritization and funding is based on numerous variables including important, complexity, funding source, human capital, dependent entities and other similar factors. We will work DHHS to assist in understanding the factors as well implications for larger scale projects which may qualify for enhanced federal funding.
B7.68	Define recommended methods and a process for addressing enhancement requests associated with regulatory requirements.	M	Yes	Standard	This will also be addressed via the Change management process and the Change Control Board while managing overall scope and timelines of the implementation. In addition, Deloitte has a national HHS practice that tracks market activities and can assist in multi-state collaboration.



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B7.69	Define methods to enable service versioning and version control/migration.	M	Yes	Standard	Versioning will be controlled using GitHub to complement the inherent controls of the stack components.
B7.70	Establish guidelines on how long should a previous version(s) of the service be maintained and subsequently retired.	M	Yes	Standard	Deloitte will work with the State to establish retention/ archive rules versioning, in general we recommend retaining version history for audit control purposes and historical reference for similar future efforts.
B7.71	Define what degree of service and system testing is required before deploying a service enhancement.	M	Yes	Standard	Deloitte will work with the state to review test coverage plan and identify exit criteria for testing of service enhancements. This will be documented in the Testing plan.
B7.72	Establish leading practices to mitigate current consumer disruption when deploying an enhancement.	M	Yes	Standard	Deloitte will work with the state to review industry standard practices to mitigate user disruption during deployments. This will be documented in the Deployment plan and is standard operating procedure.
B7.73	Develop procedures to notify consumers of the enhancement or changes to the system.	M	Yes	Standard	The Communication plan will capture procedures to notify consumers of the upcoming system enhancements, ideally leveraging existing communication controls like Jira and the DoIT ticketing system.
B7.74	Develop and implement processes to fall back to a system previous version upon discovery of a critical defect.	M	Yes	Standard	Deloitte will identify and document rollback plan/strategy to fallback to older system version upon no-go of a planned service enhancement.



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B7.75	Data Management	M	Yes	Standard	See below
B7.76	Design and Implementation of a data management strategy including data warehousing, data quality, and data integration capabilities. The strategy will incorporate current practices and the vendor will work with the current teams.	M	Yes	Standard	Deloitte's Data Governance Framework defines a data management strategy including but not limited to data warehousing, data quality and data integration capabilities.



2. APPLICATION -SOFTWARE

APPLICATION REQUIREMENTS					
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<b>GENERAL SPECIFICATIONS</b>					
A1.1	Ability to access data using open standards access protocol (please specify supported versions in the comments field).	M	Yes	Standard	Informatica support multiple open standards access protocols and will be used to satisfy this requirement. If required, Mulesoft could also be utilized for data integration and supports numerous open standards.
A1.2	Data is available in commonly used format over which no entity has exclusive control, with the exception of National or International standards. Data is not subject to any copyright, patent, trademark or other trade secret regulation.	M	Yes	Standard	Our proposed solution uses commonly adapted data standards and does not include proprietary data formats.
A1.3	Web-based compatible and in conformance with the following W3C standards: HTML5, CSS 2.1, XML 1.1	M	Yes	Standard	The navigation application and Tableau will both be compatible with W3C standards: HTML5, CSS 2.1, XML 1.1 standard and we will use SortSite to validate the navigation application.
<b>APPLICATION SECURITY</b>					
A2.1	Verify the identity or authenticate all of the system client applications before allowing use of the system to prevent access to inappropriate or confidential data or services.	M	Yes	Standard	Deloitte will work with the State to determine and develop security protocols for the application leveraging The DoIT active directly and FTP services standards.



APPLICATION REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
A2.2	Verify the identity and authenticate all of the system's human users before allowing them to use its capabilities to prevent access to inappropriate or confidential data or services.	M	Yes	Standard	Deloitte will work with the state to determine and configure appropriate levels of user profiling and corresponding system access. Deloitte will only provide user access once the State has provided formal approval and will authenticate using the DoIT activate directory.
A2.3	Enforce unique user names for internal facing solution	M	Yes	Standard	User names and profile access will be unique for the internal-facing solution using the existing active directory structure to minimize the security risks associated with duplicate user names.
A2.4	Enforce complex passwords for Administrator Accounts in accordance with DoIT's statewide <i>User Account and Password Policy</i>	M	Yes	Standard	Deloitte will enforce complex passwords for Administrator accounts, and remain in accordance with DoIT's statewide policies, as displayed by Deloitte's current compliance with DoIT standards by using the DoIT active directory capability in our system.
A2.5	Enforce the use of complex passwords for general users using capital letters, numbers and special characters in accordance with DoIT's statewide User Account and Password Policy.	M	Yes	Standard	Deloitte will enforce complex passwords for general user accounts, and remain in accordance with DoIT's statewide policies, as displayed by Deloitte's current compliance with DoIT standards through usage of the States activity directory solution.





APPLICATION REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
A2.6	Encrypt passwords in transmission and at rest within the database.	M	Yes	Standard	Passwords will be encrypted through usage of the DoIT active directory which protects in transmission and at rest within the database.
A2.7	Establish ability to expire passwords after a definite period of time in accordance with DoIT's statewide User Account and Password Policy	M	Yes	Standard	Deloitte will establish the ability to expire passwords in accordance with DoIT's statewide policy, as displayed by Deloitte's current compliance with DoIT standards.
A2.8	Provide the ability to limit the number of people that can grant or change authorizations	M	Yes	Standard	Deloitte will work with the State to determine the number of people requiring the ability to grant or change authorization and develop user permission roles accordingly.
A2.9	Establish ability to enforce session timeouts during periods of inactivity.	M	Yes	Standard	Deloitte will work with the State to determine applicable inactivity periods and will incorporate session timeouts into the application which is configurable through Tableau and Informatica as well as Oracle.
A2.10	The application shall not store authentication credentials or sensitive data in its code.	M	Yes	Standard	The application will not store authentication credentials or sensitive data in code.
A2.11	Log all attempted accesses that fail identification, authentication and authorization requirements.	M	Yes	Standard	Failed access attempts will be logged in the States active directory which is integrated with QRadar.



APPLICATION REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
A2.12	The application shall log all activities to a central server to prevent parties to application transactions from denying that they have taken place.	M	Yes	Standard	Natively, the tableau, informatica and Oracle databases will log data access. Those logs can be aggregated into the States existing QRadar instance for application management.
A2.13	All logs must be kept for (6 months)	M	Yes	Standard	Deloitte will work with the State to determine archive and purge requirements for system security data and logs which is configurable through Tableau and Informatica for their respective logs as well as Qradar if utilized.
A2.14	The application must allow a human user to explicitly terminate a session. No remnants of the prior session should then remain.	M	Yes	Standard	Tableau will allow a user to end (exit) or logout from a session which will then be terminated.
A2.15	N/A	M	N/A	N/A	N/A
A2.16	The application Data shall be protected from unauthorized use when at rest	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments which encrypts data rest in the Oracle database.
A2.17	The application shall keep any sensitive Data or communications private from unauthorized individuals and programs.	M	Yes	Standard	Deloitte will work with the state to determine and implement user access roles and permission levels, to keep sensitive data and communications private from unauthorized individuals and programs.



APPLICATION REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
A2.18	Subsequent application enhancements or upgrades shall not remove or degrade security requirements	M	Yes	Standard	In the event of future application enhancements or upgrades, Deloitte will work with the State to determine any corresponding security enhancements or upgrades without degrading or removing security features already in place. We recommend the Jira workflow be established to include a security validation task for enhancements and upgrades.
A2.19	Use change management documentation and procedures	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management processes and guidelines.
A2.20	Web Services : The service provider shall use Web services exclusively to interface with the State's data in near real time when possible.	M	Yes	Standard	Informatica can support web services with a plug-in and in addition, the State has the option of leveraging the existing Mulesoft enterprise platform for web services integration. We will work with DHHS to evaluate each interface the source system options for data integration and timing to minimize data latency.



**3. TESTING**

<b>TESTING</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
<b>APPLICATION SECURITY TESTING</b>					
T1.1	All components of the Software shall be reviewed and tested to ensure they protect the State's Web site and its related Data assets.	M	Yes	Standard	An application vulnerability scan will be completed to validate compliance with industry benchmarks.
T1.2	The Vendor shall be responsible for providing documentation of security testing, as appropriate. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability.	M	Yes	Standard	Both application vulnerability and penetration testing will be completed to complement the user control and permissions established through re-use of existing infrastructure.
T1.3	Provide evidence that supports the fact that Identification and Authentication testing has been recently accomplished; supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users	M	Yes	Standard	As part of the Testing Plan we will work with DoIT to validate logging for active directory.
T1.4	Test for Access Control; supports the management of permissions for logging onto a computer or network	M	Yes	Standard	The Testing Plan will include checks for all user permission roles and access controls established.
T1.5	Test for encryption; supports the encoding of data for security purposes, and for the ability to access the data in a decrypted format from required tools.	M	Yes	Standard	Encryption will be managed through the server platform, Oracle database, Tableau FTP server, and Informatica/Mulesoft which are being extended for this project.



TESTING					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
T1.6	Test the Intrusion Detection; supports the detection of illegal entrance into a computer system	M	Yes	Standard	The Intrusion Detection using penetration testing will be integrated by default with the broader DoIT testing for access to the on-premise infrastructure. We will also perform application penetration testing for the DAP using Metasploit.
T1.7	Test the Verification feature; supports the confirmation of authority to enter a computer system, application or network	M	Yes	Standard	The proposed solution will use the State's active directory which is tested and validated.
T1.8	Test the User Management feature; supports the administration of computer, application and network accounts within an organization.	M	Yes	Standard	Accounts will be managed using the DoIT active directory which will be validated through the test plan.
T1.9	Test Role/Privilege Management; supports the granting of abilities to users or groups of users of a computer, application or network	M	Yes	Standard	The Testing Plan will verify successful implementation of user access roles as determined by the State and implemented through Tableau for end users with complementary security through Oracle.
T1.10	Test Audit Trail Capture and Analysis; supports the identification and monitoring of activities within an application or system	M	Yes	Standard	The Testing Plan will include verification of Audit Trail Capture and Analysis capabilities.
T1.11	Test Input Validation; ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.	M	Yes	Standard	The Testing Plan will include application vulnerability management scanning against the application prior to go live using HP Fortify for code scanning and penetration test using Metasploit.



<b>TESTING</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
T.1.1 2	For web applications, ensure the application has been tested and hardened to prevent critical application security flaws. ( At a minimum, the application shall be tested against all flaws outlined in the Open Web Application Security Project (OWASP) Top Ten ( <a href="http://www.owasp.org/index.php/OWASP_Top_Ten_Project">http://www.owasp.org/index.php/OWASP_Top_Ten_Project</a> ))	M	Yes	Standard	The Web-based portion(s) of the application, as applicable, will be tested and prevent security flaws using HP Fortify for code scanning and penetration test using Metasploit.
T1.13	Provide the State with validation of 3rd party security reviews performed on the application and system environment. The review may include a combination of vulnerability scanning, penetration testing, static analysis of the source code, and expert code review (please specify proposed methodology in the comments field).	M	Yes	Standard	Deloitte's Advisory unit has performed 3 <sup>rd</sup> party validation for New Hampshire as approved by CMS and would perform the penetration and application vulnerability scans.
T1.14	Prior to the System being moved into production, the Vendor shall provide results of all security testing to the Department of Information Technology for review and acceptance.	M	Yes	Standard	The Testing Plan will include validations performed in multiple test regions prior to Production, and security testing results will be provided to the DoIT prior to production.
T1.15	Vendor shall provide documented procedure for migrating application modifications from the User Acceptance Test Environment to the Production Environment.	M	Yes	Standard	Deloitte will work with the State to establish protocols and procedures for the migration of application components from UAT environments to Production. We recommend approvals be captured using Jira for control and audit trail.
<b>STANDARD TESTING</b>					



TESTING					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
T2.1	The Vendor must test the software and the system using an industry standard and State approved testing methodology.	M	Yes	Standard	Deloitte's Testing Team will work with State resources to develop a Testing Plan in accordance with industry standards.
T2.2	The Vendor must perform application stress testing and tuning.	M	Yes	Standard	The Testing Plan will include stress testing and tuning on all application components as well as full volume "mock go live" testing.
T2.3	The Vendor must provide documented procedure for how to sync Production with a specific testing environment.	M	Yes	Standard	The configuration management plan will provide procedures for migrating changes through test environments into production.
T2.4	The vendor must define and test disaster recovery procedures.	M	Yes	Standard	Deloitte will work with the State to extend existing protocols for disaster recovery from the current EBI and assist with testing in collaboration with DoIT.



**4. HOSTING-CLOUD REQUIREMENTS**

HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>OPERATIONS</b>					
H1.1	Vendor shall provide an ANSI/TIA-942 Tier 3 Data Center or equivalent. A tier 3 data center requires 1) Multiple independent distribution paths serving the IT equipment, 2) All IT equipment must be dual-powered and fully compatible with the topology of a site's architecture and 3) Concurrently maintainable site infrastructure with expected availability of 99.982%	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments for PI and PHI and us such inherits the protections of the States data center.</p> <p>The Google platform is Fedramp certified and will only be used for de-identified data provided by Google from there digital search repository and if agreeable with the State a de-identified extract of the all payor claims database.</p> <p>The Google Cloud Platform has a 99.95% SLA, Google BigQuery Service, and the standard storage class of Google Cloud Storage have a 99.9% SLA except for the Durable Reduced Availability Storage class of Google Cloud Storage which has a 99% SLA.</p>
H1.2	Vendor shall maintain a secure hosting environment providing all necessary hardware, software, and Internet bandwidth to manage the application and support users with permission based logins.	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments. The data sourced from Google will be de-identified and will imported into the DAP consistent with other input data sources for end user access from the on-premise DAP.</p>
H1.3	The Data Center must be physically secured – restricted access to the site to personnel with controls such as biometric, badge, and others security solutions.	M	Yes	Standard	<p>Deloitte's proposed solution leverages the State's existing environments and physical controls.</p>





<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
	Policies for granting access must be in place and followed. Access shall only be granted to those with a need to perform tasks in the Data Center.				
H1.4	Vendor shall install and update all server patches, updates, and other utilities within 60 days of release from the manufacturer.	M	Yes	Standard	Deloitte will provide the mentioned system maintenance as it remains in accordance with the Vendor contract in cooperation with DoIT (e.g. Oracle).
H1.5	Vendor shall monitor System, security, and application logs.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments. Deloitte will monitor logs as part of system maintenance and support activities included within the scope of the contract.
H1.6	Vendor shall manage the sharing of data resources.	M	Yes	Standard	Deloitte will work with the State to determine policies surrounding data resource sharing and implement/follow the determined protocols.
H1.7	Vendor shall manage daily backups, off-site data storage, and restore operations.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments. Daily back-ups, off-site data storage, and restore operations will all be managed and documented in the Deployment Plan. The Google platform will not serve as the primary source of data which would require backup, although the platform is backed up as a GCP standard.



<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
H1.8	The Vendor shall monitor physical hardware.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and DoIT monitors physical hardware.
H1.9	Remote access shall be customized to the State's business application. In instances where the State requires access to the application or server resources not in the DMZ, the Vendor shall provide remote desktop connection to the server through secure protocols such as a Virtual Private Network (VPN).	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and VPN network as required.
H1.10	The Vendor shall report any breach in security in conformance with State of NH RSA 359-C:20. Any person engaged in trade or commerce that is subject to RSA 358-A:3, I shall also notify the regulator which has primary regulatory authority over such trade or commerce. All other persons shall notify the New Hampshire attorney general's office.	M	Yes	Standard	Any breaches in security will be reported to the designated DAP security lead for DHHS.

**DISASTER RECOVERY**



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H2.1	Vendor shall have documented disaster recovery plans that address the recovery of lost State data as well as their own. Systems shall be architected to meet the defined recovery needs.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and supporting disaster recovery plans which will be extended to support this project. Our teaming partner Google's disaster recovery plans can be found here: <a href="https://cloud.google.com/solutions/dr-scenarios-for-data">https://cloud.google.com/solutions/dr-scenarios-for-data</a> . However, the GCP is a source system and will not be a primary data store for DHHS's defined source data.
H2.2	The disaster recovery plan shall identify appropriate methods for procuring additional hardware in the event of a component failure. In most instances, systems shall offer a level of redundancy so the loss of a drive or power supply will not be sufficient to terminate services however, these failed components will have to be replaced.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and we do not anticipate the acquisition of additional hardware unless DHHS/DoIT elect to modify the current disaster recovery plan which does not include a hot site.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H2.3	Vendor shall adhere to a defined and documented back-up schedule and procedure.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing proposed solution. The Deployment Plan will document all back-up schedules will be jointly developed with DoIT.  Google Cloud Platform has a 99.95% SLA, Google BigQuery Service, and the standard storage class of Google Cloud Storage have a 99.9% SLA except for the Durable Reduced Availability Storage class of Google Cloud Storage which has a 99% SLA.
H2.4	Back-up copies of data are made for the purpose of facilitating a restore of the data in the event of data loss or System failure.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments, including backup copies in cooperation with DoIT.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H2.5	Scheduled backups of all servers must be completed regularly. The minimum acceptable frequency is differential backup daily, and complete backup weekly.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments. The Deployment Plan will detail all scheduled server back-ups, which will at minimum occur daily for differential backup and weekly for complete backup.as jointly agreed upon by DoIT.
H2.6	Tapes or other back-up media tapes must be securely transferred from the site to another secure location to avoid complete data loss with the loss of a facility.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and back-up media and storage.



<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
H2.7	Data recovery – In the event that recovery back to the last backup is not sufficient to recover State Data, the Vendor shall employ the use of database logs in addition to backup media in the restoration of the database(s) to afford a much closer to real-time recovery. To do this, logs must be moved off the volume containing the database with a frequency to match the business needs.	M	Yes	Standard	Deloitte will work with the State to determine the frequency with which logs are moved to maintain the ability to perform near real-time recovery. Working with DoIT, we would have the option of recovering from the database logs. Because we use a staging area to maintain the EBI/DAP platform we would have the option of recovering from the staging areas if required.
<b>HOSTING SECURITY</b>					
H3.1	The Vendor shall employ security measures ensure that the State's application and data is protected and how the system will meet all Federal and State requirements currently in law and rules protecting sensitive personal health information, as outlined in the Health Insurance Portability and Accountability Act (HIPAA) and the more stringent Title 42 Code of Federal Regulations (CFR) Part 2:	M	Yes	Standard	Deloitte will work with the State, and the Data Governance Plan will document all standards for data management, usage, and protection in the application and tangential systems based on our extensive experience supporting the security requirements for PI/PHI across numerous State clients, including New Hampshire.  Our teaming partner Google's security approach can be found here: <a href="https://cloud.google.com/security/compliance/hipaa/">https://cloud.google.com/security/compliance/hipaa/</a> . However, we will not store PHI or PI on the GCP.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
	(Confidentiality of Substance Use Disorder Patient Records regulation), as outlined by the Federal Substance Abuse Mental Health Services Administration (SAMHSA) and the Office of the National Coordinator for Health Information Technology (ONC)				
H3.2	If State data is hosted on multiple servers, data exchanges between and among servers must be encrypted.	M	Yes	Standard	The hosting will be contained on the on-premise DoIT platform with augmented data/capacity on the GCP which will be de-identified and encrypted.  Our teaming partner Google's encryption policies can be found here: <a href="https://cloud.google.com/kms/docs/encrypt-decrypt">https://cloud.google.com/kms/docs/encrypt-decrypt</a>
H3.3	All servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a whole, shall have aggressive intrusion-detection and firewall protection.	M	Yes	Standard	Deloitte will work with the State to leverage the existing DoIT infrastructure and to support version management for the application components introduced through the DAP.  Our teaming partner Google's compatibility protocols can be found here: <a href="https://cloud.google.com/blog/products/gcp/exploring-container-security-running-a-tight-ship-with-kubernetes-engine-1-10">https://cloud.google.com/blog/products/gcp/exploring-container-security-running-a-tight-ship-with-kubernetes-engine-1-10</a>



<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
H3.4	All components of the infrastructure shall be reviewed and tested to ensure they protect the State’s hardware, software, and its related data assets. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide confidentiality, integrity and availability.	M	Yes	Standard	The Testing Plan will include verification of the new infrastructure components and will extend the current controls in place for the EBI components being leveraged.
H3.5	The Vendor shall ensure its complete cooperation with the State’s Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure.	M	Yes	Standard	In the event of security vulnerability, Deloitte will cooperate and collaborate with the State’s Chief Information Officer and all other related parties as it relates to our scope of work and responsibilities.
H3.6	The Vendor shall authorize the State to perform scheduled and random security audits, including vulnerability assessments, of the Vendor’ hosting infrastructure and/or the application upon request.	M	Yes	Standard	Deloitte will work with the State to provide support and/or access to complete security audits and vulnerability assessments.





<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
H3.7	All servers and devices must have event logging enabled. Logs must be protected with access limited to only authorized administrators. Logs shall include System, Application, Web and Database logs.	M	Yes	Standard	Event logging will be enabled on all servers and devices. Deloitte will work with DHHS and DoIT to determine the user access roles that will have access to these logs, including Tableau and Informatica and with DoIT in specific for Oracle and active directory logging.
H3.8	Operating Systems (OS) and Databases (DB) shall be built and hardend in accordance with guidelines set forth by CIS, NIST or NSA	M	Yes	Standard	Both Operating Systems and Databases will extend the current Oracle platform supported and based on DoIT standards.
H3.9	The Vendor shall notify the State's Project Manager of any security breaches within two (2) hours of the time that the Vendor learns of their occurrence.	M	Yes	Standard	Deloitte will notify the State's Project Manager within the specified timeline of security breaches.
H3.10	The Vendor shall be solely liable for costs associated with any breach of State data housed at their location(s) including but not limited to notification and any damages assessed by the courts.	M	Yes	Standard	Deloitte will be fully responsible for the costs incurred as a direct result of any breaches we cause, per the terms of the mutually agreeable contract for any breach of State data housed at our location.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H3.11	The cloud services if used will be FEDRAMP compliant	M	Yes	Standard	Our team partner Google's Cloud Platform is FEDRAMP Moderate, and will likely be FEDRAMP High by January 2019. The Informatica layer is FEDRAMP High will be used to lower information security layer needed before transfer to GCP. Additionally, only de-identified data will be housed on the GCP.
SERVICE LEVEL AGREEMENT					
H4.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M	Yes	Standard	Support and maintenance of the system will commence upon the effective date and extend through the end of the contract and any extensions thereof in accordance with the contract.
H4.2	The vendor shall maintain the hardware and Software in accordance with the specifications, terms, and requirements of the Contract, including providing, upgrades and fixes as required.	M	Yes	Standard	Deloitte will maintain the applicable software and hardware within the terms set forth in the Contract based on defined responsibilities shared between the vendor, DoIT and DHHS (e.g. DoIT maintains the EBI platform and network being leveraged as part of the DAP project.).
H4.3	The vendor shall repair or replace the hardware or software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M	Yes	Standard	The proposed solution utilizes hardware and software acquired by the State. We will collaborate with the State to support upgrades and execution of maintenance support agreements within the terms set forth in the Contract.



<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
H4.4	All hardware and software components of the Vendor hosting infrastructure shall be fully supported by their respective manufacturers at all times. All critical patches for operating systems, databases, web services, etc, shall be applied within sixty (60) days of release by their respective manufacturers.		Yes	Standard	The proposed solution utilizes hardware and software acquired by the State. We will collaborate with the State to support upgrades and execution of maintenance support agreements within the terms set forth in the Contract. The Google Cloud Platform (GCP) will be maintained by Google as a service.
H4.5	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST;	M	Yes	Standard	Deloitte technical support staff will be available to the Vendor through phone or email between the hours of 8:30am and 5:00pm EST Monday through Friday.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H4.6	<p>The Vendor shall conform to the specific deficiency class as described:</p> <ul style="list-style-type: none"> <li>o Class A Deficiency – Software – Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation – missing significant portions of information or unintelligible to State; Non Software – Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency – Software – important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation – portions of information are missing but not enough to make the document unintelligible; Non Software – Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency – Software – minimal, cosmetic</li> </ul>	M	Yes	Standard	Deloitte will conform to the specified deficiency classes when assessing potential solution defects.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
	in nature, minimal effect on System, low priority and/or user can use System; Written Documentation – minimal changes required and of minor editing nature; Non Software – Services require only minor reworking and do not require re-performance of the Service.				



<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
H4.7	As part of the maintenance agreement, ongoing support issues shall be responded to according to the following: a. Class A Deficiencies – The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email/telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request; b. Class B & C Deficiencies – The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and	M	Yes	Standard	Deloitte will work with the State resources to provide maintenance of ongoing support issues per the terms of the contract.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
	Requirements of the Contract;				
H4.8	The hosting server for the State shall be available twenty-four (24) hours a day, 7 days a week except for during scheduled maintenance.	M	Yes	Standard	Deloitte will work with the State and DoIT to provide 24/7 access to the hosting server, except for scheduled maintenance windows.
H4.9	A regularly scheduled maintenance window shall be identified (such as weekly, monthly, or quarterly) at which time all relevant server patches and application upgrades shall be applied.	M	Yes	Standard	Deloitte will work with the State to determine scheduled maintenance windows and use the determined windows for server patches and application upgrades in conjunction with DoIT.



HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
H4.10	If The Vendor is unable to meet the uptime requirement, The Vendor shall credit State's account in an amount based upon the following formula: (Total Contract Item Price/365) x Number of Days Contract Item Not Provided. The State must request this credit in writing.	M	Yes	Standard	In the event of a failure to meet a mutually agreed uptime requirement and where Deloitte is determined to be solely at fault, Deloitte will provide the State with credit in accordance with a mutually agreed credit formula which can be similar to the described requirement. However, we would like to clarify the baseline cost upon which the credit would be calculated, agree to a reasonable cap on the credit per month, and a grace period after go live where credits would not apply. Additionally, we would like to propose that the uptime requirement be calculated based on a monthly average achievement.
H4.11	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management processes and guidelines, including those related to notification and tracking of change requests. We recommend using the existing Jira instance for change requests and the DoIT ticketing system for critical outages consistent with State standards.
H4.12	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M	Yes	Standard	Deloitte will adhere to the stated definition of a critical outage and will work with the State to identify action plans in accordance with the protocols mentioned above.
H4.13	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: Server up-time; All change requests implemented, including operating system	M	Yes	Standard	Deloitte will work with the State to determine a tracking methodology for repair/maintenance-related activities and will provide the State with quarterly reports on the requested metrics, including incidents tracked through the DoIT ticketing system for infrastructure maintenance and Jira for application defect tracking.





<b>HOSTING-CLOUD REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
	patches; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.				
H4.14	The Vendor will give two-business days prior notification to the State Project Manager of all changes/updates and provide the State with training due to the upgrades and changes.	M	Yes	Standard	Deloitte will provide the State with notification of two business days for all changes and updates and provide the State with training that results from the changes and updates.



**5. SUPPORT & MAINTENANCE**

<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
S1.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M	Yes	Standard	Support and maintenance for the system will commence on the Effective Date and extend through the end of the Contract term and any extensions thereof.
S1.2	Maintain the hardware and Software in accordance with the Specifications, terms, and requirements of the Contract, including providing, upgrades and fixes as required.	M	Yes	Standard	Hardware and software components of the application will be maintained in accordance with the Contract in cooperation with DoIT.
S1.3	Repair Software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M	Yes	Standard	In the event of repairs being necessitated, Deloitte will repair software components in accordance with the Contract specifications and responsibilities.
S1.4	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST;	M	Yes	Standard	Deloitte's technical support staff will be available to the Vendor through phone or email between the hours of 8:30am and 5:00pm EST Monday through Friday.



SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.5	The Vendor response time for support shall conform to the specific deficiency class as described below or as agreed to by the parties: o Class A Deficiency – Software – Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation – missing significant portions of information or unintelligible to State; Non Software – Services were inadequate and require re-performance of the Service. o Class B Deficiency – Software – important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation – portions of information are missing but not enough to make the document unintelligible; Non Software – Services were deficient, require reworking, but do not require re-performance of the Service. o Class C Deficiency – Software – minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation – minimal changes required and of minor editing nature; Non Software – Services require only minor reworking and do not require re-performance of the Service.	M			Response times for system deficiencies will align with the appropriate deficiency class as outlined.
S1.6	The Vendor shall make available to the State the latest program updates, general maintenance releases, selected functionality releases, patches, and Documentation that are generally offered to its customers, at no additional cost.	M	Yes	Standard	Program updates, general maintenance releases, and functionality releases/patches will be made available to the State as generally offered.



<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
S1.7	For all maintenance Services calls, The Vendor shall ensure the following information will be collected and maintained: 1) nature of the Deficiency; 2) current status of the Deficiency; 3) action plans, dates, and times; 4) expected and actual completion time; 5) Deficiency resolution information, 6) Resolved by, 7) Identifying number i.e. work order number; 8) Issue identified by;	P	Yes	Standard	The stated information will be collected, tracked, and maintained for all maintenance calls in Jira.
S1.8	The Vendor must work with the State to identify and troubleshoot potentially large-scale System failures or Deficiencies by collecting the following information: 1) mean time between reported Deficiencies with the Software; 2) diagnosis of the root cause of the problem; and 3) identification of repeat calls or repeat Software problems.	P	Yes	Standard	Deloitte will work with the State to identify and troubleshoot potential large-scale system failures. This process will include collection of the mentioned information and tracking in Jira for accumulation of prior issues and resolution for future use



<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
S1.9	As part of the Software maintenance agreement, ongoing software maintenance and support issues, shall be responded to according to the following or as agreed to by the parties: a. Class A Deficiencies – The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email/telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request; b. Class B & C Deficiencies –The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract; or as agreed between the parties	M	Yes	Standard	Ongoing software maintenance and support issues will be responded to in accordance with the defined deficiency classes or as agreed upon by the parties.
S1.10	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M	Yes	Standard	Deloitte's Agile Project Management Plan will include Change Management processes and guidelines, including those related to notification and tracking of change requests in Jira.
S1.11	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M	Yes	Standard	Deloitte will adhere to the stated definition of a critical outage and will work with the State to identify action plans in accordance with protocols mentioned above and visibility and tracking using the DoIT ticket tracking for incidents.



SUPPORT & MAINTENANCE REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
S1.12	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: All change requests implemented; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M	Yes	Standard	Deloitte will work with the State to track repair/maintenance-related activities and will provide the State with reports on the requested metrics, using the current Jira instance through on demand dashboards.
S1.13	The hosting server for the State shall be available twenty-four (24) hours a day, 7 days a week except for during scheduled maintenance.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and Deloitte will work with the State to align to this requirement.
S1.14	The Vendor will guide the State with possible solutions to resolve issues to maintain a fully functioning, hosted System.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and Deloitte will work with the State to align to this requirement.
S1.15	A regularly scheduled maintenance window shall be identified (such as weekly, monthly, or quarterly) at which time all relevant server patches and application upgrades shall be applied.	M	Yes	Standard	Working with the State Deloitte will define the required maintenance windows for the application, database, operating system and other similar components including regularly scheduled, upgrade, and as required maintenance.
S1.16	The Vendor will give two-business days prior notification to the State Project Manager of all changes/updates and provide the State with training due to the upgrades and changes.	M	Yes	Standard	Deloitte will meet this requirement by providing notification and knowledge transfer.



<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS</b>					
<b>State Requirements</b>			<b>Vendor</b>		
<b>Req #</b>	<b>Requirement Description</b>	<b>Criticality</b>	<b>Vendor Response</b>	<b>Delivery Method</b>	<b>Comments</b>
S1.17	All hardware and software components of the Vendor hosting infrastructure shall be fully supported by their respective manufacturers at all times. All critical patches for operating systems, databases, web services, etc, shall be applied within sixty (60) days of release by their respective manufacturers.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments and Deloitte will work with the State to align to this requirement.
S1.18	The Vendor shall provide the State with a personal secure FTP site to be used by the State for uploading and downloading files if applicable.	M	Yes	Standard	Deloitte's proposed solution leverages the State's existing environments including the secure FTP.



**6. PROJECT MANAGEMENT**

PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>PROJECT MANAGEMENT</b>					
P1.1	Vendor shall participate in an initial kick-off meeting to initiate the Project.	M	Yes	Standard	Deloitte's team will participate in an initial kick-off meeting for initiation of the project.
P1.2	Vendor shall provide Project Staff as specified in the RFP.	M	Yes	Standard	Deloitte's team will be comprised of individuals as specified in the RFP response.
P1.3	Vendor shall submit a finalized Work Plan within ten (10) days after Contract award and approval by Governor and Council. The Work Plan shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, critical events, task dependencies, and payment Schedule. The plan shall be updated no less than <i>&lt;every two weeks.&gt;</i>	M	Yes	Standard	Within the first ten days of contract award, Deloitte will update the project plan and maintain the project plan throughout the duration of the project.
P1.4	Vendor shall provide detailed <i>&lt;bi-weekly or monthly&gt;</i> status reports on the progress of the Project, which will include expenses incurred year to date.	M	Yes	Standard	Deloitte will provide the State with detailed status reports on an agreed upon schedule, including expenses incurred (milestones) in year to date fashion.
P1.5	All user, technical, and System Documentation as well as Project Schedules, plans, status reports, and correspondence must be maintained as project documentation. (Define how- WORD format- online, in a common library or on paper)	M	Yes	Standard	Documents will be maintained as project documentation. in a SharePoint repository for easy access and document version control.
P1.6	The selected vendor must define an integrated project management plan, which;		Yes	Standard	Deloitte will work with the State to develop an integrated project plan.





PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.7	Includes cost estimates for specific work to be performed,		Yes	Standard	Cost estimates will be submitted as part of the response to this RFP.
P1.8	Defines Department Training as a component of the implementation plan,		Yes	Standard	The Deployment Plan and Training Plan will document procedures surrounding Department Training.
P1.9	Clearly defines the approach and methodology to be used in each phase of the project,		Yes	Standard	Deloitte's Agile Project Management Plan clearly defines our approach and methodology for all phases of the project.
P1.10	Includes a discovery, detailed requirements and prioritization component phase of the project,		Yes	Standard	Deloitte's Agile Project Management Plan includes a phase for discovery, detailed requirements gathering, and prioritization.
P1.11	The Department has historically followed a waterfall approach to enacting changes. This is usually accomplished by having requirements meetings, followed by vendor design based on the requirements, with a development, unit test, integration test, system test and regression testing. Finally ending up with a migration to production and training and post-production review. With this RFP the goal will be to adjust to a more agile approach, allowing the organization to adapt and change as needed more efficiently and effectively in order to meet the business needs. The goals will be to provide a bi-weekly demonstration of work for review and planning for next		Yes	Standard	Deloitte's Agile Project Management Plan will allow for bi-weekly demonstrations of work for review and planning for next steps and we look forward to jointly deploying and supporting the transition to agile and will bring agile experts as part of our delivery team. We will also work with DHHS to structure the milestone exhibits and approach to align with the agile delivery model.



PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
	steps. The new process will be based on the following scope as a baseline to the strategy:				
P1.12	Team Formation: The Department in concert with the awarded vendor will identify the required team members for the duration of the product delivery. The team will consist of a product owner, scrum master, and other team members. There will be several teams based on the amount of features being worked on at any given time. Additionally, there will be operational teams to commit to and complete features associated with user stories and tasks to keep the system running as well as product enhancement teams to commit and complete features associated with user stories and tasks to meet the changes required by the business.		Yes	Standard	Deloitte has included a breakdown of the sprint activities and a Work Plan that define scope of activities included and will work with all State departments as appropriate within each sprint and phase of the project using the Agile team structure.  During the start-up of each sprint, we will work with DHHS and DoIT to identify the agile team members and rolls.
P1.13	Process: The awarded vendor will plan and implement a process similar to the following:		Yes	Standard	See below:



PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.14	Backlog Creation and refinement: The Product Owner working with team members and the business will create a prioritized backlog of work in the form of high level features. This will be an on-going process that must be completed prior to each Sprint Planning Meeting. Additionally, the Product Owner(s) will breakdown the features into prioritized user stories related to the originating features for use in the Sprint Planning meeting.		Yes	Standard	Deloitte's Project Management Plan includes creation and continuous refinement of a backlog that will be used in the Sprint Planning meetings to be recorded in Jira.
P1.15	Sprint Planning Meeting: This meeting will minimally consist of all team members facilitated by the Scrum Master and will be focused on clarifying the details of the prioritized backlog items, re-prioritizing as needed and obtaining commitment from the team to complete user stories from the backlog in the proposed sprint not to exceed 4 weeks with a preferred cadence of 2 weeks. Additionally the team will then create detailed tasks and commit to the items individually. The commitments will be managed using a KanBan tool to be provided by the vendor and agreed to by both parties for the teams use throughout the contract period.		Yes	Standard	Deloitte's Agile Project Management Plan includes usage of Sprint Planning meetings as described and using the Agile KanBan or Scrum process as jointly agreed upon, which can also be facilitated through Jira.
P1.16	Sprint: The sprint will consist of daily standup meetings (not to exceed 10 minutes) to discuss roadblocks, any clarification needs associated with work accomplished the previous day or planned for the current day, or other important items to the team. The team will work in concert with each other preferably within the same location and will require a meeting room provided by the awarded vendor for impromptu meetings to move tasks forward.		Yes	Standard	Deloitte's Agile Project Management Plan utilizes daily standup meetings throughout each project sprint.



PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.17	Sprint Review Meeting: Demonstrate working product associated with commitments from the sprint planning meeting. Communicate items to focus on in the next sprint.		Yes	Standard	Deloitte's Agile Project Management Plan includes Sprint Review Meetings to demonstrate and assess product progress and commit to future sprint items using the prioritized backlog.
P1.18	Daily Meeting: Consist of the team members that have committed to completing tasks in the sprint and will be no longer than 10 minutes answering the following questions:		Yes	Standard	Deloitte's Agile Project Management Plan includes Daily Meetings that function as the standup meetings mentioned above.
P1.19	What did I complete yesterday?		Yes	Standard	Daily scrum meetings will address work completed the prior day.
P1.20	What am I doing today?		Yes	Standard	Daily scrum meetings will address work planned for the day.
P1.21	Are there any roadblocks keeping me from completing my commitments?		Yes	Standard	Daily scrum meetings will address blockers.
P1.22	Develop and obtain buy-in for a stakeholder and communication management plan and work with the Department to craft appropriate communication messages throughout the project		Yes	Standard	Deloitte will work with the State to develop a stakeholder and communication management plan.
P1.23	Conduct organizational assessments and gap analyses for the affected divisions and programs and facilitate the development of appropriate organizational structures and job descriptions		Yes	Standard	Deloitte will work with the State to identify and organizational gaps required to meet the project objectives.
P1.24	Work with the Department to define business processes, including use cases, workflows, and business rules		Yes	Standard	Deloitte will work with the State to develop use cases, workflows, and business rules required to deliver the project.



PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
P1.25	The project must use agile-like software development principles and practices		Yes	Standard	Deloitte meets this requirement.



## C-3 Deliverables

Reference	Activity, Deliverable, or Milestone	Deliverable Type	Projected Delivery Date
<b>PLANNING AND PROJECT MANAGEMENT</b>			
1	Conduct Project Kickoff Meeting	Non-Software	Feb 2019
2	Project Status Reports	Written	Feb 2019
3	Work Plan	Written	Feb 2019
4	Infrastructure Plan, including Software and Hardware requirements	Written	Feb 2019
5	Security Plan	Written	Feb 2019
6	Communications and Change Management Plan	Written	Feb 2019
7	Agile Project Management Plan	Written	Feb 2019
8	Systems Interface Plan and Design/Capability	Written	Mar 2019
9	Testing Plan	Written	Mar 2019
10	Data Conversion Plan and Design	Written	Feb 2019
11	Deployment Plan	Written	Jul 2019
12	Comprehensive Training Plan and Curriculum	Written	Apr 2019
13	End User Support Plan	Written	Jul 2019
14	Documentation of Operational Procedures	Written	Aug 2019
<b>INSTALLATION</b>			
15	Provide Software Licenses if needed	Written	N/A
16	Provide Fully Tested Data Conversion Software or solution	Software	N/A
17	Provide Software Installed, Configured, and Operational to Satisfy State Requirements	Software	Mar 2019
<b>TESTING</b>			
18	Conduct continuous integration and continuous delivery testing plan	Non-Software	Mar 2019



Reference	Activity, Deliverable, or Milestone	Deliverable Type	Projected Delivery Date
19	Perform Production Tests	Non-Software	Aug 2019
20	Test In-Bound and Out-Bound Interfaces	Software	Mar 2019
21	Conduct System Performance (Load/Stress) Testing	Non-Software	Jul 2019
22	Certification of 3 <sup>rd</sup> Party Pen Testing and Application Vulnerability Scanning	Non-Software	Jul 2019
23	Converted Data Loaded into Production Environment	Software	Aug 2019
24	Conduct Training	Non-Software	Jul 2019
25	Cutover to New Software and solution	Non-Software	Aug 2019
26	Provide Documentation	Written	Aug 2019
27	Execute Security Plan	Non-Software	Jul 2019
<b>OPERATIONS</b>			
28	Ongoing Hosting Support if applicable	Non-Software	N/A
29	Ongoing Support & Maintenance if applicable	Software	N/A
30	Conduct Project Exit Meeting	Non-Software	Aug 2019

*Figure III-C.3-6. Deliverables.*



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## Section IV: Narrative Responses

### Section IV: Narrative Responses

Section IV solicits narrative responses describing the Software, Technical, Services and Project Management topics defined for this RFP Project. Appendix D: Topics for Mandatory Narrative Responses is organized into sections, which correspond to the different deliverables and aspects of the scoring process of the Proposal. Discussion of each topic must begin on a new page.

### D-1. Proposed Software Solution

Deloitte understands the Department is seeking a scalable enterprise data analytics platform that serves as a comprehensive data repository across multiple source systems providing analytic capabilities that address the current opioid crisis and serve as the foundation to realize your goals to organize data into information, identify meaningful social applications, and develop realistic, fact-based, evidence-supported policies and programs. Our proposal leverages and extends your EBI environment to become the Data Analytics Platform (DAP), delivering the “single source of truth” and providing a scalable platform to rapidly integrate new data sources.



Deloitte’s solution delivers an integrated analytics platform that provides:

- Single source of truth
- Real time Insights
- Faster business value
- Predictive modeling capabilities
- Integrated visualizations

Deloitte proposes to bring value to the Department by implementing and operating the HHS Interactive Opioid Insights module that is purpose built for opioid analytics and will serve as the baseline solution for the Department’s Comprehensive Opioid Response Business Intelligence (CORbi). This module is comprised of several dynamic Tableau dashboards connected to data, including machine learning models processed and analyzed in R or Python. Opioid Insights offers multiple capabilities previewed in the executive summary and highlighted below:



Benchmark

Benchmark metrics for states and counties to track trends over time and create a customizable composite risk score based on more than 20 publicly accessible datasets. This score can be especially valuable when combined with New Hampshire’s datasets as input to various predictive machine learning models.



Indicators

Opioid-centric dashboards with drilldown capabilities provide visibility and trending for populations, demographics, drug management, network coverage, overdose, death, infant dependency, naloxone, and other similar indicators from multiple perspectives.





**Population Profile**

Population profiling offers multiple vantage points to understand the broader population behavior related to opioids mined from Google digital datasets, including:

- **Geographic Trending** – Aggregate “big picture” behavior trending by zip code.
- **Audience Profiling** – Search data joined with de-identified Google data (search predicates, demographics, location, device, etc.) provides insight into audience groups and behaviors related to opioids.
- **Nudging** – The nudge may likely be delivered as a Google.com advertisement (link) that would be displayed in response to the target search predicates.
- **At-Risk+** – Machine modeling combining Audience profile data and de-identified data from the All Payors Claims Database (APCD) to develop journey map insights.



**At Risk**

At risk machine learning outputs informed by our experience with federal, state, and private sector healthcare clients who share common goals with DHHS. Our models cover the spectrum from identification of risk to potential abuse to recovery.

Our solution addresses your technical and functional requirements and builds upon the existing EBI platform, extending the data model to incorporate eight new data sources identified for Phase 1 of this project. Opioid Insights delivers value and flexibility to address the rapidly changing health care environment, presenting accurate and timely data to support analysis and decision making for the Department’s opioid crisis management processes and establishes a foundation that is critical to driving and achieving the Department’s analytics goals and objectives.



## Topic 1 – Description of Solution

### Topic 1 – Description of Solution

1.1.1 Provide a detailed description of your proposed Software Solution, including features and functionality.

Our HHS Interactive Opioid Insights is comprised of the scalable components using a platform that aligned with and is extendible through your EB/DAP platform, like the HHS Interactive LTSS module currently being deployed for DHHS. We will integrate HHS Interactive assets; DHHS intellectual capital captured in Wisdom and other comparable sources, the data defined by DHHS, and the existing architecture extending. We will extend and enhance your EBI platform building DAP with additional data acquisition, predictive analytics, and data visualization capabilities that meet your requirements using our pre-built assets. Our solution tailored for DHHS can be transitioned with no proprietary limitations or restrictions on DHHS's usage supporting your vision of re-use for future use-cases. Opioid Insights offers Informatica based data acquisition scripts, integrated data models, R and Python based predictive models, Tableau based data visualization accelerators for the Opioid Crisis Dashboard and our GCP digital data inputs for population and behavior trending.

Our proposed solution has three main architectural layers upon which our HHS Interactive Opioid Insight assets are built and will be extended into the EB/DAP for DHHS. The following figure provides further explanation of the features and functionalities of each layer of the architecture.

Layer	Features and Functionality
Collect & Ingest	<ul style="list-style-type: none"> <li>• <b>Enable Fast and Easy Data Collection and Integration:</b> Collects and integrates complex data from multiple sources and in variable formats with flexibility to handle the required standards and to rapidly adapt to changes; Supports near real-time and real-time data collection and ingestion using Informatica and if required, Mulesoft depending on subscribing system API preferences and use-cases.</li> <li>• <b>Transform Data Into Useful Information:</b> Uses innovative, proven, tested, and refined data loading and transformation processes enhancing data quality, accuracy.</li> <li>• <b>Model and Document Data:</b> Brings together DHHS, industry, and Deloitte Team health care concepts and accelerators into a single model and data dictionary for flexible and consistent views of data, to document referential integrity and data quality rules.</li> <li>• <b>Derive Business Rules:</b> Standardizes and provides transparency of business rules used within the solution to allow DHHS to reuse, modify, and consistently employ business rules for incoming data for improved information delivery and decision-making.</li> <li>• <b>Enhance Existing EBI Databases:</b> Delivers physical implementation of modeled data, providing broad and fast access to granular and aggregated data in business areas (i.e., commercial claims, child welfare investigation, Opioid Treatments, Medical Examiner Findings, Hospital ED syndromic surveillances, ER Medical and Trauma services, and population rates) to support current and future data, BI, and analytics needs.</li> </ul>
Analyze, Model & Integrate	<ul style="list-style-type: none"> <li>• <b>Standardize Approach for Data Science:</b> Implement predictive analytics approach standardizing hypothesis creation, model development, tuning, and outcome analysis leveraging our At-Risk machine learning model developed and tested for opioids.</li> <li>• <b>Analyze Large Datasets to Predict Future Events:</b> Perform statistical analysis, linear modeling, and regression analysis on large structured, semi- structured, and un-structured datasets.</li> <li>• <b>Integrate Findings:</b> Support integration of the risk scores into Data Warehouse and Dashboards; alerts can be sent to authorized users if thresholds are exceeded.</li> </ul>



Layer	Features and Functionality
Present	<ul style="list-style-type: none"> <li>• <b>Self-service, User Friendly, Always Available, Browser Based Portal:</b> Promote self-service and inspire clear insights and decision-making leveraging and tailoring our baseline HHS Interactive Opioid Insight dashboard accelerators which present our indicators, benchmarks and machine learning model outputs through an easy to navigate UI which would be seamless with your existing EBI navigation model (wrapper).</li> <li>• <b>Enterprise Licensing Model:</b> Allows immediate and increased user base expansions, including external user access, without additional license cost.</li> <li>• <b>Explore Disparate and Common Data Securely:</b> Provides very fast data exploration in a secure manner based on user roles and permissions; allows for generation of standard dashboards and ad hoc views that can be exported to multiple formats.</li> <li>• <b>Identify Opportunities for Oversight, Reform, and Performance Measurement:</b> Advances DHHS's ability to apply statistical, geographical, predictive, trending, multivariate, and other types of analysis to data to assist in analyzing health and social issues impacting NH citizens.</li> </ul>
Supporting Application Services	<ul style="list-style-type: none"> <li>• <b>Audit, Balance, and Control:</b> Provides an auditable events function that tracks end user access to confidential data tracking how, when, and who accessed data; an audit trail assists with identifying and mitigating threats of unauthorized access attempts.</li> <li>• <b>Metadata and Data Governance:</b> Defines roles and responsibilities across the Medicaid enterprise and governs data including creation, standards, escalation of issues, sharing, and how policies governing quality are developed.</li> <li>• <b>Data Privacy and Security:</b> Validates that data is appropriately protected, accessed, and used according policy guidelines.</li> </ul>

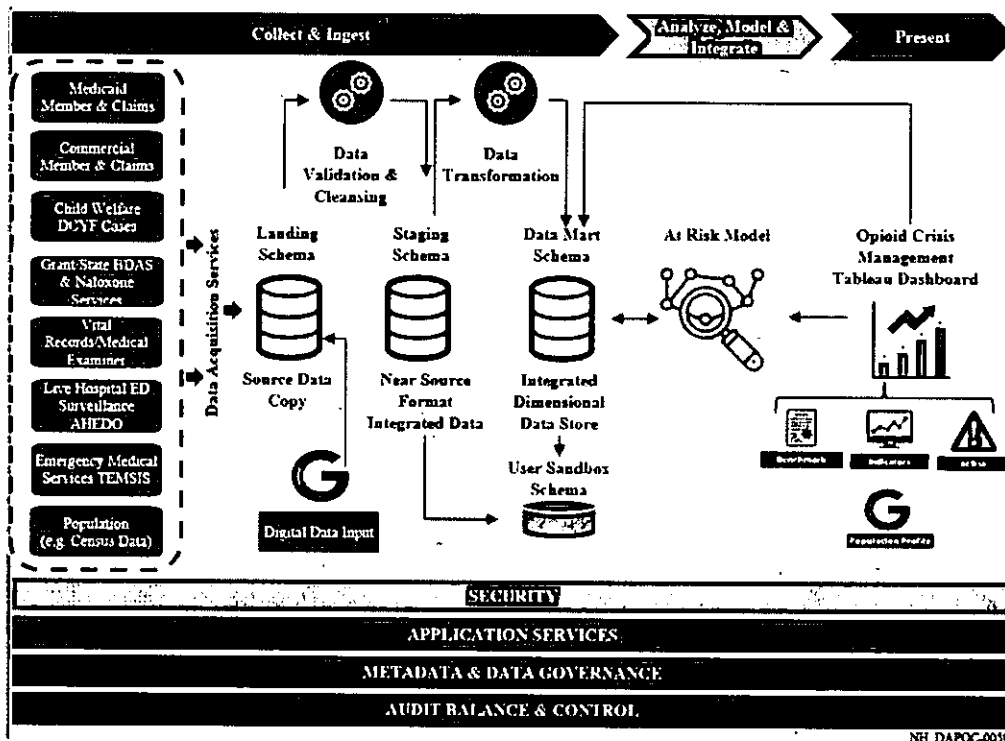


Figure IV-D.1-7. Opioid Insights Features and Functionality.



Using the above-mentioned features and functionalities as a reference, we have developed the conceptual architecture of our Opioid Insights solution illustrating the main components of the solution, tailored to meet the Department’s DAP requirements.

**Topic 1 – Description of Solution**

1.1.2 Describe the approach for design, development and implementation of the required solution ...

Our overall approach to deliver the solution functionality required as part of CORbi is built on Deloitte’s **Agile for Advanced Analytics (AAA)** methodology. Our AAA methodology combines lessons learned, best practices, and experience delivering analytic projects for hundreds of commercial, federal, and state clients. Our AAA methodology provides a robust repository of accelerators, tools, and guidance tailored to meet the Department’s requirements. Approach to each functional requirement area is described in section IV-D2.4 Topic 23: Work Plan.

**Topic 1 – Description of Solution**

1.1.3 Provide specific details of the implementation strategy to meet all functional requirements. ...

We have tailored our AAA methodology, as described in section IV. D 2.1: Topic 11, to deliver CORbi. Our approach supports implementation of the data acquisition and data quality programs to integrate the specified sources into the EBI DataMart, predictive models, and Tableau dashboards, using an agile iterative delivery. This process will be accelerated through inheritance from HHS Interactive Opioid Insights. Our AAA agile implementation approach includes a planning phase followed by five individual four-week sprints to complete the system requirements, design, build, and test of all functional components. Upon completion of the sprints, the project moves to the final phase, Deliver and Operate, where activities such as overall user acceptance testing, deployment, and operationalizing the solution are completed.

Design level use cases and workflows will be developed through visioning sessions, starting with the planning phase, and will continue to iterate during each sprint to help the team establish an understanding of end user requirements. Following are potential activities included during the visioning sessions.

<b>Design Level Use Cases &amp; Workflow Development Activities</b>	
<b>Persona development</b>	• Outline the goals and pain points and needs of end user communities stakeholders
<b>User journey mapping</b>	• Develop a flow of activities that current stakeholders perform as part of their use of existing datasets and analyses
<b>Business question prioritization</b>	• Develop a prioritized list of business questions based on the inputs from the current stakeholder, available datasets and analyses.
<b>Data mapping</b>	• Align datasets to the prioritized questions and acknowledge data limitations in answering those questions
<b>Key Predictors</b>	• Identify key variables and data elements within the datasets that stakeholders feel may help predict certain outcomes
<b>Dashboard Wireframes</b>	• Develop prototypes based on inputs from personas, user journeys and business question prioritization

*Figure IV-D.1-8. Use Case Workflow Management.*



Should we be selected for orals, we will be prepared to share a Web-based demonstration of our solution.

**Topic 1 – Description of Solution**

1.1.4 As a part of the implementation strategy, identify and explain functionality implications ...

Our approach allows us to build upon the EBI platform by expanding the data model to incorporate the additional datasets required, deploying our HHS Interactive Opioid Insight accelerators, including our At-Risk and At-Risk + predictive models, and integrating our Tableau based dashboards, including our opioid indicators and benchmarks. This strategic design approach allows for subsequent releases to build upon prior releases, enabling functionality to be deployed and reviewed in an iterative manner. The exception and error handling framework established for EBI is leveraged and extended to DAP, providing a single consistent enterprise framework.

**Topic 1 – Description of Solution**

1.1.5 Is your product used for a similar functionality at another State agency? If so, provide a description ...

Yes, the core components of our solution and our team have delivered similar functionality at another State agency. Refer to Section V. Corporate Qualifications for a detailed description of the implemented system and environment.

**Topic 1 – Description of Solution**

1.1.6 In what ways does your proposed Solution adhere to the business and technical requirements?

Our proposed solution aligns with the requirements in attachment C-2. It builds upon the EBI platform by expanding the data model to incorporate the additional datasets and by deploying the data acquisition and data quality programs. It delivers our At-Risk predictive models and dashboard that support Phase 1 indicators and extends the platform with cloud-based machine learning environment to process structured and unstructured data, including the proposed Google browsing data for population behavior analysis. Lastly, a data governance framework is delivered to align data standards.

**Topic 1 – Description of Solution**

1.1.7 Is your product dependent on an existing solution not included in this proposal?

Yes, to provide the state with the best value and reusability, we are proposing to leverage and build on your existing EBI environment. This provides the state a fully integrated data model, integration toolset, and end-user interface while eliminating redundant work and expense that would otherwise be required.

**Topic 1 – Description of Solution**

1.1.8 In what ways does your proposed solution improve our current enterprise data warehouse system ...

Opioid Insights extends your EBI platform with trickle feed and real-time data acquisition. It builds upon the EBI DataMart to become the DAP serving as a “Single Source of Truth”. It enables predictive modeling and integrates an innovative Google Cloud Platform, providing New Hampshire additional new search and location-based datasets. The solution provides advanced data visualizations and self-service data discovery and statistical analysis, including a data governance framework that establishes the foundation for a holistic DAP.

**Topic 1 – Description of Solution**



1.1.9 In what ways does your proposed solution provide enhanced ease of use for both the inspectors and ...

Opioid Insights provides the flexibility and enhanced ease-of-use for inspectors and administrative users to manage and monitor the end user access layer as outlined in the table below.

User Group	Capabilities
Inspector	<ul style="list-style-type: none"> <li>• Browser based interface to easily monitor traffic to dashboards, traffic to data sources, actions by all users, actions by specific user, and actions by recent users.</li> </ul>
Administrator	<ul style="list-style-type: none"> <li>• Browser based administrative site to manage content and assign permissions, run extract refreshes, create groups and projects, monitor site activity, optionally add users, and perform other content-related tasks</li> <li>• Used to monitor performance of Dashboards, background tasks for extracts, background tasks for non-extracts, background task delay, stats for load times, stats for space usage, and server disk space.</li> </ul>

*Figure IV-D.1-9. Inspection Capabilities.*

**Topic 1 – Description of Solution**

1.1.10 Provide an appendix with sales literature describing the functionality of the proposed Software...

The Section IX: Appendix provides the sales literature describing our proposed solution’s functionality. The table below lists the literature included in the appendix.

**Functionality**

**HHS Analytics – Advanced Analytic Solutions for Health and Human Services**

**Understanding Opioids Through Digital Data**

*Figure IV-D.1-10. Sales Literature.*

**Topic 1 – Description of Solution**

1.1.11 How does your solution meet best practices surrounding a Development, Stage, Production environment ...

The existing EBI environments will be leveraged to support DAP and the Opioid Insights solution. All code is developed, and unit tested in the development environment prior to migration to a Testing environment where access is restricted to authorized tester for integration testing. After all the entry and exist criteria is satisfied, code is scheduled for deployment to Training and/or Production, depending on whether or not the release requires end user training. Code is migration between environments following well documented deployment processes with code versioning and release notes. Our AAA methodology allows for agile development while also enforcing deployment standards required to limit code defects.

**Topic 1 – Description of Solution**

1.1.12 How does your solution address sizing requirements in accordance with planned use? Be inclusive ...

Our proposed solution builds upon the existing EBI platform infrastructure, adding advanced data acquisition, predictive analytics, and data visualization capabilities to implement the Phase 1 scope of



work while establishing the foundation for the Department’s long-term vision. With anticipated capacity expansion already planned for the EBI platform, no additional hardware or software will be required.

To support scalability, our DAP solution is based on a 3-tiered architecture that includes a data tier, application tier, and a presentation tier, allowing the Department to easily scale each tier independently depending on the need at any given time, while load balancing each tier independently, improving overall performance to comprehensively support the development and ongoing operational effort of DAP.

**Topic 1 – Description of Solution**

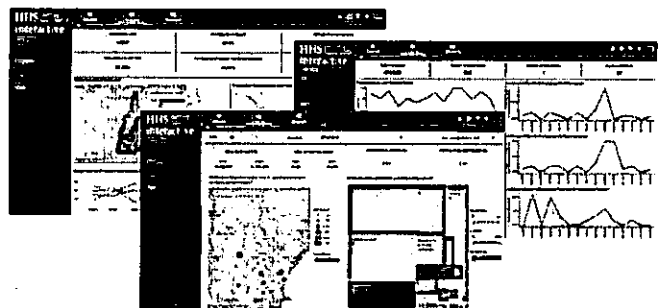
1.1.13 How does the solution address the ability to pull real-time data from multiple sources and ...

Opioid Insights real-time data acquisition function leverages Informatica PowerCenter Real-Time and provides the Department the capability to access and integrate real-time data from multiple sources while monitoring the statistics of the data being processed into the DataMart through Informatica administration console. For example, the live hospital ED surveillance data, which is in-scope for Phase 1, can be pulled real-time into the DataMart to allow the Department to monitor potential health threats as they occur. The real-time data acquisition function enables continuous data processing and supports batch, trickle feed, and real-time data integration latencies within a single optimized environment.

**Topic 1 – Description of Solution**

- 1.1.14 Provide examples of parameters in your presentation that are configurable by the end user.
- 1.1.15 Describe the solutions drill-down capability that will support detail level data displays.
- 1.1.16 Describe the proposed solution's ability to provide static/historical and dynamic (i.e. real-time) reporting for all program and functional areas.
- 1.1.17 What types of built-in (pre-defined) and end user definable (ad hoc) reporting capabilities are included in the proposal?
- 1.1.18 What types of graphical data presentations (e.g., GIS) will the proposed solution offer?

Opioid Insights – Indicators and Benchmarks modules provide a repository of Tableau-based opioid dashboard accelerators that will be tailored to meet your dashboard needs, significantly accelerating dashboard implementation through our understanding of the Department’s dashboard standards, our familiarity with the existing Tableau environment, and our significant experience implementing dashboards to meet your business objectives as summarized below.



*Figure IV-D.1-11. Opioid Insights Sample*

**Dashboard Capabilities**

- Parameters**
  - Dashboard features pre-built dashboard parameters as interactive dynamic filters such as Geography (e.g. County), Dimensional Category (e.g. Prescribing patterns), Dimensional Metrics (e.g. Rx rate), Demographics (e.g. age/sex/race), and Time (e.g. year/month); Authorized users will be able to select values they want to display
- Drill-down**
  - Dashboard allows authorized users to drill-down into the underlying transactional level data from every data point, including graphical charts





Dashboard Capabilities	
<b>Time Trends</b>	• Dashboards use historical data, allowing users to monitor data over time with ease; Time series trends include days, weeks, months, years, etc.
<b>Dynamic Reporting</b>	• Dashboards support real-time insight into data, enabling users to visualize the data, filter on demand, and simply click to dig deeper into underlying the data
<b>Graphical Representation</b>	• Dashboards are built in Tableau, which includes over 24 simple to advanced chart types, including the ability to integrate with Google maps APIs to display fully interactive street view

**Figure IV-D.1-12. Opioid Insights Dashboard Capabilities.**

We also anticipate working with DHHS to *propagate and extend your existing opioid investments (e.g. Wisdom) and possibly to complement the Healing Grant should NH be awarded.*

Topic 1 – Description of Solution
1.1.19 How does the proposed solution provide user-defined reporting views/screens based upon ... 1.1.19.1. How does configuration for this functionality occur within the proposed solution?

Active Directory integration will support customized views based on already defined user roles. Safeguarding sensitive data and extending existing data and tool access policies will be a key aspect of our solution, which can be customized during use case development. Each user role will be defined with the built-in reports and can be customized to display a relevant level of detail unique to the individual's role-set through Tableau administrator. This will customize information based on where the user is located, as well as the immediate data sets accessible by this individual. Recommendations on other relevant reports within their user scope, or frequently viewed by similar users, can be presented to increase usability and transparency.

Topic 1 – Description of Solution
1.1.20 What is the proposed solution's capability for end user report/data exportation at the report and ...

Our presentation layer is implemented in Tableau providing authorized end users with the capability to view and export underlying raw data to export data into Excel, CSV, XML, PDF.

Topic 1 – Description of Solution
1.1.21 How will the solution allow for statistical analysis on population based and client-based information ... 1.1.24 How will the solution allow for statistical analysis (e.g. R Programming) on population-based and ...

We support the Department's need to perform statistical analysis on population and client-based information stored in the DataMart. Authorized users can view statistical indicators on the canned dashboards or use Tableau to connect to the DataMart and derive statistical insights on an ad hoc basis using pre-built functions such as standard deviation, mode, kurtosis, skewness, correlation, and covariance. Users will also be able to use R and Python plugins to connect to existing advanced statistical models to compute descriptive statistics on the population and member datasets imported into Tableau. We also go above and beyond baseline requirements by integrating consumer browsing digital data sets from Google to be understand the population behavior outside of institutional setting.

Topic 1 – Description of Solution
1.1.22 Describe the model summarizing your understanding of how the data relates to the focused population.



Data will need to be mapped to the prioritized questions the State is looking to answer. This will drive data dimensions (e.g., high risk populations). Based on the dimensions that are created, Deloitte will map data to each dimension to allow for the statistical modeling and data visualization that will be used to answer questions such as Can we detect similar geographic areas or sub-populations where we can transfer successful treatment or intervention techniques?; Who are the bad actors, companies, hospitals, etc. linked to those who have higher risk for OUD and recidivism?; How can we use the identification of high risk populations in the justice system to improve treatment or intervention options?

**Topic 1 – Description of Solution**

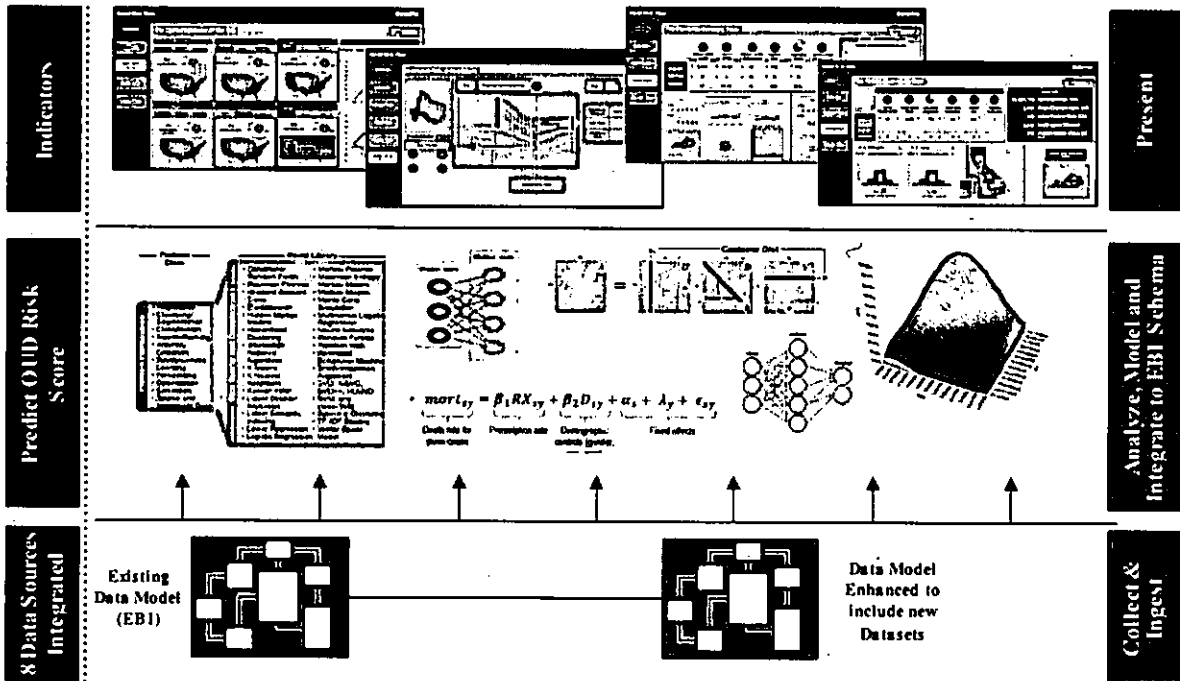
1.1.23 Describe the solutions and structure of data security (PHI or data suppression requirements) for ...

The solution will provide access rights based on the job function and role, using the concepts of least-privilege to match access privileges to responsibilities. Access right will be managed using the data governance model and workflow tool (likely the DoIT help desk ticket system) to maintain audit records of all changes. Additionally, PII/ PHI data will be masked and/or encrypted to safeguard the data.

**Topic 1 – Description of Solution**

1.1.25 Describe how your solution will be used to deliver an Opioid Crisis Dashboard based upon the ...

As described in our response to question (RFP Topic 1 – 1.1.1), HHS Interactive Opioid Insights, aligns with your requirements and will be integrated with phase one data sources and tailored to predict OUD risk scores, and dashboards to visualize indicators and benchmarks as illustrated below:



NH\_DAPOC-0053

Figure IV-D.1-13. Proposed solution model for CORbi.



**Topic 1 – Description of Solution**

- 1.1.26 Address how your solution will address the following examples of functionality:
  - 1.1.26.1. Examples on how holistic analysis of multiple data sets could be utilized
    - 1.1.26.1.1. Identifying High Risk Individuals and Groups (demographics) by Area (geographic)
    - 1.1.26.1.2. Using data to mitigate risk and progression to misuse/targeting early intervention service ...

By connecting datasets integrated into the DataMart, the State can develop an enhanced view of an individual's network and identify threats. Using our At-Risk capability provides insight to understand the high-risk factors for an individual's propensity for opioid use disorder (OUD) and identifying key actors within the system and their influences (i.e. people, places, events). Deloitte's Opioid Insights solution will create this insight using data to understand trends and patterns of high risk individuals. We will complement this core capability by going deeper and combining Google digital data with the goal of correlating behavior indicators online with institutional data to better understand the broader landscape.

At-Risk model will be trained on datasets in the DataMart, conducting millions of checks across massive datasets to find relationships at the individual level providing early warning of a possible misuse situation. As the predictive score increases it correlates with the progression from misuse to OUD and to elevated risk of death. Opioid Insights dashboards will provide the interaction with the individual data including results of the At-Risk model. Dashboards will display aggregated results of high risk individuals across all levels of geography including their current and permanent demographic dimensions. Department can analyze the results on the dashboards to examine geographic patterns in opioid misuse and mortality – places where opioid overdoses and deaths occurred more frequently, targeting early intervention to mitigate individuals At-Risk of addiction.

**Topic 1 – Description of Solution**

- 1.1.27 Using data to mitigate the progression from risk to misuse and to addiction and death – Crisis ...

Deloitte will focus on combining influential risk factors as discovered in analysis and incorporating them into an individual-based model for assessing how these factors influence the likelihood of overdose and death. By leveraging an individual-based network analysis, we will build an overarching model to assess changes in multiple observed networks as described above.

**Topic 1 – Description of Solution**

- 1.1.28 Using Data to Inform Policy – Strategic Planning – Programming
  - 1.1.28.1. Data analysis outlined above can be utilized to identify categories (population level strategies, ...

By combing an individual's trajectory through multiple state, federal, and publicly accessible sources, we begin to develop a better picture to prescribe personalized and targeted treatment interventions for the right person at the right time. This will be accomplished through a combination of capabilities we offer through HHS Interactive Opioid Insights, including our At-Risk machine learning model, our multi-state and county benchmarks, and our opioid trending reports across key influential variables including emergency admittance, newborns born to addiction, deaths from opioids, etc. Our integration with the Google digital data set will augment these core capabilities help to identify consumer behavior outside of institutions providing insight into outreach, prevention and nudging opportunities to shape behavior.

**Topic 1 – Description of Solution**

- 1.1.29. Determining the Effectiveness of Policies – Strategies and Services
  - 1.1.29.1. By particular elements (examples: Prescribing regulation, NH PDMP program, school based ...



Opioids Insights solution focuses on combining influential risk factors and incorporating them into the At-Risk model for assessing how these factors influence the likelihood of overdose and death, which will allow the Department to understand an individual’s network and where potential risks might lie. This will empower New Hampshire state policy and stakeholders to make more informed decisions to develop policies, treatments, and interventions to improve OUD and mortality rates.

By leveraging a machine learning model, we can build an overarching view to assess changes in multiple observed networks. Clustering algorithms are used to identify commonalities within a population, maximizing variation between clusters and minimizing variation within clusters. At-Risk model uses K-means clustering to identify groups of individuals that have similar characteristics to one another, using the following process:

- An iterative process assigns an individual to the cluster with the “nearest mean”
- The means are recalculated with the inclusion of new individuals
- Process is repeated until the assignments no longer change

Clusters represent groupings of individuals that are the most similar to one another, which Deloitte will leverage to determine patterns that are associated with overdose deaths. The various clusters can then be further analyzed to understand how risk factors vary within each sub-population. For each cluster, subsequent regression techniques can be leveraged to identify factors leading to successful strategies and services. The State can strengthen programs and services to prevent OUD and death rates tailored to each cluster.

#### Topic 1 – Description of Solution

1.1.30. Using data to report out on client demographics, provider process and quality data and client ... 1.1.30.1. Client demographic data by provider process data (locations, type and quantity of services ...

Deloitte’s proposed Opioid Insights dashboard module “Indicators” includes advanced interactive data visualizations providing actionable insights into client demographics, provider services, quality of service and Department’s cost of services provided empowering Department’s decision-makers with scenario-based potential outcomes integrating the predictions from the At-Risk models. Deloitte will conduct stakeholder interviews and visioning sessions during the planning phase of the project to identify the critical data points refining the dashboard and models provided through our HHS Interactive Opioid Insights solution based on New Hampshire’s available dataset and priority questions.



## Topic 2 – Software Architecture

### Topic 2 – Software Architecture

#### 1.2.1 What are the benefits of your proposed platform?

Deloitte understands the Department’s vision for unlocking, consolidating, and bringing data into a holistic Data Analytics Platform (DAP) that promotes increase in the delivery of business benefits for New Hampshire, including faster time-to-market, lower costs, better consistency, and increased agility. Our proposed HHS Interactive – Opioid Insights is an industry leading, unified solution that provides a multi-tiered architecture that aligns with the Department’s vision for a holistic analytics platform with a flexible data model that can support dynamic decision making needs by providing an enterprise view that allows effective connection with multiple internal and external data sources, enabling the data warehouse as the primary analytics repository. The table below provides the proposed platform capabilities and benefits to the Department.

Key Capabilities	Benefits to DHHS
<b>HHS Interactive Opioid Accelerators</b>	<ul style="list-style-type: none"> <li>Our benchmarks, indicator dashboards, and machine learning models will accelerate delivery of DHHS’s goals and objectives.</li> </ul>
<b>Google Cloud Accelerators and Search Datasets</b>	<ul style="list-style-type: none"> <li>The solution includes New Hampshire-based google search datasets, that will be used by our proposed At-Risk + model, which will combine search data with the de-identified APCD member claims data from EBI to produce early indications of geo-based OUD trends. Google Cloud Machine Learning engine and Google Maps APIs will drive our proposed At-Risk + model, enabling deep data insights into behavioral “nudging” strategies that may be helpful as an intervention for individuals At-Risk of OUD, especially across social media platform, along with real-time geo spatial data analysis. Nudging will be facilitated through add placement for DHHS service Web site links based on search result predicates.</li> </ul>
<b>Integrates with the Existing EBI Infrastructure and Data Model</b>	<ul style="list-style-type: none"> <li>DHHS and Deloitte hit the ground running by leveraging Deloitte’s experience with EBI and Opioid analytics, EBI Infrastructure assets, Data Model, and Opioid Insights pre-configured accelerators to jump start the project, leading to efficient use of time and resources right from the start.</li> <li>Re-use and extension of the current platform including provision of our HHS Interactive asset without restrictions on DHHS usage. This positions the Department for long term goals without vendor lock-in or duplicative infrastructure and cost.</li> </ul>
<b>Central Data Repository</b>	<ul style="list-style-type: none"> <li>The centralized data repository reduces data quality issues that are otherwise created due to data loss or data corruption through data transfers between multiple repositories. DHHS will save time and money as it will not require multiple resources to manage multiple repositories.</li> </ul>
<b>Interoperability</b>	<ul style="list-style-type: none"> <li>The solution will be scalable to provide for interoperability between solutions across departments. The 3-tier architecture allows for the solution to connect with other sources to bring in more data or provide access to transfer data to/from other data sources as DHHS needs evolve.</li> </ul>
<b>Enables Predictive Analytics &amp;</b>	<ul style="list-style-type: none"> <li>The solution provides substantial advanced analytics capabilities through statistical analysis techniques, predictive analytics, and machine learning, enabled by the Opioid Risk Tool for more reliable, accurate, and actionable risk</li> </ul>

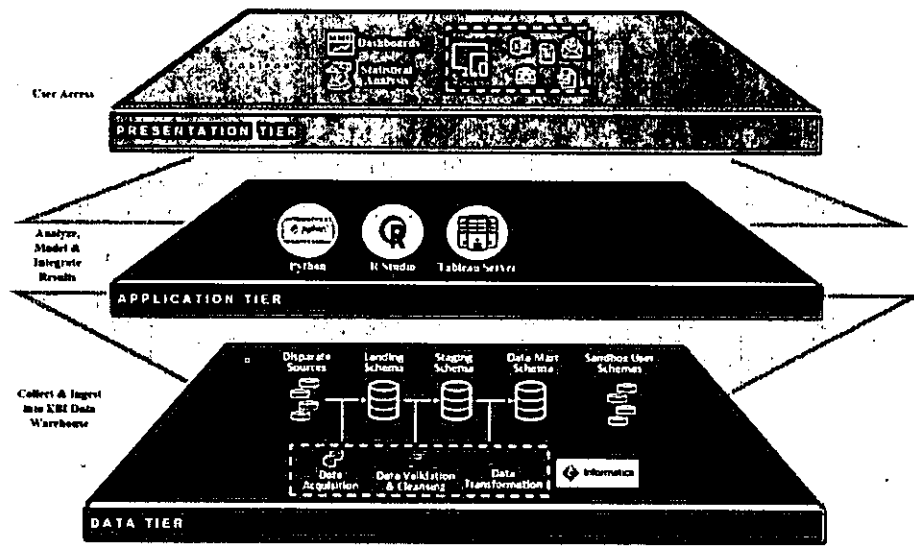


Key Capabilities	Benefits to DHHS
<b>Advanced Data Visualizations</b>	identification. The solution’s advanced visualization capability provides quick access to relevant insights and allows DHHS to interact with the data, providing dynamic filters, drill down, and geo-spatial capability through user friendly interfaces in the Tableau dashboards.
<b>Supports Role-based Security</b>	<ul style="list-style-type: none"> <li>Through Role-based security, DHHS will have more granular control of users and device access. Access will be provided only to necessary resources and restricted to unnecessary resources. This allows for improved performance as all users will not have access to everything, preventing unnecessary processing time.</li> </ul>
<b>Supports Agile Project Delivery</b>	<ul style="list-style-type: none"> <li>DHHS will have more visibility into the development of the solution and will be able to prioritize features based on business value for each cycle. Agile project delivery will allow for increased adaptability to changing requirements through the product backlog.</li> </ul>

*Figure IV-D.1-14. Platform Capabilities and Benefits.*

**Topic 2 – Software Architecture**  
 1.2.2 Is the proposed solution based upon a 3-tiered, browser-based architecture?

Yes, our proposed Opioid Insights is a 3-tiered, browser-based architecture, which is a combination of COTS products, open source software, and reusable assets. Organizing the architecture into a data tier, application tier, and presentation tier improves the scalability and performance of the platform, allowing the Department to scale



*Figure IV-D.1-15. NH DAP Architecture.*

each tier independently depending on the need at any given time, while load balancing each tier independently, improving overall performance. Modularizing into tiers also increases reliability and availability by hosting different parts of the platform on separate servers and using cached results.

The solution is based upon a 3-tiered, browser-based architecture as depicted in the architecture diagram Figure IV-D.1-9. NH DAP Architecture:

The solution’s data tier includes an Oracle Data Warehouse that is fed using Informatica (ETL tool), through ETL processes to integrate the data sources identified by the State (Medicaid Commercial Member & Claims, Child Welfare DCYF Cases, Grant/State BDAS & Naloxone Services, Vital



Records/Medical Examiner data, Live Hospital ED Surveillance AHEDD, Emergency Medical Services TEMSIS, and Population (e.g. Cursus) Data). The ETL tool is fully integrated and scalable with best-of-breed components and processing capabilities needed to handle internal and external sources of large structured and unstructured data required to generate data analysis. The ETL tool enables data acquisition in a batch mode and near-real-time (micro-batches). Data loading can be customized based on the State's requirement. Deloitte will validate and profile the data and then perform processing to create an analysis-ready dataset using data blending. Deloitte will apply data verification methods to yield a richer, more nuanced understanding of the available data. Different data sources require different verification methods and questions. Our vast Public-Sector experience has shown that variables across health groups at a local, state, and federal level are often defined differently. We will work to develop clean data that "speaks the same language." Deloitte brings extensive experience in data integration to identify and combine data from multiple sources and migrate it into a one-stop data portfolio for DHHS with logical movement, effective internal accessibility, and secure protection.

Deloitte will also use metadata management to resolve data quality issues. As higher volumes of data are ingested, the risk of misinformation and incomplete or undefined data grows, reducing the overall usefulness of the data stored, which ultimately impacts the quality of any downstream analyses. Designing a metadata process from the beginning enables efficient data organization and trust throughout the pipeline, preventing the data from degrading. Effective metadata management not only builds trust through clearly identified data, but also enables shared knowledge of how data is defined and related, expediting future analyses.

Through the data transformation process, the acquired data is cleansed, validated, and transformed to fit the data model, and then is loaded into the Data Warehouse. The data tier brings together DHHS, industry, and Deloitte Team health care concepts and accelerators into a single model and data dictionary for flexible and consistent views of data, with supporting details and governance processes to document referential integrity and data quality rules. Deloitte's enhanced ETL methodologies reduce the time it takes to collate, transform, and integrate data from disparate sources, thus improving performance.

The solution's application tier includes R and Python, with connections established to the data warehouse. This application tier configuration serves as a powerful data processing engine to perform statistical analysis, linear modeling, and regression analysis on large structured, semi-structured and un-structured datasets, allowing for batch processing workloads that perform analytics quickly and effectively. Using R and Python, we perform exploratory data analysis, where our team of experienced data scientists assess datasets against analytic models for missing or defective data, identify relevant features, and structure the data for modeling. We can quickly identify potential defects and data quality issues, assess multivariate datasets for trends and relationships, and formulate hypotheses. Our team uses visual techniques, such as simple scatter plots, to identify anomalies in multivariate data, box plots to identify outliers, and correlation matrices to assess collinearity and for variable selection. The resulting insights of these exploratory techniques serve as inputs for model development. We use the results of the model development process as inputs for model evaluation to compare and assess models to highlight impacts and biases. Models are evaluated on the accuracy of their performance, along with the benefits and ease of implementing each model. Our models support integration of the risk scores into the Data Warehouse and Tableau Dashboards. Additionally, alerts can be sent to authorized users if the model results exceed a certain threshold.

The solution's presentation tier consists of the Tableau Server, which houses dynamic Tableau dashboards connected to data that is processed and analyzed in R and Python. Bringing together analysis



results in an integrated solution and directing them to identified personas is crucial to developing insights into actionable outcomes. The presentation framework Deloitte brings to tie back the analysis to the end user personas is the crux of our design methodology. The dashboards are accessible through desktop tools as well as through web browsers. Access to the dashboards can be restricted based on roles, providing more granular control of users and device access.

Through Deloitte’s strategic partnership with Google, the solution also provides a cloud platform that provides the combined analytics capabilities of our two firms. For this solution, Google will provide the following unique assets and capabilities: (1) New Hampshire-based Search datasets (Digital data) tied to SUD with research showing early indications of geo-based SUD trends (2) Machine Learning engine that provides deep data insights into digital data captured; (3) Google Maps API engine that integrates with dashboards to provide real-time geospatial data analysis.

The above architecture gives flexibility to development teams by allowing them to update a specific part of the solution independently of the other parts. This added flexibility can improve overall time-to-market and decrease development cycle times by giving development teams the ability to replace or upgrade independent tiers without affecting other parts of the system. Scalability is another high-quality advantage of a 3-layer architecture. By separating out the different tiers, DHHS can scale each tier’s components independently, depending on the need, at any given time.

**Topic 2 – Software Architecture**

1.2.3 Does any part of the proposed Solution require Software (other than a browser) to be installed on the client workstation? If yes, describe Software that must be installed, and the access authorization level required to install it.

Deloitte’s proposed Opioids Insights solution is based upon a unique mix of packaged technologies, COTS products, and reusable assets, most of which are already being used at the State for the EBI platform. The Tableau visualizations are delivered via a browser, and developers will require several tools.

The table below provides software that is required to be installed on the client workstation.

Software	Description	Access Authorization Level
<b>Informatica Power Center</b>	Develop data acquisition and transformation programs	• ETL Developer
<b>Informatica Data Quality</b>	Develop data validation, cleansing, and consolidation programs	• ETL Developer
<b>Tableau Creator</b>	Explore and build custom datasets; build data visualizations	• Dashboard Developer • Power Users
<b>R &amp; Python Libraries</b>	Develop statistical and predictive models	• Data Scientist • Power Users

*Figure IV-D.1-16. Client Workstation Software.*

**Topic 2 – Software Architecture**

1.2.4 What add-on or third-party Software is required to support the functionality desired by the State?





Our proposed solution, Opioid Insights, leverages the Department’s Enterprise Business Intelligence infrastructure that includes Oracle Database, Informatica Power Center, Informatica Data Quality, Tableau Creator, and Tableau Server. In addition to the software included under the EBI infrastructure, Opioid Insights will require open source software libraries of R and Python to develop predictive models.

**Topic 2 – Software Architecture**

1.2.5 What programming languages are used for development, configuration, and customization of the proposed Solution?

The table below provides the programming languages used for development, configuration, and customization of Deloitte’s proposed Opioid Insights solution components.

Solution Components	Programming Language
Oracle Data Warehouse	SQL and PL/SQL
Data Acquisition, Standardization, Transformation	SQL & Informatica proprietary functions
Predictive Models	R and Python
Dashboards	SQL & Tableau proprietary functions

*Figure IV-D.1-17. Solution Components and Supported Programming Languages.*

**Topic 2 – Software Architecture**

1.2.6 What components of the Software, such as middleware, are proprietary?

Deloitte’s proposed Opioid Insights solution utilizes no Deloitte propriety software, only standard COTS products already utilized in the DHHS enterprise architecture along with the GCP platform included in our DAP proposal for digital data trending.

**Topic 2 – Software Architecture**

1.2.7 Is your solution dependent on open source software?

Yes, Deloitte’s Opioid Insights solution utilizes open source software libraries of R and Python to develop predictive models. Both of these software libraries run on a wide variety of UNIX platforms, Windows, and MacOS.

**Topic 2 – Software Architecture**

1.2.8 What is the growth potential of the proposed System?

The Deloitte team currently working to deploy EBI understands that future growth potential is dependent on a strong foundational model and solid design principles. As EBI evolves to become the Data Analytics Platform (DAP), which serves as the underpinnings of the Opioid Insights solution, these same design principles continue to drive our development. The design of the data layer is typically the least appreciated component. However, our experience tells us that this is the most critical activity when building an enterprise analytics environment. New data sources are integrated by leveraging common dimensions such as member or provider, allowing users to perform complex analysis across disparate



populations. Common data sources are modeled to support ease of use and extensibility, considering and evaluating design options to support future growth over short term needs.

With respect to the analytics capabilities of the machine learning and analytics models and visualizations serve as a framework to build upon as new data and models are integrated. The solution is scalable to include more advanced statistical analysis, predictive analytics, and machine learning to meet the State’s future needs in Phase 2 and beyond. The underlying visualization layer, built leveraging Tableau, supports building out a robust analytic visualization layer with decentralized publishing capabilities, provided to authorized users, to support a multi-agency strategy. Additionally, the integration of the Google Cloud Platform provides capabilities to integrate new and innovative data sources, such as Google search, location, and YouTube and other social media data. These datasets, combined with the Google Machine Learning engines, provide an environment that can be scaled to meet the largest, most complex data challenges the future holds. The GCP platform could be used to augment to the DAP platform for high intensity compute activities like training of new machine learning models or other intermittent demand capacity tasks.

**Topic 2 – Software Architecture**

1.2.9 What is the time frame for technical obsolescence of the proposed Software? (For the purpose of this question, the version of the proposed Software would be considered obsolete when support is no longer available.)

Our proposed solution leverages the Department’s existing Enterprise Business Intelligence infrastructure. The table below provides our understanding of the current version and the obsolescence dates associated with the on-premise software. The GCP platform is provided as SaaS.

Software	Current Version	Vendor Support End Date
Oracle	12c	August 2019
Informatica Power Center Advanced Edition	10.2.0	Latest version offered by Informatica. No end date set by Informatica for this version.
Informatica Data Quality Standard Edition		
Tableau Server	2018.3	Core based Subscription Model, will receive quarterly updates as along as the subscription is active.
Tableau Desktop		

*Figure IV-D.1-18. Opioid Insights Proposed Software Version and Vendor Support End Dates.*

**Topic 2 – Software Architecture**

1.2.10 How will the proposed solution allow for end users to share dashboards to social media (e.g. Twitter, Facebook, Google+ or other social media websites)?

Opioids Insights dashboards provide authorized end users with the following options to share information with other authorized users as well as on public-facing social media websites.

How do you want to share your insights?		
Share an image	Share a URL	Share a PDF/Excel/CSV



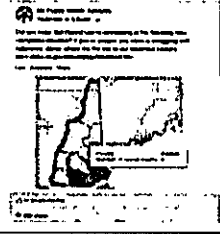
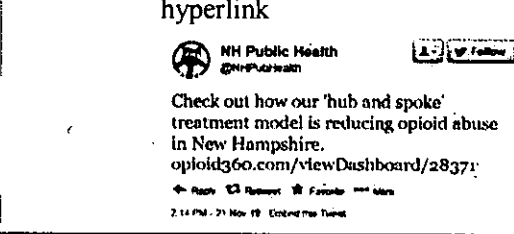
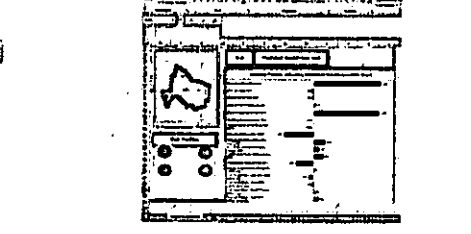
How do you want to share your insights?		
<p>All visualizations can be exported as high-resolution images to post to social media sites such as Twitter, Facebook, or Google+</p>	<p>Using a pre-defined public-view user role, specific links can be hosted and shared to allow followers to interact with public dashboards via a hyperlink</p>	<p>Detailed data that supports the visualizations can be exported to file-sharing sites to increase accessibility to data</p>
		

Figure IV-D.1-19. Opioid Insights Options to Share Visualizations.

In addition, for datasets or aggregates which DHHS considers to be “public access” the Tableau platform can be used to expose analytics using the inbuilt Tableau capabilities with guest access similar to the DHHS Wisdom. These techniques could also be combined with the Google nudge strategy placing the access points as advertisement links based on search predicates.



### Topic 3 – Data Governance and Management

Topic 3 – Data Governance and Management

1.3.1 How will your solution meet the departments needs to establish a robust governance structure for its ...

The governance structure that will enable the effective sharing, reuse, and governance of Enterprise Business and Technical Services improving collaboration, data stewardship, and data driven decision support at all levels.

Our approach is based Agile for Advanced Analytics (AAA) Data Governance (DG) Framework that is centered around a collaborative approach giving stakeholders the required context to make good decisions, documenting data flow for accountability, and promote compliance with existing and upcoming data governance standards. This approach integrates with Data Modeling (DM), Enterprise Architecture (EA) and business processes (BP), superseding inter-departmental and technical silos for improved visibility and control across domains.

Our proposed framework is made of six components that include Organization, Policies & Standards, Governance Metrics, Processes & Practices, Technology, and Data Architecture.

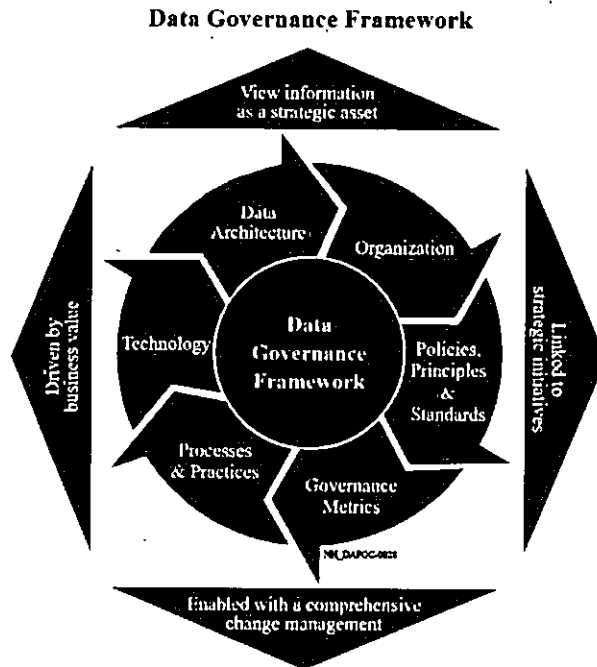


Figure IV-D.1-20. AAA Data Governance Framework.

The table below lists key activities supporting the phase one scope of work the DG framework which will establish the foundation for future phases.

Activity	Details
<b>Evaluate Current Data Governance Practices</b>	Working sessions/interviews are conducted focusing on the existing & targeted state of maturity, while prioritizing people, process, and technology to enable organization transformation. These sessions will provide a platform for agency-level input and collaboration for the development of a customized DG strategy.
<b>Define Data Governance Strategy &amp; Framework</b>	The DG strategy will document the approach to expanding and/or implementing a data governance organization to meet both DHHS DAP project needs. The outputs will help the State deliver and sustain data integrity through people and processes, while enabling the technology required to manage, maintain, and leverage information as a resource.
<b>Define Data Governance Policies &amp; Procedures</b>	We identify and provide information to formalize data policies and procedures for managing the data domains within the scope of this RFP. These policies and procedures will cover data governance related activities, such as metadata management, data profiling, and data privileging, and will leverage leading practices and learnings.



Activity	Details
<b>Mentor Data Governance Champions</b>	State and Agency personnel will receive mentoring to promulgate data governance. This will be done via coordination with Organizational Change Management (OCM) teams.

*Figure IV-D.1-21. Key activities involved in establishing the DG Framework.*

**Topic 3 – Data Governance and Management**

1.3.2 How will this solution increase delivery of business benefits for New Hampshire, including faster ...

Deloitte’s AAA approach to the data governance framework is underpinned by the belief that the end goal of data governance is to change data from a cost of doing business into a value-added asset. The business benefits can be grouped around four themes:

Theme	Benefit
<b>Data Quality Assurance</b>	<ul style="list-style-type: none"> <li>• Unlock the value of data by establishing the rigor to ensure that data is accurate and conforms to “fit for purpose” business standards</li> <li>• Create an integrated central repository of data sources with the necessary tools to rapidly integrate new data sources, enhance existing predictive models, and provide the capability that allows end users to build and deploy dashboards or visualizations</li> </ul>
<b>Cost and Time Savings</b>	<ul style="list-style-type: none"> <li>• Reduce cost and development time by creating decision rights and associated accountability for process changes</li> <li>• Cut the time spent on reconciling and mapping data for different use cases across the platform and increase use case flexibility</li> </ul>
<b>Operational Agility</b>	<ul style="list-style-type: none"> <li>• Provide an integrated central repository of data sources with the necessary tools to rapidly integrate new data sources and enhance existing predictive models</li> <li>• Empower end users to build and deploy dashboards or visualization rapidly</li> </ul>
<b>Consistency and Transparency</b>	<ul style="list-style-type: none"> <li>• Create a platform for consistency and transparency in data-driven decision making by increasing the repeatability of analytic results</li> <li>• Provide consistent definitions and data lineage across the organization through Business Glossary and Metadata Management</li> </ul>

*Figure IV-D.1-22. AAA Data Governance Framework Business Benefits.*

**Topic 3 – Data Governance and Management**

1.3.3 How will the solution change the planning, development, and operation of application systems, and ...

Cross-functional, multidisciplinary teams collaborating to deliver a holistic solution need to be supported at the organization level by eliminating silos and effectively managing the application life cycle. Our DG framework will document the process and compliance parameters required to support decision-making and to facilitate the planning, development, and operational facets of the solution across the life cycle of the DAP project.



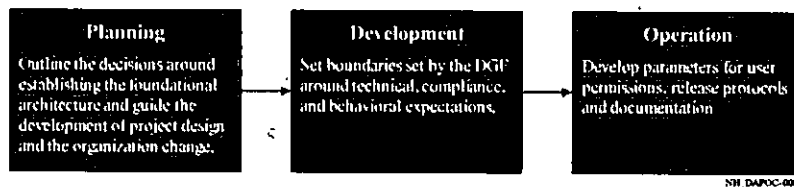


Figure IV-D.1-23. DAP Life Cycle.

Clear objectives and separation of roles within teams, as well as demarcation of work between multiple teams, is important to minimizing duplication of efforts and supporting the identification and leveraging of cross-team dependencies. The following are the sample collaboration methods that we will leverage for this project:

Sample Collaboration Methods
<ul style="list-style-type: none"> <li>• Representative cross-team daily stand-ups will encourage teams to share high-level updates on their respective team’s work, identify impediments, and collaborate with other teams.</li> </ul>
<ul style="list-style-type: none"> <li>• Multiple stakeholder check-in enables the State and other stakeholders to discuss scope, acceptance criteria, and dependencies to align and prioritize initiatives and validate solution backlogs. This approach creates stakeholder alignment and helps facilitate decision making.</li> </ul>
<ul style="list-style-type: none"> <li>• Regular monthly cross-team review and planning sessions allow teams to define high-level requirements, map cross-team dependencies, and help teams understand the integration of team outputs.</li> </ul>
<ul style="list-style-type: none"> <li>• Creation of a cross-team retrospective platform empowers teams to examine and reflect on their collaboration processes, identify action items, and create accountability for improvements.</li> </ul>

**Topic 3 – Data Governance and Management**  
 1.3.4 What will be the base structure of the Governance process and how will it ensure that the infrastructure...

The base structure of the DG framework will support the effective mobilization of shared infrastructure, business, and technical service components in the DAP platform for re-use across the State.

Component	Description
<b>Processes, Policies, Standards and Procedures</b>	<ul style="list-style-type: none"> <li>• Evolving processes, policies, standards, and procedures are key to enabling effective data governance through process automation, including data stakeholders in decision-making and the evolution of procedures to accommodate the increasingly distributed nature of data.</li> </ul>
<b>Organization, Roles and Responsibilities</b>	<ul style="list-style-type: none"> <li>• Extending the roles and responsibilities of the DG framework to the development life cycle, focusing on data security roles and empowering Data Stewards.</li> </ul>
<b>Technology and Tool Capabilities</b>	<ul style="list-style-type: none"> <li>• Tools such as cognitive and automation technologies, effective integration, and leading data security practices support data governance.</li> </ul>
<b>Data Cataloging</b>	<ul style="list-style-type: none"> <li>• Cataloging data to create an enterprise level Data Catalog is instrumental to establishing a holistic helping stakeholder to discover, understand, and trust potentially relevant assets; This provides a semantic approach for content discovery.</li> </ul>

Figure IV-D.1-24. Components of the DG Framework Base Structure.



**Topic 3 – Data Governance and Management**

1.3.5 How will the solution address a systematic method for the Department to make decisions?

1.3.6 What will your process be to identify who has the authority to make decisions, establish the precepts ...

The established and agreed upon framework will define the process and the key roles and responsibilities of the decision makers. Data-related challenges are mitigated through reducing ambiguity, establishing clear accountabilities, and circulating data-related information to all stakeholders. A Data Management and Execution team is created with the responsibility for maintaining the alignment between stakeholders and clearly delineating lines of responsibility based on data ownership.

**Topic 3 – Data Governance and Management**

1.3.7 How will the solution reduce risks and ensure that people accomplish the State's strategy, goals, and ...

The new DG framework supports a culture of informed decision making by establishing standardized processes and a clearly defining decision making structure which helps drive project success and reduce ambiguity around data which is one of the state's most important assets. By standardizing data quality and establish a well-defined metadata process across systems in scope of the DAP, and by clearly identifying data owners and data steward, project risk is dramatically reduced while ensuring the State's overall DAP strategy, goals, and priorities more easily achieved.

**Topic 3 – Data Governance and Management**

1.3.8 How will the solution implement, and subsequently optimize governance for compliance by ...

The compliance decision paradigm can be separated into three strata:

- **Automation centric:** High-volume, Low-subjectivity
- **Human centric:** Low-volume, High-subjectivity
- **Hybrid:** Combination of computer systems and human action

The DG framework will contain a set of decision rules to identify the optimal route for each directive according to the compliance profile, e.g. data with Personally Identifiable Information (PII) and Protected Health Information (PHI) will be directed to computer systems for processing to ensure strict individual privacy.

- Automated rule-based tasks can be conducted without physical and temporal constraints, can make objective decisions, and are scalable. However, these are not flexible and lack accountability and transparency.
- Compliance tasks which need decision making, which involves context-based attributes, usually need human input to incorporate ethical decisions. However, this can also lead to human error and biases as well as less efficiency.
- A hybrid approach where machine learning algorithm with guidance from humans may be the best method to span these two approaches.

**Topic 3 – Data Governance and Management**

1.3.9 What tools and/or technologies will be required to enable DAP Governance within the State?



To meet phase I data governance requirements we do not envision the need for additional tools beyond those available. As part of the phase I data governance framework development process the team will include evaluate the need for a tool and include tool recommendations if appropriate.

The ideal tool provides a holistic, pan-enterprise view of data governance programs by collating domain knowledge scattered across disconnected silos. It should integrate across all tiers in the DAP Program for oversight across the DAP process flow. Deloitte’s DG framework will provide tool recommendations for the Department to enable DAP Governance within the State, maximizing the use of Department’s existing tools while supplementing with additional tools that provide enterprise-level data governance & management.

**Topic 3 – Data Governance and Management**

1.3.10 How will your solution provide a strategy that enables the State to document the roles and responsibilities...

Deloitte’s AAA methodology for Data Governance revolves around identification of critical activities to support the effective implementation of the data governance and management decision, and then mapping roles and responsibilities from these activities to create a RACI chart. A RACI chart is a matrix of all the activities or decision-making authorities undertaken in an organization set against all the people or roles. This matrix is developed to coalesce these functions in the form of a staffing plan with clearly defined roles and responsibilities as illustrated below:

Governance Domains	Roles														
	Head of Corporate Governance	Head of Corporate Controlling	Data Owner	Global Data Steward	2nd Level Data Stewards	IT Stakeholder Manager	Data Custodian	Data Analyst	Data Architect	Governance Steering Team	Accounting Principals & Rep. Committee	Data Governance Council	Project Portfolio Management Meeting	Data Governance Working Group	Risk & Continuity Management Board
Governance Strategy	C	R	C	C	I	C	C	I	I	A	I	C	I	I	I
Data Policies & Principles	I	I	C	A	R	C	C	I	I	I	C	I	I	I	I
Organization	I	C	C	C	I	I	I	I	I	A	I	R	I	I	I
Governance Processes	I	I	A	A	R	C	C	I	I	I	C	I	C	I	I
Tools & Technology	I	I	I	C	I	R	R	C	C	C	I	A	I	I	C
Governance Elements	C	C	A	R	C	C	C	I	I	I	I	C	I	I	I

Legend

Responsible	Accountable	Consulted	Informed
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Figure IV-D.1-25. Sample RACI Matrix for Data Governance & Management.

**Topic 3 – Data Governance and Management**

1.3.11 How will your solution address the Department’s roles and responsibilities, as well as providing the ...





Attachment 3 of 3  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

The DG framework will define the Department’s roles and responsibilities, along with the skills required for the staff to be part of the DAP governance and management team as previewed in the table below:

<b>Roles</b>	<b>Responsibilities</b>
<b>Program Sponsor</b>	<ul style="list-style-type: none"> <li>• Provide guidance and direction, review completed deliverables, support resource availability</li> </ul>
<b>Project Manager</b>	<ul style="list-style-type: none"> <li>• Manage day-to-day activities – project communication, analysis, deliverable development, issue resolution, manage risks, issues, action items and delivery</li> </ul>
<b>State Team</b>	<p>Business and Technology SMEs:</p> <ul style="list-style-type: none"> <li>• Core Project Team – Facilitate information requests, perform detailed reviews of work products and deliverables, assist in execution of project activities</li> <li>• System application SMEs – Provide details on existing applications, requirements, and react to target-state scenarios</li> <li>• Business leaders and SMEs – Provide a history of existing initiatives, business drivers, application suitability, future business capabilities</li> <li>• Functional SMEs on Material, Vendor and Customer data – Deliver key statistics and performance data, provide information on current state, provide documentation</li> </ul>
<b>Key Stakeholders</b>	<ul style="list-style-type: none"> <li>• Review approach/results, provide feedback and direction</li> <li>• Represent project in senior executive meetings</li> <li>• Identify and assign appropriate resources and access to extended team</li> </ul>
<b>Data Owner</b>	<ul style="list-style-type: none"> <li>• Approve data domain and attribute definitions, calculations, and requirements</li> <li>• Ensure consistency and quality across types of data</li> <li>• Review and approve data standard specifications</li> <li>• Escalate cross-functional data standardization decisions to the Data Governance Council</li> </ul>
<b>Data Steward</b>	<ul style="list-style-type: none"> <li>• Set, communicate, and implement business practices and standards by domain</li> <li>• Work in groups by domain area to monitor standards, practices, and processes</li> <li>• Rationalize changes and assess impacts</li> <li>• Escalate data issues or opportunities to the Data Organization</li> <li>• Monitor and audit the quality of data within the DAP domain</li> </ul>
<b>Data Custodian</b>	<ul style="list-style-type: none"> <li>• Set, communicate, and implement technical practices and standards for data</li> <li>• Work in groups to monitor standards, practices, and processes</li> <li>• Rationalize changes and assess impacts</li> <li>• Escalate data issues and opportunities to the Data Governance Organization.</li> <li>• Identify technical challenges and issues as it pertains to DAT source system data</li> </ul>

**Figure IV-D.1-26: Recommended Roles for Department’s Governance Team.**

**Topic 3 – Data Governance and Management**

- 1.3.12 How will your solution fill, leverage as well as, if applicable, re-define the following roles?  
 1.3.12.1. Architects; 1.3.12.2. Developers; 1.3.12.3. Quality assurance (QA); 1.3.12.4. Database Administrators;  
 1.3.12.5. Operations and system administration staff; 1.3.12.6. Business analysts



Deloitte has provided a list of project resources required to meet the RFP requirements. The role of the architect is the responsibility of Greg Spino, currently working on the EBI implementation. Greg has over twenty years of data warehouse, data integration and analytics experience building and support multi-agency platforms.

The development lead, Abhishek Pathak, has prior experience leading complex data integration and analytic projects with specific experience working on the New Hampshire MMIS. Abhishek will lead a team of ETL developers, Database Administrators, Data Modelers and Tableau Developers. Our team offers resources that understand the current NH infrastructure and environments reducing risk and facilitating strong collaboration.

Business Analyst and Quality Assurance positions are vital roles on the project and are filled from Deloitte pool of public sector resources with experience on large Health and Human Services data integration projects.

**Topic 3 – Data Governance and Management**

1.3.13 How will the proposed DAP governance solution provide decision making guidance for all stages in ...

As stated in response 1.3.6, proposed governance framework will provide decision making guidance for the establishment of Organization, Policies, Principles & Standards, Processes & Practices. The framework will provide a life cycle structure leveraging predefined deliverables templates and content.

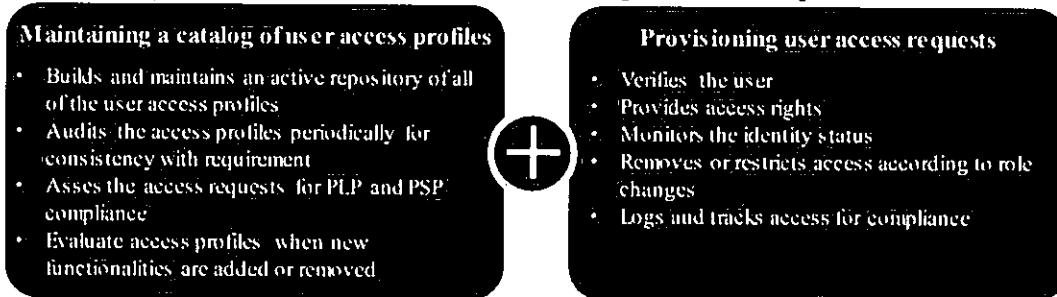
**Topic 3 – Data Governance and Management**

1.3.14 How will the solution address specific life cycle stages and issues associated with the following?

1.3.14.1. User Security Management Services

Designing security for authorized users of DAP is critical. User security management supports selective restriction of access to source/intermediate/target systems, various environments, and data interaction interfaces through authentication, authorization, and access control. Authentication verifies user identity, authorization determines the user permissions, and access control enforces the security permissions to use the data. The Role Based Access Control (RBAC) model determines access based on a user's role and implements the Principle of Least Privilege (PLP) and Principle of Separation of Privilege (PSP).

**User security management is a composite of two processes**



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**Figure IV-D.1-27. Profiles and Provisioning.**

A critical aspect of the DAP, Agile security management, is a continuous, pervasive, and proactive method of protecting assets, and involves all team members during all life cycle phases as illustrated below:



Stage/Phase	Action
<b>Initiation/ Discovery</b>	<ul style="list-style-type: none"> <li>• Document existing systems/applications and users</li> <li>• Configure users in the Identity Management solution with support for single sign-on</li> <li>• Review existing security policies and their impact on the scope of the project</li> <li>• Identify legacy misaligned default settings or unnecessary privileges</li> <li>• Change default passwords or configurations allowing access without authentication</li> </ul>
<b>Design/ Development</b>	<ul style="list-style-type: none"> <li>• Formalize the project security expectations in the Cross Functional Requirements</li> <li>• Include information about the level of security needs in the acceptance criteria</li> <li>• Create an inventory of human resources and process to identify/prioritize potential threats</li> <li>• Review the security of feature on PII and PHI data storage, encryption, and access protocols</li> <li>• Test to validate behavior if a non-privileged user attempts to access privileged information</li> </ul>
<b>Delivery/Maintenance</b>	<ul style="list-style-type: none"> <li>• Verify services are configured to follow the PLP and PSP guidelines</li> <li>• Develop an incident response plan, for recovery and mitigation from a vulnerability incident</li> <li>• Verify monitoring infrastructure to detect unauthorized access via logs/network monitoring</li> </ul>

*Figure IV-D.1-28. Life cycle Themes.*

**Topic 3 – Data Governance and Management**

1.3.15 How will the solution ensure strategic alignment between the deployed technology and the future-state ...

To maintain strategic alignment, critical components need to flex and change as the strategy itself shifts in response to the evolving requirements of stakeholders. The key factors for organizational agility include:

- Lean process redesign – Streamline processes and minimize waste
- Digitization – Digitize stakeholder experience and operations
- Advanced analytics – Provide intelligence to facilitate decisions
- Intelligent process automation – Replace routine human tasks
- Business process outsourcing – Outsource to vetted providers

**Topic 3 – Data Governance and Management**

1.3.16 What is the proposed change control process for considering and accepting or denying changes...

The need for change management and control is a salient feature of our AAA methodology due its iterative nature, the amount of churn created, and consequently, its impact on project climate and



readiness. A detailed explanation of the change management control flow is provided in Topic 21-Scope Control question 2.4.4.2.

**Topic 3 – Data Governance and Management**  
 1.3.17 How will the proposed solution develop and obtain buy-in for a stakeholder and communication ...

Our methodology provides a stakeholder and communication management plan and approach to collaborative workshops for DAP. Creating transparency and measuring project progress for stakeholders is a key pillar of our methodology. Topic 3 – Work Plan, 2.4.6.1 elaborates our methodology for communication management.

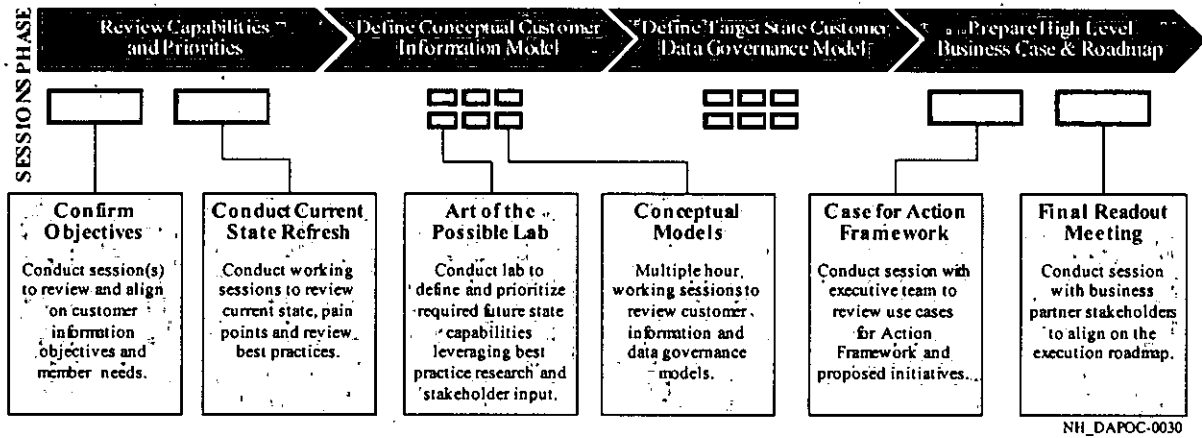


Figure IV-D.1-29. Collaborative Workshops with Stakeholders (Illustrative).

**Topic 3 – Data Governance and Management**  
 1.3.18 How will your methodology address organizational assessments and gap analyses for the affected ...

Deloitte addresses this requirement through our AAA methodology which combines our knowledge of the NH DHHS organization and systems along with our experience with the EBI project. Our approach includes identification of key participants, gathering input from stakeholders using our data capabilities assessment toolkit, and documenting that will be covered in our organizational gap assessments.



Figure IV-D.1-30. Data Capabilities.

Our proposed DG framework will create a Data Governance Organization (DGO) structure to guide the people, processes, and technologies needed to manage and protect the State’s data assets. The DGO will be organized in a pyramid structure to manage participation, and to facilitate strategy, guidance, and effective decision making.



### Data Governance Organization Model

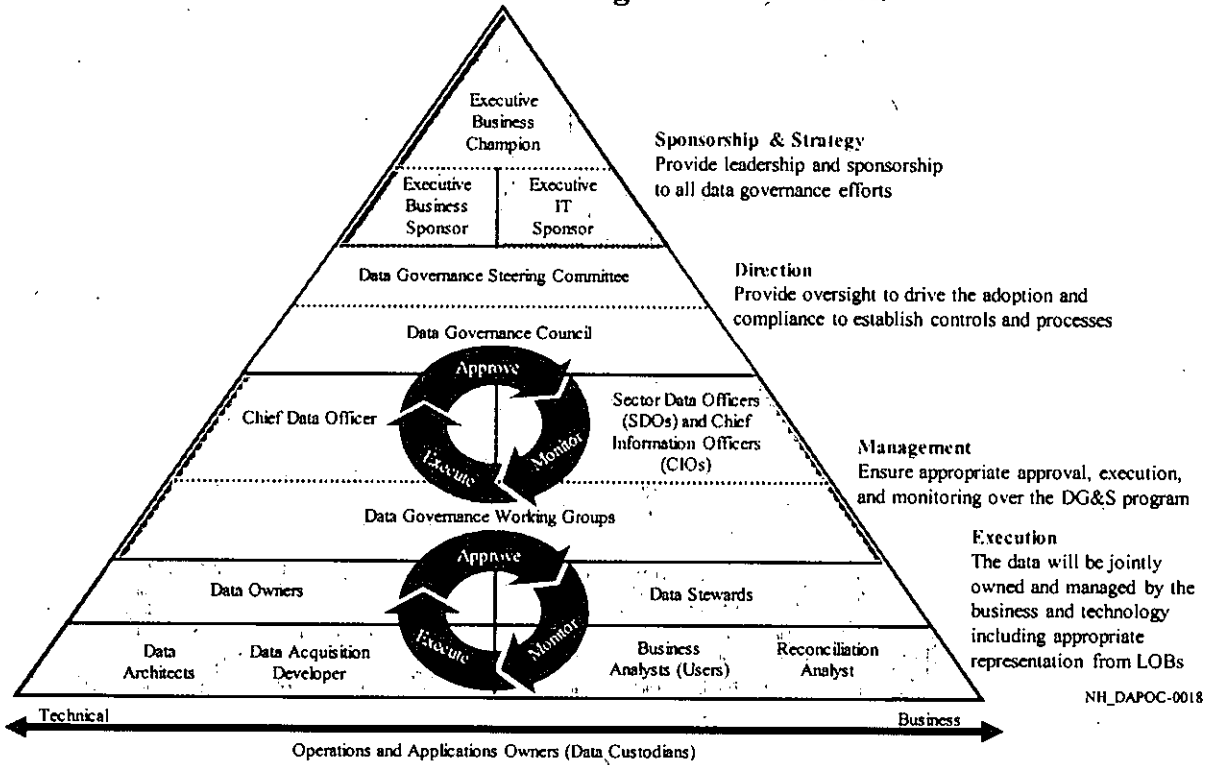


Figure IV-D.1-31: Data Governance Organization Tier Model.

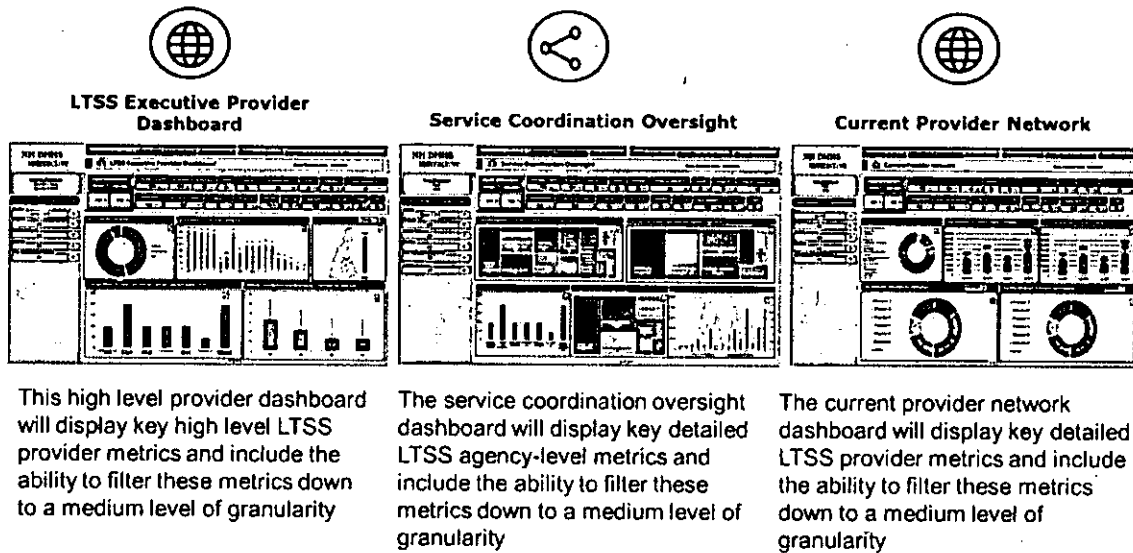


## Topic 4 – User Friendliness and Usability

### Topic 4 – User Friendliness and Usability

1.4.1. To what extent is the Software used in the proposed solution intuitive based on the likelihood that the user has experienced other applications with similar graphic user interfaces.

Opioid Insights dashboard modules “Indicators” and “Benchmarks” will leverage the same user experience design techniques and software platform (Tableau) that was selected by DHHS based on ease of use. The Tableau based platform is currently being used to build EBI dashboards for DHHS, including LTSS and Granite Advantage. The Opioid Crisis dashboards would be accessible through the same login, navigation model and with the same UI/UX theming.



*Figure IV-D.1-32. Sample dashboards, currently in the process of being themed for DHHS.*

Our HHS Interactive Opioid Accelerators use the same underlying technology and will be themed to match with your selected UI/UX schema and navigation model. This will provide a unified, clean and intuitive user flow, matched with helpful built-in user guides.

We understand the significance of the analytical outcomes represented in the user interface of this tool. Livelihoods are at stake and depend on the ability of your analysts and leaders to make decisions through interpretation of effectively displayed data. The accelerators we bring are based on our familiarity with your team, your evolving preferences, and your existing investment. We will provide a unified and seamless experience differentiating us from our competitors.

Opioid Insights approach to design is based on our proven AAA methodology which is a 4-step iterative process to achieve a user-centric design that fuels the creation of a well-designed system that resonates more deeply with your stakeholders as illustrated below. Prior to the onset of this project, the existing platform UI/UX theming and infrastructure will be established, allowing us to shift to interactive Agile development leveraging the inbuilt capabilities of Tableau to rapidly deliver sprints with live work products using the process outlined below:



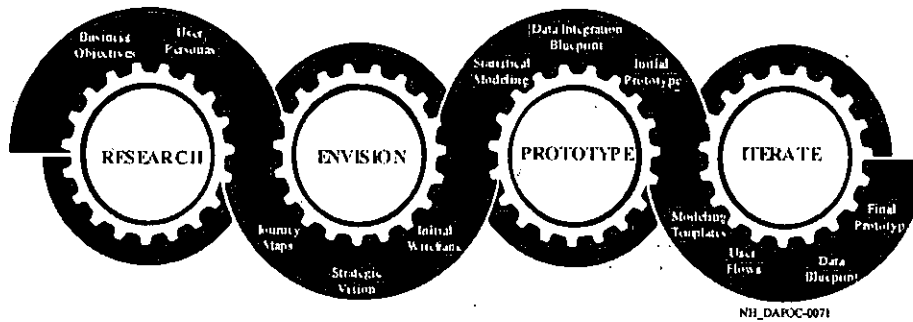


Figure IV-D.1-33 AAA User-Centric Design Approach.

User Interface Design Approach	
<b>Research</b>	Stakeholder interviews and visioning sessions to gain a better understanding of the end-user personas. We then design for key personas which are a representation of the major user groups most consistently using Opioid Insights. These personas – selected by you – become the center of our methodology. We work to understand their core business questions, preferences, working styles, historical technological constraints, and working conditions.
<b>Envision</b>	At this step we begin designing the user experience. We explore intersections between user and operation needs, and work alongside your users to develop interim work products using the Agile sprint delivery model. Specifically, we map core business questions specific to each persona and create data-to-decision-to-action flows such that the right business questions can be clearly answered and acted upon. As users provide input and feedback during our design process, pride of ownership is created and barriers to adoption are reduced. By bringing users along the design journey with us, we are preparing your teams to use these systems from day one, so that they can quickly be self-reliant and prepare their colleagues to be the same.
<b>Prototype</b>	We refine the user experience through prototyping using wireframes to rough out the initial sketch and/or directly in Tableau depending on the design predicates. During prototyping we will transition from wireframes (if they are required to sketch out the initial solution parameters) to prototyping of dashboards and indicators directly in Tableau using an Agile process that includes sharing in process asset development and iterative sprint-based work product delivery.
<b>Iterate</b>	Final step is to iterate. This process allows us to further refine the user experience through a reexamination of user personas, business questions, and data-to-decision-to-action flows. At each iteration, we update and validate the wireframes or the solution where back-end changes are required working through the prioritized backlog.

Figure IV-D.1-34. Design Life cycle.

**Topic 4 – User Friendliness and Usability**

1.4.2. How efficient is the Software in terms of the number of operations required to perform basic tasks.

Our AAA methodology offers efficiency across three dimensions as illustrated in the table below:



Our Proposed Solution Efficiencies	
<b>Design Efficiency</b>	Our team will develop user interfaces to answer durable, enduring questions to ensure the dashboards provide answers to business questions that are most asked over an extended period by their respective personas. For each of these questions, we seek to reduce the number of steps to retrieve an answer, often centralizing the answers into single-glance, or single-click locations (e.g., key performance indicator bars or pages). For the Opioid Crisis Dashboards, we will leverage our HHS Interactive Opioid Insight dashboards along with existing NH experience (e.g. NH Wisdom).
<b>Performance Efficiency</b>	Performance is a crucial component of our design methodology. In addition to following the best design practices that we have developed with our years of experience in Tableau implementations, our team will apply the Tableau performance recorder to identify and fix the problem spots which slowdown the response times. For example, using functions such as “hide all unused fields option”, applying extract filters, optimizing extracts by performing calculations in the database and reducing nested calculations etc. will improve the query speed and performance. leading to accelerated viewing of analytics.
<b>Day-one results efficiency</b>	Opioid Insights includes “Benchmarks” which is our proprietary list of opioid risk metrics and algorithms that will be configured into the Department’s environment, to bring you insights on day one.

Figure IV-D.1-35. Solution Efficiencies.

Opioid Insights dashboards provide enhanced data visualization and integration of unique, geographically-specific indicators of the opioid epidemic. They enable surveillance of various aspects of the opioid epidemic, including opioid prescribing patterns, illegal activity, opioid drug deaths, emergency room visits, and treatment facilities. Department stakeholders can use the tool to understand opioid-related activity (diagnosis, procedures, prescriptions, mortality) and identify potential areas for intervention.

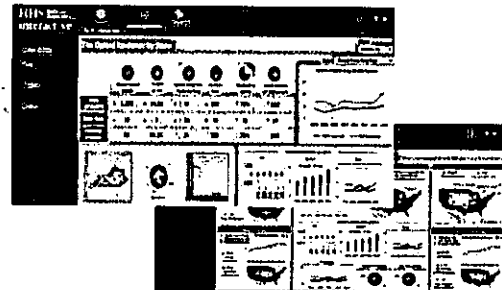


Figure IV-D.1-36. Sample Dashboards.

Dashboards enable data assessment at differing geographic granularity: state, region, county and township level. By looking at the problem geographically, Department will be able to assess problem areas, track trends over time, forecast future values, and identify areas to act.

The solution also includes Google data sets, including New Hampshire-based google search datasets, that will be used by our proposed At-Risk + model, which will combine search data with the de-identified APCD member claims data from EBI to produce early indications of geo-based OUD trends.

**Topic 4 – User Friendliness and Usability**

**1.4.3. How does the Vendor’s proposed training process support the application?**

We believe the combination of a user-centric design approach with a Train-the-Trainer methodology and a shadowing approach for power users and developers to be most effective for training the largest number of users to support the application.





By engaging stakeholders at every step of the development process, we gain buy-in and user insights. The state staff will also be integrated with the Deloitte team through consistent collaboration and shadowing, which will allow the state staff to have all the needed knowledge to continue to improve the application. We also provide the participating stakeholders a core set of users who understand the infrastructure that supports and business rationale behind each element of Opioid Insights. This experience will enable these stakeholders to serve as resources for other as Opioid Insights is rolled out.

By including a shadowing approach for continuous knowledge transfer and a unified Deloitte and state team, the application will be understood by a multitude of cross functional team members. This will allow more users to be able to help others learn about the system and be a part of the training process.

We will design our Train-the-Trainer curriculum and shadowing sessions using real-life scenarios tailored to your operational priorities and required analytics challenges.

For more information on our training development and approach, see section D.2.2.

**Topic 4 – User Friendliness and Usability**

**1.4.4. How much time is required to make new users fully functional and able to input into the system?**

Our user-centric design process intends to reduce the time from the introduction of Opioid Insights to a fully functional user base. This is due to the quick and easy understanding that is a core component of user-centric design. We anticipate that the average user would be able to navigate and use the dashboards with little to no training through usage of an intuitive navigation model and visual self-explanatory dashboards that use fly over and annotation to provide context.

We expect trained (or untrained) users will be able to put their skills to the test immediately through: 1) the intuitive design structure; 2) the instructional tool tips and Quick Reference Guides incorporated throughout Opioid Insights (see section 1.4.7 for more information).

There will be quick instructional sessions hosted by a combination of Deloitte trainers and state trainers from the Train-the-Trainer program that will help users further their skills and abilities within the application. This will be supplemented by the QRG's and hands on exercises that will allow for the users to quickly gain the knowledge that will allow for them to be fully functional in the new application. All in all, a new user can understand full functionality of the application within a few days of starting the training curriculum.

This training will be augmented by deeper dive training for DHHS and DoIT staff that will be working with the core technologies along with shoulder to shoulder knowledge transfer to prepare the State to transition and/or extend the DAP investment without reliance on a vendor.

**Topic 4 – User Friendliness and Usability**

**1.4.5. Explain any function driven capabilities that exist in the proposed application.**

We will be implementing Opioid Insights dashboards in Tableau. Tableau is developed with the function-driven capabilities for: exporting datasets and visualizations to various output types (e.g., .csv, .pdf); viewing across user types by user screen preference (e.g., desktop, laptop, tablet, smart phone); customizing to user preferences and clean user flows and intuitive design features; flexibility across browsers; and Section 508 compliance, among others.

All of our end user outputs from our HHS Interactive Opioid Insights, including Indicators, Benchmarks, At-Risk and At-Risk+ will be managed using the same basic end-to-end process described below:



- **Exporting data and visualizations:** Your data should be accessible in the form most relevant to your reader. Opioid Insights dashboards provide capabilities for printable reports that can be customized in the Page Set-up dialogue box. Where users simply need raw data, dashboard allows authorized users to drill-down into the underlying transactional level data from every data point, including graphical charts with options to export the data in .csv format for further analysis.
- **Viewing across screen preferences:** Users have different preferences; some like to view data on a cell phone on the quick trip to the board room, others like to dig into the data across three screens. We want to make sure that we build Opioid Insights to do just this. Native Tableau functionality will be leveraged to adjust and preview the look and feel of dashboards to be compatible with any device. Tableau’s “fit all” option allows us to automatically scale the view of dashboards across multiple frame sizes. Where the automatic functionality does not cut it, Tableau allows us to customize views based on the most common screen preferences by Department’s users.
- **Customization for a clean user experience:** User experience is the governing principle of our AAA dashboard design methodology, our proposed Tableau based dashboards provide Department users a clean interface, attractive color palate, and continuously supported updates from Tableau allow us to adapt a user experience with the evolving needs of your users.
- **Flexibility across browser types:** Tableau Server, Tableau Public, and Tableau Online seek to deliver compatible experiences across all browsers. Web browsers with HTML 5 <canvas> element (Internet Explorer 9.0, Firefox, Chrome, and Safari) are supported for client-side rendering. This means that we will be able to adjust how much data will be rendered across computers and mobile devices based on view complexity thresholds. This will allow us to ensure that display speeds are adjusted according to the processing power of a user’s system.
- **Compliance:** We recognize the importance and value of Section 508. Tableau based Opioid Insights dashboards helps us to meet that degree of compliance. Tableau Versions 10.2 and later support adaption and support for screen readers, braille keyboards, and keyboard-only navigation. The Color-Blind Palette also allows us to select colors that can be quickly understood by viewers of all abilities.

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**Topic 4.– User Friendliness and Usability**

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1.4.6. How does the solution address advanced analysis such as predictive analysis, root cause analysis, actionable information to determine cost-effectiveness, identification of "hot-spotters" (clients in communities with multiple complex health conditions who are high-utilizers of care, services, etc.)?

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Consistent with Deloitte’s #1 ranking as a provider of applied analytic solutions (see corporate experience section), the Deloitte solution provides a wealth of advanced analytic capabilities including in the three areas detailed below: predictive analysis and root cause analysis, identification of “Hot spotters”, and determination of cost-effectiveness. Key to Deloitte’s independent rankings is our ability to make advanced analytics easily accessible within a user’s organization by using proven solutions like HHS Interactive along with labs where clients participate in finalizing the customized user interface design. Deloitte has completed 1000s of our persona-driven design labs like what we will provide New Hampshire. This customization increases the “usability” and user-friendliness of the solution, namely, it improves user acceptance and adoption, increases the impact the analytics have on how people do their job and meaningfully improves how the analytics help the organization achieve its mission.

**Predictive Analysis and Root Cause Analysis:** As an individual becomes at elevated risk of OUD or is clinically diagnosed with OUD, the factors that drive this condition are informed by data from multiple



systems. Putting this comprehensive person-centric or "360" view together around an individual is critical and will be a valuable outcome of this project. It is also a key factor in the NIH HEALing operating model should the New Hampshire/Dartmouth team be selected. Once this person-centric view is in place, advanced machine learning predictive models (see At-Risk and At-Risk+ in section 1.1.26) are trained to provide early identification of OUD based on various attributes proven as predictors as we will demonstrate through the iterative model refinement and benchmarking against historical data to "proof" the model.

Once identified at the individual level, this information is aggregated to the community or state level. The HHS Interactive user interface allows for this information to be filtered, sorted, and analyzed across multiple dimensions. Views will allow visibility into correlations between the predictions and the input variables subject to various filters. Deloitte's experience shows a key to developing accurate predictive models for individual opioid users is to use both time series of the data (i.e. changes at the individual level over time are important for making early and accurate predictions of OUD) and "synthetic" variables such as life factors (social, medical, welfare, prescription, treatment, etc.) which allow for multi-step model training. This last step is important, so the model does not become a "black box" but rather we can easily understand the variables, mostly synthetic, that drive the OUD prediction thus encouraging user acceptance of the predictions. The usability and user friendliness of the solution allows for a rich array of data manipulation across the three types of data: geospatial, temporal and topic specific including the above-mentioned life factors for the individual aggregated to the community or state level.

Deloitte has experience building predictive models for a variety of commercial and public clients. For example, a Medicaid MSO in the Midwest hired Deloitte to build an At-Risk model to identify who within a ~1M patient population of opioid users was at elevated risk of OUD. The model used data sets like what will be used in New Hampshire. When compared with a competing rules-based predictive model, the At-Risk model produced impressive predictive results including: 85% accuracy (vs 15%), 10% error rate (vs 50%) and 50% faster predictions (4-5 months vs 9 months). The results were easily accessed through a user interface based on HHS Interactive. An additional version of the At-Risk model used massive, person-centric Lifestyle data provided by Deloitte called PredictRisk which provides ~1500 commercially accessible data elements on every adult (268M) in the U.S. updated monthly. The NIH HEALing proposal exclusively includes using this Lifestyle data on every adult in the 15 New Hampshire sites (~500,000 adults). This Lifestyle data when combined with the New Hampshire government data will have the potential to drive powerful at-risk OUD predictions with the potential to significantly help not only New Hampshire but, through NIH, many other states.

**Identification of "Hot spotters":** Having direct access to All Provider Claims Data at the individual level provides direct access to aggregated costs per person. This is important to understand and monitor the Hot Spotter population. Data exploration views will facilitate analysis and insights into the drivers behind this population and their associated costs. The ICD codes covering types of costs, treatments, diagnoses, outcomes, etc. will be particularly helpful. Importantly these individual data sets can be aggregated in the tool based on geographic areas ranging from small communities to counties and the entire State.

In addition to individual claims data, geospatial opioid-related information is important for understanding the Hot Spotter population. Deloitte through its Opioids Insight solution brings a wealth of relevant data to this topic. Accessed through HHS Interactive, data from 20+ open sources are linked across geographies and time to provide situational awareness around prevalence, prescriptions patterns (legal



opioids), illegal consumption/seizures, as well as locations and size of treatment assets. Data exploration is enabled through an intuitive, self-serve map-based user interface.

The importance of policy makers having this situational awareness is illustrated by a tragic story in New Hampshire. A boarding community in Massachusetts has emerged as a major source of fentanyl. The movement of this fentanyl throughout New Hampshire has increased the Hot Spotter population, heavily impacting costs and deaths in New Hampshire. This is a major reason New Hampshire has moved from a state struggling with a population abusing prescription opioids into a state struggling with illegal injectable opioids which result in far more Hot Spotters and deaths. Threats like this will morph over time and the proposed solutions will provide policy makers with easily accessible, intuitive tools to anticipate, identify and understand the root cause behind many of these drivers of the Hot Spotters population.

**Actionable Information to determine Cost-effectiveness:** Tying health outcomes to strategic investments/inputs to the system will be important for New Hampshire to evaluate the return on its investment, and an important marker for where to invest in the future. Analysis tools predominantly using the APCD data set will enable direct treatment costs to be aggregated and viewed in various clusters and through different filters including ICD codes for diagnosis, treatment and outcomes. Further work can give data exploration views that study the duration of treatment and time to recurrence or successful avoidance of recurrence.

This foundation can be extended in phase 2 and beyond. New Hampshire's integrated data sets will provide the ability to gain visibility into costs associated with opioids at a level previously not possible. A more sophisticated approach to determining cost-effectiveness for various expenditures that this project will enable involves capture costs at three levels: individual direct medical costs including associated with treatment, costs associated with an individual beyond their medical costs (e.g. TANF, SNAP, child services, law enforcement) and costs associated with dependents across various government programs. The accuracy of these costs across all data sets may require additional entity resolution activity beyond phase 1 requirements but the techniques and tools are known. What this will enable is the ability to look at an individual and model multiyear projected costs at the three levels. Then scenarios for different treatments can be modeled. This will allow for more informed policy decisions. For example, consider a single mother with dependents who has OUD and treatment options are being considered. The model might show, without treatment, heavy consumption of government resources across many programs and departments by her and her dependents that over 5 years there is a 90% chance the costs will exceed \$500,000. At the end she and her dependents will still not be self-sufficient. Treatment A may cost \$20,000 and will have minimal impact on the projected costs. Treatment B might cost \$100,000 up front but entails a rigorous 90 day in-patient treatment coordinated with child care and when she exists the treatment, immediate job training, job placement, transportation credits, housing credits, SNAP and TANF benefits plus Medicaid. Under the second scenario the model may show a 70% chance she and her dependents will be self-sufficient within the 5 years and in total consume substantially fewer government resources. Although these models are not part of the phase 1 requirements, the foundations for this type of analysis to determine cost-effectiveness will be in place.

**Clarity of Bias and Risk for all Models:** For all data science approaches and models, Deloitte will work to help New Hampshire stakeholders understand biases and risks associated with the data science models. Within the visual presentation of our analytics, Deloitte will present interpretable explanations of model insights, as well as error rates and confidence scores. These explanations will help clarify for New Hampshire stakeholders the differences in various sub-populations or individual clusters as developed in the various models. Deloitte will leverage our open-source Model Descriptor tool as an accelerator in



developing these explanations. The overall goal of outputs from Model Descriptor is to help people understand what the model is 'thinking'. For example:

- What is the confidence level for each prediction?
- Which variables are important in making a prediction?
- Does the model over weight one sub-population when making predictions?


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**Topic 4 – User Friendliness and Usability**

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1.4.7. How will a user guidance and/or help functions be developed into the system?

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Opioid Insights will include user guides and help functions embedded into the Tableau dashboards and be available on-demand. Every dashboard will feature a user guide accessible by clicking on the  icon on the top right corner of the dashboard, as well supplementary micro-learnings will be available when the user hovers over the KPIs. Opioid Insights dashboards leverage Tableau's tool tip functionality to deliver this functionality. Embedded user guides will include KPI definitions, dataset criteria in addition to general help on direct the user through a series of steps to find an analytical result or through a series of simple action tasks, such as dashboard navigation or steps to export the dashboard view.



## Topic 5 – IT Standards

### Topic 5 – IT Standards

The State will evaluate the degree to which IT standards used in the Vendor provided product are compliant with other State Systems or use existing State standards.

The proposed Solution must comply with Open Standards and Open Data Formats as mandated by RSA chapter 21-R: Open Standards (HB418 2012).

We recognize the importance of adhering strictly to the currently existing IT Standards in place within the State. Deloitte prides itself on its currently ongoing relationship with the State and its full compliance with legislated IT Standards in New Hampshire over the past 20+ years. The proposed solution is complying with the articles mandated by RSA chapter 21-R: Open Standards (HB418 2012). Additionally, all activities relating to the encoding and transfer of data produced or utilized by the proposed solution meet the criteria for open standards defined in RSA chapter 21-R:10.

Article	Standard	Definition	DAP Solution
21-R:10(I)	Open source software	The software that allows the user unrestricted use of the software for any purpose and unrestricted access to the respective source code, freedom to make and distribute copies of the software	Any software developed as a part of this solution meets the definition of Open source software
21-R:10(II)	Open Standard	Specification for encoding the transfer of data that is free to use in perpetuity, no restriction on the use of data stored in format, creation of software to maintain the data, a human readable format, etc.	All the data stored in human readable format and the data transfer between other agencies follows open data standards
21-R:10(III)	Proprietary software	Does not fulfill all the guarantees provided by open source software	Solution uses open source software wherever it is applicable. State EBI standard dashboard tool Tableau and ETL tool Informatica is proprietary software
21-R:13	Use of open data formats	Comply with open standards for accessing, storing, or transferring of data	Solution meets the criteria

**Figure IV-D.1-37. RSA 21.R: Open Standards Mapping.**

1.5.1. Describe the degree to which your solution complies with information technology standards mentioned on the State of NH Web site: <http://www.nh.gov/doi/vendor>

The proposed solution complies with the standards and best practices as outlined on the Department of Information Technology's Web site.

- Technology – As mandated by DoIT standards, the description of software, hardware, environmental, and network considerations are addressed in this proposal.
- Accessibility – The solution is Section 508 compliant



- Branding – DAP Solution will be designed based on the established EBI platform standards and UI/UX themes which will be approved by the State.
- Functionality – DAP Solution will be designed to meet State standards for content organization, content presentation, usability, capability, schema, expandability, and extensibility.

1.5.2. Is the proposed application considered Open Source Software?

The proposed solution is considered as Open Source Software as defined in RSA chapter 21-R excluding propriety software that the State is also already approved for use in the EBI solution including Tableau, Informatica. In addition, we are using the Google Cloud Platform (GCP) to process the Google digital search data.

1.5.3. Does it comply with Open Standards, including but not limited to Open Data Formats?

The proposed solution complies with Open Standards and Open Data Format. Within the terms of the contract, the proposed solution and associated data will be coded to:

- Be free to implement and use in perpetuity and have no restrictions on the use of data stored in the proposed format
- Have no restrictions on the creation of software that utilizes data codified as in the solution and have a specification for all to read, written in commonly accepted technical language
- Be documented so that anyone can write software that can read and interpret the complete semantics of data stored in the solution's format and meet the criteria of an open data format
- Allow any file written in the solution's format to be identified as adhering/not adhering to the format

1.5.4. Describe the degree to which the proposed Solution meets the requirements of RSA chapter 21-R:10, 21-R:11, 21-R:13.

The proposed solution meets the requirements of RSA chapter 21-R:10 as discussed above as pertains to the solution's Open Source software, Open Data Format, and open standards. As RSA chapter 21-R:13 further expands upon the definitions of Open Standards and Open Data Format and the commissioner's compliance with them, it is worth noting that the proposed solution meets the conditions stipulated in chapter 21-R:13 as well.

1.5.5. Identify what industry standards are incorporated in to the Solution.

1.5.6. Identify whether standards employed are national in origin or are unique to the proposed Software.

Deloitte offers a longstanding history of successful implementation of analytical solutions of similar origin, and we draw on our own experience, as well the industry's current standard practices, to incorporate standards surrounding the software architecture, data governance, data modeling, user access profiling, user friendliness, user experience and user-centric design, and data modeling and analysis.

## Topic 6 – Data Import/Export Standards and Migration

### Topic 6 – Data Import/Export Standards and Migration

The State will evaluate the ease of interfacing with our current Data import and export layouts for Data exchange. The State anticipates that this system will expand to be leveraged and interfaced by any department within the state as well as external organizations based on approved and compliance-based data sharing agreements. Describe the



mechanisms and tools included in the proposed System to implement these interfaces. Be sure to address the following aspects of this topic:

**Topic 6 – Data Import/Export Standards and Migration**

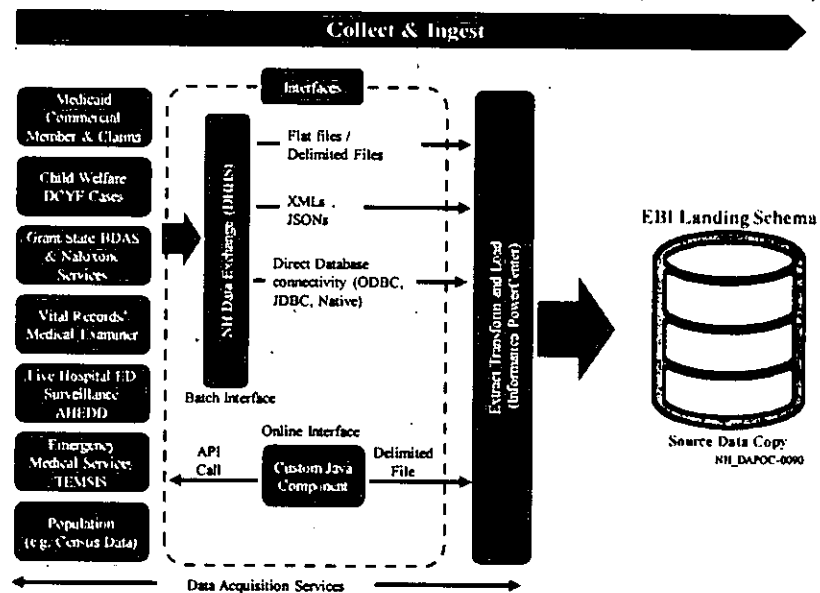
1.6.1. What types of interfaces are possible with the proposed System (e.g., online, batch, etc.)?

1.6.2. What file and database formats can the solution receive?

Deloitte’s proposed solution will support both batch and online interfaces to integrate the data from state-identified Opioid-related data sources and additional relevant public and private datasets.

Deloitte understands that, as part of Phase-1 of the DAP Project, the State would like to integrate data from multiple source systems such as Medicaid Commercial Member and Claims, DCYF, Vital Records, EMS, and other source

systems. From our experience working on the EBI platform, Deloitte proposes to use the existing Informatica ETL to ingest and organize the data from these source systems; this provides the State with a capability to import the data in a variety of formats including delimited (csv, pipe), fixed width, XMLs, and JSONs natively. If required or preferred, we also have the option of using the States Mulesoft ESB platform as a middleware solution for Web services offering extensive data exchange standards and the ability to integrate with Informatica.



*Figure IV-D.1-38. Data Exchange Interfaces & Formats.*

With Informatica as the data integration tool for the EBI platform, our solution has the ability to receive data from a wide variety of files and database formats. Some of the common formats that the State could leverage as part of this solution are listed in the table below.

Database & File Formats
• Relational tables, views & synonyms (SQL Server, Oracle, MS Access, DB2, Sybase, Teradata etc.)
• Fixed-width and delimited flat files that do not contain binary data
• COBOL Files
• XML Files
• Web Services Description Language (WSDL)

*Figure IV-D.1-39. Database & File Formats.*





**Topic 6 – Data Import/Export Standards and Migration**

1.6.3. What Data is available to other systems? What Data may be imported/updated from other systems and how is this managed?

Deloitte is currently building the EBI platform for the Department and has integrated data from multiple source systems. The current architecture lands the data in its source format in the landing layer and then the transformed data is delivered to the DataMart layer to enable analytics. With integration of the data sources identified for the Opioid Insights solution, a large repository of curated datasets would be available to be shared with other systems as shown in the Figure IV-D.1-34.

In addition, the digital data ingested from Google into DAP could also be leveraged. Should NH be awarded the Healing Grant, the data built into DAP could be integrated with the Healing Grant data creating complementary and potentially integrated ecosystems.

These and other datasets initially or ultimately included in DAP can be shared with other systems in the following three ways:

- **Direct access to the data in the DAP Platform:** The consuming systems will have opportunity to either access the granular data in raw format from EBI Landing layer or the transformed and conformed data from the EBI DataMart layer. The data will be secured using views; role-based access to views will be made available for consuming systems.
- **Data Access from Tableau Server:** The data can be exported from Tableau in excel, csv and PDF formats for consumption
- **Data Extracts from the EBI Platform:** Data Extracts can be developed to extract data from the EBI Platform in accordance with the data sharing agreements.
- **Web Services:** Subscription via Web services for data to be exchanged in real-time.

Data imports/updates from other systems will be performed and managed using our Data Management practices. Data management includes all the steps in the data integration life cycle starting from **data ingestion**, which includes initial conversion and delta loads, **data transformation**, and **data loads**, which includes direct updates or inserts to the target databases and/or historical data tracking. In the proposed solution, data from the sources documented in the Figure IV-D.1-35. will be

imported and transformed using the ETL for the initial and incremental data loads. Data will be imported into the landing layer in the source formats. Data Standardization and Data Transformation rules will subsequently be applied to conform and transform the data and deliver it to DataMart layer for reporting

**Datasets available to other systems**

- Consolidated Member Data (Demographics)
- Reference Data
- Claims and Provider Data
- Behavioral health and Long-Term Care Data
- Enrollment and Eligibility data
- Opioid Prescription and Treatment Data
- Emergency Services and ED Visits Data
- Mortality and vital records Data
- Naloxone distribution and admin Data

*Figure IV-D.1-40. Datasets available to other systems.*

Data Sources	
Medicaid Commercial Member & Claims	Live Hospital ED Surveillance AHEDO
Child Welfare DCYF Cases	Emergency Medical Services TEMSIS
Grant/State BDAS & Naloxone Services	Other Opioid and Drug Abuse related datasets
Vital Records/ Medical Examiner	

*Figure IV-D.1-41. Data Sources for Opioid Insights.*



and analytics. Modeling techniques like Type-1 and Type-2 Slowly Changing Dimensions will be leveraged to preserve the referential integrity and history of the data in the DataMart. Columns such as create date, modified date, and source identifier would be incorporated in the data model to support the audit, balance, and controls. Overall, the solution will employ robust data management practices to deliver data that meets high quality and integrity needs.

**Topic 6 – Data Import/Export Standards and Migration**

1.6.4. What data (if any) is not available for import/export and how is this managed?

Data sharing agreements and roles and authorizations provided to stakeholders will be used to manage access to data. Data which the Department wishes to restrict access will be managed through active directory, Tableau and Oracle.

**Topic 6 – Data Import/Export Standards and Migration**

1.6.5. What tools are provided with the System for the development of interfaces?

The solution has two types of interfaces and the following tools will be used to develop them:

- Data Interface
  - Existing ETL tool, Informatica, will be leveraged to build the data interfaces to ingest and transform the data from source systems and deliver the data to the landing and DataMart layers in the EBI platform
  - Python and R would be used to meet any specific data wrangling and standardization needs
- User Interface
  - Tableau will be used to visualize the data via reports and dashboards
  - R would be used to build statistical models which could further be integrated with Tableau to support advanced analytics

**Topic 6 – Data Import/Export Standards and Migration**

1.6.6. What scheduling tools are required for initiation of interfaces? Are these tools included with the proposed solution?

Deloitte understands that a scheduler facilitates batch execution with the defined dependencies and reduces manual intervention and risk; we propose using the existing Informatica scheduler to initiate interfaces and configure dependencies, which can be either time- or event-based. The following types of schedules will be built as part of the solution.

Step	Schedule	Program Type	Purpose
1	Ingestion Schedule	Data Ingestion	This schedule focuses on ingesting the source data into the EBI landing layer
2	Standardization and wrangling schedule	Data Quality	In this schedule, the jobs related to profiling and enhancing data quality will be executed in the EBI Staging layer
3	Transformation schedule	Data Warehouse Build	The data will be transformed and conformed prior to loading into EBI DataMart in this schedule



Step	Schedule	Program Type	Purpose
4	AI/ Machine learning Schedule	R & Python	This schedule will execute R & Python Models on the data for generating statistical and graphical results
5	Data Visualization Reports Schedule		Reporting jobs will build aggregate tables in the EBI DataMart to support Tableau dashboards in this schedule

*Figure IV-D.1-42. Interface Schedules.*

**Topic 6 – Data Import/Export Standards and Migration**

1.6.7. Are there any constraints upon the timing of batch interfaces?

There are no timing constraints associated with our solution, however, batch jobs loading the data to the EBI landing layer need to be tightly coordinated with the schedules of the sources systems identified in this RFP.

The data loads to the subsequent EBI DataMart layer will adhere to defined dependency rules. Conformed dimensions, such as person or member, is core to Opioid analysis and will be loaded prior to loading of the factual data from other sources like EMS, Claims, and Vital Records. Aggregate facts to support Tableau dashboards would be loaded toward the end of the data load schedule.

**Topic 6 – Data Import/Export Standards and Migration**

1.6.8. Does the System employ standard definitions or file layouts for interfaces? If so, include a sample in an appendix.

The solution will be configured to meet the State’s business needs for opioid analytics on the Data Analytics Platform. Our solution will use existing data import and export layouts used for data exchange as much as possible to integrate the data in an expeditious and efficient manner.

For new data sources not covered by the existing data exchanges, Deloitte proposes to leverage the existing data integration tool, Informatica, to ingest data into the EBI platform. The solution will be flexible to accommodate a variety of data formats supported by Informatica such as csv, pipe delimited, fixed width, and xml from source systems, as defined in the agreement, and will land the data in the EBI landing layer in the source format.

**Topic 6 – Data Import/Export Standards and Migration**

1.6.9. What standard interface formats are used with the proposed Software? What degree of flexibility is available?

The proposed solution has flexibility to support the predominant industry standard formats using Informatica. However, it expects the sources to share the data in the format defined in the data sharing agreements for ingestion into the EBI platform.

**Topic 6 – Data Import/Export Standards and Migration**

1.6.10. How does your solution meet the objective of providing a seamless and productive environment for users

One of the objectives of our solution is to provide business users with a centralized repository of the data entities that support effective analytics to address Opioid crisis through a single instance of Tableau with a unified navigation model and UI/UX theme. The proposed data model that will store the data at the lowest level of granularity as possible.



Deloitte's Data Model is divided into three layers:

- **EBI Landing Layer:** The data from the identified source systems in this RFP will be stored in the granular source format in the landing layer. This will help users perform source data specific analysis easily using the identified use cases.
- **EBI Staging Layer:** This layer will be primarily used to stage and standardize the data before de-normalizing it in the DataMart layer. This layer is generally not used by the users and is more for supporting the data transformations.
- **EBI DataMart Layer:** Dimensional subject areas will be built by combining the data received from multiple data sources in this layer. The facts and conformed dimensions will help the users complete cross-functional, cross-program analysis and help unearth factors that may be leading to opioid crisis. In addition to the granular dimension tables, this layer will also house the aggregate reporting tables that will enable better-performing Tableau reports and dashboards.

Our approach of data integration and data modeling will help users with a one stop shop or a centralized data repository of all the data needs to analyze business problems, glean patterns and trends, and derive actionable insights related to the crisis, thereby making it seamless and productive for the users.

The Tableau reports that will be presenting the key metrics and visualizations will be automated refreshed based on schedules that align with the incoming data batch schedules to reflect the most current data on the dashboards and scorecards. In summary, Deloitte's modular design for data analytics platform would account for the State's needs for automation in data ingestion, transformation, and delivery to enable seamless, secure, and productive usage of data and analytics by business users and data scientists.

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**Topic 6 – Data Import/Export Standards and Migration**

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1.6.11. How does your solution meet all mandatory State requirements and is consistent with the standards and requirements detailed in this RFP.

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Deloitte's proposed solution meet State requirements as defined by our response in this topic area as well our broader response. The proposed design provides a scalable platform for future data integration and analytics consistent with the Departments vision for an adaptable and extendable platform. We extend the existing EBI platform, which is being developed based on State standards and will leverage the tools, technologies, processes, and practices to meet RFP requirements.

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**Topic 6 – Data Import/Export Standards and Migration**

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1.6.12. How does your solution meet the requirement of the provision of development, testing/verification, training, certification, and production environments to be used to develop, deploy, maintain, and operate the integrated system.

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Our overall approach to deliver the Opioid Insights solution is built on Deloitte's Agile for Advanced Analytics (AAA) methodology as described in section 1.1.11. As part of the SDLC, Deloitte recommends conducting development, testing, certification, and production deployment. Deloitte will work with stakeholders and leverage the established processes to move through the SDLC phases in the agile framework. Also, Data Governance will establish new standards, policies, and rules that may be needed to streamline the process. Lastly, the existing EBI support team will be augmented to provide operational



support for the data analytics platform for Opioid crisis. We recommend using Jira to manage this life cycle creating a process and audit trail for validation of interfaces.

**Topic 6 – Data Import/Export Standards and Migration**

1.6.13. How will the proposed solution provide the State of New Hampshire the processes, tools and training to be able to continue the integration of data sources into the Data Analytics platform?

Deloitte's proposed solution will use modular architecture as described in section 1.2.2. The solution offers a flexible data ingestion process where source data will be consumed by the ETL process and stored in the EBI landing layer in the source system format with Informatica as the underlying toolset.

Our intent is to continue to promote knowledge transfer on Informatica, including shoulder to shoulder collaboration and shadowing for the DHHS/DoIT staff identified for ongoing support and future expansion. By extending NH's current tool selection, we minimize the knowledge transfer required for the new DAP capabilities. It is our expectation that assuming the State commits resources, DHHS/DoIT would have the skills to assume responsibility from and/or augment vendor staff at State discretion.

Deloitte, as part of knowledge transfer activities, will document processes to integrate new data sources to the platform. This process will include the considerations for data ingestion, data standardization using Informatica Data Quality, and data modeling for effective cross program analysis.



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## D-2. Technical Services and Project Management Experience

### D-2.1 Security and Protection of Data

Deloitte brings a strong understanding, recognition, and a fresh perspective of the business criticality of security. We have a history of effective engagement within New Hampshire, including support of similarly sensitive client data within the integrated eligibility system, New HEIGHTS.

Deloitte brings industry-leading security specialists with extensive experience securing information for both public and private sector health and human services clients. This, coupled with our strong understanding of and proven ability to implement security controls frameworks for current New Hampshire systems, positions us as a strong partner to support your security and business continuity needs.

IDC MarketScape Worldwide Risk Consulting Services Vendor Assessment

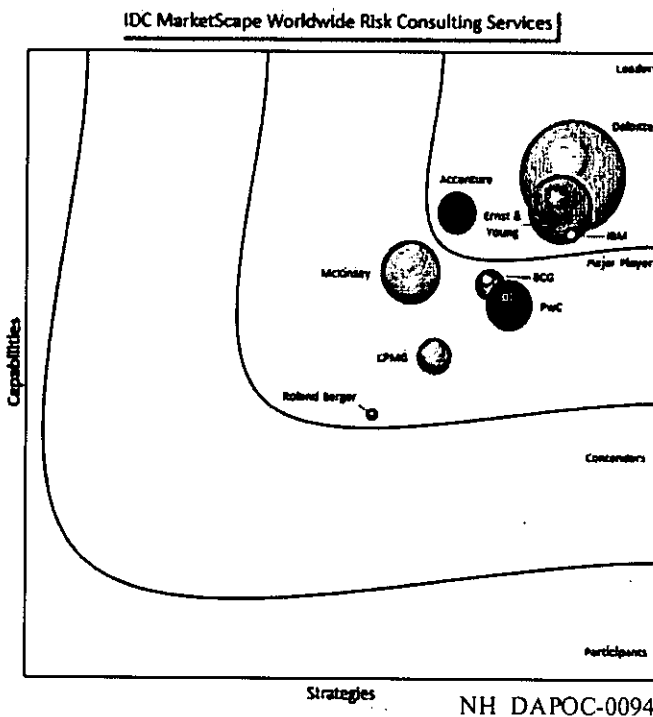


Figure IV-D.2.1-0. Deloitte's ranked #1 by IDC MarketScape.

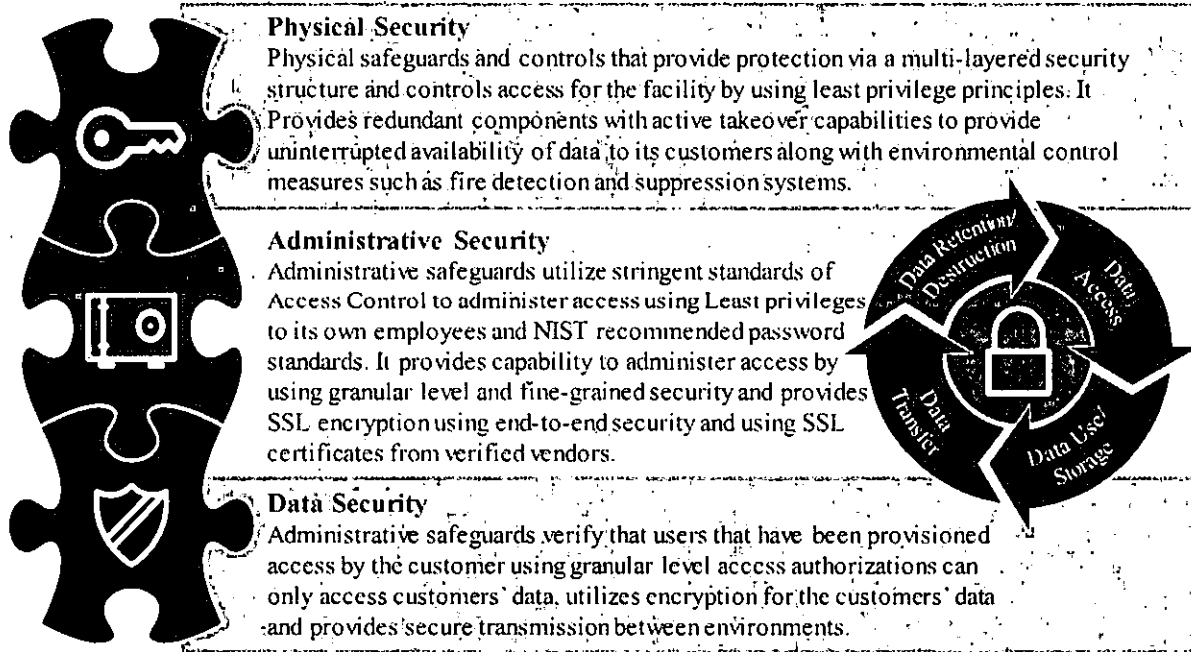
#### Distinguishing FACTORS

- MARS-E 2.0 security requirements expertise and strong partnership with CMS
- 35 years of experience managing security requirements
- 1300+ cyber risk clients nationally
- IDC ranked Deloitte the leader in Worldwide Risk Services
- Four decades of managing PHI and PII
- As per Forrester, "Deloitte has the largest number of dedicated BC professionals of any vendor... as well as the broadest geographic reach and presence."

On these projects, we have created protection and security standards to safeguard client information and data and to ensure business continuity. Our existing processes and standards meet the State's requirements and security policies and are aligned with federal and state laws, regulations, and policies. The proposed HHS Interactive Opioid Insights solution will be tailored align to the State's existing backup and disaster recovery plan through a close collaboration with DHHS and DoIT.



The following Figure IV-D.2.1-1 illustrates the features and benefits of the proposed approach for this project:



NH\_DAPOC-0066

Figure IV-D.2.1-43. Features and Benefits.





## Topic 7 – System Security

### Topic 7 – System Security

2.1.1 The State will evaluate the degree to which System issues can be avoided....

The State will evaluate the degree to which the proposed System is designed and architected to ensure the confidentiality and integrity of its valued asset, Data.

2.1.1.1. Describe the System security design and architectural features incorporated into the proposed Software. At a minimum, discuss the following:

2.1.1.1.1. The identification and authentication methods used to ensure that users and any interfacing applications are identified and that their identities are properly verified.

Our proposed solution will integrate with the State’s Active Directory (AD) and leverage it as the source for user authentication. This will ensure that access is only granted after a user is identified/authenticated with their existing state issued user id and password (based on DoIT’s access control standards) and that the sensitivity of the data available corresponds with the users’ access credentials. This will be enabled using role-based access control in Tableau and Oracle.

The Data Analytics Platform that supports the HHS Interactive Opioid Insights solution uses an integrated set of products and processes designed to work together to improve security at every level, as depicted in the figure below:

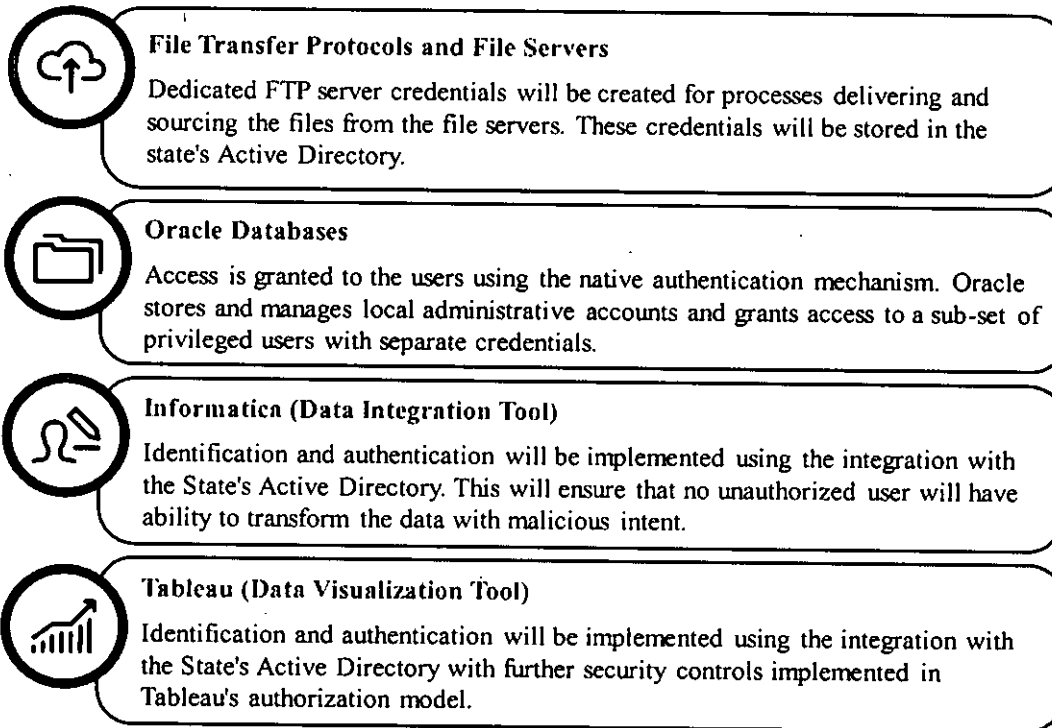


Figure IV-D.2.1-44. Component Security.

### Topic 7 – System Security

2.1.1.1.2. The authorization methods used to ensure that users and client applications can only access Data and services for which they have been properly authorized.



Unauthorized or inappropriate access to DAP data would undermine the confidence of a fragile community. Equally as important to securing this sensitive data is providing the access necessary to curb an epidemic that takes the life of nearly one person a day in New Hampshire.

System controls will be established to conform with data protection requirements. Authorization will play a key role in protection of both data and services. DAP will be built on an architecture and a set of practices that place a strong emphasis on security and data protection. The solution will provide multi-layered security capabilities, including authentication, authorization, data protection, secure communication, and role-based authorization services.

The data is accessible to authorized analysts via direct SQL queries, to end users through Tableau, and to other applications using Web services or SFTP. These access methods will be configured to provide access at a granular/object level through the assignment of system roles that it will manage internally. Controlled access is provided using the algorithm of least privilege by providing users only what they need to fulfill their assigned responsibilities. Solution security controls enforce user access to databased on assigned roles.

The data protection strategy will be aligned with the data sharing agreements between DHHS and data source providers. The policies and standards that will apply for the protection of the data will depend on the data, the governing agency, and the governing agency's regulations, including:

- **Social Security Administration (SSA)** data sharing agreements will be reviewed for clauses requiring data share partners' compliance with SSA policies, among other data protection measures.
- **Protected Health Information (PHI)** data sharing agreements will be reviewed for language outlining compliance requirements pertaining to HIPAA, HITECH, and HITRUST, among other data protection measures.
- **Personal Identifiable Information (PII)** data sharing agreements will be reviewed for language requiring compliance with NIST SP 800-53 Rev 4.

The data protection strategy will be aligned with the Memorandum of Understanding (MOU's) that governs data sharing agreements between DHHS and data source providers. Based on the results of these activities, the schemas and access methods will be aligned with the requirements defined above.

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#### Topic 7 – System Security

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2.1.1.1.3. The immunity methods used to ensure that unauthorized malicious programs (e.g., viruses, worms and Trojan horses) do not infect the application.

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Deloitte will use the State's network security controls, including but not limited to, IPS, IDS, Firewall, and antivirus software, to secure the DAP and the information contained in the system. Infrastructure security capabilities of the State network environment, such as firewalls, application firewalls, antivirus, patching, configuration management, and vulnerability scanning, will be leveraged to provide mechanisms to defend the security solution from internal and external threats.

Any custom code that is developed by Deloitte will be scanned using HP Fortify to identify any vulnerabilities, and these will be remediated prior to implementation.

For data on the Google cloud, the solution includes vulnerability scans for security threats through Cloud Security Scanner. It will automatically scan and detect four common vulnerabilities, including but not limited to, cross-site-scripting (XSS), Flash injection, mixed content (HTTP in HTTPS), and



outdated/insecure libraries. Additionally, VirusTotal will be used to analyze files and URLs, enabling the identification of viruses, worms, trojans, and other kinds of malicious content detected by antivirus engines and Web site scanners. Data loaded in the Google cloud platform will be de-identified to further reduce the risk of exposure in the data lake platform.

**Topic 7 – System Security**

2.1.1.1.4. The methods used to ensure that communications and Data integrity are not intentionally corrupted via unauthorized creation, modification or deletion.

As part of the security design, we allocate resources to develop the application security design to protect data from unauthorized access, modification, or deletion throughout the 3-tier architecture of the solution. The security methods maintain data integrity to the Datawarehouse and Informatica in the data tier, Python, R Studio, and Tableau server in the application layer, Tableau dashboards in the presentation layer, and Web services and SFTP for subscribing systems.

Our on-premise solution will extend the controls and methods currently being deployed to protect sensitive data entrusted to DHHS. As required by the State, Deloitte will define an Application Security Plan, capturing the security controls and approach as per the compliance requirements in alignment with state and federal standards, to counter security threats and protect data integrity, confidentiality, and availability. The plan will outline how data will be protected from modification and replay attacks during exchange of data over the network. As data progresses through transformation, only automated, authorized system functions modify data in a uniform and consistent fashion. These changes will be tracked and stored so users can easily understand the data transformation process. All activity within the database is audited with insert and create dates, associated user credentials, and the system functions that executed these activities. Users will be restricted from running update, insert, or delete statements on permanent tables. Virtual or "soft" deletes will be leveraged on an as-needed basis, and all records will be considered for recovery and back up.

The de-identified data stored on the Google Cloud Platform will be encrypted at rest and while in transit over the Internet to ensure that communication and data integrity is not intentionally corrupted. Additionally, systems will be set up with secure access and will be associated with cryptographic credentials that will be authenticated for any communication to exclude unauthorized modification and deletion of data. The solution will use the Advanced Encryption Standard (AES) to encrypt data at rest.

**Topic 7 – System Security**

2.1.1.1.5. The methods used to ensure that the parties to interactions with the application cannot later repudiate or rebut those interactions.

Building upon the work delivered as part of the EBI project, our solution will maintain detailed audit logs of actions performed by an authenticated user throughout the 3-tier architecture of the solution, i.e. Datawarehouse and Informatica in the data tier, Python, R Studio, and Tableau server in the application layer, and Tableau dashboards in the presentation layer. This information will include user id, action taken, action timestamp, and IP address used to connect. These pieces of information memorialize interactions with the application to protect against repudiation or rebuttal of interactions and their actions. Additionally, SSL, certificates, and encryption non-repudiation mediums will be implemented by the solution in conjunction with access management to ensure a transaction was initiated by the user.



**Topic 7 – System Security**

2.1.1.1.6. The Intrusion Detection methods used to ensure the detection, recording and review of attempted access or modification by unauthorized individuals.

Intrusion Detection Systems (IDS) play a vital role in protecting the data security of DAP. We will implement preventative measures and employ intelligent detection controls at data entry points.

For on-premise data will leverage the State's existing network security infrastructure (e.g., firewalls, Intrusion Detection Systems (IDS), Intrusion Prevention Systems (IPS), geofencing), and Security Incident and Event Management Systems (SIEM) using the IBM QRadar solution to prevent user identity and data from leaking to unauthorized users.

Data stored on the Google cloud will be protected by the perimeter defense solution, including network firewalls built into Google VPC and web application firewall capabilities, preventing detection and modification of data by unauthorized users.

**Topic 7 – System Security**

2.1.1.1.7. The privacy methods used to ensure that confidential Data and sensitive communications are kept private.

We understand the various regulations with which the solution must comply, including but not limited to, HIPAA security and privacy rule requirements, and are proposing a solution that protects confidential data from unauthorized access while protecting private communications within the solution components and between the end user and the solution.

To protect confidential data, our solution takes a 3-pronged approach that maintains data privacy and makes data available only to those who have a business need to access/view it. These include:

- **Protecting data at rest:** The data in the Oracle databases will be encrypted using Oracle native encryption mechanisms and will be monitored to protect against exposure of confidential data through direct access to the databases from the OS. Additionally, Informatica will be configured to purge all the staging tables once the ETL processes have been completed.
- **Protecting data in transit:** The data transmission protocol established in the EBI Database and Informatica will be carried forward to DAP and traffic will be carried over encrypted channels using Transport Layer Security (TLS). Secure/Multipurpose Internet Mail Extensions (S/MIME) will be used for securing email communications. End user access to the application via the browser will be available only over Hyper Text Transfer Protocol Secure (HTTPS) when viewing confidential data.
- **Authorizing access to data:** Access to confidential datasets on Tableau will only be granted after authenticating and authorizing users. The application tier components for Python, R Studio, and Tableau will use the State's Active Directory as the authoritative source for user identities. Access rights will be granted to individuals based on their job function and role, using the concepts of least-privilege and need-to-know. Requests for additional access will follow a formal process that involves a request and an approval from an authorized State representative, such as the data steward or data owner. Access to infrastructure native accounts will be limited to a very small subset of application developers and administrators. This access will be reviewed periodically to verify the user has a documented business need requiring access.

Data that is uploaded to GCP for further analytics/analysis will be de-identified, aggregate data that will be imported to DAP for end user access.



**Topic 7 – System Security**

2.1.1.1.8. The System maintenance methods used to ensure that System maintenance does not unintentionally disrupt the security mechanisms of the application or supporting hardware.

Deloitte has extensive experience operating Change Management processes in complex multi-vendor operating environments. These processes govern how application changes, including standard system maintenance, code/configuration updates, and infrastructure changes, including patches and upgrades, are deployed in the production environment.

Our proposed change control approach contains four steps:

- Change Identification
- Change Evaluation/Impact Assessment
- Change Review/Authorization
- Change Implementation

**Step 1: Change Identification**

A Change Management Request (CMR) is used for identifying changes to system maintenance and enhancements. The CMR is intended to capture detailed information, such as description of the change request, priority, affected components, and due date.

**Step 2: Change Evaluation/Impact Assessment**

The purpose of this phase is to facilitate effective change decisions. Some of the key assessment tasks are outlined below.

- Classify the impact: substantial, moderate, or minimal.
- Identify the components that are affected by the change, analyze the extent of the change required for a component, and prevent authorized modifications from accidentally defeating its security mechanism.
- Identify the web application components impacted by the change and perform vulnerability testing for components that are accessible to end users through their browser.
- Perform regression testing across environments, considering critical systems functionality, potentially affected performance, security, interoperability, and other relevant non-functional requirements established by New Hampshire.

**Step 3: Change Review/Authorization**

After a CMR has been evaluated and analyzed by the project team, the change request details are presented. After a consensus is reached on how to proceed, approved CMRs are assigned a priority: critical, high, medium, or low.

**Step 4: Change Implementation**

Once the change request has been approved and prioritized, the project team can begin development, implementation, and regression testing.



Deloitte has delivered exceptional maintenance and operations installations in other states, including large enterprise platforms like Georgia, Pennsylvania, and Texas. We will bring that same expertise and production proven solution to the DAP environment to minimize issues and risks.



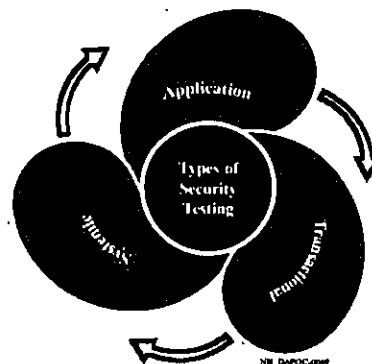
The system maintenance security requirement will maintain the levels of security specified in the security requirements during the usage phase. The configuration and policy will be adopted to track and monitor system changes and prevent disruptions to the system.

**Topic 7 – System Security**

2.1.1.1.9. The testing methods conducted to load and stress test your Software or Solution to determine its ability to withstand Denial of Service (DoS) attacks.

Deloitte will conduct security functional testing, which takes into consideration the overall testing requirements, including people, processes, and infrastructure required for a successful implementation of DAP. Our team will build a core set of test cases that will be leveraged for our solution testing. These test cases, among several others, include specific stress tests that focus on DoS attacks on the various components within the solution, including the data tier databases/Informatica and user-facing Tableau.

The stress testing will be performed in conjunction with performance testing and will help measure the software’s availability and resistance to DoS attacks. The stress testing will be performed to break the system under rigorous tests and determine the points of failures. The results of the testing will enable us to deliver a solution that can comfortably withhold the stress of day-to-day operations and demands, as well as be secure from known attacks like DoS. In addition, we will complete penetration tests and collaborate with DoIT for Nessus scanning performed against the server for any vulnerabilities that may exist and will resolve issues, if found, in cooperation with DoIT.



*Figure IV-D.2.1-45. Security Testing Types.*

**Topic 7 – System Security**

2.1.1.1.10. The ability of your Software to be installed in a “locked-down” fashion so as to turn off unnecessary features (user accounts, operating System services, etc.) thereby reducing the Software’s security vulnerabilities and attack surfaces available to System hackers and attackers.

The solution will be deployed on the hardened DoIT servers that are “locked-down” to the State standards. In addition, the software will be configured to reduce the exposure and attack surface by applying the principles of least privilege and least functionality (i.e., restricting ports, protocols, functions, and services), employing layered defenses, deprecating unsafe functions, and eliminating Application Programming Interfaces (APIs) that are vulnerable to cyber-attacks.

**Topic 7 – System Security**

2.1.1.1.11. The notification and escalation process in the event of an intrusion.

The solution deployed on-premise will leverage the existing Security Information Event Management(SIEM) for monitoring and identifying non-standard access patterns. Deloitte will work with the State to enable monitoring of events based on gathered event information, unauthorized local, network, and remote connections through a SIEM tool. State security personnel will be alerted to take necessary actions in the event of suspicious events through QRadar. The tool will be configured in cooperation with DoIT to produce periodic security management reports, including State-approved



corrective action plans. It will also generate incident reporting and near-real-time alerts to the State team based on security thresholds that will be jointly agreed to by Deloitte and the State.

The solution deployed on Google Cloud will include intrusion detection services that alert administrators of malicious activity and policy violations and identify corrective actions. Google will handle any infrastructure level intrusions and immediately notify Deloitte if the intrusions impact (or are suspected to impact) any of Deloitte's solution components.

An Incident Report will be created for intrusion events impacting our solution and will include the details of the incident, the steps taken to mitigate any immediate threat, the steps taken to ascertain the scope and nature of the breach, the nature of the breach itself, the list of affected individuals, and any other relevant information relating to the incident. Incidents will be tracked using the DoIT tracking system.

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**Topic 7 – System Security**

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2.1.1.2. Describe the System assurance provisions incorporated into the proposed Software. At a minimum, discuss the following:

2.1.1.2.1. What process or methodology is employed within the proposed Software to ensure Data integrity?

---

All the layers of the solution design contribute to provisioning of system assurance. The data landing layer focuses on landing the data from various systems like MMIS, Commercial Claims, Child Welfare system, Vital Records, Hospital data, EMS data etc. in their original format to aid data reconciliation. The data integration processes leverage Deloitte's standard Audit, Balance, and Control steps to enhance traceability to records as the data flows between various data stores. The validation steps flag the error records for remediation and re-processing. At the database layer, data modeling and the ETL process will be designed to include data quality validation and integrity.

Finally, the Deloitte team engages with the data stewards to manage operations and support in order to train them on the data flow processes, quality checks, and recovery processes in the event of failure.

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**Topic 7 – System Security**

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2.1.1.2.2. To what degree does your approach rely on System assurance capabilities of the relational database management system (RDMS)?

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Modern relational database management systems (RDMS) offer several features that help with system assurance. The standard features of securing the data at rest (in RDMS), such as setting user accounts and authentication, setting up privileges and roles for securing the data access, leveraging features like transparent data encryption, user session management, and database audit, will be leveraged. In addition, the proposed solution improves system assurance by placing controls at the data integration and data visualization layer. Section 2.1.1.2.1 discussed some of the aspects of the system assurance at the data integration layer. The data visualization layer, Tableau, will be the main medium of analyzing and visualizing opioid analytics. Coarse and fine-grain security measures will be implemented at this level, securing access to objects and data therein only to authorized users.

In summary, the solution will not only leverage the assurance capabilities of the databases, but also contributes to the design of assurance in the each of the data integration and data visualization layers to provide greater confidence to the end user regarding data integrity.

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**Topic 7 – System Security**

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2.1.1.2.3. If multiple databases are employed, what extra procedures are employed to ensure synchronization among databases?

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Attachment 11  
STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

Multiple databases are currently not proposed in the current solution, but in the event that the architecture decision is made to have multiple parallel databases to support failover or maintain business continuity in the event of catastrophic failure, data synchronization methods will be employed. The Oracle tools and capabilities currently used by the State on their EBI platform can be utilized for future data synchronization needs:

- **Active Data Guard:** A tool provided by Oracle to create, monitor, and maintain standby databases and eliminate single point of failure.
- **RMAN:** Helps with fine-grained, point- in-time table recovery from the backup. It depends on the RPO defined by the state for its databases.
- **ASM:** Leveraging the mirroring capabilities of the Oracle's Automated Storage Management.
- **Oracle GoldenGate:** A tool provided by oracle to replicate/synchronize the data in real time across database technologies to create backup or disaster recovery databases.

Although the GCP platform is being integrated for digital data and associated machine learning, that data will be aggregated and imported into DAP using the same approach as will be used for other data sources and there is no database integration planned.





## Topic 8 – Backup and Recovery

### Topic 8 – Backup and Recovery

2.1.2 The State will evaluate the degree to which proposed backup and recovery processes protect mission-critical Data, ease of use of these processes, and impact of these processes on operation of the System. The State seeks a sound backup and recovery provision as part of the Solution. Describe the tools used for backup and recovery of applications and Data. Describe the impact of the proposed backup process on the operation of the System. Also, address the following:

2.1.2.1. Use of and method for logging and journaling:

Logging and journaling ensures data consistency and integrity in the event of a failure during a transaction. With logging and journaling, the databases maintain file content changes that foster faster recovery.

The proposed DAP will reside on the existing EBI repository on Oracle database servers hosted by DoIT. These databases leverage DoIT's established database backup procedures for existing databases hosted within the DoIT datacenters and meets the State's defined RPO and RTO requirements.

The DBAs use Oracle's RMAN utility for journaling, logging, and backup capabilities to meet disaster recovery and business continuity requirements. The backups and transaction logs captured between the scheduled backups help with complete recovery of the data within the agreed RTO. The GCP uses data sourced from DAP that could be re-extracted as needed and would not require a log based recovery.

### Topic 8 – Backup and Recovery

2.1.2.2. Single points of failure and recommended approaches for their elimination:

Deloitte proposes to mitigate the risk that arises from Single Point of Failure (SPOF) by establishing redundancy at two levels: Hardware and Software.

Software Component	Migration Strategy
Data Ingestion & Organization	<ul style="list-style-type: none"> <li>Periodically back up the Informatica repository databases and the Informatica component metadata (XMLs)</li> </ul>
Data Visualization	<ul style="list-style-type: none"> <li>Backup Tableau report and dashboard files</li> </ul>
Google Cloud Data	<ul style="list-style-type: none"> <li>Data in Google Cloud platform to be rapidly rebuilt using the raw data available in EBI</li> </ul>
Machine Learning Models	<ul style="list-style-type: none"> <li>Backup models in R and Python regularly</li> </ul>

*Figure IV-D.2.1-46. Mitigation Strategies for Software Components.*

DoIT supports numerous mission critical applications for the State and manages their respective infrastructures to provide a highly available, robust hosting environment. Our proposed solution leverages DoIT's existing backup and disaster recovery procedures to mitigate SPOFs at the hardware level.

DAP is a data-rich environment that is built on copies of data from other authoritative sources. The software tools within the solution, though not deployed as clusters, in a redundant format, have a high degree of resilience as they can be recovered rapidly along with the data. The Software based SPOFs mitigation approach for our solution is enumerated in the Figure IV-D.2.1-4



**Topic 8 – Backup and Recovery**

2.1.2.3. Approach to redundancy

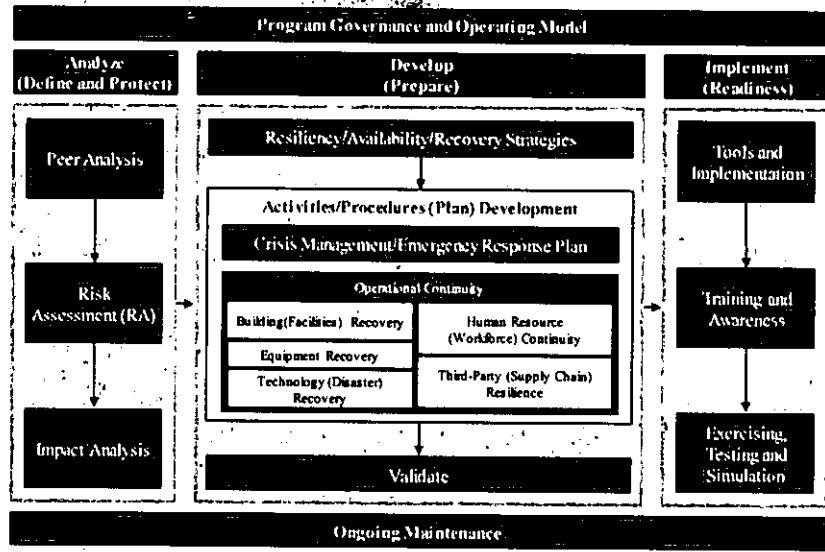
Deloitte will work with DoIT and DHHS to facilitate redundancy in the solution at two levels: Hardware and Software

- Hardware redundancy is accomplished by having redundant components in the existing redundant infrastructure working in parallel in the fault tolerant mode within the DoIT Datacenter.
- Software code components will be designed modularly, versioned, and maintained redundantly to support deployment and recovery, should one or more components be corrupted through application clustering for Informatica and Oracle.

**Topic 8 – Backup and Recovery**

2.1.2.4. Please enumerate your high-level methodology for creation of a Disaster Recovery Plan

Deloitte will leverage its Enterprise Resilience Methodology, which is inclusive of Business Continuity, Disaster Recovery, Crisis Management, and Emergency Management. It outlines an industry standard set of activities used to establish and operate a Business Continuity and Disaster Recovery program. This methodology is aligned with global and national frameworks including ISO 22301, ASIS, and ITIL. The methodology



*Figure IV-D.2.1-47. Deloitte's Enterprise Resilience Methodology.*

utilizes tools and accelerators that allow Deloitte to assist DHHS and DoIT in effectively achieving the DR objectives of the Data Analytics Platform for Opioid Crisis. Throughout the engagement, Deloitte will leverage elements of our methodology along with existing DoIT driven BC and DR methods to provide a single operational framework that will work effectively within the existing DoIT frameworks. Figure IV-D.2.1-5 illustrates our methodology.

**Topic 8 – Backup and Recovery**

2.1.2.5. Impact of Software license fees.

Our backup and recovery strategy for the proposed Opioid Insights solution aligns with the State's vision of leveraging the existing strategies and frameworks. We do not require additional Software license solely related to redundancy for backend recovery as highlighted in the preceding sub-sections.



## Topic 9 – Assurance of Business Continuity

### Topic 9 – Assurance of Business Continuity

The State will evaluate the degree to which the proposed plan to assure business continuity mitigates risk to the State, and it is potential for Implementation (cost-effective and easy to implement).

2.1.4.1. The State intends to consider provision for assurance of business continuity as an optional component of the Solution. Please provide a plan for business continuity if a disaster occurs at the data center that is hosting the proposed Solution. This is an optional requirement and will be included or excluded depending on any additional cost associated with the plan.

While the goal of the overall security program is to reduce the likelihood of a disruption, Deloitte will work with the State to develop and implement a Disaster Recovery/Business Continuity Program that enables the recovery of the IT infrastructure used to deliver the Opioid Insights solution. This will help end-to-end business processes to continue should a disruptive event occurs. The proposed program will include the following basic activities:

- Prioritizing the activities to be recovered by conducting a Business Impact Analysis
- Performing a risk assessment for each of the IT services as part of the Opioid Insights solution to identify the assets, threats, vulnerabilities, and countermeasures for each IT service
- Evaluating the options for recovery, producing a contingency plan, and testing, reviewing, and revising the contingency plan on a regular basis

DAP will be housed using the current EBI infrastructure. This database is regularly backed by DBAs, as per the DoIT-established database backup procedures, to enable its recovery within RPO and RTO thresholds defined by the State. This will enable the state to stand up any business process relevant to the data in the EBI very quickly after an adverse event.

Furthermore, the solution intends to combine the data with the search metrics on a Google cloud platform (GCP) to build de-identified data sets on GCP, on which machine learning algorithms could be executed for deriving insights on Opioid crisis related factors. While Google provides robust disaster recovery mechanisms on recovering the environment quickly for business continuity, Deloitte proposes to rapidly rebuild the data on the GCP using the data on the DAP source data to re-build if required. This will act like additional insurance to help with business continuity in an adverse event.

In summary, Oracle database backups and transaction logs provide the necessary backup capabilities to protect critical data on the on-premise database in case of an unforeseeable disaster event, and this data in its de-identified/aggregate format could be further loaded to the cloud platform, should that be needed, for a complete data recovery, thereby enabling business continuity. Our approach for the assurance of business continuity of DAP does not include building a separate DR environment. Our strategy focuses on rapidly rebuilding and recovering the solution and its data for the continuity of business operations.

### Topic 9 – Assurance of Business Continuity

2.1.4.2. The State believes that additional Software License fees solely related to redundancy for assurance of business continuity would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.

Our backup and recovery strategy for DAP aligns with the State's vision. We do not require additional Software license solely related to redundancy for assurance of business continuity as highlighted in the preceding sub-section.



**Topic 9 – Assurance of Business Continuity**  
 2.1.4.3. Please enumerate your high-level methodology for creation of a Business Continuity Plan.

We will work with DHHS and DoIT to leverage and align the business continuity plan for DAP with the overall Business Continuity plan of DoIT for the on-premise solution. This section provides an overview of our high-level methodology for the creation of a Business Continuity Plan that would be used to guide our collaboration with DHHS and DoIT in the joint development of the BCP.

Deloitte's Business Continuity Management methodology, guided by the global Risk Intelligence Program methodology and International BCM Standard ISO 22301, is a proven framework for applying Business Continuity Management Services. The modular nature of the framework allows for specific aspects of the methodology to be utilized and integrated with the State's overall risk management program. Each of these phases – Assess, Develop, Implement and Monitor – outline the key activities to be conducted for designing, creating, and enhancing business continuity management at an enterprise level as illustrated in the BCM process outline below.

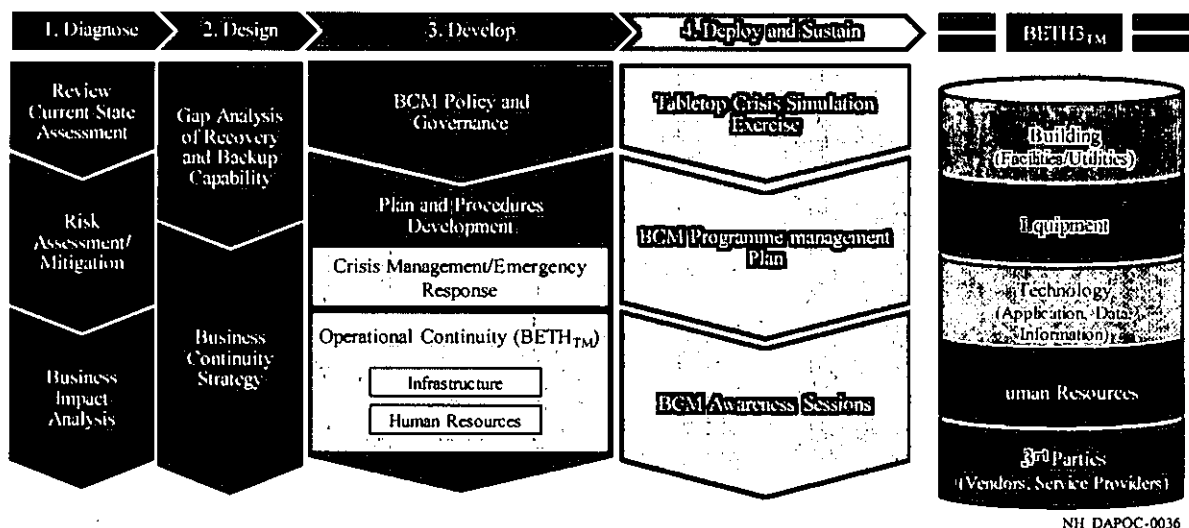


Figure IV-D.2.1-48. Business Continuity Management Methodology.



## Topic 10 – Skills and Experience

### Topic 10 – Skills and Experience

The State will evaluate the degree to which the proposed Solution provides for the skills and experience to meet the requirements in this RFP.

2.1.5.1. Describe in detail the skills and experience that your vendor will bring to the State to assist in meeting the requirements and narrative included in this RFP.

Deloitte is already investing in finding ways to combat the opioid crisis and brings a team with the necessary skills and experience to help New Hampshire develop a comprehensive platform to address this critical issue.

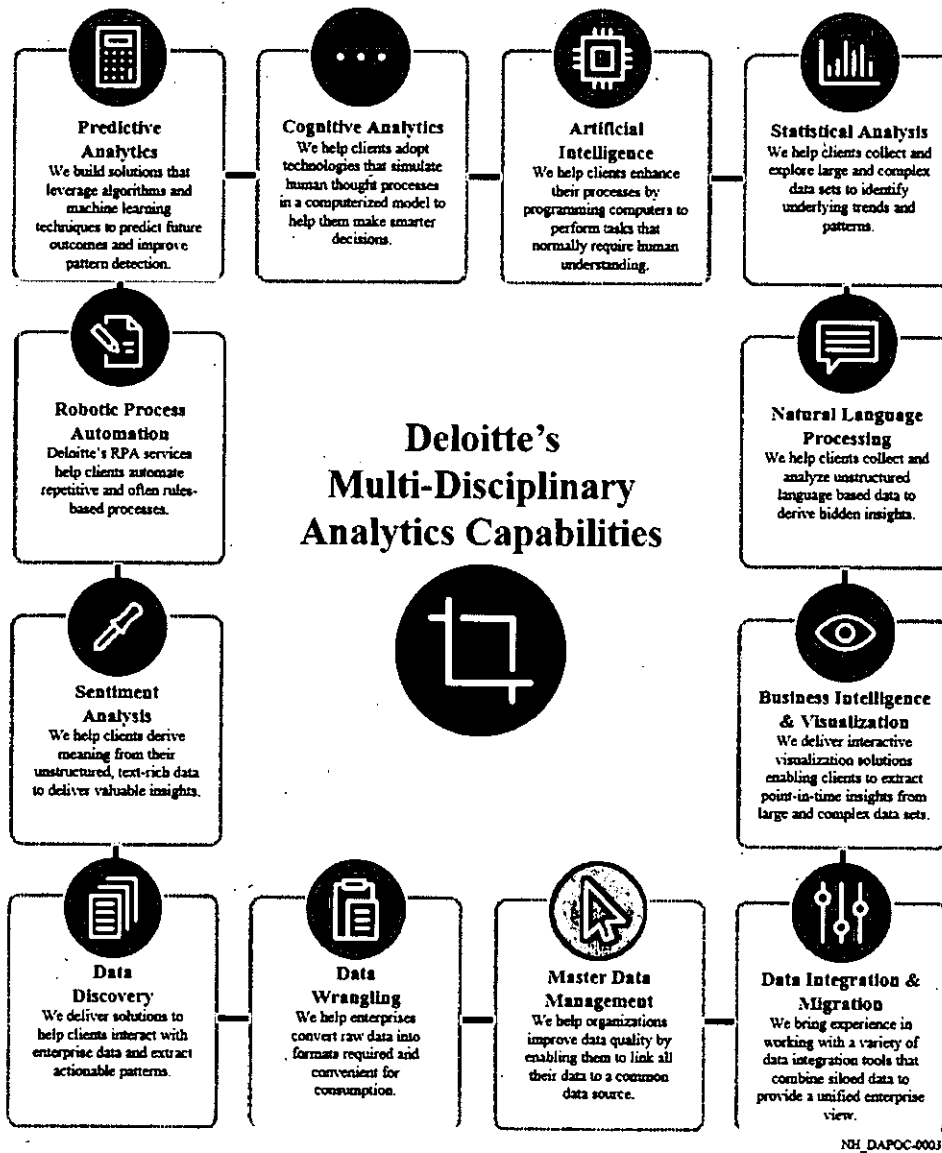


Figure IV-D.2.1-49. Deloitte's Multidisciplinary Analytics Capabilities.



Attachment 3 of 3  
STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

Our proposed CORbi project team is comprised of personnel who have extensive experience delivering analytics solutions for our clients, have delivered analytics solution in cloud platform, have a successful track record of working with Health and Human Services agencies, have hands-on experience as in multi-specialty medical treatment centers, and understand the complexities of the opioid epidemic. The team includes individuals from multiple disciplines of Deloitte's diverse Advanced Analytics practice and Health & Human Services practice, which is made up of local resources and national leadership to assist in meeting the requirements included in this RFP.

Deloitte has a proven track record of bringing a team that delivers projects that have objectives like the ones listed in the RFP and assisting organizations to advance their missions. Our approach to staffing is based on years of experience successfully delivering projects for HHS clients and is regularly updated with lessons learned to provide the most efficient approach to managing a project team. In addition, we bring an unmatched ability to quickly scale both in the data analytics and predictive capabilities focused domains based emergent needs on the project. Deloitte's extensive network of practitioners includes a global analytics practice of more than 5,000 individuals, a U.S.-based Delivery Center with more than 2,500 individuals, and a network of 3,000 Public Sector practitioners focused in Northeast state capitols.

The proposed team are prepared with a spectrum of analytics and visualization skills, including but not limited to, languages such as R and Python, commercial partnerships spanning numerous business intelligence and off-the-shelf software platforms, including top-tier alliance with Informatica for data management, longtime alliance with Tableau for visualization, and Platinum partnership with Oracle for database management. Deloitte's Informatica practice has more than 3,000 practitioners with training and experience in delivering big data integration initiatives leveraging Informatica PowerCenter for data integration and Informatica Data Quality for data cleansing and quality improvement. We have used Tableau in over 350 projects and with more than 5,000 Deloitte practitioners trained and active with Tableau.

In assessing personnel for the project, the Deloitte Team looked at the following core competencies for potential project staff:

- **Experience and Knowledge.** Direct experience, advanced analytics knowledge, and skills relevant for understanding substance use disorder, delivering analytics, how it corresponds to the State's vision, and the processes necessary for a successful implementation.
- **Communication.** Ability to communicate and work together as a team—with subcontractors, DHHS staff, data source vendors, and other stakeholders—using our Project Management methodology of AAA as our approach to achieving common objectives and goals.
- **Understanding and Managing Expectations.** Proven ability to complete tasks and activities based on project plans similar in size and scope to the project.

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Based on our understanding, some of the critical skillsets and responsibilities of our DAP Project team members are listed below:

<b>DAP Project Role</b>	<b>Responsibilities</b>
<b>ETL &amp; Data Wrangling Lead</b>	<ul style="list-style-type: none"> <li>• Develop and manage data movement strategy from source system to target</li> <li>• Collect data requirements and build data transformation logic for the business use cases</li> <li>• Formulate data loading and technical architecture design</li> </ul>
<b>Data Scientist</b>	<ul style="list-style-type: none"> <li>• Advise leadership in use case selection and prioritization</li> <li>• Conduct use case-defined Exploratory Analyses and Visioning Sessions</li> <li>• Provide advanced analytics augmentation through data science techniques</li> <li>• Implement the phased target operating model to effectively deliver and maximize added business value across the subset of selected use cases</li> </ul>
<b>Data Governance Lead</b>	<ul style="list-style-type: none"> <li>• Develop and manage the respective logical data model(s)</li> <li>• Formulate data source integrity validations and anomaly detection</li> <li>• Implement the organization’s data governance models</li> </ul>
<b>Physician and Clinician</b>	<ul style="list-style-type: none"> <li>• Provide input on appropriate use of data sets</li> <li>• Develop conclusions from data analysis</li> <li>• Support identification of appropriate interventions based on treatment data</li> </ul>
<b>Visualization Expert and UI Designer</b>	<ul style="list-style-type: none"> <li>• Collaborate closely with data scientists to develop both lightweight and big data visualizations to the specification of key stakeholders</li> <li>• Iteratively refine visualizations through analytics labs and POV developments</li> <li>• Conduct stakeholder interviews to define requirements for functional prototypes</li> </ul>
<b>Training Lead</b>	<ul style="list-style-type: none"> <li>• Collaborate with the stakeholders and the Deloitte team to develop training materials</li> <li>• Implement change management approach</li> </ul>
<b>Cloud Analytics, Cloud Engineer, Digital Data Analyst and Cloud Data Scientist</b>	<ul style="list-style-type: none"> <li>• Provide advanced analytics in cloud through data science techniques</li> <li>• Develop analytics models and implement the solution in a cloud platform</li> <li>• Advise on the integration with the cloud analytics platform</li> </ul>
<b>Security Lead and Security Analyst</b>	<ul style="list-style-type: none"> <li>• Advise security features like authentication and authorization for the solution</li> <li>• Advise required security changes based on collaboration with stakeholders for the solution</li> </ul>

*Figure IV-D.2.1-50. DAP Project Roles and Responsibilities.*



**Topic 10 – Skills and Experience**

2.1.5.2. Describe at least two (2) other solutions that you have completed that relates to the requirements for this RFP

A proven record of excellence is the single biggest predictor of successful project delivery to the State. As illustrated in the following table, Deloitte brings multi-agency, state, and commercial experience delivering solutions and capabilities related to the requirements for this RFP. More information about these projects, as well as other similar solutions, can be found in Section V.

Client	Project Overview	Solution Requirements
<b>Centers for Disease Control and Prevention</b>	ONDIEH Management Support – DARPI Support and WISQARS Visualization Application Development	CDC’s Web-based Injury Statistics Query and Reporting System (WISQARS™) is an interactive, online database that provides fatal and nonfatal injury, violent death, and cost of injury data – including Opioid fatalities – from a variety of trusted sources. The system uses many data sets, including NCHS mortality data that NCIPC seeks to integrate into the DCIPHER system.  CDC engaged Deloitte to modernize the existing WISQARS applications through end-to-end development of advanced data visualizations tools including conceptualization, design, development, and knowledge transfer
<b>Pennsylvania Department of Human Services</b>	PA Office of Medical Assistance Programs Technical Assistance	The Pennsylvania (PA) Office of Medical Assistance Programs (OMAP) administers the joint state/federal Medical Assistance (MA) or Medicaid program that purchases health care for ~2.7 million Pennsylvania residents. OMAP is responsible for enrolling providers, processing provider claims, establishing rates and fees, contracting and monitoring of MCOs, and detecting and deterring provider recipient fraud and abuse.  Beginning in 2014, Deloitte helped develop and maintain a cloud-based analytics solution to collect, validate, store, and analyze data from multiple sources including Managed Care Organizations, the Independent Enrollment Broker, and the state’s MMIS.

*Figure IV-D.2.1-51. Examples of DA Projects Delivered.*

**Topic 10 – Skills and Experience**

2.1.5.3. Describe the manner in which users and system administrators can view transactional Data.

It is critical that State system administrators and users view transactional data. As described in the section 2.1, the platform will integrate with the State’s Active Directory for authentication needs and maintain security of the data within each of the components in the solution architecture using respective authorizations capabilities.





The proposed solution architecture for DAP provides two interfaces where clients will have access to the data:

- Enterprise Business Intelligence Data Mart (Oracle Database)
  - End users will have the ability to view and query the data using tools like query studio, Oracle’s SQL Developer, or TOAD. The access can be restricted by setting the user profile and grant framework to restrict users logging into the database.
- Tableau (Leverages the data model and the base tables in the datamart)
  - BI-enabled dashboards will be created using Tableau acting as the presentation layer for the underlying data. Tableau provides great flexibility and agility to present the data as per customer requirements.

Typically, role-based secure access will be provided on the database tables. This access will be controlled via two ways: (a) Database Authentication (b) Database Views. Users will have access to only those data entities according to role security. All access will be in “Read Only” mode.

Tableau provides both coarse and fine grain access to the datasets, reports, and dashboards available across various sites configured in Tableau. After authentication of users in the State’s Active Directory, users will be navigated to the landing page; only those dashboards that they are authorized to view/access will be visible in the landing area. Based on assigned privileges, users will be able to create reports and dashboards or just interact with them.

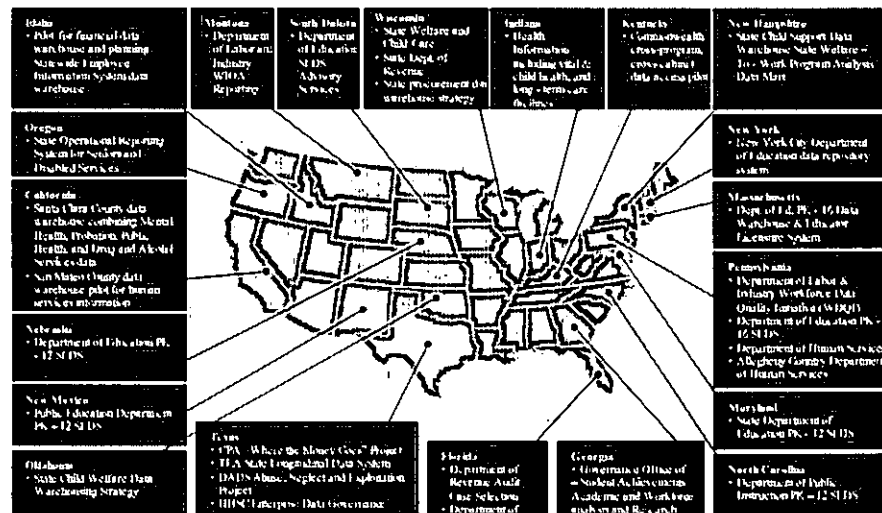
Administrators will have full access to the transactional data and will be responsible for the upkeep of the data in the EBI platform.

In summary, the data analytics platform will provide multiple options as listed above to authenticated business users and administrators to securely access the underlying transactional data.

**Topic 10 – Skills and Experience**

2.1.5.4. Please describe your experience with organization similar to the Health and Human Services and discuss what historical data they have and have not converted/migrated into the new system.

Deloitte employs a robust Analytics and Information Management (AIM) practice comprised of over 5,000 practitioners with significant experience delivering analytics solutions to Health and Human Services clients. We were also recently named as a global leader in analytics and information management by both Gartner and Kennedy Research.



**Figure IV-D.2.1-52. Deloitte’s State Government Analytics and Information Management Experience.**

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Deloitte offers a broad suite of analytics capabilities to help clients harness the most value from their data to enable informed, insight-driven decision making. As highlighted in the graphic above, Deloitte’s HHS experience spans the entire nation. We have partnered with numerous state agencies to design, develop, and implement analytics solutions focused on integrating the right data to the make the right decisions.

One of the key services which we provide to HHS clients is focused on data conversion and migration. Data conversion services combine and integrate data from multiple departments, programs, and sources into a single unified data repository to support analytics. Deloitte’s data conversion approach always starts with understanding your key business objectives and needs in order to determine the required sources of data. Once the required sources have been identified, Deloitte’s migration approach focuses on profiling, extracting, cleansing, transforming, and loading data into a structured format.

The project team for this initiative brings significant experience using with similar data and tools. Using Informatica, we build the processes or mappings which connect to source repositories, extract required data elements, transform databased on join conditions/logic, and load data into the new repository. Depending on the individual business need, data can be loaded into several areas within the repository.

Typically, all required data is loaded into the landing or staging area. Data within the landing area is usually a direct load or copy from the source repository. Once data has been loaded into the landing area, only a subset of information will be loaded into the target repository or schema. Target data is typically transformed in Informatica to model and join the information in an optimized format.

As indicated above the specific data required is contingent on your business needs and objectives. Deloitte brings extensive experience converting and migrating a wide array of Health and Human Service related information. The graphic below highlights a subset of the data which we have converted and migrated to support Health and Human Service related analytics.



Figure IV-D.2.1-53. Deloitte experience in Data Conversion Sources.

As indicated above, we bring extensive experience in data conversion and migration activities to identify and combine data from multiple sources and migrate it into a one-stop data repository for DHHS’s analytics needs. We currently provide data conversion services for numerous HHS clients using tools such as Informatica to integrate large and siloed data sets in a centralized enterprise data warehouse. A few key examples of our experience are highlighted in the table below:

<b>Kentucky Child Support Enforcement</b>
<b>Client/Project Name:</b> Kentucky Cabinet for Health and Family Services (CHFS) – Child Support Enforcement (CSE)



**Kentucky Child Support Enforcement**

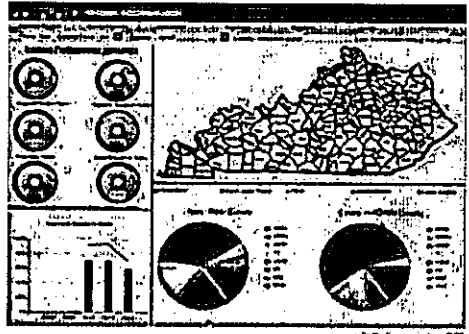
**Services Delivered** Data Warehousing, Conversion, Data Integration, Data Wrangling, Visualization, Dashboards,

**Opportunity/Challenge** The Cabinet for Health and Family Services (CHFS) is responsible for providing a broad array of Health and Human Services to the citizens of Kentucky. The Child Support Enforcement (CSE) agency within CHFS is a service delivery agency that is responsible for the collection and distribution of Child Support to the custodial parents of the children of the Commonwealth. Currently, CSE is serving over a million Commonwealth citizens and children and distributes nearly \$400 million annually.

Child Support is a data-driven program requiring information from many disparate systems. In Kentucky these systems reside on multiple platforms. A final hurdle for the program has been a complete inability to proactively monitor program performance on a timely basis at all levels: statewide, regionally, locally. CSE requested Deloitte to help in integrating the complex data sets stemming from disparate data sources and visualizing the data to be able to gather actionable and data-driven insights specific to program outcomes and operations.

**Solution** Deloitte delivered a data warehouse and visualization solution consisting of integrating a series of child support-related data sets and applications into a single, dimensionally-modeled data warehouse solution and the creation of several dashboards to improve case management and increase collections.

The delivered solution provided CHFS with enhanced visibility into program data, providing greater flexibility to conduct timely analysis without the need for IT involvement. Moreover, the solution has enabled caseworkers to analyze data specific to their case load, which fosters and encourages proactive measures and increases productivity by reducing manual activity. At the CHFS Leadership level, the data warehouse solution improves visibility into program data, establishes a single source of the truth, and communicates how the agency is performing against key child support enforcement performance measures.



*Figure IV-D.2.1-54. CSE Dashboard.*

**Impact** CHFS has realized the collection of an additional \$20 million dollars annually for the children of Kentucky. In addition, Kentucky substantially improved their compliance and performance with federal performance incentives enabling Kentucky to significantly increase federal grant and performance funding.

*Figure IV-D.2.1-55. Kentucky Child Support Enforcement Data Conversion.*

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<b>CARES Income Maintenance (IM) Management Reporting</b>	
<b>Client/Project Name:</b> State of Wisconsin Department of Health Services	
<b>Services Delivered</b>	Data Warehousing, Data Integration, Conversion, Visualization
<b>Opportunity/Challenge</b>	<p>Deloitte has collaborated with the State of Wisconsin Department of Health Services (DHS) for over 25 years on the Wisconsin CARES project. CARES is a State eligibility system that administers benefits, including Medicaid, SNAP, Child Care, and TANF for more than one million recipients.</p> <p>Prior to engaging Deloitte for enhanced reporting and data analytics, reporting at WI DHS was supported by disparate data sources. In March 2012, DHS engaged Deloitte to implement a multi-layer, Enterprise Data Warehouse (EDW) to support the state’s data analytics needs for Medicaid, SNAP, and other public assistance programs.</p>
<b>Solution</b>	<p>Deloitte adopted an incremental approach to provide modern business intelligence capabilities to a broad range of diverse stakeholders including: state executives, local agency managers, and case workers.</p> <p>The key objectives of the Business Intelligence modernization project included:</p> <ul style="list-style-type: none"> <li>• Centralizing data into a unified repository supporting federal, state, agency, and regional service areas reporting requirements</li> <li>• Providing sophisticated analytical tools to analyze data more effectively and produce richer insights</li> <li>• Providing a secure self-service portal for automated report generation</li> <li>• Standardizing methods for regional service areas to monitor high priority performance standards for their contract.</li> <li>• Establishing a single version of truth to support data discovery and enhance insight</li> </ul>
<b>Impact</b>	<p>As part of this initiative Deloitte leveraged their knowledge of HHS programs and delivered the following:</p> <ul style="list-style-type: none"> <li>• Integrated data warehouse that supports easy integration of structured, semi-structured and unstructured data from both internal and external sources</li> <li>• Intuitive self-service business intelligence interface where DHS business users and Technical staff can create and access specific sets of reports and queries, reducing reliance on contractor staff</li> <li>• Reports that assist DHS and IM consortia in understanding inefficiencies in business processes, drive performance management, understand program population, and evaluate program integrity across the programs of assistance</li> <li>• Fully automated standard CMS and FNS compliance reporting with enhanced analytical capabilities that allow DHS to analyze agency performance and program effectiveness</li> </ul>

*Figure IV-D.2.1-56. CARES IM Data Conversion.*

**Topic 10 – Skills and Experience**

2.1.5.5. How many years of historical data is typically converted in a project similar to this one? Describe how you will help Health and Human Services determine the right number of years to convert.



Attachment 3, Letter to Proposer  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

As part of the DAP Project, Deloitte will work closely with DHHS to determine the appropriate amount of historical data to covert and migrate to support the comprehensive Opioid analytics and dashboards. Based upon prior experience and best practices, we typically convert five (5) years' worth of data to the EBI platform as part of initial data transfer. For this project, we would do so from the following systems:

- Medicaid Commercial Member & Claims
- Child Welfare (DCYF Claims)
- Grant/State BDAS & Naloxone Services
- Vital Records/Medical Examiner
- Live Hospital ED Surveillance
- EMS and Population data

The State would be able to leverage that breadth of historical data in our proposed solution and leverage that information to create multi-year trends regarding treatment and deaths across multiple dimensions such as demographics, geography, and opioid sources.

After the initial migration, Deloitte will collaborate with DHHS to schedule monthly data loads that will incorporate additional data, augmenting the data warehouse and downstream Google digital data.

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## Topic 11 – Project Management Methodology

Combining Data Science with rapid ingestion and integration of multiple large data sets to develop analytic solutions makes traditional project management techniques impractical. Attempting to predict every challenge or opportunity prior to project onset often proves counter-productive. To overcome this reality, Deloitte teams use a tailored Agile for Advanced Analytics (AAA) methodology to deliver transformational analytics while rapidly communicating any adjustments to scope, timeline, or deliverables.

### Topic 11 – Project Management Methodology

The State will evaluate the Vendor’s approach to project management methodology.

2.1.6.1. Describe the methodologies used for organizing teams to implement solutions in an iterative Agile methodology.

Deloitte’s methodology manages CORbi delivery using sprint iterations for each dimension of the solution. These iterations allow for maximum analysis and minimum risk of error for each dataset and easily incorporates user feedback at each deployment. This methodology and framework guide our teams to rapidly build incremental and measurable value.

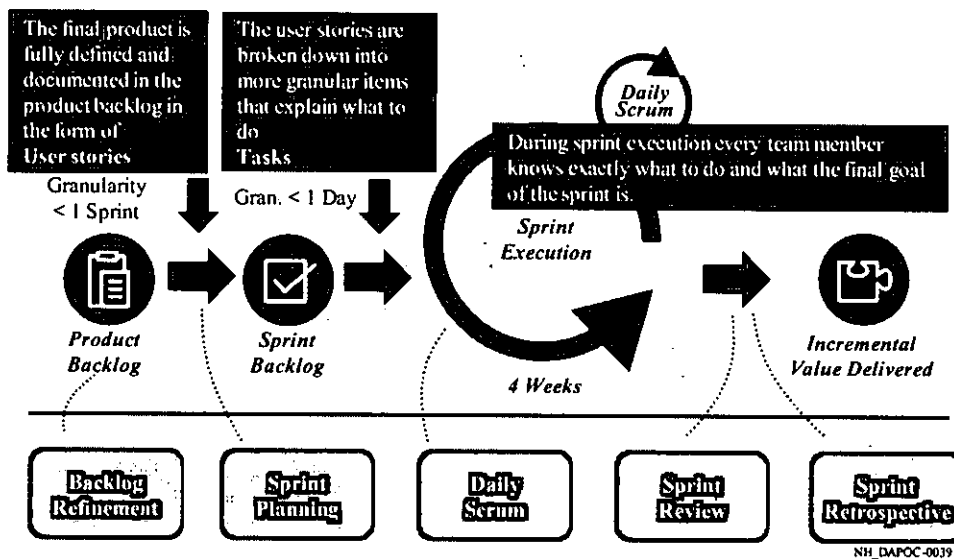


Figure IV-D.2.1-57. Deloitte's Analytics Scrum Model will deliver a product increment every four weeks, thus iteratively solving key business questions while providing constant feedback and limiting delivery risk.

To arrive at each deliverable within a given dimension, our approach is structured around the use of Scrum methodologies, focusing on the use of integrated development teams conducting independent but complimentary four-week sprints. Each sprint would be tailored uniquely toward delivering incremental and measurable value across the current dimensions and would be organized generally across four main functions: Stakeholder Engagement, Collect & Ingest, Analyze Model & Integrate, and Present.

### The Stakeholder Engagement Sprint Phase:

The Stakeholder Engagement phase occurs during every sprint and focuses on the development of key analytical questions that will be answered by Deloitte’s Opioid Insights solution in order to understand



opioid-related activity (diagnosis, procedures, prescriptions, mortality) and identify potential areas for intervention. These key questions are created in partnership with the solution owners and relevant stakeholders and a backlog of “user stories” is created. These user stories are evaluated and prioritized based on stakeholder priority, technical feasibility, availability of data, and the expected impact on the mission of intervention. Unlike formulaic project management methods where this phase would occur only once in the entire project, in our approach this phase occurs at the beginning of each sprint to help identify the nature of the challenges of each sprint and the clarity of the sprint’s requirements and data. The Stakeholder Engagement phase helps define the definition of done for each product increment.

### **The Collect & Ingest Sprint Phase:**

The Collect & Ingest phase allows our teams to completely understand the datasets that were defined as being necessary inputs to address critical issues and answer key questions during the planning phase. The Oracle data warehouse will be leveraged to create data tables from the ingested data sources. Data tables will be modeled, integrated into Oracle, and made available to be used as inputs to the predictive models and data visualizations being developed in later phases.

In accordance with our Agile for Advance Analytics methodology, during this phase, we anticipate the following data sets iteratively and incrementally being prioritized, modeled, and stored in Oracle as part of the EBI platforms transition to DAP:

- **Sprint 1:** Child Welfare and CDC Population Data
- **Sprint 2:** Medicaid and Commercial Claims
- **Sprint 3:** Vital Records/Medical Examiner and Grant/State BDAS & Naloxone Services
- **Sprint 4:** Live Hospital ED Surveillance AHEDD
- **Sprint 5:** Emergency Medical Services TEMSIS

### **The Analyze, Model, & Integrate Sprint Phase:**

In the Analyze, Model, and Integrate phases our teams analyze and integrate data sets to create a data model that is easy to consume for visualization, predictive modeling, and ad hoc reporting. Our teams design rigorous research projects and validate data science techniques proactively and quickly based on the incremental data ingested in the prior phase. This means that instead of completing the full analysis prior to testing and gaining feedback, the sprint model allows our teams to learn rapidly while also resulting in fewer errors in the final Opioid Insights solution. As the State progresses into future more complex phases of the project the models will be extended. These phases will focus on developing solutions to the previously produced user stories that in turn contribute to addressing opioid addiction intervention such as:

- How are local areas with different socioeconomic characteristics impacted differently by opioid abuse?
- Do health care providers in different areas tend to prefer certain types of MAT over others, due to efficacy or cost considerations?
- Are certain treatment units/administrators more effective than others?
- Is there a relationship between treatment outcomes and the number of social groups or community support groups in the vicinity of treatment entities?
- What individual risk factors result in higher rates of opioid abuse, relapse, and/or mortality rates?



- Does reduced access to prescription opioids cause increases in use and addiction to illicit opioids or other drugs?
- How do changing networks impact an individual's behavior and risk-level over time?
- How does access and utilization of medical and treatment services effect OUD outcomes?
- Should treatment be tailored to specific geographic areas or custom-defined communities?
- Can we detect similar geographic areas or sub-populations where we can transfer successful treatment or intervention techniques?
- Who are the bad actors, companies, hospitals, etc. linked to those who have higher risk for OUD and recidivism?
- How can we use the identification of high risk populations in the justice system to improve treatment or intervention options?

The answers to these questions are addressed in the Model Development and Selection portion of the phase. Our team uses visual techniques such as simple scatter plots on smaller components of the solution to identify anomalies in multivariate data, box plots to identify outliers, and correlation matrices to assess collinearity and for variable selection. The team also has extensive experience working with missing values and sparse datasets. We can implement a range of data imputation and sparse matrix analysis techniques to save samples and build stronger models despite missing data.

Appropriate models for the problem class are selected from the Deloitte model library. Our model library includes models based on advanced statistics, mathematics, engineering, statistical process control, operations research, risk analysis, signal processing, artificial intelligence, simulation, and several other novel approaches. For the CORbi project, Deloitte will establish an instance of the Deloitte Opioid At Risk Plus model to connect to the data within the platform for exploratory analysis within the designated State environment.

### **The Present Sprint Phase:**

The Present phase focuses on tailoring the incremental value delivered by the Agile for Advanced Analytics methodology to their intended audiences and providing the results of the analytics solutions in a manner that functionally supports decision-making. The presentation framework Deloitte brings to tie back the analysis to the end user personas is the crux of our design thinking methodology. Deloitte will deploy the HHS Interactive Opioid Insights solution which includes the Indicator dashboard in this phase. Deloitte will work with the State to incorporate the KPI's in the Indicator dashboard with the metrics in the existing WISDOM solution to create visualizations for exploratory analysis within the designated State environment. Existing code will be brought into the established environment, and the existing Tableau visualization data source connections will be updated based on the new data sources and predictive models to prepare the tool for updates which will ultimately become the Opioid Crisis Response Management Dashboard.

### **The Delivery Sprint Phase:**

The final 4-week sprint will focus on final delivery of the work across all Phases. This will include:

- a. Final testing (UAT) and validation of At Risk/At Risk Plus models and the Indicator Dashboard
- b. Conduct final training activities





- c. Provide any remaining documentation
- d. Conduct project exit meeting

Our teams know that the value of a complex analysis is lost if the insights it brings are lost on its audience. To accomplish this, our teams use a persona-driven approach to Agile for Advanced Analytics outputs. At the end of the Integrate & Present phase of the sprints, the development team delivers an incremental product that meets the previously determined definition of done and that the users can use in order to provide critical feedback to inform the next sprint. The final delivery phase will focus on closure of all sprints, migration of the final components to the Production environment, and validation that users can leverage DAP to manage the Opioid Crisis.

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**Topic 11 – Project Management Methodology**

2.1.6.2. Describe how your approach meets the requirements for project management and testing the security of the Software application and hosting environment

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Deloitte performs a number of proactive measures with each incremental delivery during each sprint for the security of the Software application, its hosting environment and the data. This means that rather than trying to identify all security vulnerabilities and protections at the end of the solution's delivery, the security measures are adapted and put into place with each iteration in each sprint. These measures include:

- **Secure code review** – Secure code reviews are performed using Hewlett Packard (HP) Fortify. The secure code review is performed for any custom code developed as part of the solution before being released into production. The assessment of the code is performed during the user acceptance testing to check that the code adheres to the know code conventions and best practices. A list of defects is tracked in the defect tracking system with remediation recommendations.
- **Environment Penetration testing** – Vulnerability assessment for the solution and its supporting hosting/infrastructure will be performed prior to production release of the solution. We use Tenable Nessus or Metasploit to run automated penetration testing scans and conduct manual testing to provide contextual interpretation in order to weed out false positives. These tests will be conducted in close coordination with the DoIT staff to ensure that it does not trigger alerts from their monitoring tools. Additionally, any identified vulnerabilities will be shared with DoIT and a plan for their remediation developed and co-executed with DoIT and Deloitte.

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**Topic 11 – Project Management Methodology**

2.1.6.3. How can you ensure the security and confidentiality of the State Data collected on the system?

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Security and privacy are not an afterthought, but rather at the forefront of the process during each and every sprint. To protect confidential data that exists in each sprint, our solution takes a 3-pronged approach that ensures that data privacy is maintained and data is available to only those who have a business need to access/view it consistent with DHHS's broader data and security governance vision. These include:

- **Protecting data at rest:** The data in the Oracle databases will be encrypted using Oracle native encryption mechanisms ensuring that direct access to the databases from the OS will expose any confidential data. Additionally, Informatica will be configured to purge all the staging tables once the



ETL processes have been completed, ensuring that there is not data within the solution once the processing has been completed.

- **Protecting data in transit:** The data transmissions within the solution components will be carried out over encrypted channels using Transport Layer Security (TLS). Secure/ Multipurpose Internet Mail Extensions (S/MIME) will be used for securing email communications and end user access to the application via the browser will be available only over Hyper Text Transfer Protocol Secure (HTTPS) when viewing confidential data.
- **Authorizing access to data:** Access to confidential data will only be granted after authenticating and authorizing the users. The application tier components will use the State’s Active Directory as the authoritative source for user identities. Access rights will be granted to individuals based on their job function and role, using the concepts of least-privilege and need-to-know. Requests for additional access will follow a formal process that involves a request and an approval from an authorized State representative, such as the data steward or data owner. Access to infrastructure native accounts will be limited to a very small subset of application developers and administrators and this access will be reviewed periodically to ensure that people with a business need have access. Fine grained roles based access will be managed through the Tableau administrator in combination with broader permissions managed through Oracle.

Additionally, access rights will be provided and refined during each sprint, based on an individual’s job function and role, using the concepts of “least-privilege” and “need to know” to match access privileges to defined responsibilities based on data governance standards. Requests for additional access at any time during a sprint will follow a formal process that involves a request and an approval from a data or system owner/manager/other executive as dictated by the security policy. Approvals are managed by workflow tools that maintain audit records of all changes.

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**Topic 11 – Project Management Methodology**

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2.1.6.4. What security validation Documentation will be shared with the State?

Security testing processes during each individual sprint includes detailed reporting on vulnerabilities/issues unique to that sprint’s deliverable that are identified during our scans/testing, their remediation options and their criticality. These reports will be shared with DHHS. Additionally, Deloitte will conduct manual testing to verify the results of the automated scans in order to filter out the false-positives. The vulnerabilities that are verified by our manual process will be logged as defects in the defect tracking system and will also be available to the State for viewing/reporting.

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**Topic 11 – Project Management Methodology**

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2.1.6.5. Do you use internal or external resources to conduct security testing?

Deloitte has a dedicated Cybersecurity Advisory practice. The security testing for each incremental phase of the solution, per our Agile for Advanced Analytics Methodology, will be conducted by professionals with experience and expertise in running the security testing tools and conducting manual validations to rule out the false positives so that the team can focus on the real issues. Our team has previously been approved by CMS to conduct security validations for DHHS in NH, including for work completed by Deloitte Consulting for formal assessments, including MARS-E 2.0 analysis.



## D-2.2 State Personnel and Training

Providing effective and timely training and knowledge transfer on the use of a new system is critical to overall adoption. Our experience shows that effective knowledge transfer is continuous and relies on a positive, collaborative learning environment established early in the project life cycle. Our training and knowledge transfer program establishes a foundation at the beginning of the project, builds upon that foundation throughout the project, and ultimately prepares NH staff for full transition of the responsibilities at the end of the contract term.

Deloitte follows an Agile-ADDIE – Analyze, Design, Develop, Implement, Evaluate – training design methodology, which integrates multiple collaborative feedback opportunities to develop a training program that prepares users to efficiently and accurately use the system.



Figure IV-D.2.2-58. The Agile-ADDIE Model.



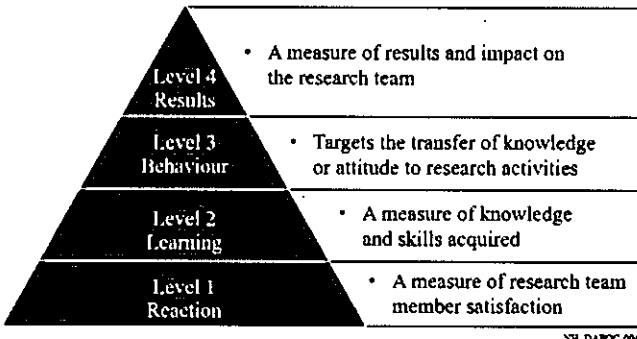
## Topic 12 – User Training Approach

### Topic 12 – User Training Approach

2.2.1 The State will evaluate whether the training approach is likely to prepare users adequately to use the new System from the day of deployment, including maximum knowledge transfer to allow the State to conduct its own training in the future...

2.2.1.2. Questions to address include, but are not limited to, the following...

Deloitte has successfully applied the Agile-ADDIE model to guide the development and delivery of training programs for government agencies and commercial entities deploying business intelligence systems. Our approach focuses on developing and delivering a Train-the-Trainer (TTT) program and creating self-service capabilities that promote sustainable use of the system for technical, business, and external users. Key components of our plan are listed in Figure IV-D.2.2-2 below.

Question	Response
2.2.1.2.1	<p>Training is conducted in a classroom setting and leverages conceptual overviews with hands-on practice exercises to allow NH facilitators to become more familiar with training materials and the new system, allowing for a more consistent delivery experience to end users.</p>
2.2.1.2.1	<p>We follow the Kirkpatrick Assessment Model to evaluate the success of the training program, focusing on four key components: reactions, learning, behavior, and results. We work with NH to develop key metrics in each of these areas such as surveys, tracking use of support materials (downloads/views), tracking overall uptake and usage of the tool post-training, as well as support requests. We develop a survey using the PollEverywhere tool to assess reactions, learning, and satisfaction with the training.</p>
	 <p>The diagram is a pyramid divided into four horizontal sections. From top to bottom, they are: Level 4 Results (A measure of results and impact on the research team), Level 3 Behaviour (Targets the transfer of knowledge or attitude to research activities), Level 2 Learning (A measure of knowledge and skills acquired), and Level 1 Reaction (A measure of research team member satisfaction). A small reference code 'NH_DAPOC-004' is visible at the bottom right of the pyramid.</p>
2.2.1.2.3	<p>The training team is integrated with the user support teams, including the usability and user acceptance test teams, and NH staff 'shadows' to reinforce traceability, consistency, and overall usability. Post-launch, a formal feedback mechanism is used between each team to verify that user input is distributed to all relevant teams to enhance the quality of user support and drive tool and training improvement opportunities.</p>
2.2.1.2.4	<p>Our goal is to provide manuals that are comprehensive to enable trained users to research answers to their own questions. We routinely update manuals on a mutually-agreed-upon maintenance schedule. If specialty questions arise that are not covered by the manual, additional support is provided through TTT, job shadowing, virtual office hours, and other formal mechanisms to facilitate knowledge development.</p>
2.2.1.2.5	<p>Manuals are updated on a mutually-agreed-upon maintenance schedule in response to feedback from stakeholders. To the extent possible, we update manuals prior to product releases. If clear gaps are identified that require an immediate response, we provide off-cycle updates for NH approval.</p>
2.2.1.2.6	<p>The primary focus of our approach is a rigorous TTT methodology that involves instructor-led training supported by overview materials, quick reference guides (QRGs), and in-class</p>



Question	Response
	exercises. In addition, we integrate knowledge transfer activities, including mentorship and office hour programs, to provide additional learning support during the transition phase.
2.2.1.2.7	All training manuals and other support materials will be available in a shared repository and maintained, including version control documentation, as part of a maintenance agreement.

*Figure IV-D.2.2-59. Response to User Training Approach Questions.*

We work with NH staff to determine business and performance goals, gather training requirements, and identify targeted stakeholders from the three end user groups (casual, specialty, and power) impacted by the new implementation. We develop and deliver a needs assessment to identify and determine skill levels and abilities and to define learner preferences and needs for each end user group. We apply the principles of human-centered design to understand and collect data on the experience of stakeholders with current tools, as well as their anticipated needs and uses for the new system. The information gathered through this process is supplemented with information gathered through usability/design sessions and user acceptance testing to inform recommendations for the training plan and curriculum. Recent EBI training experience has given us insights into current user needs. For example, we anticipate formal and informal shadowing to represent a significant component of our training and knowledge transfer effort.

We will work DHHS and DoIT to create a **Comprehensive Training Plan and Curriculum**, which includes TTT, QRGs, and associated materials. The training plan includes a list of proposed trainings for each user group, including format, duration, goals, a storyboard, and proposed assessment methodology. The curriculum is based on the analysis gathered from the needs assessment, working with NH to finalize the objectives of training for each group. For example, power users might be trained on creating custom analyses using Tableau, including the underlying datasets, while casual users are trained on using pre-set reports.



- Supporting CMS Million Hearts® implementation through activities such as:
- 15 webinars, 2000+ participants
  - OnDemand video training
  - Average trainee satisfaction rating over 90%

We support the operational teams creating the **Communications and Change Management Plan and Documentation of Operational Procedures (SOPs)**. In addition, we propose rapid design prototyping to allow NH to provide early feedback into training design and minimize rework later in the process. Please refer to Figure IV-D.2.2-3 below for recommended training materials for the TTT session.

Item	Description/ Rationale
<b>Overview Materials</b>	One PowerPoint for each user group to support the delivery of conceptual overview.
<b>Quick Reference Guides (QRGs)</b>	Short, targeted training documents (1-2 pages per QRG) that represent the transactions that most of the end users complete in the system.
<b>TTT Session</b>	TTT includes a one-day, instructor-led session delivered to a class of 6 participants identified by NH, two per user group. These participants are identified early in the design phase of the project, shadow designated Deloitte team members throughout the development process, and work with the training team to develop materials to use with their designated user group. They receive formal in-person training on the final



Item	Description/ Rationale
	product to prepare for final training handoff. TTT is delivered in a computer-lab setting to provide hands-on practice with the application in a non-production environment. Following a conceptual overview to the group, participants break into three groups – casual, power, and specialty users – to review concepts and materials specific to those user groups, then transition to hands-on practice with targeted use case exercises.
<b>In-class Exercises</b>	Hands-on practice to facilitate experiential learning during the TTT session includes scenarios with test logins, steps to follow, test data to manipulate, and expected results.
<b>Training Evaluation</b>	One online evaluation developed using PollEverywhere to gather feedback from participants on the TTT session and supporting materials.

***Figure IV-D.2.2-3. Recommended Training Materials.***

Materials are updated as determined by the maintenance release schedule; however, if there is an urgent need for an update outside of the schedule, we review such requests to determine and mutually agree upon when it be accommodated. Understanding that the needs of the training program evolve over time, we remain flexible and responsive as the tool and its users evolve.



## Topic 13 – Preparation of State Staff

### Topic 13 – Preparation of State Staff

The State will evaluate whether the provisions to prepare State staff participating in the Project will enable the staff to contribute appropriately.

2.2.2.1. Describe how State staff assigned to the Project Team will be prepared to contribute.

Our plan offers State staff the opportunity to learn their roles and responsibilities through a demonstrated knowledge transfer methodology based on in-person, real time interactions. This knowledge transfer program occurs throughout the system development life cycle to allow for State staff to contribute to the design, development, implementation, and maintenance of the system. In addition to knowledge transfer, the State staff are integrated into the team through regular and consistent communication, allowing for State staff to remain aware and make informed decisions.

The knowledge transfer program includes multiple components to drive success:

- **Smart Pairings:** We identify appropriate mentors within the Deloitte team based on their project role, relevant knowledge, and skills that will be transferred to State staff mentees. Each mentor is responsible for providing skill coaching to State mentees within their specific project role. Mentors focus on coaching day-to-day skills needed to complete project assignments and are actively involved during system and infrastructure development and documentation.
- **On-The-Job Training:** The project facility provides a collaborative learning environment for State staff and the Deloitte project team. Deloitte resources work side-by-side with State counterparts to successfully complete project assignments. Our approach provides State staff an opportunity to learn and practice completing the same project tasks, applying the same methodologies, and using the same tools as the Deloitte resources. State staff increase involvement and self-sufficiency over time, culminating in the ability to independently perform system tasks associated with their respective roles.
- **Shadowing Material:** Deloitte mentors and NH mentees must agree on what material to cover during shadowing. The training team develops a checklist and plan in coordination with State staff to determine all the required knowledge to be transferred; this allows for a tracking mechanism to verify that staff have gained the agreed-upon knowledge. This checklist is reevaluated throughout development and shadowing to verify it has the appropriate material included as the development of the tool progresses.
- **Formal Meetings:** Meetings are scheduled every other sprint to track the knowledge transfer progress. Status reports on knowledge transfer are shared with project leadership following this meeting. Times may be set by the training team so mentors and mentees can focus on a specific set of knowledge transfer topics. An example of a formal shadowing session with Deloitte mentors and NH mentees is working together through the setup of a source-to-landing layer ETL mapping and workflow, then having State staff build similar mappings based off their recent mentor/mentee experience.



Benefits of a shadowing approach:

- Individualized support
- In-person discussions
- Customized topics based on project assignments
- Just-in-time learning
- Real-time Q&A



- **Informal Sessions:** Mentors and mentees schedule their own time to familiarize themselves with these materials. These are mostly demonstration-focused to give mentees hands-on experience with the material, as well as to ask their mentor questions and get real-time answers. These sessions are focused on a specific topic, but can be scheduled as needed. An example of an informal shadowing session could be working through a defect when there is an issue in order to learn the best approach for resolving the defect.
- **Office Hours:** Mentors hold office hours twice per week to allow State staff to ask any questions they may have. These sessions do not focus on a specific topic but are instead time where the mentors are completely available to discuss questions/issues, work through a defect together, etc.
- **Continuing Knowledge Transfer:** The State trainers participating in TTT activities are among the mentees involved in this knowledge transfer. After they complete the training program and knowledge transfer, the State trainers are also prepared to help support other State staff on material related to the tool. This allows for future State staff to prepare to contribute after the tool is in place.
- **Assess Knowledge Transfer Progress:** Knowledge Transfer assessments are conducted on a regular basis to gather self-assessment details from State staff. These assessments enable State staff members to rate their familiarity with identified skills and/or tools. It also gives them the opportunity to request additional training in certain project-specific areas where they may need more assistance or have a further interest. Figure D2.2.-4 above provides an example of a self-assessment survey.

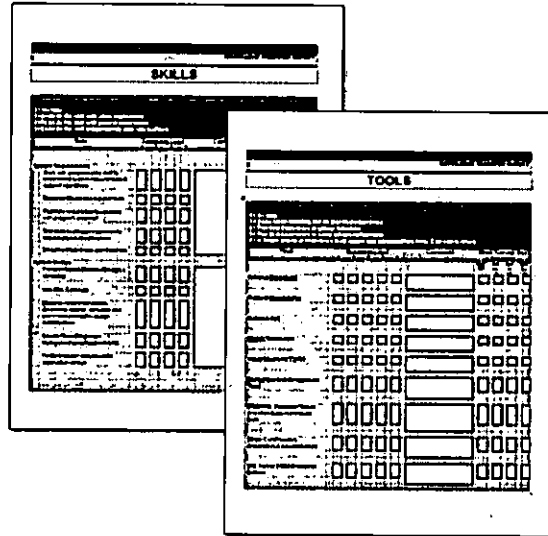


Figure IV-D.2.2-4. Knowledge Transfer Self-Assessment Survey.

The knowledge transfer activities and support mechanisms as noted above provide a customized approach for continuous learning and development of NH IT staff. This collaborative, on-the-job program prepares NH staff to independently manage and maintain the tool going forward.

**Topic 13 – Preparation of State Staff**

2.2.2.2. Provide an overview of Project Team interactions and dependencies between functions.

As previously mentioned, creating a unified project team with Deloitte and NH staff is critical to the overall success of the project. This unified project team has a set of joint meetings that allow for regular and consistent communication.

- **Daily Scrum:** Throughout the project life cycle, there are daily agile scrum meetings that are attended by cross-functional Deloitte and State staff. At these meetings, discussions occur about the activities for the previous and current day and what barriers exist to complete tasks. By having the unified project team in these meetings, any dependencies that exist between Deloitte and State staff are identified early. Dependencies that occur among different functions such as policy, analytics, data modelers, and





developers can also be managed during these meetings. This allows for a quicker resolution as well as the ability to take preventative measures before any barriers occur.

- **Design Meetings:** Design is a collaborative effort between the Deloitte functional and technical team members as well as the State team members. By having this collaborative effort among the different sub-teams on the project, a more comprehensive design can be created. With input from all key stakeholders when discussing design, there are significantly fewer issues, such as design expectations being different than the end product. For example, by having developers in design meetings, there can be input as to the level of effort required for different designs.
- **Shadowing Meetings:** The formal and informal shadowing meetings explained above help to decrease dependencies due to an increased understanding of the development process by State staff. Through shadowing and actively participating throughout the project life cycle, State staff are able to take more ownership of the development and maintenance of the system and leadership of the overall project.
- **Defect Review and Triage:** As defects are reviewed, key stakeholders within the Deloitte and State unified team are in attendance. This allows for the priorities and level of effort for fixes to be determined and understood by a multitude of team members with different perspectives. The key stakeholders from the State prioritize which defects require immediate fixes and what defects are nice-to-have changes that can be deprioritized for future development.



## D-2.3 Project Execution

The Deloitte team leverages the project management disciplines included within our Agile for Advanced Analytics methodology based on the principles from agile and scrum, the Capability Maturity Model Integration (CMMI), and the Project Management Book of Knowledge (PMBOK).

The Data Analytics Platform for Opioid Crisis will be delivered using our Agile for Advanced Analytics methodology (AAA). Our methodology combines lessons learned, best practices, and experience delivering analytic projects for hundreds of commercial, federal, and state clients. Our methodology provides a robust repository of accelerators, tools, and guidance focused around delivering key analytics capabilities. An agile approach enables the solution to evolve with adherence to predefined timelines and budget constraints to deliver the highest value in the shortest amount of time.

Our approach aims to be pervasive across the enterprise, engaging with stakeholders to help shift the organization towards becoming an Insight Driven Organization (IDO). IDO's consider the business need, strategy, people, and process components required to successfully deliver analytics work. Our methodology contains structured development processes, tools, templates, IDO guidance, and deliverables that benefit engagements by:

- Enhancing delivery quality through leveraging lessons learned, defined management processes, and key accelerators
- Providing flexibility to quickly react to changing client needs and priorities
- Reducing program risk with a set of standardized, demonstrated processes
- Accelerating the analytics journey by embedding insight capabilities into core processes and operations
- Increasing client engagement and feedback through agile approaches



## Topic 14 – Implementation Approach

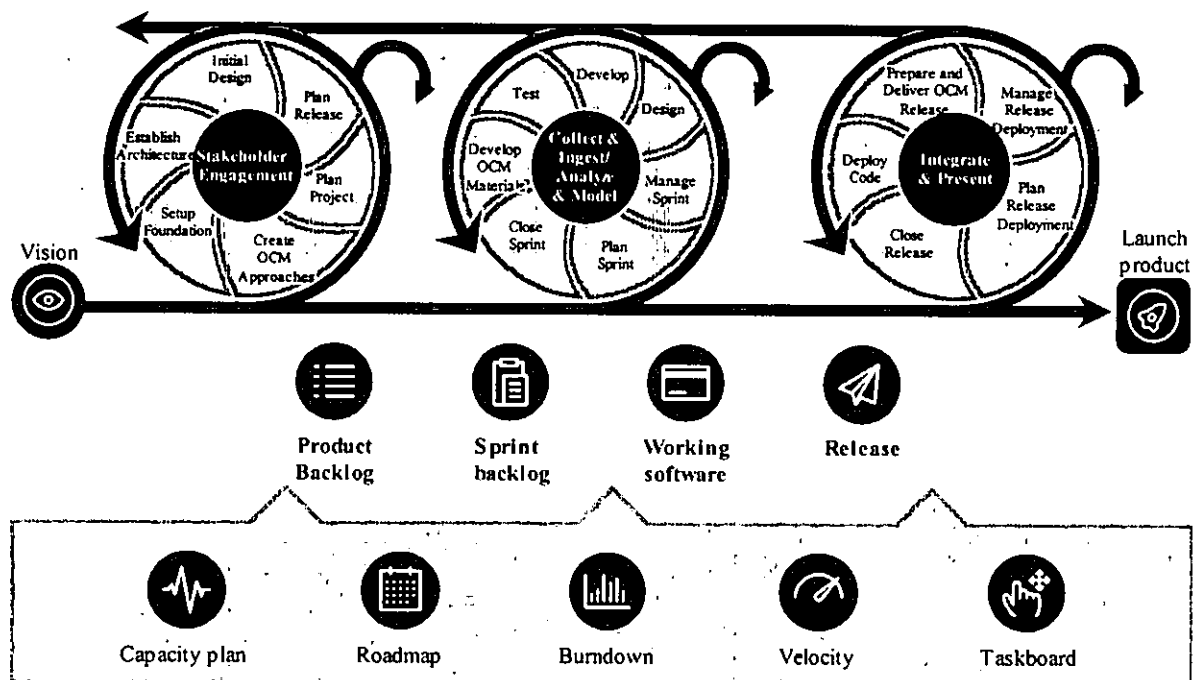
### Topic 14 – Implementation Approach

The State will evaluate the quality of analysis, reasonableness, and flexibility evident in the proposed Implementation approach. Provide one or more feasible Implementation plans. For each plan provided:

2.3.1.1. Identify timeframes for major milestones, including timing for discontinuing legacy Systems if applicable;

Deloitte’s implementation Approach to Data Analytics Platform for Opioid Crisis will be Agile and will follow the below approach.

- Based on Scrum
- Focus on **working analytics products** and continuous improvement
- Scope defined using **product and sprint backlogs** and prioritized by the **product owner** to forecast releases with the **roadmap**
- Work managed through quick iterations called **sprints**, facilitated by the **scrum master**, and progress is visualized on a **task board** (or equivalent tool)
- Team measures include **capacity, velocity, and burndown**



NH\_DAPOC-0078

Figure D-2.3-60. Agile Approach.

The major milestones as part of the implementation approach are illustrated below and elaborated on in section 2.4, Topic 23 Work plan.

**Sprint 0:** The milestone which will be achieved as part of the sprint 0 are the key foundational planning and scoping documents (e.g. Sprint Plan, Work Plan, Kick-off, Communication plan etc.) that will lay the foundation for future sprints. The key members of the team, consisting of both the State and Deloitte



personnel, will initiate the project and organize the people and processes needed to jointly manage and monitor the project execution and define working parameter to support successfully delivery.

**Sprint 1:** The milestone which will be achieved as part of Sprint 1 is the acquisition of all eight data sources defined in the RFP. This sprint will analyze, integrate, and operationalize data from the source systems to the landing layer. Additionally, during this phase, the first two of the eight sources, Child welfare and CDC population data, will be modeled and integrated into the EBI schema to support predictive modeling and visualizations. The time frame for the milestone will be 4 weeks.

**Sprint 2:** The milestone which will be achieved as part of Sprint 2 is the modeling and integration of the Commercial claims data. This data set is critical to the project success and is isolated in a single sprint. During this sprint, the data is modeled and integrated into the EBI schema along with Medicaid Claims. The time frame for the milestone will be 4 weeks.

**Sprint 3:** The milestone which will be achieved as part of Sprint 3 will be full integration of the Vital records/Medical Examiner, Grant/State BDAS, and Naloxone data sources. These data will be analyzed, modeled, and integrated into the EBI schema, continuing to evolve the EDI schema to become the Data Analytics Platform (DAP). The sprint will include the model formulation, finalize the key predictors, perform exploratory analysis, and assess variable correlations and relationships. During this sprint the team will also evaluate and design the integration for the Google behavioral trending data to determine on how best to use the NH specific Google's datasets to predict early indications of geo-based OUD trends. The time frame for the milestone will be 4 weeks.

**Sprint 4:** The milestone which will be achieved as part of Sprint 4 is the full integration of the live Hospital ED Surveillance AHEDD data. These data will be analyzed, modeled, and integrated into the EBI schema. This Sprint will also cover predictive model development activities and the design of Opioid Crisis Dashboard. The de-identified claims data will be migrated to the Google cloud, the At-Risk model will be redeveloped into At-Risk+ model integrating the behavioral search data leveraging the Google's machine learning platform. The predictive results will be sent back to the Data Analytics Platform for integration into the data model and visualizations. The time frame for the milestone will be 4 weeks.

**Sprint 5:** The milestone which will be achieved as part of Sprint 5 is full integration of the Emergency Medical Services TEMSIS data. These data will be analyzed, modeled, and integrated into the EBI schema, completing the phase 1 data modeling of the Data Analytics Platform. The predictive models will be refined, and the Opioid Crisis Dashboard development will be completed. The time frame for the milestone will be 4 weeks.

**Sprint 6:** The milestone to be achieved during the final sprint is the delivery and transition of a fully functioning solution. The final production code migration takes place, end-to-end user testing is executed, and training is completed.

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#### Topic 14 – Implementation Approach

2.3.1.2. Discuss cost implications of the plan, including implications on maintenance fees; and ...

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Our agile implementation approach and our sprint design plan is constructed to support an efficient and rapid delivery with the iterative integration of data. The plan framework was designed to create a consistent process that minimizes risk and provides clear direction.

Each sprint starts with a review of the previous sprint and works on any backlog refinement which will be required in the new sprint. The new sprint is then planned along with the previous sprint backlog.



The estimation tool enables the planning using the below details.

- e. **Define Duration:** The number and duration of sprints are defined as well as the type of each sprint.
- f. **Define Resource Assumptions:** The number of resources per skillset is defined for sizing. This is not intended to be the number of resources on the project. It is an assumption used for sizing.
- g. **Define Size and Features:** Epics/Features are defined and sized (T-shirt sizing) by skillset. These are added together to translate into “effort” (i.e., number of sprints per skillset).
- h. **Compare Duration vs Effort:** The duration of the project is used with the epic/feature sizing to calculate the needed capacity per the expected scope (i.e., no. of scrum teams needed with a specific skillset).
- i. **Review Resource Plan:** The comparison in the previous step provides the estimated number of resources and scrum teams. The assumptions can be adjusted as needed to re-estimate.

Deloitte Agile estimation is a way to determine relative size on a project-by-project basis. This tool is a management aid for cost estimation. T-shirt size estimation can have a 25% variance given its relativity, and that estimation is done at a high level rather than at a task level.

The implications of using Agile methodology and cost implications of using the agile estimation framework are as follows:

Features	Benefits
Minimize risk	A consistent process and tool used across the practice will minimize risk and provide clear direction for Agile projects; It can also provide the foundation for effective contracting
Speed and flexibility	A proven solution that meets the needs of service offerings will decrease the time to develop an estimate and eliminates the need to reinvent the wheel
Real-life experience	A solution that is consistently used and updated provides lessons learned and real-life experiences to new projects
Leverage through life cycle	A solution delivering forecasting functionality can be used throughout the project to confirm the ability to deliver

*Figure D-2.3-61 Features and Benefits of Agile Methodology.*

**Topic 14 – Implementation Approach**

2.3.1.3. Address the level of risk associated with the plan

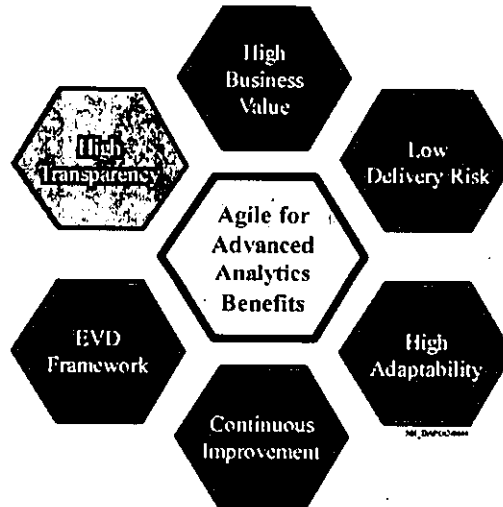
The plan was created with a detailed understanding of your existing EBI solution, including the infrastructure, the tools, and technology recently procured, and the data model being designed. With this knowledge, our team evaluated the new data sources and the project objectives and drafted an initial set of sprints, summarized in 2.3.1.1 and more details provided in the Work Plan section 2.4 Topic 23. All this knowledge informed our sprint design, significantly reduced the delivery risk, and enabled us to construct a plan to meet the tight timeline defined in the proposal. The team understands how these new data sources will be integrated into the existing data model, how these data will be leveraged by our At-Risk predictive model, and how the opioid dashboards will be integrated into the existing solution, all contributing to reduce the risk within our delivery plan.



**Topic 14 – Implementation Approach**

2.3.1.4. What are the highlights (key selling points) of your proposed approach?

Deloitte’s Agile for Advanced Analytics (AAA) tailors agile to fit the unique complexities of a data integration project. Our Analytics Scrum Model will deliver a product increment every four weeks, thus iteratively solving key business questions while providing constant feedback and limiting delivery risk. It is critical to note that while a product increment is delivered every four weeks, a key assumption of our delivery model is frequent and constructive interaction with the users of the analysis. A regular cadence of discussions, feedback sessions, and demos, not just at the end of the four-week sprint, is one of the strongest arguments for using Agile. These interactions help bring clarity to the direction of the product and can lead the analysis down different but higher value avenues based on the teams having time to constructively ideate.



*Figure D-2.3-62. Benefits of AAA.*

**Topic 14 – Implementation Approach**

2.3.1.5. What makes your proposed implementation approach unique in consideration of your competitors?

Our implementation approach is different from our competitors in four key areas:

1. **Know your Environment** – We helped design and deploy your existing environment; our approach leverages this knowledge and is tailored accordingly.
2. **Reuse** – We designed an approach that maximizes the reuse of your existing assets, providing the most value to the State.
3. **Accelerators** – We bring specific accelerators, built on the same technology stack as your solution, to speed the development process (e.g. At-Risk predictive model, HHS Interactive Framework)
4. **Knowledge Transfer** – We provide full knowledge transfer, enabling the State to support, leverage, and build upon the platform moving forward.

Additional Deloitte’s differentiators related to our approach include:

- Deloitte’s Agile for Advanced Analytics (AAA) methodology combines lessons learned, best practices, and experience delivering analytic projects for hundreds of commercial, federal, and state clients. Our AAA methodology provides a robust repository of accelerators, tools, and guidance tailored to meet the Department’s requirements.
- Deloitte’s understanding of data governance and our experience helping government clients establish governance frameworks offers a unique differentiation for this implementation.
  - Deloitte understands Data Governance and will help to establish a governance structure that will enable the effective sharing, reuse, and governance of Enterprise Business and Technical Services, thereby improving collaboration and data driven decision support at all levels.



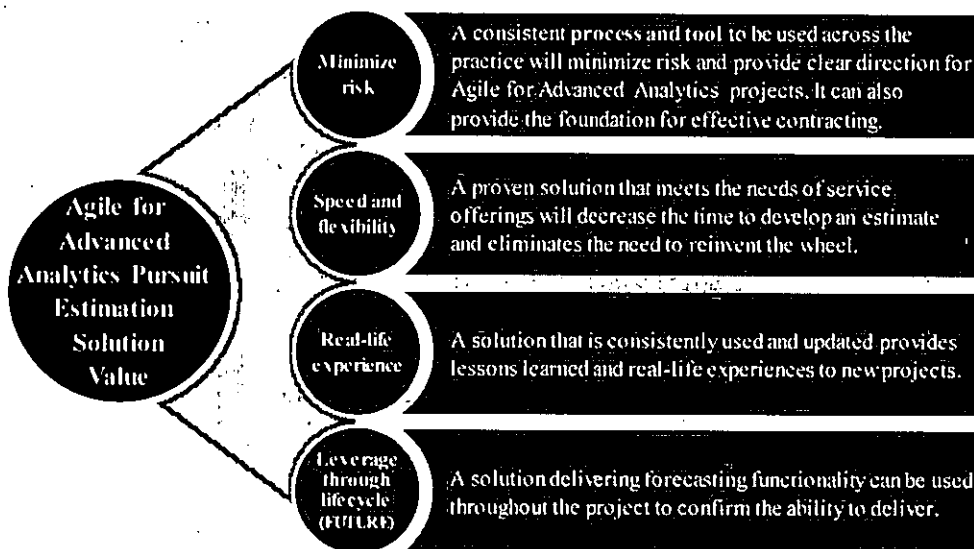
- Deloitte’s approach integrates with Data Modeling (DM), Enterprise Architecture (EA) and business processes (BP), superseding inter-departmental and technical silos for greater visibility and control across various departments, while also ensuring that security and privacy are not an afterthought.
- Deloitte’s experience with Medicaid data, All Payer Claims Database and Human Services data integration project informed the development of our approach. The team has direct and relevant experience and is equipped to make this project successful within the tight time frame define.

**Topic 14 – Implementation Approach**

2.3.1.6. To assist the State in evaluation of the Implementation Plan or plans discussed, identify the ...

The project estimates are based on the work defined in Section 2.4 Topic 23 and serve as the basis our estimates. Project estimation is about accuracy – making the right decisions about scope, costs, resources, deliverables, and delivery milestones. Deloitte has its own proprietary Project Estimation & Planning Suite tool that is designed to help drive this accuracy, and in turn, facilitate the effective management of project risks.

The Agile Estimation solution provides the following value.



NH\_DAPCC-0045

Figure D-2.3-63. AAA Solution Value.



## Topic 15 – Testing

### Topic 15 – Testing

- 2.3.2 The State will evaluate the quality of support the Vendor will supply to assist State testing staff and ...  
 2.3.2.1. Describe your testing methodology and include a proposed test plan.

Deloitte’s approach to testing mirrors our broader principle: that quality must be built in from the beginning. Our agile approach to testing includes validations throughout the Sprint life cycle to obtain feedback and re-testing of the key components of the solution. Our team will work with the project stakeholders and key subject matter experts to engage in the validations of each component as they are developed, and unit tested. Any defects identified during testing activities are reviewed, triaged, and prioritized by Deloitte in collaboration with the Department. All prioritized defects are resolved and re-tested for confirmation. Based on the schedule, additional testing activities may be required. For example, for public facing dashboards, security testing may be required, or if we are delivering a predictive analytics model, a series of validation activities are executed to tune and calibrate the model.

The table below provides details on the testing phases included in Deloitte’s testing methodology that may be leveraged for the CORbi project.

Testing Phase	Description
<b>Unit Testing</b>	Unit testing validates that individual functions are configured and/or developed to appropriately translate technical and functional requirements. Deloitte Scrum team will execute test scripts to validate the acceptance criteria. This will include ETL programs and reporting dashboard components. Fixing errors earlier will help with overall implementation timeline and effort.
<b>ETL Test Scripts</b>	ETL test scripts will include steps to create data in source systems, execute data loads into DAP, compare data values between source and each layer of the DAP, and verify the filters applied when selecting the records from source.
<b>Dashboards Test Scripts</b>	Includes steps to verify the text, layout, and security for the reporting views, confirm the aggregated numbers by executing SQL queries against the source data, verify the various dashboard filters are applied to the appropriate source data columns, and validate changes to underlying data are updated accurately within the dashboard.
<b>System Testing</b>	Validate system functionality meets the approved design as well as the business needs as specified by the requirements. Documents system test results in shared location, including information pertinent to requirements traceability matrix and defects. The defects will be evaluated into Critical, High, Medium, and Low categories based on the impact to overall sprint release. State participants may view the progress of system testing and monitor results at their convenience leveraging JIRA. This provides opportunities for questions and clarifications early in the process, thus saving time and providing better preparation for UAT.
<b>Integration Testing</b>	The objectives of this task are to establish the approach and define the scenarios for integration testing. Integration testing focuses on testing all the elements of in-scope end-to-end business requirements. The intent is to mimic real-life business processes in a testing environment and determine whether the solution meets the Requirements. During the sprint cycle, an early integration testing will be performed to validate the processes (or parts of processes) that were completed in the sprint to identify early integration issues. If available, Production data will be leveraged during Integration testing to identify any data anomalies as early as possible.





Testing Phase	Description
<b>Regression Testing</b>	Regression testing will be conducted to re-run tests to validate that previously validated components are still functioning after additional software is added to the environment. In an agile environment, regression testing will be conducted in later sprints to verify that the components previously developed are still functioning as expected.
<b>Performance/ Stress Testing</b>	The objective of this activity is to document the scope, scenarios, and logistics required to verify performance of the system’s underlying technical architecture. The approach simulates load using lower environments, production volume data, and batch jobs to measure the system’s response time, latency, throughput, and resource utilization. Once a performance risk or issue has been identified, Deloitte identifies the root cause of issues, develops solution designs, and initiates performance tuning requests.
<b>Data Conversion Testing</b>	Prepare a data conversion plan, prepare SQL scripts to test data validity post conversion, validate results, discuss data quality issues, update assumptions and implement fixes as required. In an ETL environment, this includes validating that the data loaded from each source is loaded accurately into the target database.
<b>Security Testing</b>	Security Testing will be conducted as part of non-functional testing. Deloitte will work with State staff to leverage existing infrastructure and processes to meet the security requirements. Deloitte staff assisting to manage user administration and security processes will follow State's existing policies and practices. The CORbi team will use existing Oracle advanced security capabilities used for EBI project for transparent data encryption. The data at rest will be encrypted and the authorized applications will be able to decrypt data when displaying to authorized users. Security vulnerability testing will be performed on Tableau dashboards published to the public.
<b>Installation and Environment Testing</b>	Confirms all components of the solution have been properly installed, configured, and can be accessed by the appropriate stakeholders. Testing of the environment will include execution of ETL mappings and refresh of Tableau dashboards and predictive models in the environment specified for validation.
<b>Production Validation</b>	Once Production deployment activities have completed, Deloitte performs production validation. If no issues are uncovered, Deloitte allows users to log onto the system with changes deployed. Deloitte performs post-production monitoring and any incidents identified are quickly escalated to the State with the goal of achieving or maintaining system stability. Incidents requiring a change are reviewed with the State for prioritization and emergency releases are scheduled based on direction from the State.
<b>Acceptance Testing</b>	The User Acceptance Test (UAT) phase continues the process of validating the solution meets the business requirements, allows the State to validate the end user experience and gives the State the ability to validate the design and reassess functionality if needed. Deloitte will continue to support the State throughout the UAT phase to validate and confirm the new business functions are performing as specified. As each component is ready, the State will be able to perform UAT.

*Figure D-2.3-64. Testing Phase Details.*

**Topic 15 – Testing**

2.3.2.2. Will configured Software be delivered in functional components for State Acceptance Testing?

Yes, as each functional component is completed and has been tested by the Deloitte team, the State team will be able to validate. For example, as ETL mappings are completed the data will be loaded in an environment to allow for the State team to validate the accuracy of the data and the business rules applied.



**Topic 15 – Testing**

2.3.2.3. How much time should the State allow to complete User Acceptance Testing of a component?

Deloitte will work with State to come up with an appropriate timeline for testing the components based on the scope, complexity, functional and non-functional requirements. Overall UAT effort could range from 2-5 days for a 4-week Sprint.

**Topic 15 – Testing**

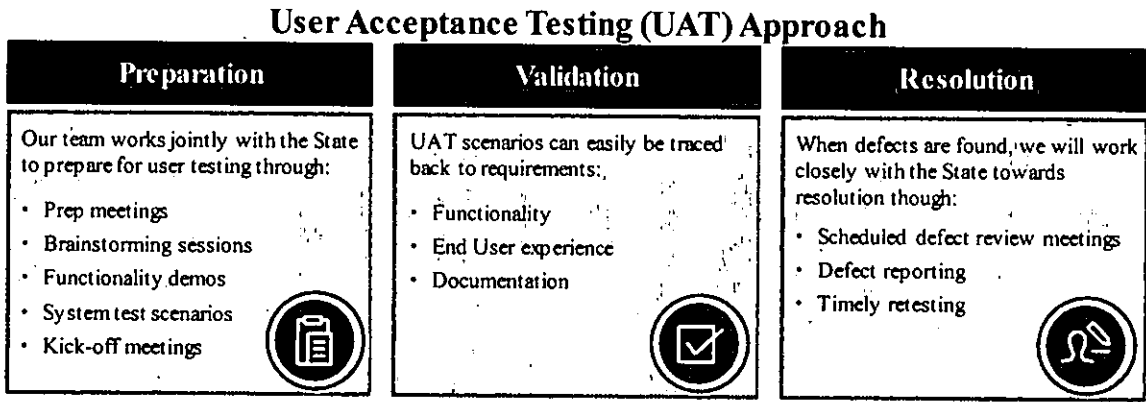
2.3.2.4. What test management and test driver tools will be employed in quality assurance testing prior to ...

The Jira tool will be used for test management and quality assurance prior to delivery of code to the State. These tools will be available to the State similar to what is being performed for the current New HEIGHTS and EBI projects.

**Topic 15 – Testing**

2.3.2.5. What support will be provided to prepare State staff during Acceptance Testing? How will on-site ...

The Deloitte team will be available on site to prepare the State for acceptance testing. The diagram below outlines the multi-discipline approach to UAT preparation.



*Figure D-2.3-65. UAT Approach.*

**Topic 15 – Testing**

2.3.2.6. How will members of the testing team be prepared to test the configured Software?

The testing team will be part of the Scrum team and included in the daily stand up meetings. In addition, all design documentation will be reviewed with members of the testing team, the data model will be reviewed with the team, and working sessions walking through the data validated in system testing will be performed prior to the State team performing testing. In addition, a series of meetings will be setup for test planning, scenario discussion, scenario prioritization, testing kickoff and demo, testing release and status meetings and any additional testing clarification meetings.

**Topic 15 – Testing**

2.3.2.7. What Documentation of configured Software will be available to the testing team?

- Charter



- Requirements Documents and Requirements Traceability Matrix
- User Stories and Acceptance Criteria
- Design Deliverables including ETL Specifications and Dashboard Mockups/Checklists
- Unit Test Scripts and Results
- System Test Scripts and Results

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**Topic 15 – Testing**

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2.3.2.8. Based on experience in similar Projects, how many and what types of Defects are likely to be ...

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In previous analytics implementations, approximately 5 – 10 % of UAT scenarios had defects or required clarification. None of these were critical or high defects. The nature of the defects include applying complex source data filters, layout of a dashboard/reporting view, or due to the nature of the data received from the source.

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**Topic 15 – Testing**

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2.3.2.9. How much time is available for comprehensive testing and correction of Defects prior to ...

---

Deloitte implements a robust testing approach with multiple phases and plans for contingency in case of unforeseen issues. The time available for testing is dependent upon the complexity of the Sprint, data available, and components developed in each Sprint. The general timeline within each Sprint for testing is 2-3 weeks. Based on metrics from similar Agile Analytics implementations this time is sufficient.

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**Topic 15 – Testing**

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2.3.2.10. If frequency exceeds the expected level, what corrective actions will be instituted?

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Deloitte will track and report all defects, closely monitoring the trends and root causes to identify if additional cycles are required for requirements clarification, unit testing, system impact and reprioritization. Frequency increases can be a result of multiple factors to include unclear requirements, invalid defects logged, or code quality. Deloitte will work with the State to assess the root cause of frequency increase and put a plan in place to correct in upcoming Sprints.

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**Topic 15 – Testing**

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2.3.2.11. How quickly will a suspected Defect be investigated, and what classifications are planned for ...

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Defects should be classified into Critical, High, Medium and Low. The investigation of a defect will be within 2 business days and will be prioritized based upon the classification.

---

**Topic 15 – Testing**

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2.3.2.12. How quickly will Software Defects be corrected?

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Based on priority, defects identified during unit testing, system testing and UAT will be reviewed with the State and prioritized. All Critical and High defects will be corrected within the same sprint. Medium and Low defects reviewed and identified during the Sprint review may be deferred to a future sprint.

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**Topic 15 – Testing**

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2.3.2.13. What specific Software tools will be used to isolate performance problems?

---



Our solution will use existing tools part of State’s infrastructure. Rational Performance Tester will be used to mimic reporting user transactions to simulate a large transaction load on the server. Server response time measurements will be collected to identify the presence and cause of any potential bottlenecks.

**Topic 15 – Testing**

2.3.2.14. What tools will be used to document and track status of suspected Defects?

Our solution will use existing tools part of State’s infrastructure. Jira will be used for documenting and tracking status of suspected defects.

**Topic 15 – Testing**

2.3.2.15. Will these tools be available to the State after the Project is completed?

Yes, these tools will be available to the State after the project is completed per the renewal licenses procured by the State. CORbi project team members will be configured for the Jira tool during the project planning.

**Topic 15 – Testing**

2.3.2.16. What role will the State play in classification and prioritization of Defects?

Prior to the user acceptance phase, The State and Deloitte will review defects created to assess prioritization based on relevant documentation and criticality to the business. During the user acceptance phase, the State will be responsible for creating defects and assigning defect classification. During the UAT status meetings, defects will be reviewed to validate that the appropriate classification and prioritization has been assigned.

**Topic 15 – Testing**

2.3.2.17. Will System performance be measured and documented using the State’s infrastructure and Data? ...

Yes, system performance will be measured and documented using the State’s infrastructure and data as mentioned within 2.3.2.1.

**Topic 15 – Testing**

2.3.2.18. Provide a sample User Acceptance Test Plan from a completed Project as an appendix.

See appendix.

**Topic 15 – Testing**

2.3.2.19. Testing Prior to UAT:

2.3.2.19.1. The State has a specific approach it generally requires for testing. Please read Appendix G2 ...

Deloitte’s testing methodology is described above in response to 2.3.2.1. As specified in the table, the Deloitte methodology includes the components included in the State mandated guidelines within Appendix G2. The Deloitte team will work with the State to review the Deloitte methodology for testing to make sure the State’s standards have been achieved.

**Topic 15 – Testing**

2.3.2.19.2. Use the first five pages of this topic to describe the approach you have proposed to



testing. Be sure to cover as applicable:

- 2.3.2.19.2.1. Installation and Environment Testing
- 2.3.2.19.2.2. Unit Testing
- 2.3.2.19.2.3. System Testing
- 2.3.2.19.2.4. Regression Testing
- 2.3.2.19.2.5. Performance Tuning and Stress Testing
- 2.3.2.19.2.6. Data Conversion Testing and Data Validation
- 2.3.2.19.2.7. Security Review/Testing

2.3.2.19.3. What test management and test driver tools will be employed in quality assurance testing prior to delivery of code to the State? Will these tools be available to the State for use in Acceptance Testing?

As mentioned in the response to 2.3.2.1, Deloitte’s testing methodology includes multiple phases to validate that the solution is functioning as expected. The figure below displays the sprint cycle iterative approach of which the building and testing of the solution is included prior to each release.

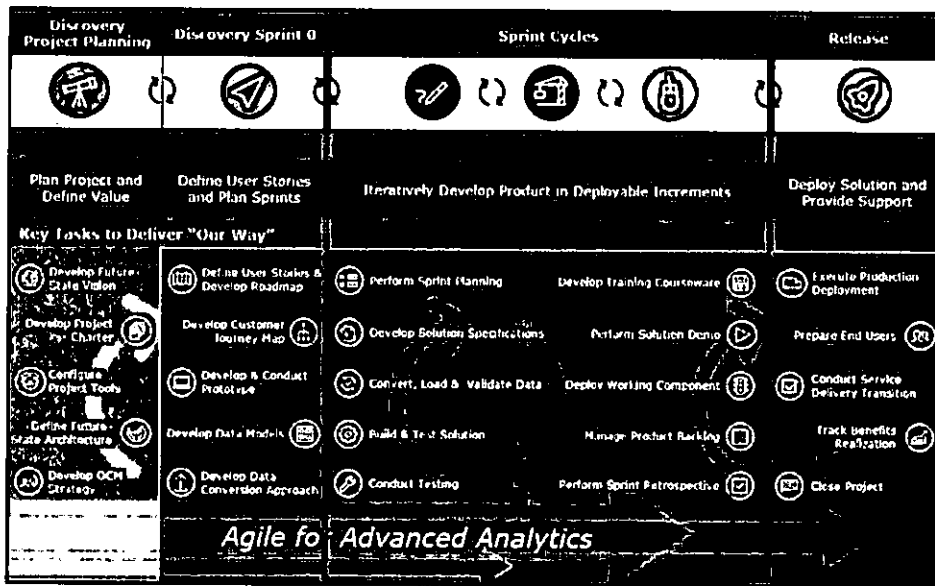


Figure D-2.3-66. Iterative Approach to Building & Testing Solution.

Similar to what is currently being performed for the DHHS New HEIGHTS and EBI projects JIRA will be used as the test management and driver tool. JIRA bundles can be effectively used to manage the testing status and to effectively manage defects.



## Topic 16 – Migration Strategy

### Topic 16 – Migration Strategy

The State will evaluate the degree to which the Vendor will ensure that Data conversion is effective and impacts ....  
 2.3.3.1. It is our assumption that the Data Conversion/Migration Plan is a deliverable that will ultimately lay ...

Deloitte has vast experience in successfully implementing data conversion projects in the public-sector domain with regards to creating Enterprise Data Warehouse (EDW) based analytical solutions. Our data conversion and migration strategy incorporates the following general guiding principles and leading practices to help address the unique aspects of data conversion and migration.

- Promote collaboration between State representatives and the Deloitte team to provide a thorough understanding of the data requirements from both the target and source systems and to confirm and refine these requirements.
- Use tools and automated processes to optimize the conversion process and support the proposed implementation schedule
- Employ repeatable development, testing, and implementation cycles of the data conversion process, allowing for continual improvement of data quality and reduction of data issues with each cycle.

The high-level approach to converting and migrating data into the DAP platform varies based on the process used to migrate the data. Please see the table below on the various approaches and supporting data migration tools.

Approach	Description	Tools Used
<b>Convert/Migrate complete Database via ETL</b>	The Conversion and migration of a complete database via ETL will be leveraged when certain restrictions prevent the database from being completely copied and moved from the existing server to the DAP platform. In this scenario, the legacy database will be retired and the ETL's will be a one-time data load.	Oracle PL/SQL, Informatica PowerCenter
<b>Database to Database</b>	The Database to Database migration of data from a data source includes a direct database connection to a source. This connection could be either a live connection or on a batch interval to extract data into the DAP platform.	Oracle SQL Developer, Informatica PowerCenter
<b>Flat File to Database</b>	The Flat File to Database migration process includes the extraction of data from a source into a flat file. The flat file can be in multiple formats (.CSV, Fixed Width, Pipe-Delimited, etc.) and stored on an SFTP server or the Informatica server to be consumed via an ETL process.	NH SFTP, Oracle SQL Loader, Informatica PowerCenter

*Figure D-2.3-67. Conversion & Migration Approaches.*

### Topic 16 – Migration Strategy

2.3.3.2. Describe the approach that will be used for assessing Data quality and conducting Data cleansing ...



As part of the Data migration and conversion process all data will be loaded into a landing layer in raw data formats before converting and migrating data into a structure for consumption in dashboards and predictive models. Deloitte assesses quality of the databased across six core dimensions – completeness, uniqueness, timeliness, validity, accuracy, and consistency. Based on any quality concerns or issues, we create a data mitigation plan to address key concerns which may include creation of exception reports or flagging of data quality records in the database. Informatica Data Quality (IDQ) also includes the ability to create data quality dashboards as a part of the solution. The roles and responsibilities for data quality and cleansing by phase are included in the table below.

Phase	Task/Activity/Event Description	State Task	Deloitte Task
<b>Design, Development and Unit Test</b>	Source system extract delivery/Extract issues	Lead	Support
	Source system extract data purification/cleansing/parsing and load landing	Support	Lead
	Staging reconciliation reports/Load Target table/Data Validation	Support	Lead
<b>System Test</b>	Identify scenarios (test cases) for testing/ provide data for testing	Support	Lead
	System testing with migrated data/issue resolution/issue fix and retest	Support	Lead
<b>UAT</b>	Provide jointly agreed amount of converted data in UAT region/UAT Issue resolution	Support	Lead
	UAT Testing/ /Fix validation	Lead	Support
<b>Go-Live Migration</b>	Identify operational impacts/migration setup and execution	Support	Lead
	Critical data validation /Final data load count validation	Lead	Support

**Figure D-2.3-68. Roles & Responsibilities for Data Quality & Cleansing.**

**Topic 16 – Migration Strategy**

2.3.3.3. Discuss the use of automated tools in Data conversion....

2.3.3.3.1. What data do you know will be challenging to convert/migrate and why? What special approach...

Automated tools will be used throughout the data conversion and data migration process. Informatica mappings and workflows will be used to extract data from the various data sources and load data into the DAP platform on a pre-defined cycle. As required, IDQ transformations will also be automated and embedded into the ETL mappings to cleanse data on a pre-defined frequency as defined in the user story for each sprint. Based on our experience, the following data sources will be challenging to migrate.

Data Source	What makes this source challenging	Special Approach
<b>Commercial Claims</b>	Dealing with APCD datasets presents several unique challenges including data quality and data consistency issues. Additionally, member data is generally de-identified preventing direct linkage to other data sources.	If authorized, the team can work with the APCD vendor to provide a feed to link existing client ID to the APCD identifier.

**Figure D-2.3-69. Conversion & Migration, Challenges & Approach.**



**Topic 16 – Migration Strategy**

2.3.3.3.2. Please discuss your approach to working with the Agency to document a data conversion/migration ...

During the Strategy and Planning phase, the Data Migration Plan is developed. The plan describes the Deloitte's comprehensive approach to meeting the State's migration requirements including State participation in data migration activities, security measures, data cleansing approach, post-migration cleanup, and contingency procedure. The plan will be reviewed for every sprint.

The determination on the amount of historical data to be loaded into the DAP environment is based upon requirements for trending in dashboards, the amount of data required to support predictive models, and potential policy and federal guidelines for data storage of specific data. The team will work with the State on defining these requirements prior to loading data into the landing environment.

**Topic 16 – Migration Strategy**

2.3.3.3.3. Define expectations for State and Vendor roles during the development of the data conversion/...

Development of the data conversion and migration plan will involve careful review and feedback from State and Vendor to approve the plan and documentation. Understanding of the existing data structures, data sharing agreements, and policy rules will be expected to be provided by the State as a part of this process. Documentation of these rules along with best practices for converting and migrating data will be the responsibility of the Deloitte team.

**Topic 16 – Migration Strategy**

2.3.3.3.4. What lessons learned can you share with us from other implementations that are important to ...

A few of the lessons learned shared from other implementations of a similar size and scope are below.

- Validating with production data as early as possible
- Implementing applicable cleansing in source system
- Understanding and Implementing appropriate data governance and sharing policies up front in the project
- Engaging all key stakeholders, including the DoIT organization throughout the project is crucial to project success





## Topic 17 – Environment Setup

### Topic 17 – Environment Setup

The State will evaluate whether proposed environments are sufficient to satisfy Project needs, including phased Implementation.

2.3.4.1. Describe the different Software and hardware environments required for the concurrent development, testing, and production of the proposed Solution. Discuss how the proposed environments support the Implementation of the hosted Solution, including all necessary training.

As part of the EBI Project, DHHS and DoIT are building the infrastructure that will support the Data Analytics Platform for the Opioid Crisis. Following figure D-2.3-11 clearly shows the two application servers and the two database servers that will support the Development, Test and Production environments via virtual environment for the all the key architecture components of the Opioid Insights solution. The virtual machines (VMs) on the application servers will host the Informatica ETL used for the data integration and Tableau environment for Opioid Insights dashboard. The virtual machines on the database servers will host the production and non-production Oracle databases that act as the backend for the solution. Additionally, the other architecture components like R and Python will be installed and configured on the application server VMs to support advanced analytic capabilities of the Opioid Insights solution. The Deloitte team, will work with the State on assessing the environment below for scalability with the data sources in scope for the CORbi project.

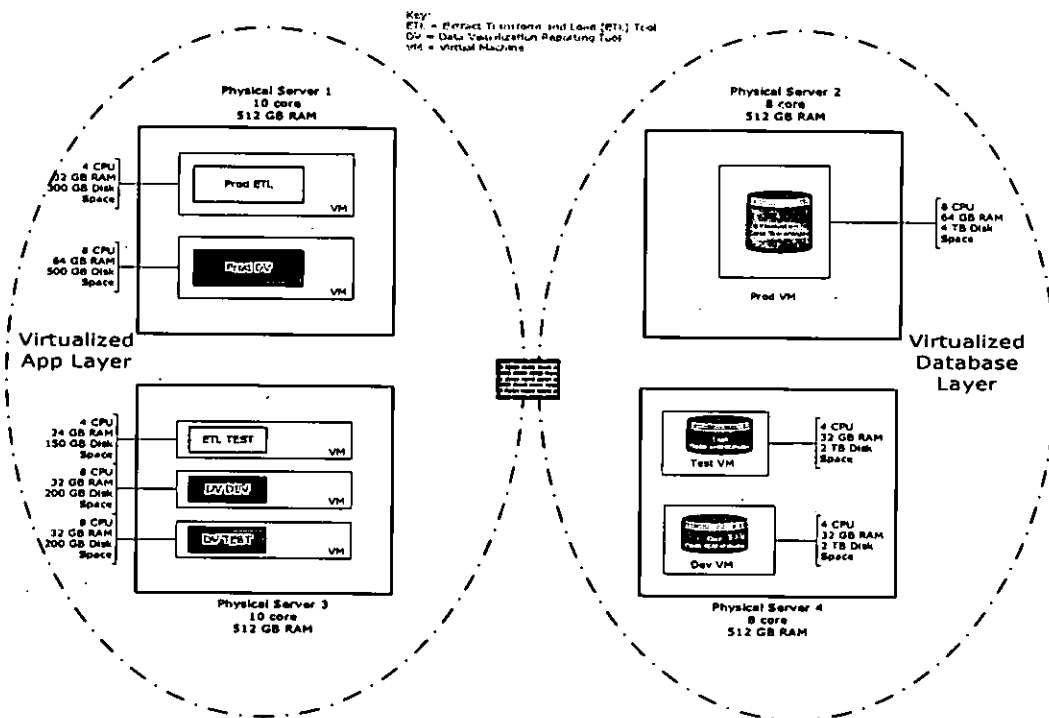


Figure D-2.3-70. Virtualized Layers.

### Environments:

**Development** – This environment will be used by the development team to create their code and perform unit testing based on Oracle DW, Informatica ETL mappings and Tableau dashboards.



**Test** – This environment will be used by the testing and training teams to setup their scenarios. This will be an independent environment from the development environment to facilitate the Integration, User Acceptance (System) and Regression testing. We will work with DoIT to create database schemas that support these testing activities and also support DoIT with code migrations across environments.

Physical Server	Architecture Component	Environment (VMs)
Server – 1	Informatica ETL	Production
	Tableau	Production
Server – 2	Oracle 12C	Production
Server – 3	Informatica ETL	Test
	Tableau	Test
	Tableau	Development
Server – 4	Oracle 12C	Test
	Oracle 12C	Development

**Figure D-2.3-71. Hardware Environment.**

**Training** – Application Demos and Trainings to the business users on Tableau dashboard usage will also be conducted in the test environment. A separate folder structure will be set up with the proper security controls to allow only those users engaged in training to access dashboards to be leveraged as a sandbox after the training is conducted.

**Production** – The tools setup in this environment will be used for deployment of the production application and support day to day operations for the Opioid Insights solution.

**Topic 17 – Environment Setup**

2.3.4.2. The State believes that additional Software License fees solely related to establishing environments for normal development life cycle would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.

Our environment strategy for the proposed Opioid Insights solution aligns with the State’s vision of leveraging the existing infrastructure, both hardware and software for this initiative. We do not require State to procure any additional Software licenses fees solely related to environment build out for this project.

**Topic 17 – Environment Setup**

2.3.4.3. Discuss how the proposed environments support the Implementation of the hosted Solution, including all necessary training.

As discussed in the section 2.3.4.1, DHHS and DoIT has already procured the hardware and software that will support the CORbi project. The figure D-2.3-13 clearly articulates how each of the server will be used to support the software

Physical Server	Technology	Development	Integration Testing	System Testing	Regression Testing	Production	Demos and Training
Server-1	Informatica					Yes	
	Tableau					Yes	
Server-2	Oracle					Yes	
Server-3	Informatica		Yes	Yes	Yes		Yes
	Tableau	Yes	Yes	Yes	Yes		Yes
	Python / R	Yes	Yes	Yes	Yes		Yes
Server-4	Oracle	Yes	Yes	Yes	Yes		Yes

**Figure D-2.3-72. How Servers Will Support the SDLC.**

development life cycle of the Opioid Insights solution. Deloitte will work closely with DoIT on code migration and enabling the environments through their standard access provisioning processes on ODAR and JIRA.



## D-2.4 Project Management Competence

Deloitte delivers using well-executed and proven methods, including the Agile for Advanced Analytics (AAA) methodology that will be used to govern this project. We appreciate and understand the unique challenges that can occur throughout the course of data driven, complex projects like CORbi based on our experience supporting other states and working with NH DHHS.

Our Project Management methodology anticipates and mitigates challenges and issues before they arise. CORbi project is a complex project with multiple simultaneous Sprints combined with a rapid turnaround time for the deliverables. The sections below detail Deloitte's AAA methodology, approach, and processes in managing the CORbi project, specifically focusing on agile delivery, 360-degree communication, timely delivery, quality and consistency. AAA has been used effectively in the past for agile project delivery in NY, PA, and TX that are similar in size and scope to the CORbi project. We recently used a similar agile delivery approach for the DCYF salesforce pilot project with live sprint review demonstrations of completed task prioritized from backlog, including previewing in process work. AAA and its supporting Project Management suite of tools provide the State with visibility and insight into Deloitte's methodology and our Agile project delivery. At the onset of this project, our usage of existing EBI platform and our HHS Interactive Opioid Insight accelerators will place us in a strong position to deliver using Agile as illustrated in our preliminary sprint plans in our project management approach.

We will communicate through our scrum facilitation as well as well as status reports for project leadership providing updates on schedule, milestones, time and schedule variance, ongoing Activities, key risks, issues and action items.

Our sprint scope management provides clarity through granular definition of the epics and user stories and usage of backlog. Our familiarity with the DHHS environment and data will be an advantage during project startup placing us in a strong position to hit the ground quickly with the first sprint beginning immediately following the Governor and Council project approval.



## Topic 18 – System Acceptance Criteria

### Topic 18 – System Acceptance Criteria

The State will evaluate whether proposed Acceptance criteria will assure the State that the new System is functioning effectively before being turned over for State for User Acceptance Testing.

2.4.1.1. Propose measurable criteria for State final Acceptance of the System.

Deloitte’s proven testing procedures confirm that the implemented solution meets the specific needs of DHHS, maintains the level of data quality required, and validates system readiness. Through the use of our AAA methodology, which includes a series of templates, tools, and accelerators to validate well-defined testing, the testing phase for this implementation is both efficient and effective. One such tool is the Acceptance Criteria Checklist, which validates that the new System is functioning effectively before being turned over for State for User Acceptance Testing. From our past experience, we believe System Acceptance Criteria are critical for DHHS because it enables you to have confidence in the CORbi project being implemented.

We propose to bring the following Acceptance Criteria Categories for consideration. Working together, Deloitte and DHHS will agree on the System Acceptance Criteria during the early planning stages of the project.

- **Requirements met** – e.g., validated that the corresponding requirements for the specific sprint have been met
- **Technical infrastructure** – e.g., local hardware in the UAT environment is in place; performance tested
- **UAT Ready System** – e.g., Systems Integration Test (SIT) complete; defects resolved as per agreed upon guidelines; load test has been completed
- **Data set up** – e.g., data (obfuscated/deidentified if applicable) has been loaded into the UAT environment and tested and is ready for use
- **Solution Readiness** – e.g., data loaded is validated; security profiles are set up; data wrangling and load processes, predictive models and dashboards deployed; the processes configured for the CORbi project; all deployments smoke tested
- **Training** – e.g., course material complete and deployed; UAT testers have been trained
- **Regression testing** – e.g., Regression testing of previously deployed components to confirm new deployment did not negatively impact their functioning

*Figure IV-D.2.4-73. Acceptance Criteria Categories.*

To facilitate an orderly and quality implementation of the System prior to UAT, the criteria will be developed and reviewed collaboratively with the DHHS team at the onset of each sprint. The proposed criteria would include:

- Sprint demonstration use-case validations completed in real-time for the DHHS agile scrum product owner and supporting team
- The planned test Scenarios for Systems Integration Testing (SIT) have been executed, validated by the test lead and the test results documented
- Defects found in test execution are entered in the defect tracking system and have been resolved or a resolution identified.
- No outstanding critical or high severity defects remain; a plan to resolve any medium severity defects is in place



- With respect to interface testing, successful functioning of the application with either real data (when the interface is ready for handshake) or stubbed data (if the interface is not ready for handshake) is considered to be the completion of interface-based testing
- Installation instructions or build guides are completed by the application team and an environment readiness walk-through is completed
- UAT Environment has been configured and delivered to the testing team by the application team and application architect
- Shakeout of the UAT Environment is completed and is fully operational with no major issues including the verification of:
  - Basic application functionality
  - Test data and
  - User logins

**Topic 18 – System Acceptance Criteria**

2.4.1.2. Discuss how the proposed criteria serve the interest of the State.

Deloitte’s framework incorporates testing for each Sprint to confirm that the System is ready for the next phase. The following table lists how the proposed Acceptance Criteria serves the interest of the State.

Acceptance Criteria	How the proposed criteria serve the interest of the State
The planned test Scenarios for Systems Integration Testing (SIT) have been executed, validated by the test manager and the test results documented	Confirms that the features and functionalities of the System were tested by the Deloitte team prior to UAT
Defects found in test execution are entered in the defect tracking system and have been resolved or a resolution identified.	Confirms to DHHS that a resolution for the defects has been identified and defects will be resolved either prior to UAT or during UAT. Demonstrates system is fit for use and meets the needs of the business
No outstanding critical severity defects remain; a plan to resolve any high severity defects is in place	Confirms that a stable System is in place
Test results have been reviewed with the relevant project team and project leadership	Provides confidence to DHHS that all required tests have been executed and passed
Test Execution Results from SIT in the form of completed Test Checklists are published by the Deloitte Test Team to DHHS. Test execution communication meetings are scheduled (status meeting and defect meeting) Systems Integration Testing (SIT) is complete and signed off for the modules being tested	Provides DHHS leadership a preview and good understanding of the status of the functioning of the System and set expectations for the users prior to UAT



Acceptance Criteria	How the proposed criteria serve the interest of the State
Installation instructions or Build Guides are completed by the application team and an environment readiness walk-through is completed	Demonstrates the readiness of the environment – set up of infrastructure, software components, etc.
Test Environment has been configured and delivered to the testing team by the application team and application architect	Confirms that the testing environment is ready for the UAT to begin. Though this does not demonstrate System readiness, this criterion is to test the readiness of the environment to execute UAT
Shakeout of Test Environment completed and is fully operational with no major issues including the verification of: <ul style="list-style-type: none"> <li>• Basic application functionality</li> <li>• Test data and</li> <li>• User logins</li> </ul>	Demonstrates that the UAT user profiles are set up and the System is working as expected with the appropriate test data

*Figure IV-D.2.4-74. How Proposed Acceptance Criteria Serves the Interest of the State.*



## Topic 19 – Status Meetings and Reports

### Topic 19 – Status Meetings and Reports

The State will evaluate the degree to which Project reporting will serve the needs of State ...

2.4.2.1. Introductory Meeting: Participants will include Vendor Key Project Staff and State ...

At the start of the engagement, Deloitte works with DHHS to identify all required introductory meetings, including contract planning, project kick-off, project management planning sessions and develops required meeting presentation and documentation. Participants in these meetings include key project vendor staff, State project leaders from DHHS, and DoIT. During these initial meetings, the vision and the mission statements for the project are established, project governance communication protocols and guidelines are established. The project timelines and schedules are finalized, deliverables submission and approval processes are reviewed, project management tools such as issue and defect tracking tools are defined, critical success factors are determined, and a 30 day/60 day plan is created.

Our advisory team includes Scott Workman, who has a long history with DHHS, will be sponsoring this project, and will be available to the State as required to address and concerns or issues that may develop during project delivery as a point of escalation.

### Topic 19 – Status Meetings and Reports

2.4.2.2. Kickoff Meeting: Participants will include the State and Vendor Project Teams and major stakeholders. This meeting is to establish a sound foundation for activities that will follow.

The kickoff meeting establishes a sound foundation for the activities to follow and sets the stage for the entire project. For previous engagements, Deloitte has coordinated with other stakeholders and compiled a concise kickoff meeting presentation to cover all the pertinent topics. Details around timing, agenda, and participants for the kick-off meeting are included in section 2.4.2.9.1.

### Topic 19 – Status Meetings and Reports

2.4.2.3. Status Meetings: Participants will include, at a minimum, Vendor Project Manager ...

Deloitte will conduct weekly status meetings to address overall project status and any additional topics needed to review the project health and burn down. The participants include the vendor project manager, State project manager, and key project staff. As part of the project status review, Deloitte provides weekly progress and work plan updates supported by relevant documentation (i.e. dashboards, reports), to confirm that key stakeholders understand project performance, outstanding and current risks, issues, decisions, and action items. Any remedial or mitigating action for variances will also be noted in the status report. These meeting will be in addition to and complement the scrum planning and stand-up meetings.

### Topic 19 – Status Meetings and Reports

2.4.2.4. The Work Plan: must be Reviewed at each Status Meeting and updated, at minimum, on a ...

Deloitte will update the project work plan weekly and include relevant project work plan reviews during the status meetings, specifically focused on project critical path items and external dependencies in accordance with the contract. By establishing a cadence and updating the work plan regularly, Deloitte will leverage metrics like the Deliverable Completion Rate and Schedule Performance Index (SPI) to quantify the project progression.



**Topic 19 – Status Meetings and Reports**

2.4.2.5. Special Meetings: Need may arise for a special meeting with State leaders or Project ...

In addition to the formal status meetings, Deloitte anticipates a strong on the ground contingent to collaborate dynamically with DHHS and DoIT. We understands that ad hoc and special meetings between State leaders or project stakeholders are essential and expect to engage with State staff on a regular basis to clear roadblock and make forward progress working as one team.

**Topic 19 – Status Meetings and Reports**

2.4.2.6. Exit Meeting: Participants will include Project leaders from the Vendor and the State...

Deloitte will conduct an exit meeting (retrospective) at the end of each spring to review the lessons learned and collected during the project life cycle. This will be supported by exit tasks including turnover-related items as part of the overall project closure.

**Topic 19 – Status Meetings and Reports**

2.4.2.7. The State expects the Vendor to prepare agendas for and minutes of meetings. Meeting ...

Deloitte will prepare agendas, formal presentations/reports, and maintain an updated work plan for meetings. During the meeting Deloitte will document meeting notes, which will be stored on SharePoint. The project SharePoint site will serve as a common project document repository for the State and Deloitte. In addition to the detailed meeting minutes, Deloitte will also update or log new risks, issues, action items, and decisions on SharePoint, when applicable. As a pivot from current project delivery, we plan to move towards a more interactive minutes (decision) process. We will use live projection so that the meeting community can participate and view captured information in real-time. This will also extend to product feature reviews and backlog management.

**Topic 19 – Status Meetings and Reports**

2.4.2.8. Vendor shall submit status reports in accordance with the Schedule ... (2.4.2.8.1 – 2.4.2.8.7)

At a minimum, Deloitte will produce project status reports that contain the following:

- Current status (on track, off track), Work plan overview, along a timeline, which notes the different sprints
- Deliverable status including the key Milestones, like Sprint start/end dates and deliverable submission dates. Progress and accomplishments made during the weeks included in the report
- Planned activities for the upcoming two (2) week period, Upcoming milestones; deliverables, meetings and reviews
- A summary of risks, issues, and action items logged in Jira and organized by severity. Risks requiring DHHS input and guidance are further elaborated, including response strategies and triggering points, and number of days since the risk was identified. Overdue items flagged for immediate follow up and appropriate escalation.
- Progress against work plan start date, end date, and duration for project activities

**Topic 19 – Status Meetings and Reports**

2.4.2.9. Be sure to cover the following: ... (2.4.2.9.1 – 2.4.2.9.4)





2.4.2.9.1. Based on our experience with other similar projects, Deloitte recommends having the kick-off meeting within the first two weeks of the project. The participants for the kick-off meeting include key project leaders from Deloitte and DHHS such as the Project Sponsor, Project Manager, Contract Manager, other major stakeholders including users of the system, business users. The duration of the kickoff meeting may range from 2 to 3 hours, and the meeting will cover the following topics in the agenda: Review of Project Charter, the Project Org Chart, Key Project Members, Project Timelines and Schedule, Communication guidelines/protocols, Project Scope, Stakeholder roles and responsibilities, and next steps (30/60 Day Plan).

2.4.2.9.2. Given the dynamic and critical nature of the project, Deloitte proposes a weekly status meeting with DHHS. Agendas are coordinated with the State and published prior to the meeting. Beyond reviewing the documentation (i.e. meeting agenda, work plan, risk and issues report) prepared for the meeting, Deloitte focuses on outcome driven meetings to keep all stakeholders informed in a timely manner regarding key decisions and critical project roadblocks. The standard agenda for status meetings, at the minimum, includes a project status update, review of RAID (Risk, Action Items, Issues and Decisions) log, and a discussion on any critical items that need DHHS’s immediate attention.

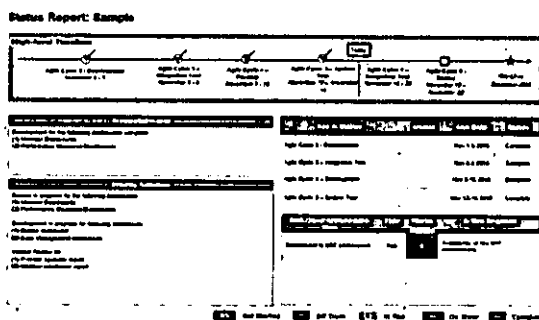
2.4.2.9.3. Deloitte is committed to making our team available for any special meetings to discuss topics that are not covered during the regular meetings or status update meetings as well as for scrum planning and stand-up meetings.

2.4.2.9.4. Exit meeting take place at the end of each spring and upon project close-out to review the lessons learned and collected during the project life cycle and other turnover-related items. Sprint review meetings take place at the end of each Sprint, lessons learned are reviewed and documented, and changes are implemented for subsequent sprints cycles

**Topic 19 – Status Meetings and Reports**

2.4.2.10. As an appendix, provide an example of status reports prepared for another Project. Names ...

2.4.2.10 – The graphic below shows the summary page of a sample status report from another Deloitte analytics engagement, see appendix for the sample status report.



**Figure IV-D.2.4-75. Example of Status Report.**

**Topic 19 – Status Meetings and Reports**

2.4.2.11. As reasonably requested by the State, Vendor shall provide the State with information ...

Deloitte understands the requirement and will support creation of special ad hoc reports and presentations for CORbi project to support client stakeholder goals toward project success.



## Topic 20 – Risk and Issue Management

### Topic 20 – Risk and Issue Management

2.4.3.1. Provide proposed methodologies for risk and issue management. Discuss State and Vendor responsibilities. The State seeks a clear means to compare planned versus actual status, including percentages, at a sufficiently detailed level to ensure the State can adequately monitor the progress of the Project. Be sure to identify any essential time constraints on State actions. Escalation procedures will be defined in a Contract between the State and the Vendor.

Deloitte’s risk and issue management practices use the principles advocated by Project Management Institute Body of Knowledge (PMBOK) and focus on the following key processes:

### Risk and Issue Identification

The onset of each sprint as the first opportunity to identify internal and external risk elements. As we begin a sprint, we note potential areas of risk that may arise from project scope, staffing, schedule execution, requirements gathering, software delivery, quality plans, stakeholder communications, and other deliverables. Extra focus, monitoring and tracking is done with respect to source system data availability, access and quality to mitigate risks associated limited availability and poor quality of data during data integration activities. Our national and local experienced uniquely positions us to provide guidance and navigate through these concerns. Risk identification may arise from team/client meetings, analysis, document reviews, workgroups, and other day-to-day sprint-related activities. The identified risks are then captured in a risk register. Risk description, impact description, risk assessment, owner, and response strategy are a few of the data elements tracked within each risk entry. Active risks are tracked and published in the weekly project status report. Issues can arise from risks that become realized. A risk that is realized will either initiate the risk response plan or be logged as a new issue to be addressed by the project’s defined issue management process.

### Approach, Methods, and Tools to Analyze, Prioritize, and Escalate Risks

Risk analysis involves the assessment of risk exposure derived from the likelihood of the event occurring, and the severity of consequences or impact of realization. Risk evaluation also includes the prioritization of risks, so that highly rated risks receive more analysis, resources, and attention. Identified risks need to be re-evaluated throughout the sprint life cycle, because conditions and priorities can change over time. The probability of risks is assigned within a range of 10-90% occurrence as seen below. If a risk has a 100% probability, then it is realized and becomes an issue. The following table can serve as a guideline for assigning probability value for a risk:

Probability	Probability Value	Description
0-29%	2	Not Likely
30-59%	3	Low Likelihood
60-79%	4	Likely
80-99%	5	Highly Likely
100%		Occurred: Risk became an Issue

*Figure IV-D.2.4-76. Guideline for Assigning Probability Value for a Risk.*



When risks are identified, they are qualitatively analyzed in terms of impact and probability. Both impact and probability are assessed on a range of 1 – 5, with 1 being Low and 5 being High. The two values are then multiplied to compute an overall risk exposure score:

$$\text{Risk Exposure Score} = \text{Probability Value} * \text{Risk Impact}$$

Risk exposure features the priority level of any given risk. The exposure score is a range of 1 – 25, as calculated in the below table.

		Probability				
		1 (0-10%)	2 (10-20%)	3 (30-50%)	4 (60-70%)	5 (80-90%)
Impact	1 – Minimal	1	2	3	4	5
	2 – Low	2	4	6	8	10
	3 – Medium	3	6	9	12	15
	4 – High	4	8	12	16	20
	5 – Critical	5	10	15	20	25

Figure IV-D.2.4-77. Sample Exposure Score Range.

The severity of the risk dictates the escalation process; Lower severity risks are managed within individual or cross-team committees while higher severity risks are raised to the project manager and possibly the project leadership and are discussed during status meetings.

Once escalated, the risks are assigned an owner who will work through in mitigating the risk. The Risk Assignee will create a formal risk response plan for risks that are determined to be High Exposure. Other risks are monitored and reviewed but will not have formal risk response plans. Risk response planning will be a joint responsibility between the State and Deloitte resources.

### Communication of Issues and Risks

Deloitte will work with the State to come up with a process flow to triage, validate, prioritize, and escalate the various risks and issues that arise during the course of a sprint.

Our approach to communicating risks will focus on probability and frequency of occurrence of the risk and tailored messages delivered through multiple channels. Our approach to communicating issues will focus on messaging to identify impacted stakeholders. Tailored messages delivered through multiple channels (i.e. SharePoint, Email, status meetings, ad hoc meetings, status reports) at specific times, over the course of the project, will enable stakeholders to understand project risks and issues.

If agreeable, we suggest using Jira to track risk. Jira dashboards will help the State monitor and control project issues and risks. Examples of risk and issue monitoring dashboard panels built by Deloitte in past projects are

- Cumulative Issues and Risks by Status
- Active Issues by Severity
- Active Issues Aging by Severity



### Roles and Responsibilities

The table below illustrates the responsibilities shared by the State and Deloitte in the risk and issue management process.

Entity	Responsibility
State	<ul style="list-style-type: none"><li>• Support Deloitte in resolving risks and issues</li><li>• Review risk and issue management process workflows and provide feedback</li></ul>
Deloitte	<ul style="list-style-type: none"><li>• Implement risk and issue management methodologies and workflows</li><li>• Identify, communicate/escalate project risks and issues and track them to closure</li></ul>

*Figure IV-D.2.4-78. Roles and Responsibilities of State and Deloitte.*



## Topic 21 – Scope Control

### Topic 21 – Scope Control

2.4.4.1. Suggest an approach for scope control. Describe how the approach has been employed effectively on another Project.

Deloitte has successfully controlled scope on a variety of projects using agile. We will extend those lessons learned from retrospective and similar efforts which we have played forward in our approach to comparable analytics projects.

### Topic 21 – Scope Control

2.4.4.2. Demonstrate your firm's ability to manage scope creep by discussing tools and methodologies, as well as past Project experiences.

Scope control for the CORbi project is critical to successful and timely delivery of the project. The Deloitte team proposed for this project has decades of experience delivering similarly complex, data-related projects and understands the need to work closely with the State to manage scope and maintain a focused approach. We will also be engaging a certified agile coach to introduce the method to project participants and assist with project start-up setting a strong foundation for scope management.

The User Story Backlog and the Requirement Traceability Matrix (RTM) and are the foundations to document to scope management and acceptance criteria for each user story associated with a particular sprint and maintain traceability between user story and the technical design document(s)/artifact(s) and test cases(s) associated with each user story. The User Story clearly defines the functions to be delivered within each sprint.

The RTM provides traceability regarding the project's scope, requirements, and deliverables, and allows for visibility into whether they remain as originally procured when compared to the baseline. The RTM enables users to find the origin of each technical and/or functional user story and understand the changes impacting the user story. It also identifies gaps between user story requirements and subsequent life cycle events, such as design and testing; and it confirms completeness and coverage of requirements. These tools give the State capabilities to effectively manage scope creep.

In addition to user stories and the RTM, one of the most essential ingredients to scope management is a team that understands your vision and environment and is committing to finding the highest value way forward within budget constraints. We have consistently demonstrated this ability working with DHHS to innovate and adapt to meet or exceed expectations while remaining on budget.

Any user story requirement identified as out of scope is managed through a change management control process. Change management is the process for managing proposed changes to a project through a defined and controlled change control process. Once a change from the sprint baseline has been identified, the formal change management process is initiated. This process includes documenting the change in the change management tool used by the State, collecting requirements, estimating the change (effort and costs), and determining system, module, and stakeholder impacts, prior to reviewing the change with the State's Change Control Board (CCB). Deloitte provides day-to-day support for the controls, processes, procedures, and tools supporting the State's CCB by adjudicating the sprint change requests through the change management life cycle.

Impact analysis of the change is performed by Deloitte on behalf of the State and includes:





## Topic 22 – Quality Assurance Approach

### Topic 22– Quality Assurance Approach

The State will evaluate the degree to which proposed procedures will ensure that Deliverables require limited modification when submitted for approval.

2.4.5.1. The State has identified three categories of Deliverables:

2.4.5.1.1. Written Deliverables, such as a training plan;

2.4.5.1.2. Software Deliverables, such a configured Software module; and

2.4.5.1.3. Non-Software Deliverables, such as conduct of a training course.

**Our approach:** Deloitte’s structured approach to quality assurance and monitoring provides DHHS with a solution that meets the quality objectives and standards of DHHS. Our quality management processes and controls are focused around improving results and outcomes, integrating quality management in each step of the implementation and into operations, as well as managing risks by identifying and tracking defects early to take the required corrective measures for quality improvement. Initiatives like the CORbi project impact downstream systems that may include NH healing grant if awarded, which require coordinated and integrated quality assurance and monitoring approaches. Our quality management processes and project management methodology address these challenges by working collaboratively with DHHS and resolving them.

**Our Process:** The CORbi project is an innovative and challenging undertaking, with critical components such as complex business rules, heterogenous data from eight different sources, and interfaces with third-party systems. These complexities are compounded when the project is following an agile delivery as the impact of such complexities is instantaneous with short time frames for each sprint which create the need for having a mature quality management process. We recognize that inattention to quality leads to reactive thinking, inconsistent results, and ineffective decision-making. We consider it critical to focus on establishing an integrated quality management process. We proactively identify any data quality issues, establish a realistic schedule and scope within each sprint, to include testing, reviews and defect resolution, and reduce risk by infusing our subject matter experts early in the sprint cycle. We also use the same set of quality resources for each sprint cycle to leverage the knowledge gained and lessons learned from previous sprint cycles. The process is made up of three parts: 1) define quality 2) monitor quality, and 3) improve quality, as illustrated in the figure IV-D.2.4-8.

Quality Process	Activities
Define Quality	<ul style="list-style-type: none"> <li>Identify deliverables for each Sprint Cycle</li> <li>Set deliverable standards</li> <li>Review and approve process design with the State</li> <li>Set quality expectations</li> </ul>
Monitor Quality	<ul style="list-style-type: none"> <li>Review deliverables against standards</li> <li>Conduct peer reviews</li> <li>Perform management reviews</li> <li>Informal deliverable reviews</li> </ul>
Improve Quality	<ul style="list-style-type: none"> <li>Produce quality deliverables</li> <li>Complete deliverable walk-through</li> <li>Submit quality deliverables</li> <li>Post deliverable submission debriefs</li> </ul>

Figure IV-D.2.4-80. Quality Process.

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2.4.5.1.1 As a part of our quality assurance approach for submitting

written deliverables, Deloitte has a structured process in reviewing and finalizing the deliverable internally prior to submitting to the State. For example, if we are preparing the Communication and Change Management Plan (CCMP), one of the required deliverables, the quality assurance approach process starts off with the creation of a Deliverable Expectations Document (DED), which contains the proposed structure and content of CCMP. The DED also contains information related to the deliverable review process, acceptance criteria, schedule, roles and responsibilities, associated artifacts, and outline.



The document is reviewed with DHHS to get feedback on the expected content and structure of the CCMP. Provided DED feedback is incorporated into the actual deliverable. The DED clearly sets expectations on the deliverables. Once DHHS approves the DED, it is used as the template to create the actual deliverable. The deliverable creation process goes through a rigorous internal review once the content is put together by the deliverable owner. The team leads, and the project manager review the deliverable and provide feedback prior to submission to DHHS. Once submitted to DHHS, Deloitte works with the State to determine if a walk-through is necessary to enable easier review of the deliverable. Depending on the amount of feedback and changes, Deloitte may make the changes to the deliverable during the walk-through and submit an updated version as appropriate. This approach has worked successfully in many projects and we are confident it will also work for DHHS.

2.4.5.1.2 Our deliverable and project activities undergo multiple levels of testing to make sure that they are of highest quality requiring minimal changes prior to acceptance testing. The different types of testing performed by Deloitte team have been explained in our response for 2.4.5.2.3

2.4.5.1.3 As a part of our quality assurance approach any non-software deliverable such as a training course undergoes the same review and scrutiny to deliver a quality deliverable to DHHS. For example, while delivering a training course for DHHS members, the Deloitte team has a defined training approach as per our AAA methodology. The approach outlines various steps to deliver the training course, has checks and balances to minimize any modifications when it is ready for submission to the State for approval.

We discuss with the State the proposed structure and content of our training materials and gain approval prior to creating the materials. The developed deliverables are peer reviewed and reviewed by the leadership team to confirm that the deliverable is of quality. We review the course content with the State prior to distribution and the trainers deliver the course to a limited set of DHHS users to confirm the right content and delivery of the course. Any changes needed will be done prior to finalizing the course content and submission to DHHS.

#### **Topic 22– Quality Assurance Approach**

2.4.5.2. Describe the methodology that will be employed to assure that each type of Deliverable is of high quality before submission for State consideration. Discussion should include but not be limited to:

2.4.5.2.1. Provision for State input to the general content of a Written Deliverable prior to production;

2.4.5.2.2. The standard for Vendor internal Review of a Written Deliverable prior to formal submission; and

2.4.5.2.3. Testing of Software Deliverables prior to submission for Acceptance Testing

Deloitte’s structured approach to quality assurance and monitoring provides DHHS with a solution that meets the quality objectives and standards of DHHS. Our quality management processes and controls focus on improving results and outcomes, integrating quality management in each phase of the implementation and into operations, as well as managing risks by identifying and tracking defects early to take the required corrective measures for quality improvement.

2.4.5.2.1. Our approach to quality assurance and monitoring incorporates industry best practices. This applies to all deliverables including written deliverables. The written deliverable submission process starts off with the creation of a Deliverable Expectations Document (DED). Before beginning work on deliverables, agreement on content and format is crucial. A DED allows the State and Deloitte to collaboratively define deliverable expectations in terms of content, structure, timeline, and acceptance criteria. Used alongside the artifacts comprising the deliverable, the DED is used to sufficiently define the format, structure, and acceptance criteria. The DED is submitted for the State’s review and approval





which provides a provision for State input to the general content of the written deliverable prior to creation of the written deliverable. We strongly believe DHHS should be actively involved while the Deloitte Team is drafting deliverables. The agency’s involvement, coupled with the DED process, minimizes surprises and establishes expectations before submission to minimize disconnects on content or level of detail. We believe this also enables us to effectively make use of the short review cycle suggested by DHHS. Once the Deloitte Team receives approval from DHHS on the expected content and format, we move forward on the deliverable per the project schedule. The Deloitte Team proactively reviews and agrees upon deliverable content and format prior to the scheduled start date to facilitate transparency and minimize the risk of unforeseen setbacks.

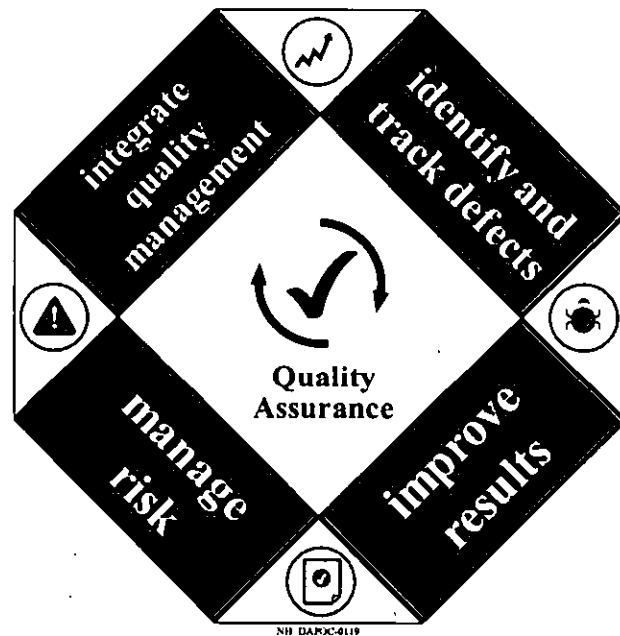


Figure IV-D.2.4-81. Quality Assurance Approach.

2.4.5.2.2. Our approach to quality assurance and monitoring has a standard internal deliverable review process. The internal review enables a quality output prior to submission to DHHS. The Deliverable internal reviews are performed by the project team to: (1) verify the completeness of a deliverable, (2) verify the accuracy of a deliverable, (3) confirm that a deliverable meets project standards (for example, using the right template), as well as any deliverable-specific or custom requirement, and (4) confirm that the content of a deliverable meets its objectives and is consistent with prior approved or related deliverables, if any. The Deloitte team employs multiple types of deliverable reviews to help confirm that each deliverable meets specified requirements, the cornerstone of which is the DED process to give DHHS a precursor view and input to a deliverable’s development. Once the Deloitte Team completes the internal deliverable review process, the deliverable is submitted to DHHS for review with a deliverable review comment log.

2.4.5.2.3. Our approach to quality assurance and monitoring is based on lessons learned from our previous implementations similar in size and complexity to the CORbi project. We support our approach to testing and reduce overall project risk with certified processes that comply with the Project Management Book of Knowledge (PMBOK) leading practice standard for project management and align with the proposed AAA methodology. Our objective for testing is to provide testing that produces a high-quality, high-performing application that meets your system requirements and design. Our testing approach and methodology is detailed and includes multiple levels of testing of the functionality and application. Each phase of testing achieves a higher level of system stability.

An exponential increase in cost and risk occurs when defects are found later in the life cycle of an application. So, prior to handing over the application for acceptance testing, a dedicated team of testers test the application thoroughly to confirm that the system is ready for acceptance testing. The Deloitte team performs multiple levels of testing, each with a specific objective and goal in mind. The multiple levels of testing prior to acceptance testing are described in the table below:



Deloitte Test Phase	Test Phase Description
<b>Unit Testing</b>	<p>Unit testing is used to verify the input and output for each component/module. For example, in the CORbi project, the dashboards are unit tested by the developers once development is complete. Successful testing indicates the validity of the dashboard and confirms traceability to the design. During unit testing, the developer tests each dashboard individually and verifies against a check-list to confirm that the dashboard that they created is working as per expectations.</p> <p>For example, dashboard unit testing includes testing the structure/format of the dashboards, validity of the content, functionality such as clicks, filters, sort work as defined in the specifications. The check-list is created prior to beginning of the development and the check-list is used as a guide for unit-testing. This enables development consistency among components developed by different developers.</p>
<b>System Testing</b>	<p>System testing serves to validate functionality and confirm that all business requirements are met as expected and confirms that the system performs properly, both from a functional and technical perspective.</p>
<b>Integration Testing</b>	<p>Integration testing follows the successful completion of system testing and the integration of one component within the application with other components. We perform end-to-end testing in relation to the business process and technical coordination of individual units or modules with the larger system. This testing confirms that the different components within an application can properly interact and interface with each other.</p>
<b>Regression Testing</b>	<p>Regression testing verifies that system modifications have not caused unintended effects and that the existing software or system components still comply with specified requirements. For example, verifying impact to existing EBI Platform data structures with the inclusion of the new data sources identified for the CORbi project.</p>

*Figure IV-D.2.4-82. Testing Phases.*

Defined Acceptance Criteria are agreed upon and established for each phase of testing as discussed in Topic 18 – User Acceptance Criteria. Each phase is determined complete if the Acceptance Criteria are met. Completion of Integration Testing and acknowledgement that the criteria are satisfied initiates the beginning of Acceptance Testing phase activities to begin.



## Topic 23 – Work Plan

### Topic 23 – Work Plan

The State will evaluate whether the Vendor's preliminary proposed Work Plan includes a description of the Schedule, tasks, Deliverables, major milestones, task dependencies, and a payment Schedule. The Work Plan shall also address resource allocations (both State and Vendor team members). This narrative should reflect current Project Management "best practices" and be consistent with narratives on other topics. The Software to be used to support the ongoing management of the Project should also be described in the Work Plan.

The State sees a Work Plan as essential to reaching a comprehensive agreement with a Vendor. Consequently, the State will seek to refine the proposed Work Plan prior to Contract approval with the selected Vendor and to incorporate the refined Work Plan by reference into a Contract.

2.4.6.1. Provide a preliminary Work Plan depicting tasks, task dependencies, Schedule, milestones, Deliverables, and payment Schedule. Include the deliverables outlined in Appendix C (System Requirements and Deliverables) and include other deliverables that you, based on past experience, would recommend be developed on this project.

We bring knowledge from our ongoing collaboration with DHHS/DoIT and our national analytics practice and will combine this knowledge with expertise in opioids and data science. We will expand on your existing platform infrastructure using a tailored agile methodology to include more advanced analytics capabilities to combat the opioid crisis.

Deloitte is well positioned to deliver the work plan through extensive technical and subjective matter experience and our innovative delivery methodology; specifically, we differentiate ourselves as follows:

- Our understanding of the Department's programs, applications, architecture, and your Enterprise Business Intelligence (EBI) platform helps us **significantly accelerate delivery** and reduce time spent for onboarding, conducting knowledge transfer, understanding data structures, and understanding the Governance required in working with additional agencies (e.g. Department of Information Technology).
- The Department is already working with Deloitte and continuing to **build on the success of the EBI platform** is the best way to deliver meaningful results by the end of August.
- Our team has experience delivering **data wrangling, data integration, data governance, visualization, and predictive analytics capabilities required** to execute the tasks indicated within this RFP.
- Our Gartner recognized leading analytics practice brings demonstrated advanced analytics capabilities such as **machine learning, artificial intelligence, predictive analytics, and cognitive engagement** to help continuously grow and enhance the Department's analytics capabilities.

Based on our understanding of the RFP tasks, as well as our understanding of the Department's objectives related to data analytics, we have structured the subsequent section to detail our proposed methodology



DHHS benefits from Deloitte's approach that:

- Leverages an iterative, agile, and flexible advanced analytics approach tailored to deliver insightful results
- Provides data-driven thinking to offer a fresh, innovative perspective on data analytics
- Includes subject matter experience on the existing environment and opioid analytics to accelerate the delivery of tasks



and approach for delivering this project. Our goal is to work collaboratively with you to help achieve each of the objectives defined in the RFP.

## Our Understanding of Your Objectives

As a thought leader in analytics, Deloitte understands that you are seeking advanced analytics services to help harness the value of your data to improve the insights into the opioid crisis which empower the State to take meaningful actions. Deloitte provides a tailored approach across your key objectives as listed below in Figure IV-D.2.4-11.

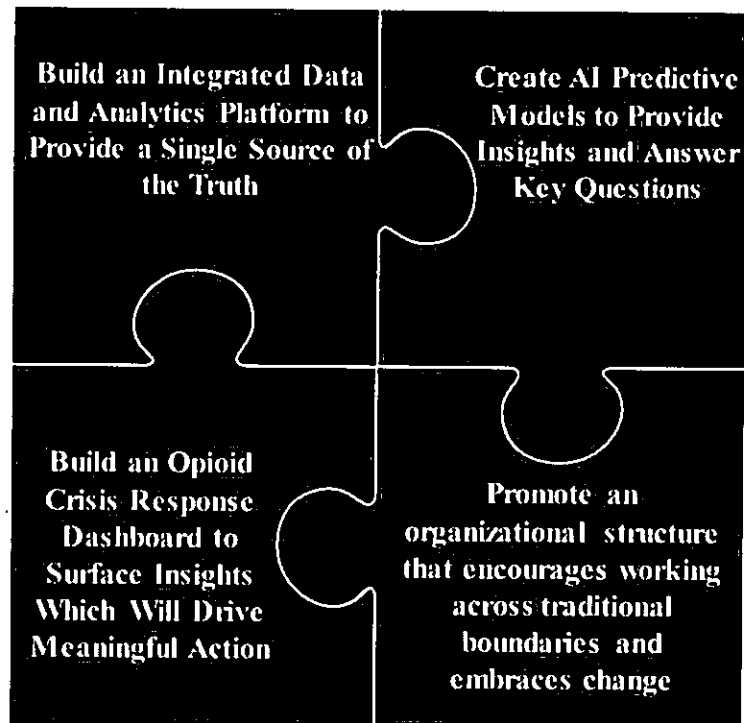
### Work Plan

Our work plan begins with a look into our proposed project schedule. The project schedule provides an overview of the key workstreams and activities that we will be undertaking. Following the project schedule, we provide additional details on the each of the proposed sprints as well as our plan for project management and data governance. Our team will refine the schedule at the start of the project based on priorities and scope approved by DHHS.

### Sprint Summary

The sprints described below will use an Agile for Advanced Analytics project management methodology to deliver transformational analytics while rapidly communicating any adjustments to scope, timeline, or deliverables. Deloitte’s Agile for Advanced Analytics project management methodology and overarching framework provides incremental value with each Sprint through multiple iterative deliveries. These deliveries will incorporate, and adjust rapidly to, continuous user feedback during each sprint as opposed to feedback too late in the process that would incur extra costs (both time and resources) to fully integrate. This methodology and framework guide our teams to rapidly build iterative and measurable value.

To arrive at delivery on each of the tasks in a given sprint, our approach is structured around the use of Scrum methodologies, focusing on delivering incremental value during each sprint based on tasks and activities determined through prioritization with key stakeholders. The following graphic summarizes the sprints, including data sources, tasks, and deliverables for Sprints 0-6:



*Figure IV-D.2.4-83. Deloitte applies a tailored approach, a skilled team, and a deep understanding of your data to meet your key objectives.*



	Sprint 0 (Discovery)	Sprint 1	Sprint 2	Sprint 3	Sprint 4	Sprint 5	Sprint 6 (Delivery)
	4 weeks	4 weeks	4 weeks	4 weeks	4 weeks	4 weeks	4 weeks
Data Sources		1. Child Welfare 2. CDC Population Data	3. Medicaid Claims 4. Commercial Claims	5. Vital Records/ Medical Examiner 6. Grant/State BDAS & Naloxone Services	7. Live Hospital ED Surveillance AEHDD	8. Emergency Medical Services TEMSIS	
Tasks	1. Determine high-level priority business needs and capabilities with Department stakeholders 2. Develop plans across multiple areas for successful project management, data governance and delivery	1. Load to EBI Landing Schema and Profile Data 2. Perform Standardization and Data Wrangling 3. Modeling, Integration Design, and load into specified EBI schema	1. Perform standardization and data wrangling 2. Modeling, Integration Design, and load into EBI schema	1. Perform standardization and data wrangling 2. Modeling, Integration Design, and load into EBI Data Mart schema 3. Finalize key predictors, perform exploratory analysis, assess variable correlations and relationships	1. Perform standardization and data wrangling 2. Modeling, Integration Design, and load into EBI Data Mart schema 3. Build At-Risk Predictive Models 4. Design Opioid Insights Dashboard Wireframes	1. Perform standardization and data wrangling 2. Modeling, Integration Design, and load into EBI Data Mart schema 3. Refine At-Risk Predictive Models 4. Develop Opioid Insights Dashboard	1. Productionize the Environment 2. Conduct Final UAT 3. Deploy final At-Risk Predictive Model and HHSI Opioid Insight Dashboards 4. Conduct final training and transition activities
Deliverables	1. Project Kickoff Meeting 2. Sprint Plan 3. Work Plan 4. Infrastructure Plan 5. Security Plan 6. Communications and Change Management Plan 7. Agile Project Management Plan 8. Comprehensive Training Plan and Curriculum 9. Provision of Software Licenses if needed 10. Provision of Software Installed, Configured, and Operational to Satisfy State Requirements	1. Systems Interface Plan and Design/Capability 2. Testing Plan 3. Change Control Document and Deliverable for new Data Loads 4. Data Model and ETL Specifications	1. Integrated Data Model 2. Change Control Document and Deliverable for new Data Loads 3. Deployment Plan	1. Integrated Data Model 2. Change Control Document and Deliverable for new Data Loads 3. Deployment Plan	1. Integrated Data Model 2. At Risk and At Risk+ Predictive Model 3. HHS interactive Opioid Insights Wireframe Design	1. Deployment Plan 2. Integrated Data Model 3. Refined At-Risk and At-Risk+ Predictive Models 4. HHS interactive Opioid Insights Dashboard	1. End User Support Plan 2. Documentation of Operational Procedures 3. Conduct System Performance (Load/Stress) Testing 4. Certification of 3rd Party Pen Testing and Application Vulnerability Scanning 5. Go-Live Cutover to New Software and solution 6. Provide Documentation 7. Execute Security Plan 8. Final UAT 9. Final Training 10. Final Deployment of At-Risk Predictive Model 11. Productionize HHSI Opioid Insight Dashboards 12. Conduct Project Exit Meeting

NH\_DAPOC-0116\_1

Figure IV-D.2.4-12. Overview of Proposed Sprints Including Data Sources, Tasks and Deliverables.

## Detailed Sprint Descriptions

In this section, we provide detailed sprint descriptions that include duration, goals, tasks, and deliverables. A few notes below on the detailed sprint descriptions.

- Key milestones are included in each of the detailed sprint descriptions
- Task Dependencies for each of the sprints will build on the prior one to lead to successful delivery of the Opioid Insight solution
- The successful integration of the data sources laid out below in the sprint plans is a key dependency for the creation of the At-Risk Predictive Model
- Both the successful integration of the data sets laid out below in the sprint plans as well as the successful completion of the At-Risk Predictive Model are key dependencies for the creation of the Opioid Insight Dashboards



## Sprint 0 – Planning Phase (4 Weeks)

To kick off the project, we will conduct a discovery sprint (Sprint 0), including a working session with Department stakeholders. This will determine the high-level priority business needs and capabilities required throughout the project.

**Goal:** The primary goal is to review current state issues, confirm user groups, and identifying questions that will define the priorities and requirements for the Opioid Insight solution. This includes the development of required plans across multiple areas that will allow for successful project management, data governance, and delivery.

### **Task 1: Determine high-level priority business needs and capabilities with Department stakeholders**

Our understanding of the Department’s goals for this project in conjunction with knowledge of the EBI data landscape and architecture will help guide the direction of these conversations. Our approach to the working session(s) includes the following steps: (1) Gather appropriate stakeholders to allow for us to capture perspective from across the Department. (2) Collect and categorize stakeholders’ questions related to the relevant data, to help identify relevant and compelling use cases for prioritization. (3) Facilitate the group through a prioritization exercise to identify the maximum impact and feasibility of the solution. (4) Apply our knowledge of EBI architecture and data in estimating the level of effort for priority business questions to realize maximum throughout the project.

### **Task 2: Develop plans across multiple areas for successful project management, data governance and delivery**

Following the working sessions with key stakeholders, we will develop numerous planning documents detailed below in the deliverables section. Based on these documents, we will develop a product backlog which will allow requirements to be revisited, reprioritized, and used to guide decision making. Jira is the key Agile Project Management (APM) tool we use to track Backlog Items. We will also use it for Sprint Planning to achieve the key deliverables for this task, the Scrum schedule and Sprint planning purposes. The schedule will detail the Sprints with the outcomes of each Sprint. The Sprint Plan will identify the objectives, scope, approach, and acceptance criteria for each Sprint. We are using Jira as the APM on our current EBI project supporting the Department, so we understand how to quickly establish a new project in Jira.

### **Deliverables**

The following deliverables are included as part of the initial planning phase (Sprint 0):

- Project Kickoff Meeting
- Work Plan
- Infrastructure Plan
- Security Plan
- Communications and Change Management Plan
- Agile Project Management Plan
- Comprehensive Training Plan and Curriculum



- Provision of Software Licenses if needed
- Provision of Software Installed, Configured, and Operational to Satisfy State Requirements

## **Sprint 1 (4 Weeks)**

**Goal:** There are two primary goals of the sprint: 1) Complete data acquisition of all eight data sources; analyze, integrate, and operationalize the acquisition of the new data sources into the EBI landing schema. Confirm and implement the file validation logic and perform data profiling to provide feedback on data integrity to inform future sprints. This lays the foundation for all future sprints and enable early access to data. 2) Begin to enhance the EBI data model; integrate Vital Records, Child Welfare Case Data, and CDC Population data required to support predictive analytics.

### **Stakeholder Engagement**

As part of the stakeholder engagement phase, we will be reviewing the user stories and acceptance criteria identified for Sprint 1, defining detailed requirements, data acquisition and data model design along with creating tasks to complete the user stories.

To accomplish the goals defined for sprint 1, Deloitte proposes the following three tasks that focus on setting up the foundation for the “Collect and Ingest” track.

### **Task 1: Load to EBI Landing Schema and Profile Data**

Following the existing EBI development processes, the team’s focus is on identifying and integrating all of the eight new data sources into the existing EBI landing schema. Working closely with each data source owner to define the interface requirements, the team establishes the connections and defines the required load processes in accordance with existing standards. This includes establishing data frequencies, file exchange validation logic and error processing and notification mechanisms. Upon completion of the integration of the new sources to the landing schema in their raw format the team is positioned for success in future sprints with nearly access to data for profiling and quality assessments to drive future requirements.

Similar to what was performed for the EBI project, some of the data sources will have data elements which are utilized downstream in the EBI Data Mart schema (e.g. data elements from New Heights used in the LTSS dashboarding) whereas other data sources will be loaded into the environment for analysis and ad hoc usage in their raw format (e.g. the CHIS database load).

The figure below depicts the existing EBI platform and schemas at the start of the CORbi project.



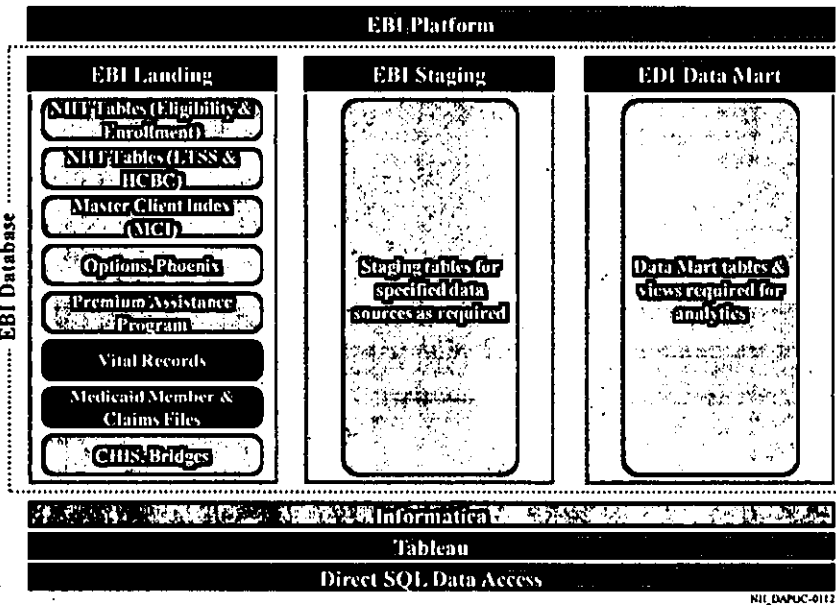


Figure IV-D.2.4-84. Current EBI Landing.

The data sources depicted in dark green above indicate data sources which are mentioned in the RFP however, some of these sources are already available in the existing EBI platform.

For consistency with the standards created during the EBI project, each new data source will be loaded into the EBI landing layer in the same structure as created in the source system or file extract. The new data sources being loaded into the EBI platform will go through a profiling exercise to make sure that the data types specified in each data source match the data types created in the EBI landing layer to address any source data quality concerns. Additional validations such as check sum count validations will also be performed between the data sources and the EBI landing to validate that the correct number of records is received. The figure below depicts what the EBI data platform will look like at the end of this task.

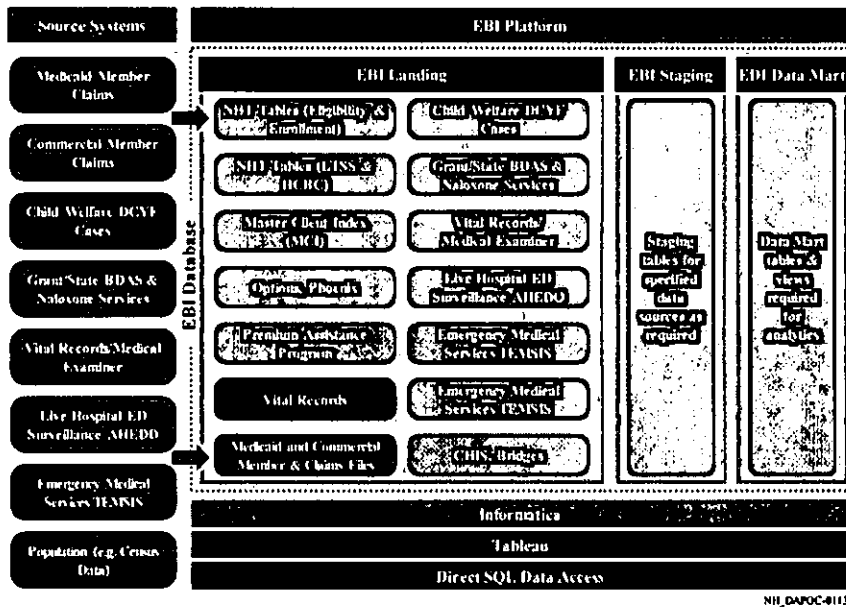


Figure IV-D.2.4-85. Updated EBI Landing Post Task 1 Completion.





**Task 2: Perform Standardization and Data Wrangling**

The focus of this task will be on converting the raw data format stored in landing into a cleansed and standardized data set. Data discovery sessions will be conducted with the key stakeholders to hypothesize the business questions and identify the appropriate datasets within each source which will be standardized into the existing data structures. Individuals landed from population data set and the Child Welfare data set will be cleansed and conformed to the standard applied in the existing EBI structure for individuals which have already been loaded into the EBI platform. Removal of special characters, trimming of key demographic values, and conforming of the data structures will be applied in the EBI staging layer for these data sets.

**Task 3: Modeling, Integration Design, and load into specified EBI schema**

During this task the business rules required to load data into the EBI data mart layer for consumption will be applied. The Deloitte team will work with the Department to enhance the data structures currently stored in the EBI data mart environment. Similar to what is currently performed on the EBI project, the Deloitte team will review the data model and ETL specifications with the State to make sure that the data structures being developed provide ease of use for ad hoc reporting, consumption, predictive modeling as well as dashboard development. While consuming the Child Welfare and Population data in this phase, the Deloitte team will extend the existing EBI dimensional data model where required while also creating additional tables and views for consumption. The data modeling process is driven by core design principles to create a unified data model enabling the State to analyze and understand data across multiple dimensions. This entails leveraging and enhancing existing core dimensions, such as member and provider, where possible to reduce duplication and enhance usability. The diagram below is a conceptual model of the existing data stored within the EBI platform today.

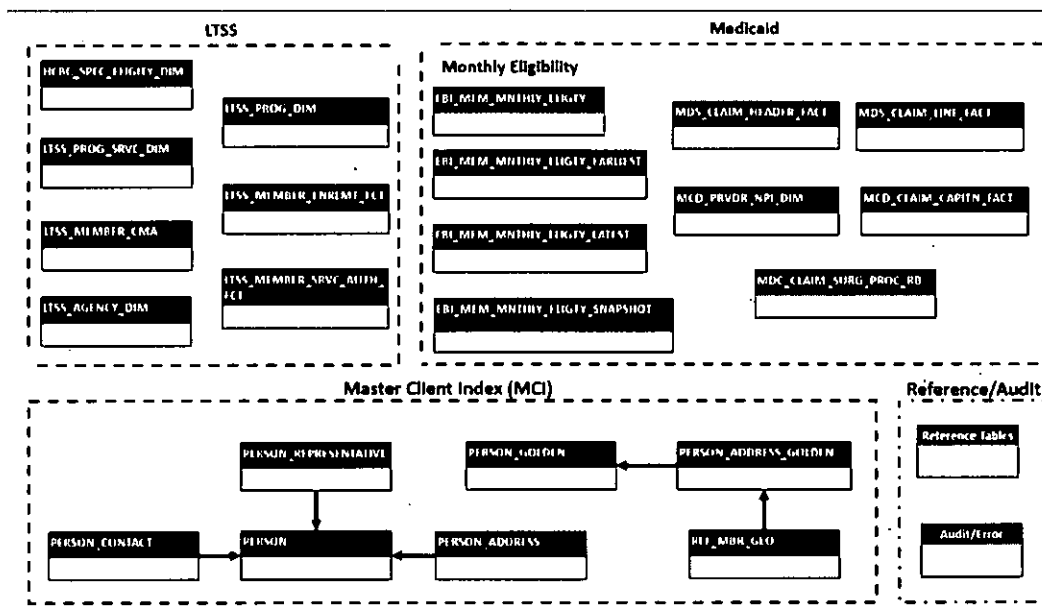


Figure IV-D.2.4-86. EBI Conceptual Data Model.

During the load process of Child Welfare and DCYF Case data, the MCI subject area above will be leveraged to load individuals from these source systems into a common set of tables that will store all individuals currently loaded into the EBI platform. Currently, the MCI contains individuals from the



NEWHEIGHTS, NECSES, and the BRIDGES systems. Individuals from the OPTIONS systems is scheduled to be loaded in early 2018 along with the individuals from the data sources included in this Sprint.

The following table serves as an example of the data which will be contained in the EBI\_PERSON table at the end of this task in Sprint 1 with the highlighted rows representing the new individuals loaded.

PERSON_SEQ	PERSON_ID	SRC_ID	SRC_NM	MEDICAID_ID	FIRST_NM	LAST_NM	SUFFIX_NM	PREFIX_NM	GENDER	BIRTH_DT	DEATH_DT	SSN	ETHNICITY
1	123	12345	NEWHEIGHTS	1	Jack	Johnson			M	11/1/1978		987654321	Hispanic
2	123	23834	BRIDGES	1	Jack	Johnson			M	11/1/1978		987654321	Hispanic
3	123	93723	NECSES	1	Jack	Johnson			M	11/1/1978		987654321	Hispanic
4	123	918124	OPTIONS	1	Jack	Johnson			M	11/1/1978		987654321	Hispanic
5	123	32189	POPULATION	1	Jack	Johnson			M	11/1/1978		987654321	Hispanic

*Figure IV-D.2.4-87. Person table included in the EBI MCI Schema.*

Child Welfare case data will be assessed and evaluated to extend data structures currently in the EBI platform similar to the work being performed on individuals. New subject areas will be created where required.

**Deliverables**

The following deliverables are included as part of sprint 1:

- Systems Interface Plan and Design/Capability
- Testing Plan
- Change Control Document and Deliverable for new Data Loads
- Data Model and ETL Specifications

**Sprint 2 (4 Weeks)**

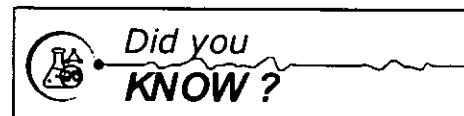
**Goal:** The goal for Sprint 2 is to complete the integration of Medicaid Claims data and commercial claims data into the core EBI model. As part of the current EBI project, the Medicaid Claims data have been loaded into the current EBI schema. The Deloitte team will work with the State to assess the similarities between the Medicaid Claims data and commercial claims data and follow a similar process to integrate the commercial claims data into the existing EBI Schema.

**Stakeholder Engagement:** As part of the stakeholder engagement phase, Deloitte team will review the user stories and acceptance criteria identified for Sprint 2, defining detailed requirements, data acquisition and data model design along with creating tasks to complete the user stories.

To accomplish the goal for Sprint 2, Deloitte proposes the following two tasks:

**Task 1: Perform standardization and data wrangling**

During Sprint 1, commercial claims data were loaded into the EBI Landing layer. In this sprint, commercial claims data will be loaded into the EBI Staging layer through a set of ETL process. Data discovery sessions will be conducted with the key stakeholders to hypothesize the business questions and understand how to leverage the existing claims, provider, and reference data subject areas created for Medicaid Claims to support the commercial claims load. During these sessions,



The data structure created as a part of the current EBI project contains a data model to support Claims Data and Provider Data, and Reference table values to support claims reporting.



we will leverage the knowledge of the existing EBI team responsible for developing the existing claims structures to assist in providing subject matter expertise on the commercial claims. Per the current design of the EBI Schema for Medicaid Claims, a staging layer is built to allow specific data reconciliation/debugging activity to happen for pre, during or post load data validations, as well as to support complex transformation logic such as grouping of sequence of claims together. Similarly, to complete the integration and the merge of the commercial claims data, the Deloitte team will identify the variations of data types from the landing layer to standardize the datasets prior to integrating with the Medicaid Claims data. For example, when loading the Medicaid Provider data, the Deloitte team brings the National Plan and Provider Enumeration System (NPPES) file obtained from CMS for specific States as the base for loading provider information. This data is then merged with data from MMIS which contains providers who submitted claims which are not in the NPPES data set. The Deloitte team will work with the Department to follow a similar process for Commercial Claims by creating a staging table to support the extension of the current EBI provider tables. This process will be followed for Commercial Claims data as well to create a staging table to support the extension of the existing claim header and detail tables. The standardization, conforming, and data wrangling in this task will ensure the success of the integration with the Medicaid data as well as provide scalability for data sets in the future.

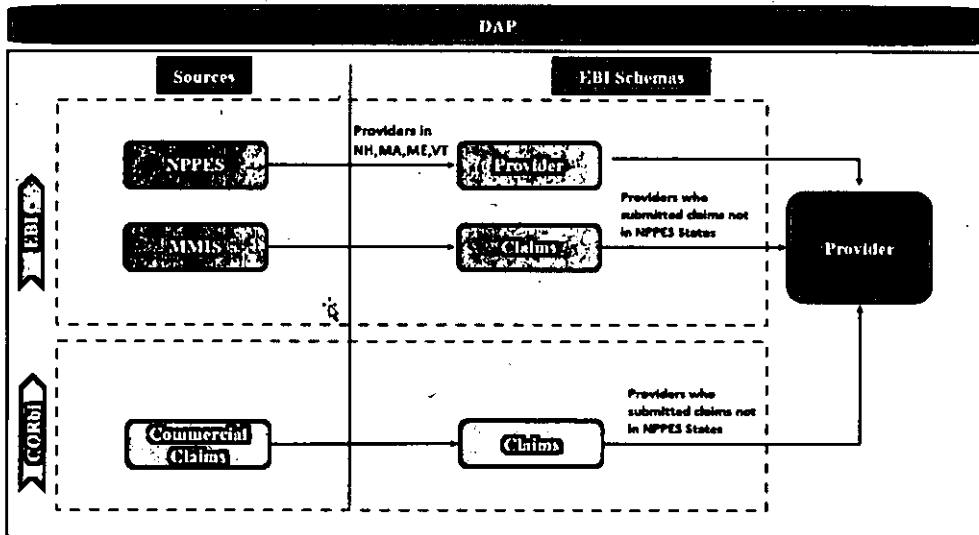
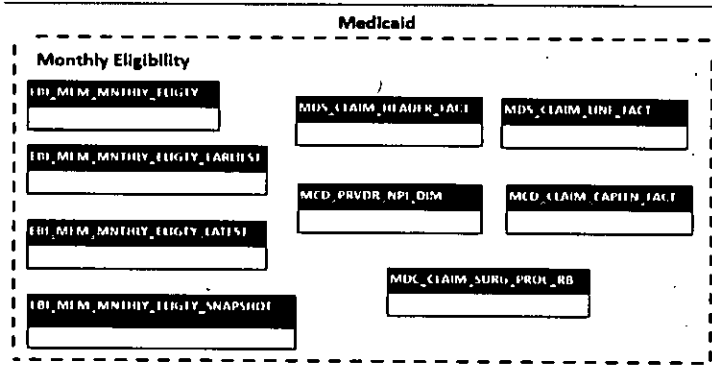


Figure IV-D.2.4-88. Provider Recommended Load Process.

**Task 2: Modeling, Integration Design, and load into EBI schema**

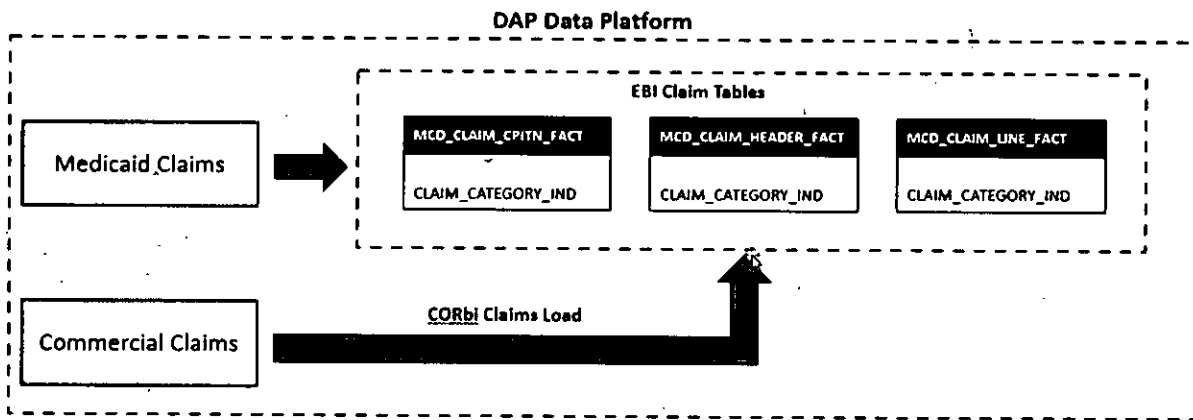
Once the Commercial Claims data are prepared in the staging layer, the data are loaded into the existing EBI Schema which contains three core subject areas: 1) The Claim Fact tables, 2) The Provider Dimension, and 3) Reference Dimension tables which stores reference codes and their descriptions related to claims. The current design of EBI Medicaid Data Model provides the end user the ability to query various types of claims data, perform aggregation, and ad hoc analysis at both header or at the line level based on the requirement of the Medicaid Claims data. The figure below shows the conceptual model for the current EBI subject areas which support Medicaid Claims.





**Figure IV-D.2.4-89. Core Medicaid Model.**

Deloitte will leverage the existing design of the Medicaid Claims data to bring in the Commercial Claims data which will also be loaded into the three core areas with the applicable attributes. Attributes will be added to the existing data model to denote claims which come from the Medicaid population versus the Commercial Claims population. The diagram below illustrates the existing Medicaid model with the Commercial Claims data included.



**Figure IV-D.2.4-90. DAP Data Platform.**

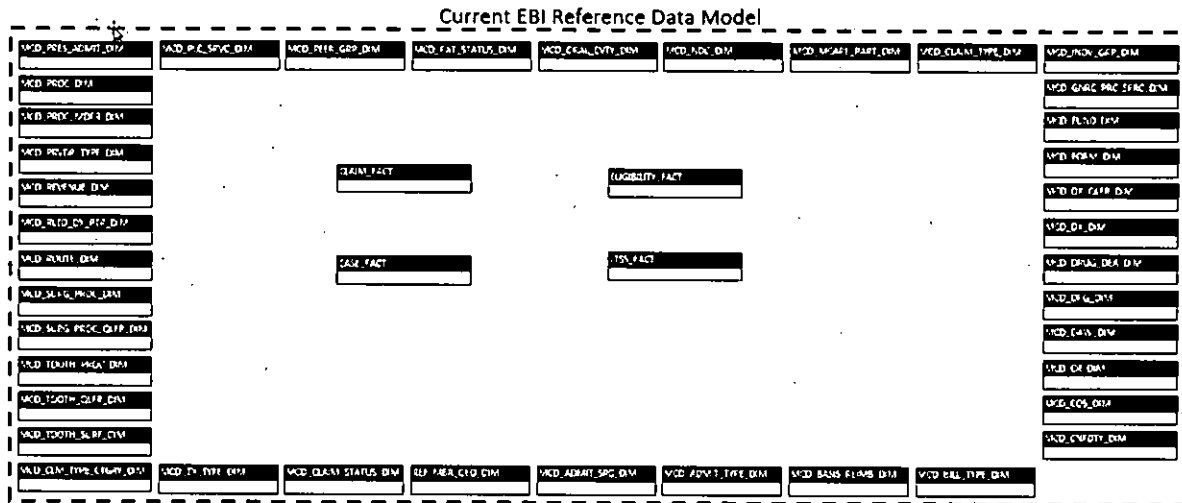
As mentioned in Task 1, the current provider table in the EBI schema merges both providers from the NPPES data for a specific set of States with providers who have submitted Medicaid Claims. The staging table created in task 1 will be used to load the providers who have submitted Commercial Claims into the EBI Data Mart Provider table, EBI\_PRVDR\_NPI\_DIM. Once integrating the provider information from commercial claims data, additional attributes might be added into the existing provider table. The following diagram shows how the data will be represented in the extended Provider table.

PROVIDER_NPI_SEQ	PROVIDER_ID	NPI	Source Indicator	PROVIDER_TYPE_CD	PROVIDER_NM
1	123	12345	MMIS	Billing Provider	PETERBOROUGH FAMILY DENTAL & IMPLANT CENTER
2	345	23834	NPPES	Referring Provider	John Marbol
3	456	18124	Commercial	Service Facility	WENTWORTH DOUGLASS HOSPITAL
4	567	32189	Commercial	Billing Provider	JOHNNY DENTAL CENTER

**Figure IV-D.2.4-91. Provider Data Sample Including Commercial.**



The existing reference table structure will be leveraged for commercial claims if applicable. The Deloitte team will also identify and analyze the distinct characteristics of the Commercial Claim Data and additional reference codes required and incorporate into the existing EBI data model. Below is a snapshot of the current reference dimension tables which are used to support the Medicaid Claims which includes dimensions to allow for breaking data down by Date, Gender, Geography, and other key factors.



**Figure IV-D.2.4-92. Current EBI Reference Data Model.**

**Deliverables**

The following deliverables are included as part of Sprint 2:

- Integrated Data Model
- Change Control Document and Deliverable for new Data Loads

**Sprint 3 (4 Weeks)**

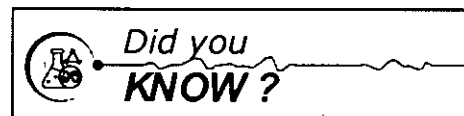
**Goal:** The goals associated with Sprint 3 are to: 1) Complete the integration of Vital Records/Medical Examiner data and Grant/State BDAS and Naloxone Services into the DAP, 2) Initiate the design activities for the data elements required for predictive modeling, 3) Perform exploration and assess the relationship between variables used in the predictive modeling development 4) Evaluate and design the integration for the Google behavioral trending data.

**Stakeholder Engagement:** As part of the stakeholder engagement phase, Deloitte team will be reviewing the user stories and acceptance criteria identified for sprint 3, and defining detailed requirements, data acquisition and data model design along with creating tasks to complete the user stories.

To accomplish the goals defined for sprint 3, Deloitte proposes the following three tasks:

**Task 1: Perform standardization and data wrangling**

In this task, the Vital Records/Medical Examiner and Grant/State BDAS and Naloxone Services data will be loaded from the EBI landing layer into the EBI Staging layer through



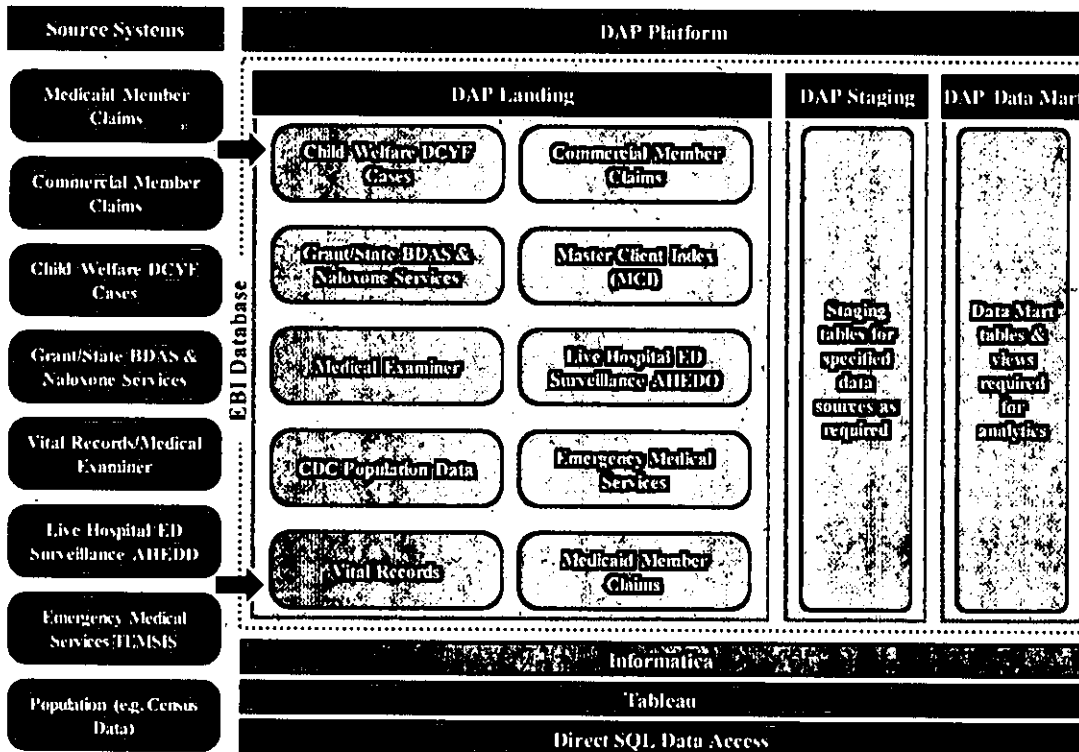
Data from the Vital Records (BVRODS) database was loaded into the EBI Landing environment as a part of the current EBI project.



a set of ETL processes. Data discovery sessions will be conducted with the key stakeholders to identify the key business questions the Department would like to visualize, integrate into a predictive model, or leverage to create reports. During these sessions, the Deloitte team will leverage the experience of our key Clinician, Manal Azar, to discuss the key business questions with the Department. Similarly, the existing EBI team will support in driving discovery sessions to assess the best way to integrate the Vital Records/Medical Examiner and Grant/State BDAS and Naloxone data into the DAP. Once the discovery is complete, the Deloitte team will apply the appropriate data cleansing routines and begin conforming data dimensions to the data already loaded in the DAP. For example, new individuals will be staged for loading into the MCI schema to continue to provide conformity of an individual in New Hampshire and their demographics. Additionally, the evaluation and integration design activity related to the google behavior data begin.

**Task 2: Modeling, Integration Design, and load into EBI Data Mart schema**

Once data has been loaded into the staging layer, the Deloitte team will work with the Department to continue extending the EBI Data Mart Schema within the DAP platform to incorporate the Vital Records/Medical Examiner and Grant/State BDAS and Naloxone Services data for dashboarding, ad hoc reporting, and predictive modeling. New individuals will be loaded into the MCI schema with the appropriate attributes denoting death and birth information along with the overdose related information received from the Vital Records/Medical Examiner data source. Additional subject areas will be created as required to capture level of care and facility related information which is brought in from the Grant/State BDAS and Naloxone Services dataset. The figure below illustrates how the data model will look at the end of this task in Sprint 3.



NH\_DAPOC-0114

Figure IV-D.2.4-93. DAP Platform Through Sprint 3.



### **Task 3: Finalize key predictors, perform exploratory analysis, assess variable correlations and relationships**

After data has been prepared and appropriately loaded into a user-friendly data model for consumption, the predictive model formulation activities will occur. During this Sprint, we will begin with exploratory data analysis, where our team of experienced data scientists assess datasets against analytic models for missing or defective data; identify relevant features; and structure the data for predictive modeling. We can quickly identify potential defects and data quality issues, assess multivariate datasets for trends and relationships, and formulate hypotheses. Visually exploring the data along the various dimensions in the feature set can yield insights about the nature of the relationship with the target, exposing the need for additional features that must be generated and included in the final model. Furthermore, visualizations can be used to confirm and validate model assumptions and assert overall stability, as well as examine forecast stability regarding performance within the model training and test sets. The design and development of the Opioid Insights dashboards will occur in Sprints 4 and 5 however we will work with the Department to produce some preliminary visualizations for analysis purposes. Some illustrative examples may include:

- How are local areas with different socioeconomic characteristics impacted differently by opioid abuse?
- Do health care providers in different areas tend to prefer certain types of MAT over others, due to efficacy or cost considerations?
- Are certain treatment units/administrators more effective than others?
- Is there a relationship between treatment outcomes and the number of social groups or community support groups in the vicinity of treatment entities?
- What individual risk factors result in higher rates of opioid abuse, relapse, and/or mortality rates?
- Does reduced access to prescription opioids cause increases in use and addiction to illicit opioids or other drugs?
- How do changing networks impact an individual's behavior and risk-level over time?

These hypotheses may then be wrapped into higher-level questions such as the following:

- How does access and utilization of medical and treatment services effect OUD outcomes?
- Should treatment be tailored to specific geographic areas or custom-defined communities?
- Can we detect similar geographic areas or sub-populations where we can transfer successful treatment or intervention techniques?
- Who are the bad actors, companies, hospitals, etc. linked to those who have higher risk for OUD and recidivism?
- How can we use the identification of high risk populations in the justice system to improve treatment or intervention options?

Deloitte data scientists will use these questions to inform their data hypotheses for analysis, aligning them to critical issues and key questions. These hypotheses will be iteratively discussed with the Department throughout the engagement, as findings are developed through analytics sprints. During this task the team will also evaluate the Google behavioral data on how best to utilize the NH specific Google's datasets to predict early indications of geo-based OUD trends.



**Deliverables**

The following deliverables are included as part of Sprint 3:

- Integrated Data Model
- Change Control Document and Deliverable for new Data Loads

**Sprint 4 (4 Weeks)**

**Goal:** The goals associated with Sprint 4 are to; 1) Complete the integration of Live Hospital ED Surveillance AHEDD data, 2) Complete development of the At-Risk Predictive Model, 3) Begin wireframe designs on the HHSi Opioid Insight Dashboards.

**Stakeholder Engagement Phase:** As part of the stakeholder engagement phase, Deloitte team will be reviewing the user stories and acceptance criteria identified for sprint 4, defining detailed requirements, data acquisition and data model design along with creating tasks to complete the user stories.

To accomplish the goals defined for sprint 4, Deloitte proposes the following three tasks:

**Task 1: Perform standardization and data wrangling**

In this task, the Live Hospital ED Surveillance AHEDD data will be loaded from the EBI landing layer into the EBI Staging layer through a set of ETL processes. Data discovery sessions will be conducted with the key stakeholders to identify the key business questions relative to potential health threats received from the data source. During these sessions, our key Clinician, Manal Azar, will continue to assist the Department in driving business outcomes related to this Hospital ER data.

**Task 2: Modeling, Integration Design, and load into EBI Data Mart schema**

Once data has been loaded into the staging layer, the Deloitte team will work with the Department to continue extending the EBI Data Mart Schema within the DAP platform to incorporate the Live Hospital ED data for dashboarding, ad hoc reporting, and predictive modeling. As new individuals are loaded into the MCI, the team will work with the Department to determine if individual attributes should be added to the MCI schema as a result of an individual being treated at hospitals which are sharing data. Where possible, the data will be stored at the lowest level of granularity however data may be aggregated to capture cluster data or to store the health threat data at an aggregate level.

**Task 3: Build At-Risk Predictive Models**

Our team uses visual techniques such as simple scatter plots to identify anomalies in multivariate data, box plots to identify outliers, and correlation matrices to assess collinearity and for variable selection. The team also has extensive experience working with missing values and sparse datasets. We can implement a range of data imputation and sparse matrix analysis techniques to save samples and build stronger models despite missing data. These

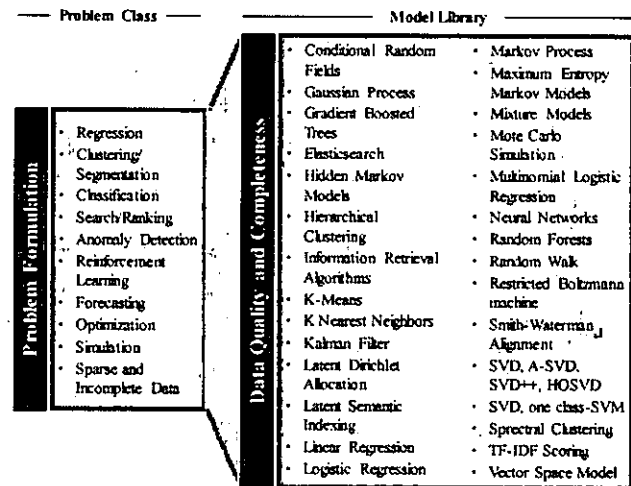


Figure IV-D.2.4-94. Deloitte Model Library.





exploratory techniques serve as inputs for **model development**. Appropriate models for the problem class are selected from the Deloitte model library. As shown in **Figure IV-D.2.4-23** above, our model library includes models based on advanced statistics, mathematics, engineering, statistical process control, operations research, risk analysis, signal processing, artificial intelligence, simulation, and several other novel approaches.

Based on our extensive experience and knowledge of model characteristics, we aim to select the best performing model, taking into consideration data characteristics including complexity, type, quality and completeness of information. In addition, the modeling process is conducted using best scientific and analytics practices to avoid model over fit and to choose appropriate testing, validation and testing datasets.

Extracting meaningful insights from the data requires advanced analytical techniques using machine learning to be performed by seasoned professionals with unique perspectives and the right balance of curiosity as well as focus on business objective. Our existing model library and experience will serve as accelerators in the model development process to answer the questions posed by the State.

Deloitte will deliver two predictive models, At-Risk and At-Risk+. The At-Risk on-prem machine learning (ML) model is based on a proven model used commercially on behalf of a State government to predict individuals at elevated risk of Opioid misuse, OUD or Death. The At-Risk+ is an enhanced version which exists in the GCP cloud and the model uses both de-identified NH State data (same used in At-Risk) plus Google search data. The connection between the data and the four focused populations – youth, young adult, adult, and older adult – is complicated by the distinction between legal and illegal opioid users. The All Claims Payer Data (Medicaid Claims + Commercial Claims) is a foundational data set used across all populations and is particularly helpful with the legal users at all ages. The initial At-Risk model will be built using an ensemble machine learning approach. Several years of historical data including the ACPD will be used for training the models and for scoring their performance.

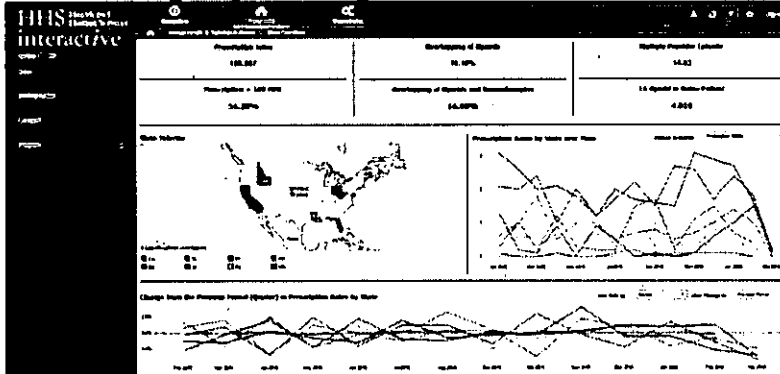
The At-Risk model will be trained on 7 data sets assuming all are available. Basic entity resolution work will be performed to connect “same as” records based on a 6-10 data field match. The seven data sets include Medicaid Claims, Medicaid Eligibility, MCI, Vital Records, Medical Examiner, and LTSS. These data sets will be particularly effective with populations of young adults, adults, and older adults struggling with legal prescription opioids. For example, the At-Risk machine learning model was successfully applied to ~1 million Medicaid opioid users for a midwestern state. When compared to a competing rules-based predictive model, At-Risk produced remarkable results: accuracy (85% vs 15%), error rate (10% vs 50%) and lead-time to make a prediction (4-5 Months vs 9 Months). Data and predictions on the youth population will depend on their inclusion in the ACPD. The At-Risk ML model’s excellent results are a result of how the data model is built. At-Risk uses an ensemble approach where multiple competing models are trained on historical data then each model makes predictions on a test data set. The most accurate model continues, and the others are discarded. The winning model passes through additional rounds of competition until the final model is finished and deployed. In the past the optimized At-Risk model makes important use of the ICD9/10 codes for the original diagnosis when the first Opioid was prescribed. The model then uses hundreds of data elements to separate out who for example in the population that started an opioid due to back pain had legitimate back pain and who was fraudulently seeking pills. The At-Risk model for NH will be trained on the NH data using this approach.

The At-Risk+ will operate in the Google Cloud Platform (GCP) and provide a meaningful demonstration of the power of Cloud, the GCP ML platform, and the predictive ability of Google’s search data. Google can track search terms down to neighborhood size geographic areas. Google has shown a strong positive



correlation between certain opioid related search terms and increased levels of OUD and death. The At-Risk+ will demonstrate the predictive power of this additional search data for New Hampshire. Data from NH will be de-identified then sent to the cloud where it will feed into the At-Risk+ predictive model and the Google search data for the geographic area associated with the individual's domicile. The resulting prediction will be sent back on-premise for storage. Importantly, NH will be able to experience the power of GCP to automate the O and M of the predictive models. These models will undergo periodic retraining and GCP provides a remarkable array of services to semi-automate this process.

#### **Task 4: Design Opioid Insights Dashboard Wireframes**



*Figure IV-D.2.4-95. Sample HHSi Opioid Insights Indicators Dashboard.*

During wireframe design sessions, we focus on identifying the key business questions which the Department would like to address using dashboards. Business questions are typically captured during focused sessions with stakeholders. In addition, throughout these sessions, we also work to understand and collect the key data sets which are required to support dashboard development.

We use a question-driven approach to the sessions, meaning that the focus remains on the business questions identified during previous discussions and identification of hypothesis to be proved or disproved by the dashboard. For example, if you are trying to identify the trends for the number of opioid related hospital visits, you may hypothesize that certain external factors lead to spikes. By pulling in data from the dimensions developed in the DAP, the user may be able to prove or disprove their hypothesis by slicing the data set by gender or by a geographic region.

As the Department is providing feedback on the business questions answered by the dashboards, the Deloitte team will create dashboard wireframes. The wireframes lay out easy-to-understand visuals focused on key business questions. We will confirm the types of visuals that are used to portray the data, the filters used to update the data and the expected logic behind the visuals with the stakeholders prior to development of the dashboards.

#### **Deliverables**

The following deliverables are included as part of Sprint 4:

- Integrated Data Model
- At-Risk and At -Risk+ Predictive Models
- HHS interactive Opioid Insights Dashboards Wireframe Design



## **Sprint 5 (4 Weeks)**

**Goal:** The goals associated with Sprint 5 is to; 1) Complete integration of the Emergency Medical Services data (TEMSIS), 2) Enhance the At-Risk Predictive model with TEMSIS data, 3) Develop the HHSi Opioid Insight Dashboard 3) Migrate the selected de-identified claims data to the Google cloud for development of the At-Risk+ opioid model.

**Stakeholder Engagement Phase:** As part of the stakeholder engagement phase, Deloitte team will be reviewing the user stories and acceptance criteria identified for sprint 5, defining detailed requirements, data acquisition and data model design along with creating tasks to complete the user stories. To accomplish the goals defined for sprint 5, Deloitte proposes the following four tasks:

### **Task 1: Perform standardization and data wrangling**

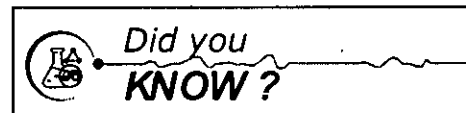
In this task, the TEMSIS data will be loaded from the EBI landing layer into the EBI staging layer through a set of ETL processes. Data discovery sessions will be conducted with the key stakeholders to focus on identifying the key business questions regarding incidents on NARCAN emergency responses. During these sessions, our key Clinician, **Manal Azar**, will continue to assist the Department in driving business outcomes related to this data set. Data will also be staged as necessary for confirming to the existing EBI structures and data sets previously loaded into the staging schemas.

### **Task 2: Modeling, Integration Design, and load into EBI Data Mart schema**

Once data has been loaded into the staging layer as required, the Deloitte team will work with the State to continue extending the EBI Data Mart Schema within the DAP to incorporate the TEMSIS data for dashboarding, ad hoc reporting, and predictive modeling. As performed in previous sprints, new individuals are loaded into the MCI. The team will work with the Department on whether individual attributes should be added to the MCI schema as a result of an individual being treated for Narcan or having any other emergency and trauma related services. The TEMSIS data will be merged with the data created for the EBI project as well as the data sets loaded as a part of the CORbi project into the DAP with a data model which creates ease of use for end users.

### **Task 3: Refine At-Risk Predictive Models**

After forming the At-Risk and At-Risk+ models in Sprint 3 and completing development of the models in Sprint 4, we will perform refinement on the At-Risk and At-Risk+ models to help tune and calibrate. The key to creating a successful, highly adaptable predictive models is to make sure that they are dynamic and repeatable. A common pitfall is to over-fit the model to the training sample data set and effectively create a model that overemphasizes patterns found in the sample data and are not repeatable on a different data set. To offset this concern, we evaluate models based on the accuracy of their performance through visualizing model results and fit statistical techniques. These techniques help to compare the observed model outcome with actual real-world results to support model confidence and accuracy.



The LTSS dashboards being deployed as a part of the current EBI project are a subset of the overall HHS interactive solution. This task builds upon the HHS interactive solution by deploying the Opioid Insights module to the existing environment.



Overall, our predictive analytics objective for this project is to help the Department derive actionable insight to enhance decision making. We highlight here that incorporating generated insights and predictions into an overall business process requires change management, training, and overcoming adoption barriers, all of which are being conducted throughout the project to deliver a comprehensive solution.

#### Task 4: Develop Opioid Insights Dashboard

In this task we focus on the development of the designed dashboards based on the wireframes created in Sprint 4. Dashboard development typically includes building visualization themes, controls and interfaces based on the defined wireframes. In addition, during the Build phase Deloitte works to set up and configure dashboard security. Security configuration activities are required to help validate that only authorized users can access

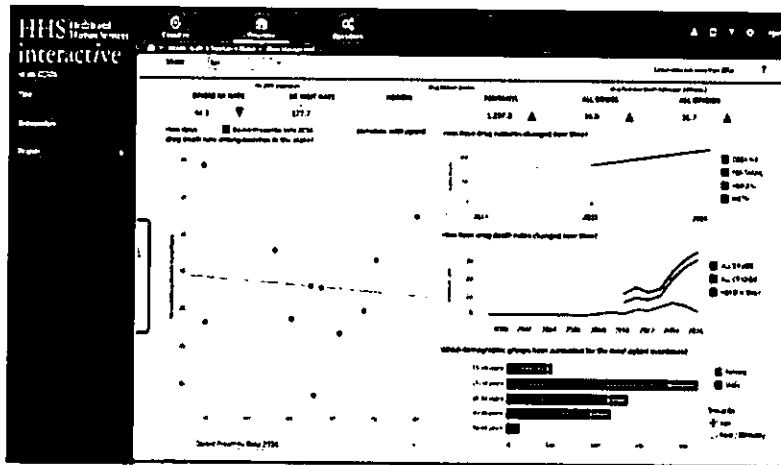


Figure IV-D.2.4-96. HHS Interactive Dashboard.

the dashboard. After the dashboards have been developed, demonstrations will be held with the Department stakeholders to review the dashboards and provide feedback. These feedback sessions are focused on confirming the quality of the dashboard as it relates to the documented design and confirming the dashboard addresses the Department's key business questions. Deloitte will conduct internal testing to validate that the dashboard aligns with the intended design prior to any sessions with the Department. Following the Department validation of the dashboard, the HHS interactive Opioid Insights dashboard will be deployed to the server using the existing Tableau license. Once the dashboard is deployed, we can coordinate transfer of the Tableau data structure and workbook to the Department and conduct turnover and knowledge transfer activities of the visualization results.

#### Deliverables

The following deliverables are included as part of Sprint 5:

- Deployment Plan
- Integrated Data Model
- Refined At-Risk and At-Risk+ Predictive Models
- HHS interactive Opioid Insights Dashboard

#### Delivery Phase – Sprint 6 (4 Weeks)

**Goal:** To conclude the project, we will conduct a delivery sprint (Sprint 6), including productionizing the environment, conducting final UAT, deploying the final At-Risk Predictive Model and HHS interactive (HHSi) Opioid Insight Dashboards, and holding final training and transition activities.



### **Task 1: Productionize the Environment**

After completing data integration and modeling, finalizing of the At-Risk predictive model, and development of the HHSi Opioid Insight Dashboard, we will tune and calibrate the environment to see that it is ready for use in production by all stakeholders. This will include stress testing and execution of the security plan.

### **Task 2: Conduct Final UAT**

Final user acceptance testing will be conducted to make sure that all components of the HHSi Opioid Insight environment are working properly and to standards defined throughout the project.

### **Task 3: Deploy final At-Risk Predictive Model and HHSi Opioid Insight Dashboards**

The final, tested versions of the At-Risk Predictive Model and HHSi Opioid Insight Dashboards will be rolled into the production environment.

### **Task 4: Conduct final training and transition activities**

As part of the delivery phase, final user training will take place for the At-Risk Predictive Model and HHSi Opioid Insight Dashboards. This will include all documentation for the environment, predictive models, and dashboards.

### **Deliverables**

The following deliverables are included as part of the final delivery phase (Sprint 6):

- End User Support Plan
- Documentation of Operational Procedures
- Conduct System Performance (Load/Stress) Testing
- Certification of 3rd Party Pen Testing and Application Vulnerability Scanning
- Go- Live – Cutover to New Software and solution
- Provide Documentation
- Execute Security Plan
- Final UAT
- Final Training
- Final Deployment of At-Risk and At-Risk+ Predictive Models
- Productionize HHSi Opioid Insight Dashboards
- Conduct Project Exit Meeting

### **Data Governance**

Deloitte will produce a written Data Governance structure and framework that will occur concurrently with all other phases. Our proposed governance model will enable the effective sharing, reuse, and governance of Enterprise Business and Technical Services through the deployment of DAP. The model will also strengthen data sharing, worker collaboration and drive decision support at all levels through



DAP. Finally, the combined Data Governance and Analytic Strategy will enable State to focus on resources to increase the availability of information for informed decision making.

The Deloitte approach is based on our Agile for Advanced Analytics framework and marks a shift from the traditional static governance goals such as maintaining business glossary, dictionaries, and data catalogs. The new framework is centered around a more collaborative approach focused on giving the stakeholders the required context to make good decisions, documenting the data flow for accountability upcoming data governance standards. This approach integrates with Data Modeling (DM), Enterprise Architecture (EA), and business processes (BP), superseding inter-departmental and technical silos for greater visibility and control across domains, while also ensuring that security and privacy are not an afterthought, but rather at the forefront of the process during every sprint. This means understanding the regulations that each incremental deployment within DAP must comply with, including but not limited to HIPAA security and privacy rule requirements.

To protect confidential data that exists in each sprint, our solution takes a 2-pronged approach to maintain data privacy and make data available to only those who have a business need to access/view it. Our approach is concerned with protecting data at rest and data in transit.

Access to confidential data will only be granted after authenticating and authorizing the users. The application tier components will use the State’s active directory as the authoritative source for user identities. Access rights will be granted to individuals based on their job function and role, using the concepts of least-privilege and need-to-know. Requests for additional access will follow a formal process that involves a request and an approval from an authorized State representative like the data steward or data owner. Access to infrastructure native accounts will be limited to a very small subset of application developers and administrators and this access will be reviewed periodically so that only people with a business need have access.

**The payment schedule as required in this topic is further elaborated in section F-1 Activities/Deliverables/Milestones Pricing Worksheet.**

**Topic 23 – Work Plan**

2.4.6.2. Define both proposed Written and Software Deliverables. Include sufficient detail that the State will be able to identify departures from the Plan in sufficient time to seek corrective action. In particular, provide information about staffing.

2.4.6.3. Describe all Deliverables to be produced in the Project. Ensure that all Deliverables and milestones are identified in the Work Plan. Identify and discuss the following:

2.4.6.3.1. All assumptions upon which the Work Plan is based;

2.4.6.3.2. Descriptions of recommended roles by activity and time required for both State and Vendor members of the Project Team;

2.4.6.3.3. Assignments of members of the Vendor’s team identified by role to specific tasks; and

2.4.6.3.4. Critical success factors for the Project.

Below is a table of deliverables for each of the sprints outlined above (Each number in parentheses ties to Table C-3 in RFP; if there is no number in parentheses, the deliverable is in addition to what is included in Table C-3).

Sprint	Timeline	Deliverables
Ongoing	February – August	<ul style="list-style-type: none"> <li>Project Status Reports (2)</li> <li>Data Conversion Plan and Design (11)</li> </ul>



Attachment 11  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

Sprint	Timeline	Deliverables
		<ul style="list-style-type: none"> <li>• Provide Fully Tested Data Conversion Software or solution (18)</li> <li>• Conduct continuous integration and continuous delivery testing plan (20)</li> <li>• Perform Production Tests (22)</li> <li>• Test In-Bound and Out-Bound Interfaces (23)</li> <li>• Converted Data Loaded into Production Environment (26)</li> <li>• Conduct Training (28)</li> <li>• Ongoing Hosting Support if applicable (32)</li> <li>• Ongoing Support and Maintenance if applicable (33)</li> </ul>
<b>Planning</b>	February	<ul style="list-style-type: none"> <li>• Conduct Project Kickoff Meeting (1)</li> <li>• Work Plan (3)</li> <li>• Infrastructure Plan (4)</li> <li>• Security Plan (5)</li> <li>• Communications and Change Management Plan (6)</li> <li>• Agile Project Management Plan (7)</li> <li>• Comprehensive Training Plan and Curriculum (13)</li> <li>• Provide Software Licenses if needed (17)</li> <li>• Provide Software Installed, Configured, and Operational to Satisfy State Requirements (19)</li> </ul>
<b>Sprint 1</b>	March	<ul style="list-style-type: none"> <li>• Systems Interface Plan and Design/Capability (9)</li> <li>• Testing Plan (10)</li> <li>• Change Control Document and Deliverable for new Data Loads</li> <li>• Data Model and ETL Specifications</li> </ul>
<b>Sprint 2</b>	April	<ul style="list-style-type: none"> <li>• Integrated Data Model</li> <li>• Change Control Document and Deliverable for new Data Loads</li> </ul>
<b>Sprint 3</b>	May	<ul style="list-style-type: none"> <li>• Integrated Data Model</li> <li>• Change Control Document and Deliverable for new Data Loads</li> </ul>
<b>Sprint 4</b>	June	<ul style="list-style-type: none"> <li>• Integrated Data Model</li> <li>• At Risk Predictive Model</li> <li>• HHSi Opioid Insights Wireframe Design</li> </ul>
<b>Sprint 5</b>	July	<ul style="list-style-type: none"> <li>• Deployment Plan (12)</li> <li>• Integrated Data Mode</li> <li>• Change Control Document and Deliverable for new Data Loads</li> </ul>
<b>Deliver</b>	August	<ul style="list-style-type: none"> <li>• End User Support Plan (14)</li> <li>• Documentation of Operational Procedures (16)</li> <li>• Conduct System Performance (Load/Stress) Testing (24)</li> <li>• Certification of 3rd Party Pen Testing and Application Vulnerability Scanning (25)</li> <li>• Go Live – Cutover to New Software and solution (29)</li> <li>• Provide Documentation (30)</li> <li>• Execute Security Plan (31)</li> <li>• Conduct Project Exit Meeting (34)</li> </ul>



*Figure IV-D.2.4-97. Proposed Deliverables list.*

## Vendor Staff

The table below lists the roles and responsibilities table for Key Vendor Staff that will be further refined during project initiation in conjunction with the State.

Resource	Role	Responsibilities/Tasks	Projected Hours
<b>Greg Spino</b>	Enterprise Architecture Lead	As the Enterprise Architecture Lead, Greg aligns the proposed solution with existing NH DHHS infrastructure. He works closely with the project manager, Jeff, to manage and monitor key success metrics for the project.	210
<b>Sean Conlin</b>	Opioid Analytics Lead	As the Opioid Analytics Lead, Sean provides subject matter expertise on a range of analytics topics to the team. He works closely with Jeff to navigate questions, offer optimal solutions and provide direction on the business expectations from the solution.	110
<b>Jeff Walker</b>	Project Manager	As the Project Manager, Jeff provides day-to-day direction to team members regarding activities and timelines, manages project risks, and contributes to and reviews all deliverables prior to submission.	540
<b>Abhishek Pathak</b>	ETL and Data Wrangling Lead	As the ETL and Data Wrangling Lead, Arvind leads the data-specific efforts of the project, employs his big data experience to lead the data engineering, data manipulation, and data exploration and analysis alongside the remainder of the data science and project management team.	1520
<b>Tim Hartman</b>	Data Science Lead	As the Data Science Lead, Tim serves as an intermediary between data governance and visualization, providing expertise on the interpretation, utilization, and usage of the data at hand.	240
<b>Kelly Neway</b>	Training Lead	As the Training Lead, Kelly drives the training and change management efforts required along with solution implementation. She will collaborate with the project management, Jeff, to build out a training schedule that meets the needs of the project stakeholders in a timely fashion.	864
<b>TBD</b>	Data Visualization	A data visualization team member design the visual aspects of the reports and dashboards to make them more intuitive.	1032
<b>TBD</b>	Data Scientist (2)	A data scientist interprets the data and build different predictive and analytics data models that will be integrated into the solution.	480





Resource	Role	Responsibilities/Tasks	Projected Hours
<b>Nii-Lante Lamptey</b>	Data Governance Lead	As a Data Governance Lead, Nii-Lante coordinates with the state to setup a data governance structure around the project.	1019
<b>Dipak Modi</b>	Security Lead	As a Security Lead, Dipak Modi oversees the security features like authentication and authorization for the solution.	144
<b>Neluka Wijegunawardena</b>	UI Designer	As a UI Designer, Neluka brings innovative and intuitive screen designs that can help a user navigate the solution more efficiently	160
<b>Manal Azer</b>	Clinician	As a Clinician, Manal brings her experience as a registered nurse to support the team in decision making for building models that accommodate for dependencies between treatments.	120
<b>Douglas Rosendale</b>	Physician	The physician supports the team in building models and making decision to weave in considerations for medical treatments and other substance use disorder medications.	120
<b>TBD</b>	ETL Developer (3)	Three ETL developers will be part of the team	3420
<b>TBD</b>	Security Analyst	Security analyst will be part of the team	720
<b>TBD</b>	Testers (2)	Two testers will be part of the team	1960
<b>Quinn Chasan</b>	Digital Analytics	Quinn advises the team on the analytics model that are being integrated into the google cloud platform.	100
<b>Sean Wohltman</b>	Cloud Engineer	As a Cloud Engineer, Sean advises the infrastructure requirements for building the analytics platform.	100
<b>Bryce Buffaloe</b>	Cloud Data Scientist	As a Cloud Data Scientist, Bryce advises the team on the analytics model that are being integrated into the google cloud platform.	100
<b>TBD</b>	Digital Data Analyst	Digital data analyst will be part of the team	128

*Figure IV-D.2.4-98. Key Vendor Staff.*

## State Personnel Involvement

Deloitte will collaborate closely with the State Project Team during each phase of the project. Based on the requirements and tasks set forth in the RFP, we completed the following Proposed State Staff Resource Hours Worksheet that lists resources and the minimal estimated time commitment of the State Project Team based on our preliminary Work Plan. The extent of effort (time) required by State staff can vary considerably based on the degree of engagement from product owners, stakeholders, staff looking to



cross train, and other similar factors which are difficult to estimate prior to a joint collaboration and dialog.

State Role	Initiation	Configuration	Implementation	Close Out	Total
Project Sponsor	10	10	10	10	40
State Project Manager	20	60	60	25	165
State IT Manager	5	20	40	5	70
Technical Support Team	20	65	30	60	175
Business Process Owners	160	440	440	160	1,200
User Acceptance Team	0	0	160	0	160
State Total Hours	215	595	740	260	1,810

Figure IV-D.2.4-99. State Personnel Involvement.

### Assumptions

- Member linking will be done to support analytic requirements, i.e. the level of confidence target is in the 90% range
- Key personnel from the State, including data source subject matter experts, will be engaged throughout the Project to support the process and will be empowered to make timely decisions.
- Neither the Contract nor this SOW may be modified except as otherwise agreed by Deloitte and the State. Either party may request changes to the services, Deliverables, and/or any other aspect of this SOW through a written change request ("Change Request"). Promptly thereafter the parties shall discuss what impact the Change Request will have on the services and Deliverables and on pricing, timing, and other terms of this SOW. Any changes to this SOW agreed upon by the parties as a result of the foregoing process shall be set forth in a change order signed by the parties ("Change Order"). Once a Change Order is signed it shall amend, and become part of, this SOW. Neither party is obligated to change the services, Deliverables, or any other aspect of this SOW unless a Change Order for such change has been signed by the parties.
- The State shall provide Deloitte with at least 30 days written notice and opportunity to cure prior to any suspension or termination of this SOW resulting from Deloitte's failure to perform any of its obligations.
- Pre-existing Materials shall also include modifications and derivative works to any items that constitute Pre-Existing Materials. The State consents to Deloitte using any of its Pre-Existing Materials that Deloitte believes is useful in the performance of the services hereunder.
- The State will deliver data per the jointly agreed upon timelines. In the event of any delay encountered with the State's ability to deliver the data or any delay encountered that is beyond Deloitte's control, the State will collaborate with the vendor, using a change order if required, to address the adverse impact.
- Deloitte warrants that it shall perform the Services in good faith and in a professional manner. Notwithstanding anything to the contrary in the contract, Deloitte disclaims all other warranties of merchantability and fitness for a particular purpose.



## Critical Success Factors

- Based on experience, the single biggest success factor for transformative data analytics project is strong leadership. Involvement of key stakeholders and a strong project sponsor with the authority to make and enforce decisions is essential to successful implementation.
- Early access to data and clear understanding of the data provided by the source system owner is another key success factor for any data integration, analytics or reporting project. Data analysts understand that analytic requirements evolve iteratively with consumption and review throughout the lifecycle; only when data is available can informed decision be properly made.
- In order to meet the project deliverables within the desired timeframe the team will need to adhere to a tight scope control processes. We understand the important goals the State desired to achieve with this project and clearly articulating the scope of each sprint will align the team's activities and set clear expectations.
- As this will be one of the Departments larger projects delivered using agile, a commitment of the State and vendor resources to understand, commit to, and follow the agile and scrum practices will be essential. This includes a commitment of the required effort and the appropriate intellectual capital at the point in time dictated by the process.

Lastly, timely decision making is required to prevent the project from missing key dates. We will work with the State to establish the decision-making structure and the team will communicate and escalate as needed to support the State's decision-making process. This decision making process will require adaptability on the part of the vendor and State to innovate through challenges collectively.

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### Topic 23 – Work Plan

2.4.6.4. Discuss how this Work Plan will be used and State access to Plan details including resource allocation

2.4.6.5. Discuss frequency for updating the Plan, at a minimum weekly and for every status meeting. Explain how the State will know whether the Project is on Schedule and within budget.

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One of the key work products required to support project success is a detailed project work plan. Deloitte will use Microsoft Project to create, update, and maintain the work plan for this project. The work plan includes the key activities, planned start and end dates, assigned resources, anticipated duration, key milestones, and dependencies needed to deliver the project. Given the dynamic and critical nature of the CORbi project, Deloitte proposes a weekly status meeting with DHHS to address overall project status and any additional topics needed to review the project health and burn down.

Deloitte will update the project work plan weekly and include relevant project work plan reviews during the status meetings, specifically focused on project critical path items and external dependencies in accordance with the contract. In addition to sharing the work plan during regularly scheduled status meetings, Deloitte will also make the most updated version of the work plan available via SharePoint for the State to access. Throughout the project life cycle, Deloitte will actively leverage the work plan to manage and monitor overall project delivery. Our team will update actual start and actual completion dates, as well as percentage of activity completion, to monitor delivery progress. This allows us to run monitoring reports to understand late or slipping tasks to proactively mitigate and manage task completion.



## D-2.5 Ongoing Operations

Deloitte has a demonstrated track record of providing quality maintain and operation services. We are committed to collaborating with DHHS/DoIT staff to define and document Maintenance & Operations (M&O) functions and transition these tasks to the State at the end of the contract term.

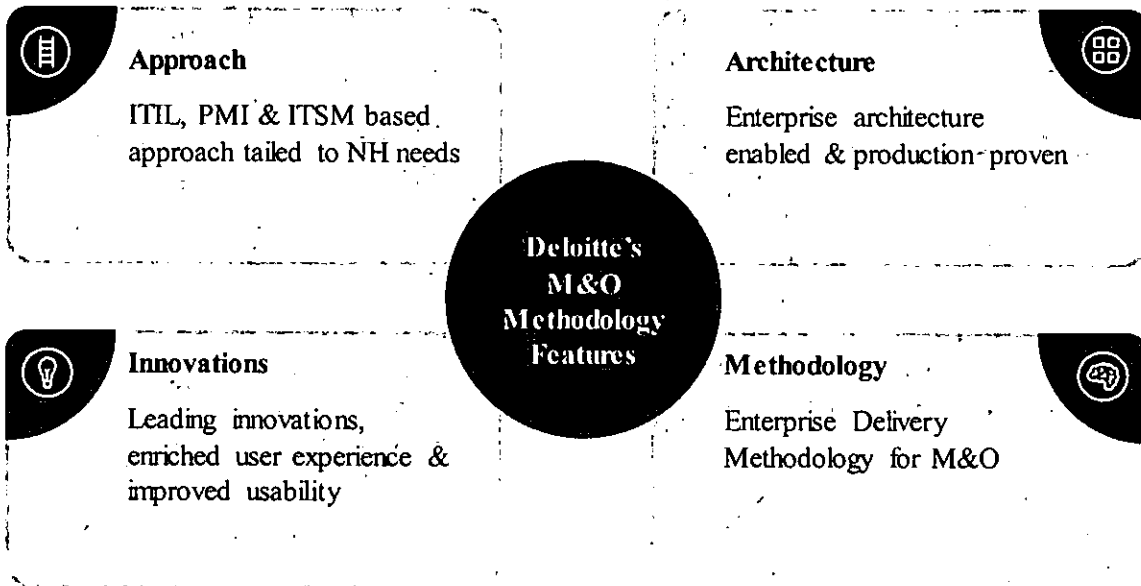
Our approach to Operations and Maintenance applies industry-leading IT Service Management (ITSM) and DoIT standards and processes to guide the efficiency design, management, and operations of IT activities and functions.

Our collaborative approach promotes working shoulder-to-shoulder with DoIT and DHHS staff during the development and deployment to promote efficient transition of maintenance and operations support post go-live. The figure below describes the features of Deloitte’s M&O methodology that supports innovations, demonstrated enterprise architecture, and the ITIL-based approach tailored to the needs of the Data Analytics Platform (DAP).


Section  
HIGHLIGHTS

Deloitte’s M&O methodology includes the following benefits:

- PMI, ITIL and ITSM-based approach for effective and efficient service delivery.
- Experience with 40+ states providing a platform for the exchange of innovative ideas and lessons learned.



NH\_DAPOC-0082

Figure IV-D.2.5-100. Deloitte's M&O Methodology Benefits.



## Topic 24 – Hosted System If Applicable

### Topic 24 – Hosted System If Applicable

Describe the hosting plan including hardware and software platforms, software utilities, telecommunications resources, security measures and business continuity plans. Include a description of servers, computers, software, programming capability and other equipment and technical resources which will be used to design, develop, implement and maintain the application.

The core Data Analytics Platform and Opioid Insights will be hosting within the State environment. The Google components will be hosted in secure FedRamp GCP. We recognize the importance of process as DHHS operates, maintains, and enhances the DAP. Our team and approach have been tailored to reflect best practices cultivated across the many other States we support. Our approach and assets place DHHS in a position of strength to use, sustain, and enhance the DAP:

Figure IV-D.2.5-2. below shows the list of hardware and software components proposed as part of the solution for M&O activities for the DAP application.

Type	Purpose	Description	Status
Software	Database	Oracle 12c	Existing
Software	Data Integration	Informatica	Existing
Software	Data Visualization	Tableau Creator Licenses	Existing
Software	Data Processing	Python, R, Tableau Prep	Existing
Software	Project Management	Atlassian Jira	Existing
Software	Incident Management	Atlassian Jira	Existing
Software	Configuration Management	Atlassian Jira	Existing
Software	Version Management	Git	Open Source
Software	Continuous Integration	Jenkins	Open Source
Software	SortSite	W3C validation	Existing
Software	HP Fortify	Application Vulnerability	Existing
Software	Metasploit	Penetration Testing	Existing
Software	Build Scripting	Apache Another Neat Tool (ANT)	Open Source
Software	Data Modeling	SQL Modeler, Erwin	Existing
Software	Programming	Java, Angular 5, R, Python	Open Source
Software	IDE	Eclipse	Open Source
Software	Google Cloud Platform	Compute Engine (VMs), Data Transfer, Big Query, Machine Learning APIs	New
Hardware	Database Servers	HPE BL460c Blades	Existing
Hardware	Application Servers	HPE BL460c Blades	Existing
Software	Operating Systems	Red Hat Enterprise Server and Linux for Virtual Datacenters	Existing
Hardware	Host Servers	8 core VPP L4 VMware vSphere 6 with Operations Management Enterprise PI	Existing



Type	Purpose	Description	Status
Software	ESB Interface	Mule	Existing
Software	FTP Server	NHFTP Server	Existing
Software	Security Management	Apache LDAP	Open Source

**Figure IV-D.2.5-101. List of Hardware and Software Components Proposed.**

2.5.1.1. Provide the type and speed of the connection:

The application usage, architecture, performance requirements, and security requirements are key parameters that influence the network bandwidth requirements. As described below, the network latency, peering issues, bandwidth at upstream providers, and incident users using their Internet connections for other reasons aside from this application affect the perceived performance of the connection and the amount of bandwidth required to keep the performance adequate. Our process embeds tools to measure, tune, and validate the application performance. The results optimize efficiency and network utilization while also providing the inputs necessary for DoIT to maintain and tune network access across the broad spectrum of potential stakeholders and their physical locations (Brown Building, District Offices, Hazen Drive, etc.).

Parameter	Impact on Bandwidth	DAP Solution
End-user Internet speed (high-speed, and wireless connections)	To meet any of these network speeds, the application must have a lightweight design.	The application is designed to use as little bandwidth as possible, so that the application can perform adequately over any type of Internet connection.
Background network activity	Some applications perform continuous background operations to feed the data while the user views data on a page.	Data load from various internal systems to the EBI platform use the current network assets and are expected not to cause any bottlenecks as it runs off-period hours.
Data encryption in transit	Encryption adds to bandwidth consumption and can cause IP fragmentation.	The servers are configured to support the most current encryption level – TLS 1.2.
Data backup strategy	Network bandwidth requirements will change depending on data backup frequency and chosen platform.	As the database and backup media are sitting in the same network, no additional consideration is needed from a network bandwidth point of view.

**Figure IV-D.2.5-102. Parameters and Bandwidth Impacts.**

2.5.1.2. Information on redundancy

The DAP production systems and interfaces are designed for high availability by considering component redundancy, clustered solutions, data replication, and failover capabilities to support optimal operational performance, even at times of high loads. On-premise architecture redundancy significantly improves reliability and cost and will be finalized in collaboration with DoIT to maximize value of the on-premise platform and to support expanded utilization as the EBI platform matures and grows. This strategy will extend the current work being completed to establish the baseline EBI platform.



2.5.1.3. Disaster recovery

Deloitte’s approach to Disaster Recovery (DR) and Business Continuity (BC) builds upon leading industry practices drawn both from past experiences and ongoing service for states with projects of similar size and scope as well as our work collaborating with DHHS and DoIT in New Hampshire. We understand the DHHS’s need to sustain critical business operations even during catastrophic conditions. We understand that during a disaster, the DAP will be one part of the overall business continuity action plan that DHHS will need to execute. Given our experience, Deloitte recognizes there are several possible external events that make systems susceptible to an outage. These can include, but are not limited to:

- **System failures:** Hardware failure of critical servers or disk failures
- **Natural disasters:** Catastrophic events such as earthquakes, tornadoes, or fire
- **Man-made disasters:** Human errors, fire, theft or sabotage, and electrical power outages
- **Electronic attacks:** Security breaches, hackers, and computer viruses

The mitigation strategies for each of the above risks will vary and are driven by acceptable downtime limits (the length of time the system is unavailable) and budget constraints. As part of our DR approach, we will collaborate with DHHS and DoIT to build on the current DR strategy which falls under the broader scope of the DoIT data center DR plan. The off-premise Google platform will be designed so that the system can reload from the onsite DAP in the event of a failure, minimizing the cost of DR infrastructure.

2.5.1.4. Security

Deloitte is uniquely positioned to assist the State on this important initiative given our history of providing cyber risk services for New Hampshire and other states, as well as our deep bench of IT security risk assessment specialists.

Security processes include performing a risk analysis of each target environment to determine what the best approach is to implementing and operating security features. Threats evolve, and our security approach is designed to facilitate ongoing effectiveness based on new standards as well security scanning and monitoring results using tools updated regularly to protect against the latest threats. We work with the DoIT to leverage existing security tools and department-specific security practices to be incorporated in the DAP. For the DAP, the security infrastructure will build on the EBI platform and the evolving DHHS governance model.

During the Design, Development, and Implement (DDI) phase, we will establish the baseline foundation for security, including fine grained controls at the database and application (Tableau security controls) levels, allowing access limits based on defined roles and profiles of the DAP user community. These controls will be integrated with the broader DHHS data governance and stewardship roles being established to manage data.

2.5.1.5. Interim staffing for peak help desk demand periods and transition to a permanent arrangement;

2.5.1.6. Development of a help desk knowledge base; and

2.5.1.7. Metrics based on help desk inquiries



Attachment 1411 - **STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

Deloitte has a long history of providing help desk support for our State HHS clients, including interim and transitional support. We understand that DHHS will provide the permanent help desk services support. We recommend that during the transition, Jira be used to track and manage incidents and problems. The ticket history maintained in Jira is searchable and would serve as the help desk knowledge-base. Jira provides aggregate and drill-down reporting through real-time dashboards.

The application’s M&O Plan will incorporate descriptions of the help desk functions and their interaction with other support activities of the application’s M&O Plan. Deloitte will use Jira to support the help desk functionality. All Help Desk calls and resolutions are documented in Jira to maintain a help desk knowledge base.

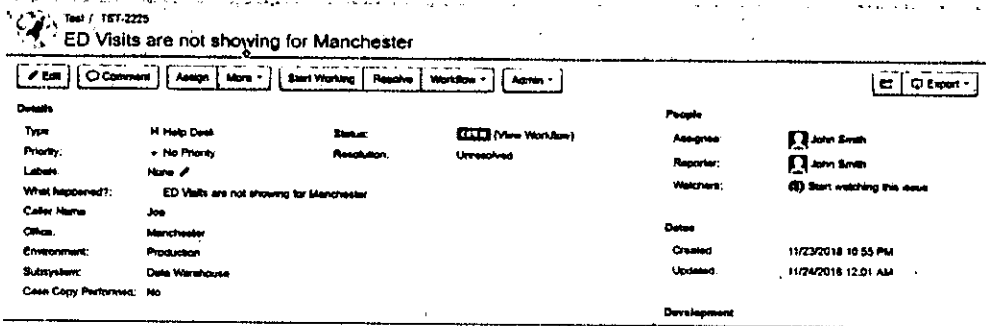


Figure IV-D.2.5-103. Help Desk Ticket – Jira.

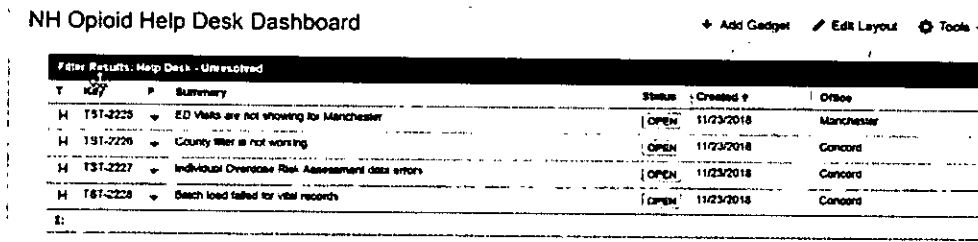


Figure IV-D.2.5-104. Help Desk Dashboard.

Deloitte staff will support DoIT and DHHS staff with help desk staff supplementing the transitional DHHS/DoIT staff as the project moves from DDI to operations. Deloitte will provide the necessary support to resolve issues and document solutions. During this phase, Deloitte will employ a broad process which incorporates stakeholder feedback to properly align priorities to maintenance activities, while also emphasizing a reduction in overall system defects to improve system stability and usability at go-live

A set of standard reports, produced through Jira, will facilitate oversight and understanding of help desk activities. The help desk staffing requirements will be documented for DHHS/DoIT and clearly defined roles and responsibilities identified. Should the State require additional resource support, Deloitte will work with DHHS/DoIT to provide resources necessary to support the environment.





## Topic 25 – Support and Maintenance If Applicable

### Topic 25 – Support and Maintenance If Applicable

The State will evaluate whether the Vendor’s proposed support and maintenance plan includes ...

This proposal assumes full transition of support and maintenance to the State post go-live however, should the state support the team will work with the State to design a support model that meets your goals and objectives. Our M&O approach is guided by our experiences collaborating with DoIT and our usage of ITIL standards. Our typical approach to support and maintenance provides the structure required to predictably manage and monitor the status of the M&O activities, along with the flexibility needed to proactively address issues. The types of services provide in our typical M&O engagement includes not only application “defect”, or “break fixes”, but also activities such as performance monitoring and tuning, software upgrades, and application enhancements.

The following highlights the features of our approach to the DAP’s support & maintenance:

Activity Type	Frequency	Activity Type	Frequency
Monitoring Application outages	Automated	New/Enhanced Reports	On Request
Help desk support	Daily	Ad hoc Reporting	On Request
Policy and Application Enhancements	On Request	User Maintenance	On Request
Software Upgrades and Emergency Patches	Quarterly/On Demand	Bach Support for ETL and Reports generation	Daily

*Figure IV-D.2.5-105. M&O Activity Types and Descriptions.*

2.5.2.1. For how many of your clients do you provide typical software maintenance and support ...

2.5.2.2. For how many of your clients do you provide support and maintenance of the operational ...

Deloitte serves thousands of clients worldwide across the public and private sectors, a large percentage of whom use maintenance services. We have implemented HHS systems in 45 states including implementation, maintenance and operation, modernization of legacy systems, all based on MARS-E standards. Currently, we are providing M&O services in 27 states, which is approximately 60% of total number of state projects we have implemented in the past 5 years.

2.5.2.3. What do you find to be the optimal amount of support?

The optimal support model for Opioids Insights would include staff to evolve existing data input, continue schema development, provide performance tuning, and continued support for Tableau visualizations and reporting would be (1) Operations Manager, (2) Business Analyst (2) Informatica experts (2) Tableau developers and (1) DBA.

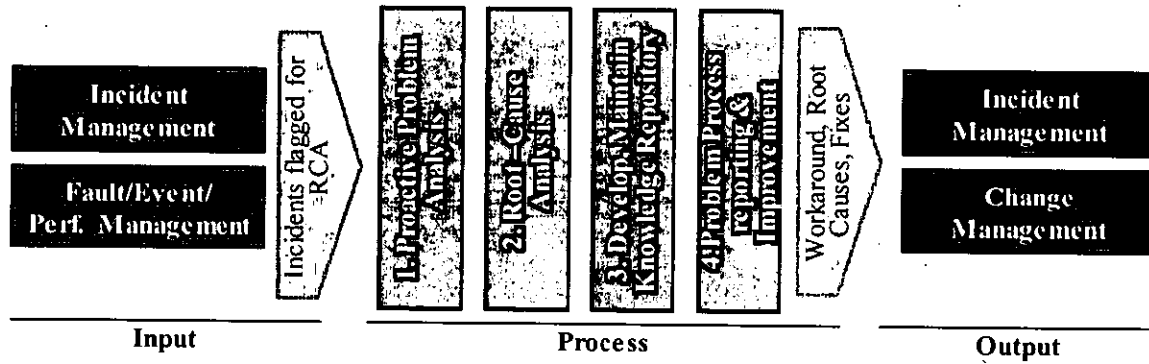
2.5.2.4. Describe how general support and maintenance skills are transferred to State technical ...

2.5.2.5. Describe how are support and maintenance issues are tracked detailing methodology ...

2.5.2.6. Describe process for maintenance of the general knowledge base



The knowledge repository is maintained in Jira with all details including root-cause analysis and workaround, fix, and process improvements for each problem and incident reported. State technical support personnel can access this repository and it will be used to transfer the operations activities to DoIT staff. The following figure explains the process of maintaining the general knowledge base and the knowledge sharing process:



NH\_DAPOC-0102

Figure IV-D.2.5-106. Problem Management Approach.

2.5.2.7. Describe any particular procedures required to handle escalation and emergency calls.

The process follows the typical problem management process with shortened timelines and faster responses. The Help desk will determine the incident scope and escalate to the appropriate team (DBA, systems, application, network, etc.), which analyzes the issue, determine the root cause, apply the data fix/come up with a workaround, and fix the issue. The call tree would be developed in collaboration with DHHS and DoIT teams to handle escalation and emergency calls. This documented process will be used to manage incidents, problems, and escalations during the transition period and is recommended for DHHS/DoIT following transition.

2.5.2.8. Detail the plan for preventive maintenance and for upgrade installations.  
 2.5.2.9. Detail the types and frequency of support tasks required

As a part of our typical M&O approach, the change management process describes the procedure associated with the operation, support, and maintenance of live systems. The list below is the sample checklist for preventive maintenance and for upgrade installations and tasks associated with maintaining and operating the DAP application.

Support Task	Frequency	Preventive Maintenance	Frequency
Running database backups	Daily	Monitoring & reporting disk usage	Auto Alerts
Helpdesk support	Daily	Security Vulnerability Scans	Monthly
Break fixes	Monthly release	System Monitoring	24/7 (Auto)
Audit Support	Annual/On-Demand	3rd Party tools upgrades	Timely
Change Management	Monthly	Log Monitoring	Automated
Database activities	Weekly	Disaster Recovery	Annual

Figure IV-D.2.5-107. Maintenance and Operations Tasks and Activities.



## Section V: Corporate Qualifications

### Section V: Corporate Qualifications

Section V should provide corporate qualifications of all firms proposed to participate in the Project. Specific information to be provided is described in Appendix E: Standards for Describing Vendor Qualifications – Section E-1: Required Information on Corporate Qualifications.

Deloitte brings over 30 years of health and human services experience, is ranked by Gartner as #1 in Business Analytics for execution, and has been a leader in helping governments address the opioid crisis. We are energized and committed to working side-by-side with DHHS to use data to drive meaningful change in solving the opioid crisis.

- **We provide a strong, integrated team with deep data analysis capabilities, predictive analytics experience, and experience supporting clients across the opioid ecosystem.** As the recognized leader of analytics consulting, Deloitte offers a broad suite of capabilities for analytics and data modeling. We understand that opioid addiction has far reaching impacts – it strains our health care resources, stresses child welfare systems, reduces the economic vitality of families, and drains first responders. Our team combines the requisite skill sets of data discovery, data ingestion and integration, data migration/conversion, statistical modeling, user design, and visualization to meet your needs and objective. We will apply those competencies to help New Hampshire develop strategies and creative solutions across the ecosystem.
- **We add value by leveraging intellectual capital and accelerators.** Leveraged delivery is a critical input to our successful collaborations with New Hampshire and our other HHS clients. We provide value-added services that help New Hampshire advance policy and process objectives using analytics as an enabler to improve outcomes. Deloitte has had the opportunity to work with various governments, agencies, and commercial entities to tackle the opioid crisis. These experiences have led Deloitte to invest in a dedicated data science and visualization team to specifically focus on opioid related data. The goal of our investment is to help clients, academics, and other organizations quickly analyze trends and patterns in the data to better inform decisions. Our intellectual capital will be shared with New Hampshire in this project.



Deloitte meets your requirements through:

- Our eminence and thought leadership on using analytics to help governments address the opioid crisis
- Our experience implementing advanced analytics across multiple states, federal agencies, and commercial clients
- Our unmatched nationwide HHS experience
- 25+ years of serving the State of New Hampshire, and specifically serving DHHS.



## E-1.1 Vendor and Subcontractors

### E-1.1.1 Corporate Overview

#### E-1.1.1 Corporate Overview

Identify the proposed role of the firm on the Project. Describe the major business areas of the firm. Provide a high-level description of the firm's organization and staff size. Discuss the firm's commitment to the public sector, experience with this type of Project Implementation and experience in New Hampshire. (2-page limit)

Deloitte's role is to serve as the prime contractor to design, build, and implement a scalable Opioid Crisis Response Management Business Intelligence dashboard within the scope of the RFP. This includes providing project management, clinical support, technical services, and ongoing support.

Deloitte is a full service, multi-functional organization that provides consulting, audit, tax, and financial advisory services. Deloitte brings industry-leading advanced analytics specialists with extensive experience in data science and data modeling for both public sector and private sector clients. Deloitte has 94,000+ practitioners across 120 offices in the US. We employ a robust Cognitive Data Analytics practice comprised of 5,000+ practitioners, and our breadth of experience allows us to draw on leading resources across this practice and others to meet your needs and objectives.

Deloitte's industry-leading predictive analytics capabilities coupled with an unmatched understanding of your existing programs, data sources, and structures have led to joint successes with the State of New Hampshire and DHHS, demonstrating that we bring the applicable skills and experience to help with this critical initiative and, furthermore, inspiring the trust and confidence that we can work together successfully to tackle the most challenging health crisis of our time.

### Commitment to the Public Sector and New Hampshire

Deloitte's commitment to our government clients is core to who we are. Deloitte has nearly 12,000 practitioners dedicated to our Government and Public Services (GPS) consulting practice, with more than 4,500 focused on state and local government clients. More than one-third of our GPS practitioners specialize in Health and Human Services. We bring together our Health and Human Services and Cognitive Analytics practices to provide project management, data modeling, and analytics experience to meet DHHS's goals and expectations for this engagement.

Deloitte has been, and will continue to be, committed to the State of New Hampshire. Since 1996, we have become a trusted partner to the State, and are currently helping the State on many of its most challenging initiatives in a host of critical areas such as enterprise business intelligence, cybersecurity, data management, and Medicaid modernization. We have more than 100 Deloitte professionals who are actively supporting various projects and initiatives across different agencies for the State.



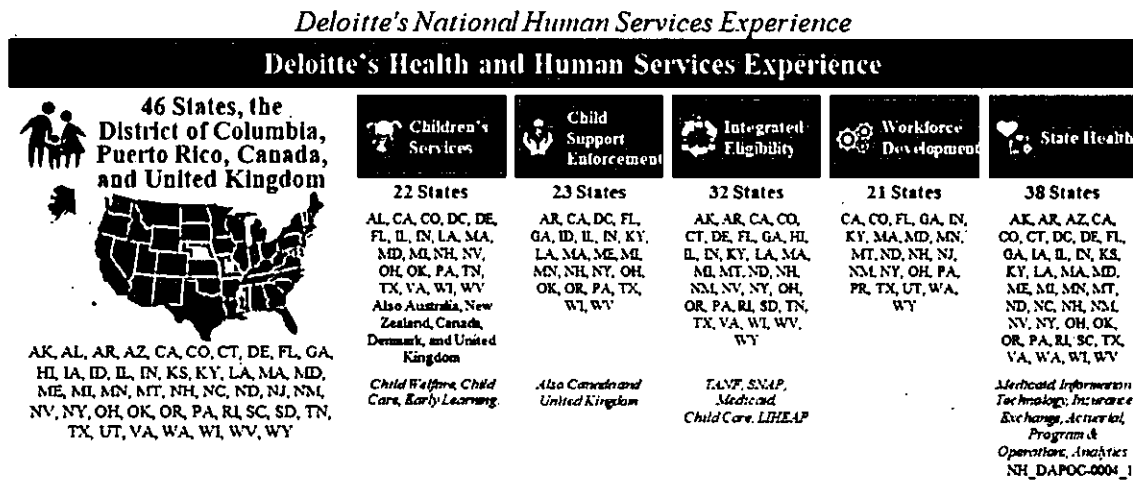


Figure V-108. Deloitte's Public Sector Experience within Health and Human Services.

### Commitment to the Nation's Fight against the Opioid Epidemic

Deloitte believes that given the widespread impact of the problem, curbing the opioid crisis lies in wide-scale, integrated solutions with contributions from all impacted sectors. Deloitte is committed to making a positive impact in our communities, and as such, we have thrown our strengths and resources behind conducting research, sharing knowledge, innovating solutions, and providing client services dedicated to quelling this epidemic.

Deloitte has taken a number of steps to make a positive impact on this issue. Our health care research arm – the Deloitte Center for Health solutions – has released research on strategies for combating opioid addiction, covering the full scope of the healthcare space, exploring efforts across the provider, payer, and patient arenas, while also considering environmental, policy, and community efforts. Additionally, Deloitte launched a firmwide initiative, the Deloitte Opioid Strategies Community, to consolidate activities and coordinate teams to combat the opioid crisis, with the ultimate goal of promoting collaboration to effectively respond to this crisis. Deloitte staff have won and participated in 'hackathons' across the country on this topic – for example, a team of Deloitte staff recently won first place in an opioid 'codeathon' for the Commonwealth of Pennsylvania. Deloitte is currently supporting data analytics projects related to the opioid epidemic at the FDA, CDC, the DOJ/DEA, and the DOD, as well as with states hard-hit by the epidemic, including Ohio and Virginia. Deloitte is also working with life sciences organizations to help increase access to treatment and to prevent addiction thru alternative pain management therapies. We feature three of these projects in our project qualifications.

Our experience developing strategies and solutions across this ecosystem for our clients uniquely positions us to help the State of New Hampshire. We provide specific project qualifications later in this Section V to demonstrate the breadth and depth of our experience related to opioids.

### E-1.1.2 Financial Strength

#### E-1.1.2 Financial Strength

Provide at least one of the following:

- 1.1.2.1.1. The current Dunn & Bradstreet report on the firm; or
- 1.1.2.1.2. The firm's two most recent audited financial statements; and the firm's most recent unaudited, quarterly financial statement; or



**E-1.1.2 Financial Strength**

1.1.2.1.3. The firm's most recent income tax return. For example, either a copy of the IRS Form 1065, U.S. Return of Partnership Income or Schedule E (IRS Form 1040) Supplemental Income and Loss (for partnerships and S corporations) OR IRS Form 1120, U.S. Corporation Income Return. These forms are typically submitted when a Vendor does not have audited financial statements.

Deloitte LLP and its subsidiaries (the “U.S. Firms”) have more than 94,000 professionals in nearly 120 offices in 100 U.S. cities providing consulting, audit, advisory, and tax services. In the following section, we provide the information requested in the RFP to demonstrate the financial strength of the Deloitte organization.

**Current Dun & Bradstreet Report**

The current Dun & Bradstreet report is attached in the Section IX – Appendix.

**Two Most Recent Financial Audited Statements**

Since the U.S. Firms are privately owned partnerships, they do not have audited financial statements, nor do they file other corporate financial information such as a 10-K. The following section includes consolidated, un-audited financial information for the U.S. Firms that is publicly available. Should you have additional questions regarding the financial information, please contact Sherif Sakr, Deputy Chief Financial Officer of Deloitte LLP, at (212) 436-6042 or Graham Cowie, U.S. Firms’ Controller of Deloitte Services LP, at (615) 882-7270.

For the most recent fiscal year ended June 2, 2018, the U.S. Firms had revenue of U.S. \$19.9 billion.

<b>Deloitte LLP and Subsidiaries – By The Numbers</b>			
<b>US Firms (US\$ Billions)</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
Offices (national and regional)	120	115	113
People	94,637	84,890	78,642
<b>Consolidated Revenues</b>	<b>\$19.9</b>	<b>\$18.6</b>	<b>\$17.5</b>
Current Assets	\$5.1	\$4.7	\$4.6
Other Assets	6.7	6.6	6.2
<b>Total Assets</b>	<b>\$11.8</b>	<b>\$11.3</b>	<b>\$10.8</b>
Current Liabilities	\$3.1	\$2.7	\$2.6
Other Liabilities	4.0	4.0	3.8
Partnership Equity	4.7	4.6	4.4
<b>Total Liabilities Partnership Equity (US\$)</b>	<b>\$11.8</b>	<b>\$11.3</b>	<b>\$10.8</b>
Working Capital	\$2.0	\$2.0	\$2.0
Current Ratio	1.7:1	1.7:1	1.8:1
<b>Consolidated Revenues by Business</b>			
Audit and Enterprise Risk Services	28.6%	29.5%	29.3%
Consulting	50.6%	48.5%	48.4%
Financial Advisory Services	3.9%	4.6%	4.7%



Deloitte LLP and Subsidiaries – By The Numbers			
Tax	16.9%	17.4%	17.6%
<i>Source: Deloitte LLP, New York</i>			

**Figure V-109. Deloitte U.S. Firms FY18 Consolidated Financial Information.**

**Deloitte LLP and Subsidiaries (U.S. Firms) Consolidated Financial Information: Comments**

- **Current Assets** consist principally of cash, client receivables, and prepaid expenses.
- **Other Assets** consist principally of property and prepaid pension cost.
- **Current Liabilities** consist principally of accounts payable, accrued expenses, and accrued compensation and benefits.
- **Other Liabilities** consist principally of long-term senior notes payable to insurance companies, with maturities through 2034.
- **Partnership Equity** consists of capital invested by partners and undistributed earnings.

Further, although the U.S. Firms do not have a rating from one of the nationally recognized credit rating agencies, their privately placed debt is assigned a designation by the National Association of Insurance Commissioners (“NAIC”). The U.S. Firms’ privately placed debt carries an NAIC 1 designation, NAIC’s highest designation, which is comparable to an A or better rating from one of the nationally recognized rating agencies. Detailed information regarding Deloitte LLP in the U.S. is provided in the chart below:

NAIC Designation/Rating	Comparable to a Public Debt Rating of	Viewed As
1	A or better	Investment grade
2	BBB	Investment grade
3	BB	Non-investment grade
4	B	Non-investment grade
5	CCC	Non-investment grade/junk
6	Default status	Non-investment grade

**Figure V-110. NAIC Rating Benchmarks.**

The above financial information was prepared for internal purposes. This financial information has not been audited and does not present the financial position, results of operations, or other financial information in accordance with generally accepted accounting principles.

The use of this information is restricted to your consideration in providing you professional services. Any other use or circulation of this information is prohibited.



### E-1.1.3 Litigation

#### E-1.1.3 Litigation

Identify and describe any claims made by clients during the last ten (10) years. Discuss merits, current status and, if available, outcome of each matter.

Deloitte Consulting LLP, as one of the leading providers of consulting services, is routinely involved in complex consulting projects, often involving large-scale systems implementations and multiple service providers. Although we are justifiably proud of our record of client satisfaction, such projects do occasionally give rise to disagreements over contract requirements, and we are occasionally, though rarely, involved in litigation with clients pertaining to our consulting services. We do not believe that such matters will affect our ability to provide consulting services, or that they will affect our ability to serve the State of New Hampshire in connection with this proposed engagement.

### E-1.1.4 Prior Project Descriptions (3 limited to 3 pages each)

#### E-1.1.4 Prior Project Descriptions (3 limited to 3 pages each)

Provide descriptions of no more than three (3) similar projects completed in the last < four (4) years. Each Project description should include:

- 1.1.4.1. An overview of the project covering type of client, objective, project scope, role of the firm and outcome;
- 1.1.4.2. Project measures including proposed cost, actual project cost, proposed project schedule and actual project schedule;
- 1.1.4.3. Names and contact information (name, title, address and current telephone number) for one or two references from the client; and
- 1.1.4.4. Names and project roles of individuals on the proposed team for the New Hampshire Project that participated in the project described.

Deloitte's client engagements provide the best evidence of our capabilities. Our clients, your peers, are best positioned to provide the most credible testimonials regarding our ability to perform on the CORbi project. These projects provide examples of the value we deliver to their organizations and the value we deliver to New Hampshire.

As required by your RFP, we are providing **three similar projects completed within the last four years**. For additional examples of similar project implementations and our experience with other health and human services organizations, please review *Section D-2.1.5 Topic 10 – Skills and Experience*.

### Three Prior Project Descriptions

While we have numerous public sector and commercial clients wherein we have demonstrated our advanced analytics capabilities related to opioids, we have selected the following completed projects to showcase the depth and breadth of Deloitte's capabilities as they relate to this project:

- j. **US HHS Centers for Disease Control: ONDIEH Management Support – DARPI Support and WISQARS Visualization Application Development**
- k. **Indivior: Analytics for Communities In Need Opioid Use Disorder Treatment**
- l. **Commonwealth of Pennsylvania Department of Human Services: Cloud Medicaid Analytics**





These project examples exemplify the value we deliver to other states, agencies, and organizations, and the value we intend to deliver for New Hampshire.

### 1. Centers for Disease Control



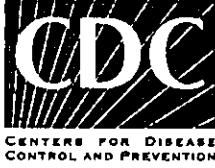
**Centers for Disease Control and Prevention**  
 National Center for Injury Prevention and Control (NCIPC) – Division of Analysis, Research and Practice Integration (DARPI) Support and WISQARS Visualization Application Development

**Type of Client:** US Federal Public Health Agency

**Project Overview:** CDC's Web-based Injury Statistics Query and Reporting System (WISQARS™) is an interactive, online database that provides fatal and nonfatal injury (including opioid overdose data), violent death, and cost of injury data from a variety of trusted sources. Deloitte worked closely with NCIPC to design and deliver a series of data visualization applications that arm critical stakeholders in the opioid crisis with accurate information on drug overdose rates across key demographic areas including geography, gender, age, and race/ethnicity.

<b>Project Measures:</b>	<p><b>Proposed Project Cost:</b> \$1,150,000 (DAPRI Total – multiyear)  <b>Actual Project Cost:</b> within planned budget  <b>Proposed Project Schedule:</b> 9/30/2017–9/28/2019  <b>Actual Project Schedule:</b> on schedule</p>
<b>Nature and Scope of Project:</b>	<p><b>Project Description:</b> CDC's WISQARS™ (Web-based Injury Statistics Query and Reporting System) is an interactive, online database that provides fatal and nonfatal injury, violent death, and cost of injury data from a variety of trusted sources. The tools are public facing and utilized by researchers, policy makers, and the general public. One of the uses of the system is to explore fatal and non-fatal drug overdose data, including opioids, to understand trends in age, race, and ethnicity over time in different geographies of the US. Deloitte's work involves modernize the existing WISQARS applications through end-to-end development of advanced data visualizations tools including conceptualization, design, development, and knowledge transfer. Deloitte employed user centered design to co-design drug overdose use case and other prominent public inquiries with NCIPC clients.</p> <p><b>Tasks Delivered:</b></p> <ul style="list-style-type: none"> <li>• Conceptualized the required data analysis tool</li> <li>• Developed wireframes</li> <li>• Iterated data visualizations through collaborative user-oriented frameworks</li> <li>• Captured requirements uncovered during the visualization design stages</li> <li>• Cataloged system functional requirements into required CDC EPLC documents and guided effort through stage gates</li> <li>• Developed projects and web-applications development</li> <li>• Met 508 requirements through documenting of testing efforts</li> <li>• Supported User Acceptance Testing and incorporated feedback into existing and in-development modules.</li> </ul> <p>The data visualization outputs can be viewed here:</p>





**Centers for Disease Control and Prevention**  
 National Center for Injury Prevention and Control (NCIPC) – Division of  
 Analysis, Research and Practice Integration (DARPI) Support and WISQARS  
 Visualization Application Development

	<a href="https://wisqars-viz.cdc.gov:8006/">https://wisqars-viz.cdc.gov:8006/</a> <b>Objectives Met:</b> Modernizing the existing WISQARS applications
<b>Client Reference Information:</b>	<b>Reference Contacts:</b> Name: Mindy McCarthy Title: Division of Analysis, Research and Practice Integration (DARPI) Address: 1600 Clifton Road, NE Atlanta, Georgia 30329 Telephone: (404) 639-4242 Email: McCarthy, Malinda (CDC/ONDIEH/NCIPC) <cyq5@cdc.gov>

**Name/Project Role of Proposed Project Team Members who Participated in this Project**

N/A



**2. Private Sector**



Type of Client: Life Sciences

**Project Overview:** Used data science approaches and combination of secondary, non-traditional data sources to understand the national opioid epidemic at a community level, and to understand drivers to act to improve patients' access to treatment and quality of life.

<b>Project Measures:</b>	<p><b>Proposed Project Cost:</b> \$370,000  <b>Actual Project Cost:</b> \$370,000  <b>Proposed Project Schedule:</b> March 2018 – May 2018  <b>Actual Project Schedule:</b> March 2018 – May 2018</p>
<b>Nature and Scope of Project:</b>	<p><b>Project Description:</b> The current opioid crisis is a significant public health issue for which medication-assisted treatment (MAT) has been shown to be effective. Significant geographic variations exist along dimensions, such as rate of drug dependence, opioid-related overdose deaths, prescription and illicit drug abuse, and access and availability to MAT. Indivior worked with Deloitte to use data science to harness the depth and breadth of available data to understand the possible drivers and actions to mitigate the risk of opioid use disorder (OUD) and help to ensure local communities have sufficient access to treatment.</p> <p><b>Tasks Delivered:</b></p> <ul style="list-style-type: none"> <li>• Defined risk scores using data science techniques: an opioid risk score and a treatment availability score</li> <li>• Assigned scores to each county/geographic area</li> <li>• Established a framework to identify community level needs</li> <li>• Employed clustering algorithms to group communities with different unmet needs based on their opioid risk score and treatment availability score</li> <li>• Identified drivers and pathways that can inform various modes of action specific to each group of communities</li> </ul> <p><b>Objectives Met:</b></p> <ul style="list-style-type: none"> <li>• Built a substantial database that can answer different business questions</li> <li>• Established a robust framework to identify community level needs</li> <li>• Engaged a broad set of client groups to link insights to actions</li> <li>• Developed a good working model and great momentum for data-driven strategic thinking and communications</li> <li>• Identified which communities are struggling with OUD and have limited access to MAT</li> <li>• Where MAT availability is high, found distinctive differences between communities where OUD risk is still high vs. where OUD risk is low</li> <li>• Revealed clear patterns in the data of OUD risk, MAT opportunity, and geographically-based diversion risks and issues to analyze further</li> </ul>

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	<ul style="list-style-type: none"> <li>Quantified the impact of formulary coverage on volume growth and market share</li> </ul>
<b>Client Reference Information:</b>	<b>Reference Contacts:</b> Name: Debby Betz, Title: Chief Officer, Corporate Affairs and Communications, Indivior Address: 10710 Midlothian Turnpike, Suite 430, North Chesterfield, VA 23235 Telephone: O +1 (804) 423-7082; M +1 (804) 370-0585 Email: <a href="mailto:Debby.betz@indivior.com">Debby.betz@indivior.com</a>
<b>Name/Project Role of Proposed Project Team Members who Participated in this Project</b>	
N/A	



### 3. Commonwealth of Pennsylvania OMAP



Pennsylvania Department of Human Services  
 Office of Medical Assistance Programs Technical Assistance Contract

Type of Client: State Health and Human Services Agency

**Project Overview:**

The PA Office of Medical Assistance Programs administers the joint state/federal Medical Assistance (MA), or Medicaid program, that purchases health care for close to 2.4 million Pennsylvania residents. The PA Office of Medical Assistance Programs is responsible for enrolling providers, processing provider claims, establishing rates and fees, contracting with and monitoring managed care organizations, and detecting and deterring provider recipient fraud and abuse.

Deloitte provides a wide range of data analysis, data integration services for Medicaid quality, and program data for Pennsylvania’s Medicaid program.

<p><b>Project Measures:</b></p>	<ul style="list-style-type: none"> <li>• <b>Proposed Project Cost:</b> Since this is multi-year contract, depending on the number of task orders issued, the annual contract value ranges from \$2.5M – \$3M and 8-10 FTEs per year.</li> <li>• <b>Actual Project Cost:</b> Task orders have been completed on-time and on-budget.</li> <li>• <b>Proposed Project Schedule:</b> Since this is multi-year contract, depending on the number of task orders issued, the annual contract value ranges from \$2.5M – \$3M and 8-10 FTEs per year.</li> <li>• <b>Actual Project Schedule:</b> Task orders have been completed on-time and on-budget.</li> </ul>
<p><b>Nature and Scope of Project:</b></p>	<p><b>Project Description:</b> Beginning in 2014, Deloitte helped develop and maintain a cloud-based analytics solution to collect, validate, store, and analyze data from multiple sources, including Managed Care Organizations, the Independent Enrollment Broker, and the state’s MMIS.</p> <p><b>Tasks Delivered:</b></p> <ul style="list-style-type: none"> <li>• Provided the Bureau of Medicaid Managed Care Operations (BMCO) with analytical oversight tools to support compliance with Medicaid Managed Care Rule updates</li> <li>• Designed an integrated data model to combine and store data from the state’s MMIS, along with the state’s provider revalidation system, to create and maintain process oversight dashboards, allowing OMAP to easily track and prioritize providers to be revalidated, applying federal provider revalidation guidelines</li> <li>• Designed and configured the Extraction, Transformation, and Loading (ETL) for the data intake and cleansing processes</li> <li>• Developed an advanced geospatial analytics engine and hot spotting visualizations to assist OMAP in understanding and oversight of their MCOs provider networks based on network adequacy standards</li> <li>• Conducted analyses to identify gaps where MCOs, Providers, Federally Qualified Health Centers (FQHCs), and other contracted entities were not meeting contractual obligations, using the data sets to help OMAP meet federal oversight requirements</li> </ul>

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**Pennsylvania Department of Human Services**  
**Office of Medical Assistance Programs Technical Assistance Contract**

	<ul style="list-style-type: none"> <li>• Developed and supported an integrated provider network data integration solution with the state’s 9 MCOs and the state’s Independent Enrollment Broker</li> <li>• Provided guidance and health care analytics subject matter expertise to OMAP’s Office of Clinical Quality Improvement as they begin to leverage statewide healthcare quality data collected through the state’s Health Information Exchange (HIE)</li> </ul> <p><b>Objectives Met:</b></p> <ul style="list-style-type: none"> <li>• Expanded access – Using advanced data comparison technologies and geospatial hot spotting, Deloitte was able to help identify underserved areas of the state down to the city block level. OMAP is now better able to work with MCOs to increase provider enrollment in those areas and provide improved access to the services they need.</li> <li>• Improved program oversight – With the cloud solution, the oversight process time frame was reduced from months to days. OMAP is now more able to focus on assessing the quality of the MCOs’ services.</li> <li>• Better able to adapt – The new flexible platform in the cloud enables OMAP to respond to evolving state and federal oversight requirements in a more timely manner.</li> </ul>
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<b>Client Reference Information:</b>	<p><b>Reference Contacts:</b>          Name: Erin Slabonik          Title: Contract Manager, PA Department of Human Services          Address: 625 Forster Street, Harrisburg, PA 17120          Telephone: 717-787-1871          Email: <a href="mailto:erslabonik@state.pa.us">erslabonik@state.pa.us</a></p>
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<b>Name/Project Role of Proposed Project Team Members who Participated in this Project:</b>
N/A



## E-1.1.5 Subcontractor Information

### E-1.1.5 Subcontractor Information

Vendors must provide information on any Subcontractors proposed to work on this Project. Required information shall include but not be limited to:

- 1.1.5.1. Identification of the proposed Subcontractor and a description of the major business areas of the firm and their proposed role on the Project;
- 1.1.5.2. A high-level description of the Subcontractor's organization and staff size;
- 1.1.5.3. Discussion of the Subcontractor's experience with this type of Project;
- 1.1.5.4. Resumes of key personnel proposed to work on the Project; and
- 1.1.5.5. Two references from companies or organizations where they performed similar services (if requested by the State).

For this important project, Deloitte is partnering with Google.

Google's business is data. Google approaches problem solving from a new and innovate point of view, beginning with the data. Google's toolset crawls through vast, unstructured datasets mainly via automated machine learning systems to try to get ahead of likely audience behaviors.

Google is proposing three vantage points that use digital data to understand and engage citizens impacted by opioids:

- **Geographic Trending:** Opioid search predicate statistics can be captured across the full spectrum of New Hampshire's population. This data would provide an aggregate perspective and "big picture" trending information by zip code.
- **Audience Profiling:** This extends geographic trending by associating individual data (de-identified) known to Google for individuals using the search predicates that would be defined for DHHS opioid data collection. This includes data like demographics, location, device, etc. This is the same approach used by commercial entities to understand their audience (who is shopping for full sized SUV's and what influences purchasing behavior). The results will provide DHHS insight into the nature of the audience groups and behaviors specific to the groups related to opioids.
- **Journey Mapping:** The audience profiling data would be ingested into a machine learning model on the GCP using de-identified data from the All Payors Claims Database (APCD) to correlate audience data and healthcare outcome data to improve the understanding and ability to influence behavior.

Google's mission is to organize the world's information and make it universally accessible and useful. Within its 55,000 person complement, Google has a dedicated government practice, focused on developing and delivering solutions that support state governments. Resumes for the google personnel proposed to work on the Project can be reviewed in Section E-4 Non-Key Personnel Resumes.

Google also brings deep experience in helping organizations leverage data to drive decision and policy making. For example, Google partnered with the CDC to build an opioid awareness campaign that spurred action by consumers and enabled the public health team to break down the Search Lift results by geographic area, meaning they could see – even down to the county level – where the campaign was working and could optimize future ads.



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## Section VI: Qualifications of Key Vendor Staff

### Section VI: Qualifications of Key Vendor Staff

This Proposal section must be used to provide required information on key Vendor staff. Specific information to be provided is described in Appendix E: Standards for Describing Vendor Qualifications – Sections: E-2: Team Organization and Designation of Key Vendor Staff; E-3: Candidates for Project Manager; and E-4: Candidates for Key Vendor Staff Roles.

In addition, we bring an unmatched ability to quickly scale both in the data analytics and predictive capabilities focused domains based emergent needs on the project. Deloitte's extensive network of practitioners includes a global analytics practice of more than 5,000 individuals, a U.S.-based Delivery Center with more than 2,500 individuals, and a network of 3,000 Public Sector practitioners focused in Northeast state capitols. Combined with the analytics experience of our Google team members, we offer NH DHHS a team ready to drive insights from complex data sets.

Assembling the right team members with the appropriate blend of skills and experience is essential to maximizing the value of analytics for DHHS. Deloitte brings to NH DHHS an integrated team with the experience and skills needed to provide ongoing insights to the opioid epidemic across New Hampshire.

Our team for NH DHHS includes individuals with clinical backgrounds, data visualization skills, and health and human services data analytics knowledge.

The Deloitte team brings DHHS access to talented individuals with experience in data analysis, data analytics, data quality, statistics, data governance, UX and UI, data modeling, data visualizations, project management, training and data migration.

In addition to having the right team, in our experience, including our work with NH DHHS, the most successful projects have been the ones where the Deloitte and state teams have collaborated closely. Our team looks forward to forging a shoulder-to-shoulder, working relationship with NH DHHS staff.

### Section HIGHLIGHTS

#### How our proposed team will help achieve success

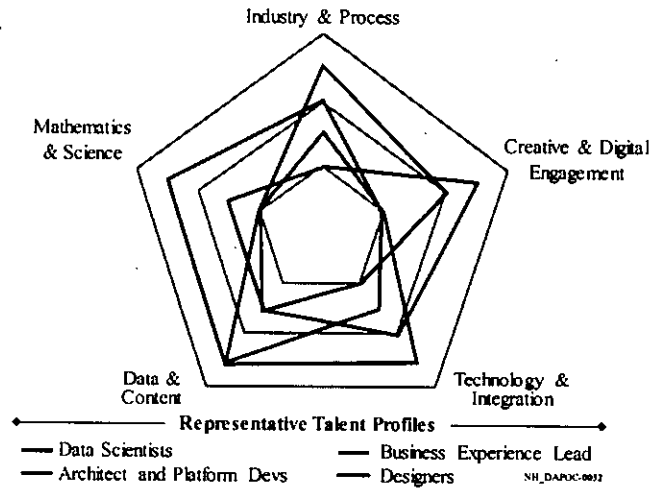
- Selected personnel meet or exceed all expected qualifications defined in the RFP.
- Our team brings specific HHS domain experience delivering solutions.
- Personnel will deliver this engagement working side-by-side with the State of New Hampshire.



The Deloitte team’s Starfish model, as shown in Figure VI-1, illustrates how we bring a multi-faceted skillset to give NH DHHS access to analytics capability spanning data modeling techniques, programming languages, and platforms.

Moreover, we have the ability to scale quickly in both the data analytics and predictive capabilities focused domains, based on the emergent needs on the project. Deloitte’s extensive network of practitioners includes a global analytics practice of more than 5,000 individuals, a U.S.-based Delivery Center with more than 2,500 individuals, and a network of 3,000 Public Sector practitioners focused in Northeast state capitols. Combined with the analytics experience of our Google team members, we offer NH DHHS a team-ready to drive insights from complex data sets.

This section includes the organizational chart showing our proposed team and resumes of the key personnel.



**Figure VI-111. Deloitte Starfish Model for Staffing Analytics Projects.**



## E-2 Team Organization and Designation of key Vendor Staff

### E-2 Team Organization and Designation of key Vendor Staff

Provide resumes of key personnel proposed to work on the Project and an organizational chart depicting the Vendor Project Team. This chart should identify key staff required from the Vendor, any Subcontractors, and the State. Define the responsibilities and length of assignment for each of the roles depicted in the organizational chart. Identify the positions that should be designated key staff. Ensure that designation of key Vendor staff includes subject matter experts in the following areas:

- Data Analysis
- Data Analytics
- Data Quality
- Statistics
- Data Governance
- User Experience (UX) and User Interface (UI)
- Data Modeling
- Data Visualizations
- Project Management
- Training
- Data Migration

A single team member may be identified to fulfill the experience requirement in multiple areas.

Our team, shown in the figure below, has been assembled to deliver results for the State, on-time and on-budget. As the prime vendor, Deloitte will be the primary point of contact for the state and will be responsible for the successful delivery of all project requirements.

The figure below illustrates the organizational chart for the proposed team:

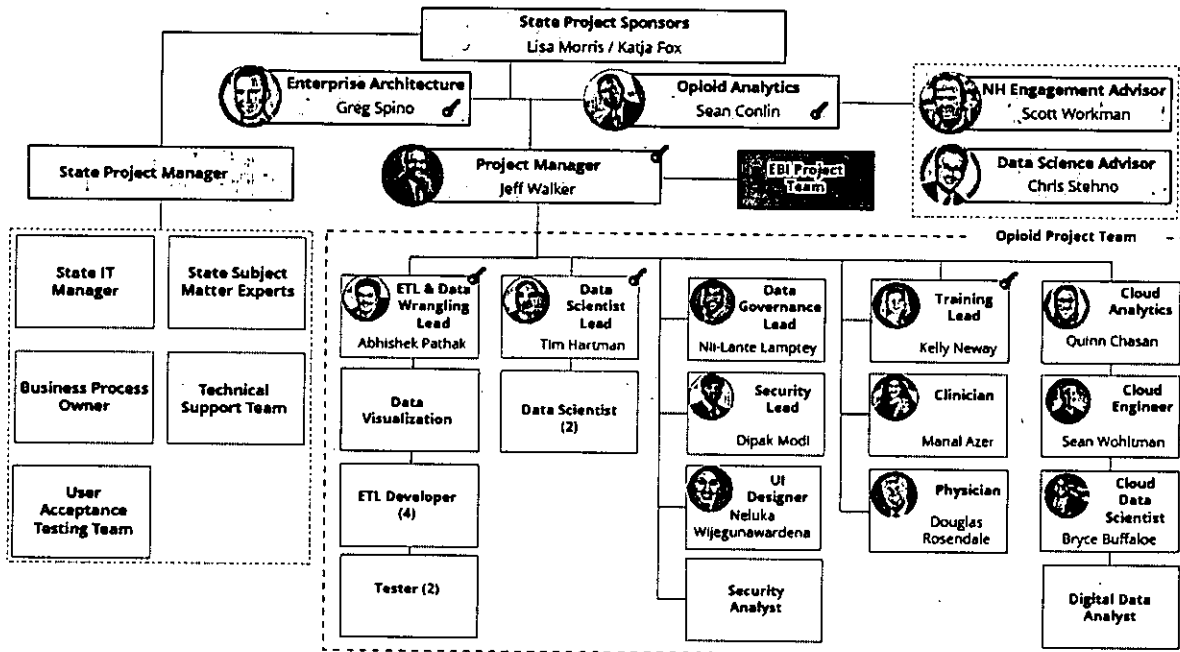


Figure VI-112. Proposed Organizational Chart.

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For positions on the organizational chart without named resources, individuals will be identified from Deloitte and Google’s deep pool of resources, based on the skills and timing of the project phase. The table below lists the roles and responsibilities table for key personnel. Responsibilities may be further refined during project initiation in collaboration with DHHS.

Resource	Role	Responsibility
Greg Spino	Enterprise Architecture Lead	As the Enterprise Architecture Lead, Greg aligns the proposed solution with existing NH DHHS infrastructure. He works closely with the project manager, Jeff, to manage and monitor key success metrics for the project.
Sean Conlin	Opioid Analytics Lead	As the Opioid Analytics Lead, Sean provides subject matter expertise on a range of analytics topics to the team. He works closely with Jeff to navigate questions, offer optimal solutions and provide direction on the business expectations from the solution.
Jeff Walker	Project Manager	As the Project Manager, Jeff provides day-to-day direction to team members regarding activities and timelines, manages project risks, and contributes to and reviews all deliverables prior to submission.
Abhishek Pathak	ETL & Data Wrangling Lead	As the ETL & Data Wrangling Lead, Abhishek leads the data-specific efforts of the project, employs his big data experience to lead data engineering, data manipulation, and data exploration and analysis together with the data science and project management team.
Tim Hartman	Data Science Lead	As the Data Science lead, Tim serves as a connection between data governance and visualization, providing expertise on the interpretation, utilization, and usage of the data at hand.
Kelly Neway	Training Lead	As the Training Lead, Kelly drives the training and change management efforts required along with solution implementation. She will collaborate with the project manager, Jeff, to build out a training schedule that meets the needs of the project stakeholders in a timely fashion.

*Figure VI-113. Roles and Responsibilities for Key Staff.*

## E-2.1 Proposed State Staff Resource Hours Worksheet

### E-2.1 State Staff Resource Worksheet

Append a completed State Staff Resource Worksheet to indicate resources expected of organization. Expected resources must not exceed those outlined in Appendix A: Background Information – Section A-4: State Project Team. The required format follows.

Deloitte will collaborate closely with the State Project Team during each phase of the project. Based on the requirements and tasks set forth in the RFP, we completed the following proposed State Staff Resource Hours Worksheet that lists expected resources and estimated time commitment of the State Project Team based on our preliminary Work Plan.

The Worksheet assumes part-time support for all expected resources. The Project Sponsor will be minimally involved to secure financial requests, address issues identified by the State Project Manager,

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Attachment 11  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

and assist in promoting the Project throughout the State. The State Project Manager and Business Process Owners will be more heavily engaged throughout all phases of the project, with the latter group involved in testing activities as well. The Technical Support Team will be more heavily involved in early planning and design activities, and their involvement will slowly taper off as the project reaches the Implementation and Close Out phases. If the State Project Manager or the subject matter experts are able to dedicate additional hours beyond what is estimated in this Worksheet, Deloitte will work with the State to adjust the timing and tasks within the project Work Plan to accommodate the additional opportunities for their prospective and input throughout critical activities of the project.

State Role	Initiation	Configuration	Implementation	Close Out	Total
Project Sponsor	10	10	10	10	40
State Project Manager	20	60	60	25	165
State IT Manager	5	20	40	5	70
Technical Support Team	20	65	30	60	175
Business Process Owners	160	440	440	160	1,200
User Acceptance Team	0	0	160	0	160
<b>State Total Hours</b>	<b>215</b>	<b>595</b>	<b>740</b>	<b>260</b>	<b>1,810</b>

*Figure VI-114. Proposed State Staff Resource Hours Worksheet.*



## E-3 Candidates for Project Manager

### E-3 Candidates for Project Manager

Although the State recognizes that staff availability is somewhat uncertain, qualifications of the Project Manager are particularly critical. Therefore, the State requires that the Project Manager be identified with some degree of certainty. For the Project Manager candidate, provide a resume not to exceed five (5) pages in length addressing the following:

- 3.1. The candidate's educational background;
- 3.2. An overview of the candidate's work history;
- 3.3. The candidate's project experience, including project type, project role and duration of the assignment;
- 3.4. Any significant certifications held by or honors awarded to the candidate; and
- 3.5. At least three (3) references, with contact information, that can address the candidate's performance on past projects.

Our analytics practice brings direct experience helping organizations leverage one of their most important assets – information. We have worked with numerous state, federal, and commercial clients to enhance efficiency, reduce cost, and improve programs through fact based, information-driven decision making. Our team has been carefully selected for DHHS based on their unique skill sets and background in analytics. To help meet DHHS goals, we have assembled an experienced leadership team to work collaboratively to deliver this project. Our leadership team possesses strong project delivery capabilities, demonstrated results, and a wide array of experience in working with state and federal health and human service programs.



Jeff  
Walker

**Jeff Walker**, our proposed **Project Manager**, has over 14 years of experience in designing and delivering data solutions within the Public Sector. Currently, Jeff is the project manager for the Enterprise Business Intelligence (EBI) project team with The State of New Hampshire DHHS and leads his team in Concord to build out the existing EBI platform to include installation of analytics tools, training, and designing and delivering data marts and analytics dashboards. He plans to extend his experience from the EBI project to successfully deliver this Opioids analytics project for DHHS. Jeff brings his experience from across the data analytics spectrum including building analytics strategies, data governance, and design and delivery of full Data Warehouse and Analytics platforms.

Resumes and the references are provided in the Key Personnel Resumes section as per the RFP requirement.



## E-4 Candidates for Key Vendor Staff Roles

### E-4 Candidates for key Vendor Staff Roles

Provide a resume not to exceed ten (10) pages for each key Vendor staff position on the Project Team. Each resume should address the following:

- 4.1. The individual's educational background;
- 4.2. An overview of the individual's work history;
- 4.3. The individual's project experience, including project type, project role and duration of the assignment;
- 4.4. Any significant certifications held by or honors awarded to the candidate; and
- 4.5. At least three (3) references, with contact information, that can address the individual's performance on past projects.

Our personnel bring strong predictive analytic capabilities along with a wide array of experience in health and human service programs. This section provides a detailed description of how the proposed team members meet the personnel requirements stipulated in the RFP and includes their resume with examples of previous experience, which qualifies them for this initiative.

### Enterprise Architecture Lead



 Greg Spino

**Greg Spino** has over 20 years of Public Sector experience designing and delivering complex solutions that focus on creating business value. He has focused on designing, building, and deploying large-scale human services solutions, including data warehouses and analytic platforms, business intelligence tools as well as common client and master data solution. Greg understands how to architect and design a flexible and extensible Enterprise Medicaid Data Warehouse that can evolve to meet the dynamics needs of a Medicaid environment. Greg understands the role of master data management and the need to create a single-source-of-truth that state leaders can trust to drive decisions in health care investments.

### Opioid Analytics Lead



 Sean Conlin

**Sean Conlin** has over 20 years of experience managing and executing a wide array of advanced analytic projects. Sean's most recent advanced analytics projects include a multi-agency Opioid analytics project for the State of Ohio, an Opioid analytics project for the Centers for Disease Control, and a network-based analysis solution for the Department of Homeland Security (DHS) which enables DHS to identify, predict, and prevent potential illicit. Sean is currently Deloitte's national Public Sector leader in Cognitive Analytics and Machine Learning.

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## ETL and Data Wrangling Lead



Abhishek  
Pathak



Abhishek Pathak has over 16 years of Information Technology experience in various global program/project management, consulting, delivery and client facing roles. Abhishek has led and successfully delivered many data analytics implementations for state Medicaid and commercial plans/payers. He is experienced in architecting enterprise technology solutions and integration platforms, business intelligence platforms, analytical dashboards, and big data solutions.

## Data Science Lead



Tim  
Hartman



Tim Hartman has extensive experience in healthcare analytics such as refining substance abuse predictive models, identifying vulnerable patients and segmenting patients into groups for different interventions. He recently worked at IBM Watson Healthcare building population healthcare analytic models. Tim has a Ph.D. in molecular physics from the University of Wisconsin and an MBA from the University of Chicago Booth Business School. He has spent the last five and a half years working on various projects requiring insights into complicated healthcare datasets.

## Training Lead



Kelly  
Neway



Kelly Neway has over 19 years of change management, business process reengineering (BPR), system testing, training, implementation and operational experience with government and commercial clients. She has deep experience with health and human services agencies. She has led large teams through complex transformations where she was responsible for organization transition planning, As-Is/To-Be and gap analyses, system requirements gathering/validation, test planning and execution, training development and delivery, knowledge transfer, implementation planning and support, and communications management.





## NH Engagement Advisor



Scott  
Workman

Scott Workman has over 24 years of IT advisory, project management, and health and human services experience. Of the 24 years, Scott has worked with NH DHHS for over 20 years and is currently serving as the project executive for New HEIGHTS. Scott assist states in the optimization of services to protect and care for the vulnerable and to promote health and independence. He offers innovative thinking, a deep understanding of technology, and insights into health and human services best practices. He has served as a project executive for projects ranging from Affordable Care Act implementation, LTSS modernization, Fee-for-Service to Managed Care transition, Expanded Medicaid, streamlined applications for MAGI, statewide document imaging, and content management implementations. His technology expertise includes UI/UX design, document capture; workflow management, forms design, configuration management, security architecture, and process management.

## Data Science Advisor



Chris  
Stehno

Chris Stehno has over 25 years of healthcare and insurance experience. He specializes in in advanced analytics and their business applications in the healthcare and life insurance industries. His work includes consulting on the convergence of lifestyle based behavioral data, and electronic medical records. He specializes in data mining, predictive modeling, AI, opioid analytics and behavioral nudging applications. Chris has developed business applications include augmenting underwriting and pricing decisions, understanding and predicting the motivation factors behind unhealthy behaviors and readiness to change triggers, and advanced analytics to predict substance use disorders, and enhancing risk-based sales, marketing and retention efforts. Chris pioneered the use of third party publicly available data for morbidity and mortality modeling. He has built models that reflect an individual's propensity to be at-risk for a disease, an individual's willingness to change lifestyle attributes which are contributing to the at-risk state or substance use disorders, and behavioral nudging applications to take advantage of this knowledge. Chris is a frequent speaker on alternative data sources, predictive modeling, advanced opioid analytics and behavior analytics and has been published and quoted in many publications including the *Society of Actuaries Healthwatch*, *The American Academy of Actuaries Contingencies*, *The Journal of Disease Management*, *Predictive Modeling News* and *The Wall Street Journal*.

Resumes and references are provided in the **Key Personnel Resumes** section as per the RFP requirement.



## Key Personnel Resumes

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# Gregory Spino

## Enterprise Architecture Lead

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### Overview of Work History

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Greg has extensive Public-Sector experience designing and delivering complex solutions that focus on creating business value. He has focused on designing, building and deploying large-scale human services solutions, including Data Warehouses and Analytic platforms, Business Intelligence tools as well as common client and master data solution. Greg has deep experience and understanding of how to architect and design a flexible and extensible Enterprise Medicaid Data Warehouse that can evolve to meet the dynamics needs of a Medicaid environment. Greg understands the role of master data management and need to create a single-source-of-truth that the business can trust. Additionally, Greg has worked with several states on their All Payers Claims Database implementation and planning which required integration from dozens of payers and of disparate data sources.

His career has been focused on leveraging data to drive organizational change and support new business initiatives. He has experience with cross agency performance management helping clients track key performance metrics and monitor those metrics against outcomes. He has overseen and directed several Medicaid focused initiatives; building Medical Homes Platforms to support providers, creating bundled payment methodologies to support payment reform, implementing automated Medicaid forecast methodology to support the Medicaid budget process, implementing an approach to intake all required data and manage the DUALs population. All of these efforts have been focused on leveraging data and technology to support the business vision.



- 20+ years of extensive Public Sector practice experience delivering complex solutions that focus on creating business value
- Focus on creating large scale Data Warehouse and Analytic platform solutions
- Understands the role of master data management and need to create a single-source-of-truth that the business can trust

### Educational Background

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Boston University

Bachelor of Arts in Economics

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**Relevant Project Experience**

Project Name & Type	Duration & Role
<p><b>Wyoming Department of Health</b></p> <p><u>Type:</u> Enterprise data warehouse implementation</p>	<p><u>Duration:</u> 9 months</p> <p><u>Role:</u> Oversaw the contract management activities and work with the client to align the project goals and objectives. Worked with the client to define the vision for the enterprise data warehouse. Managed the team of analyst and developers to design, build and test the solution.</p>
<p><b>Rhode Island Healthcare Exchange (HSRI)</b></p> <p><u>Type:</u> Enterprise analytics strategy</p>	<p><u>Duration:</u> 12 months</p> <p><u>Role:</u> Worked with the client to design the enterprise analytics strategy and create a roadmap that would extend beyond the current project. Led the design of the data marts and aligned them with specific business needs as prioritized by the client. Managed the process to evaluate and select the appropriate business intelligence tool suite. Oversaw the requirements process for the data marts, dashboards and reporting functionality. Engaged the cross-agency business owners, Medicaid, Department of Public Health and the Rhode Island Quality Institute to ensure alignment and support for their needs.</p>
<p><b>Metropolitan Consulting Corporation</b></p> <p><u>Type:</u> Enterprise data warehouse implementation</p>	<p><u>Duration:</u> 12 years</p> <p><u>Role:</u> Built and maintained a 20+ Terabyte data warehouse that includes claims history and eligibility information for about 1.8 million members, covering over 12 years of claims history. Led the effort to achieve federal certification for the Decision Support System (DSS) components during overall Medicaid Management Information System (MMIS) deployment. Collaborated with business users, analytic teams and EOHHS IT to develop the single business intelligence platform serving over 1,500 users across 30 business units and agencies. Managed the multi-year, \$35+ million project budget, Drafted Bond Briefs and Advance Planning Document (APD) for each project to secure Federal Government/ CMS funding. Worked closely with business users in all major EOHHS projects from project inception to ensure that their reporting and analytic requirements are met. Provided EOHHS with an Enterprise Reporting platform to manage reporting needs for all EOHHS-developed applications. Drafted RFPs, managed vendor relationships, and managed contract deliverables. Developed several analytic applications including EHSResults, which was a Governor’s initiative for performance management and transparency in government</p>
<p><b>Rhode Island Executive Office of</b></p>	<p><u>Duration:</u> 41 months</p> <p><u>Role:</u></p>

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**Relevant Project Experience**

<p><b>Health and Human Services</b></p> <p><b>Type:</b>                  Technical analytical architecture design</p>	<p>Led the effort to engage several State Agencies in the Business Requirements process to ensure the APCD supported their current and future analytic needs. Developed a proposed future state architecture to support the overall project vision and business needs. Assisted the State in the drafting of the RFPs for vendor selection and supported the entire vendor selection process. Provided technical oversight and guidance to ensure the project delivered a solid technical foundation while meeting the delivery timeline. Engaged with the Analytic vendor to ensure the delivery of all analytic products aligned with business user needs.</p>
<p><b>Rhode Island Healthcare Exchange (HSRI)</b></p> <p><b>Type:</b>                  Reporting and analytic solution strategy</p>	<p><b>Duration:</b> 15 months</p> <p><b>Role:</b>                  Led the engagement team to gather an understand of the current state capabilities of the organization. Led JAD session to define business and technical requirements. Evaluated alternate approaches to deliver analytics, both database and business intelligence solutions. Oversaw the delivery of reporting and analytic environment to support current needs while positioning the client to migrate to a more robust platform. Discussed transition plan and strategy with executive leadership on how to move forward with the next phase of the reporting and analytic solution.</p>
<p><b>Maryland Healthcare Quality Commission</b></p> <p><b>Type:</b> Data model designing</p>	<p><b>Duration:</b> 15 months</p> <p><b>Role:</b>                  Worked closely with the technical leads to ensure the solution aligned with the business needs. Oversaw the data model design to ensure the model supported its primary function which was rapid query response to support analytics and reporting. Provided guidance and direction for the implementation of the new business intelligence environment and evaluated various tools to ensure alignment with business needs. Led the effort to implement a data quality and reconciliation program by working with the client and the State’s Division of Insurance to create a formal process.</p>

**Certifications Held or Honors Awarded**

- Chartered Financial Analyst (CFA)

**References**

<p><b>Alda Rego</b>                  Assistant Secretary for Administration and Finance                  Massachusetts Executive Office of Health and Human Services  <a href="mailto:alda.rego@massmail.state.ma.us">alda.rego@massmail.state.ma.us</a></p>	<p><b>Terry Dougherty</b>                  Executive Director, Health Systems Transformation                  University of Massachusetts Medical School  <a href="mailto:terry.dougherty@umassmed.edu">terry.dougherty@umassmed.edu</a></p>	<p><b>Melissa Pullin</b>                  Chief of Staff, Department of Transitional Assistance, MA                  Executive Office of Health and Human Services  <a href="mailto:mjpullin@gmail.com">mjpullin@gmail.com</a></p>
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# Sean Conlin

## Opioid Analytics Lead

### Overview of Work History

Sean has significant experience managing and executing a wide array of advanced analytic projects. Sean’s most recent advanced analytics projects include implementing a Mission Graph solution for the Department of Homeland Security (DHS) which enables DHS to identify, predict, and prevent potential illicit crime and/or terrorist attacks and supporting TSA build system-of-system models that have driven more than 150 critical security-related operational decisions. In addition, Sean has helped implement a number of advanced analytics solutions for federal clients including the Center for Medicare and Medicaid Services (CMS), the State of Texas, Immigration and Customs Enforcement, the Center for Disease Control (CDC) and the Transportation and Security Administration (TSA). Sean brings experience delivering all phases of advanced analytics life cycle from initial planning and strategy development through solution implementation. Sean is viewed a trusted advisor to his clients in analytics and has helped numerous organizations grow and expand their analytics footprint



- 20+ years of experience in leading mission-focused cognitive and analytics transformation projects
- Viewed as a trusted advisor to his client on helping improve strategic decision making through advanced innovative analytical capabilities
- Deloitte’s national leader in Cognitive Analytics and Machine Learning

### Educational Background

University of Michigan	Bachelor of Science in Computer Engineering
University of Michigan	Bachelor of Science in Mechanical Engineering
Northwestern University – McCormick College of Engineering	Master of Science in Manufacturing Engineering
Northwestern University – Kellogg School of Management	Master of Business Administration



**Relevant Project Experience**

Project Name & Type	Duration & Role
Department of State  <b>Type: Data Transformation Project)</b>	<b>Duration:</b> 18 months  <b>Role:</b> Served as the project manager for the Trafficking-In-Persons (J/TIP) office. The J/TIP office publishes the definitive annual report for country level assessments of performance on addressing human trafficking. The project focused on the development of a python-based LDA model with a java script front end that was used to read an unlimited amount of text and automatically organize it into 20 Minimum Standard “buckets” with relevance scoring applied to every document. This resulted in a significant increase in the volume of information an analyst could take into consideration, dramatically improving efficiency and the quality of the J/TIP report.
Transportation Security Administration  <b>Type: Predictive analytics and data visualizations</b>	<b>Duration:</b> 3 years  Served as the project manager for our TSA initiative. Similar to the needs of DHS, Sean’s focus at TSA was conducting a series of data analysis, data visualization, and predictive analytics capabilities to better understanding their TSA Pre✓® Program. Some of the key facts TSA was interested in analyzing focused on enrollment demographics, forecasting volume, client complaints, expanding their target audience, and driving increased enrollment. As part of this initiative a series of dashboards were implemented to visualize key model outcomes and empower TSA employees to analyze data on a near real time basis.
Transportation Security Administration  <b>Type: Risk-based modelling</b>	<b>Duration:</b> 3 years  Directly managed and led Deloitte’s OSO (Office of Security Operations) Cargo Inspection initiative, which focused on developing the first ever risk-based model and algorithm designed to flag suspicious cargo or packages for review and inspection. During the initial month after the risk algorithm was implemented OSO increased seizure of illicit cargo by nearly 20% nationally while at the same time reducing overall searches by nearly 7%.

**Certifications Held or Honors Awarded**

- N/A

**References**

Dr. Mark Livingston  
 Deputy Undersecretary of  
 Security, U.S. Navy  
[mark.a.livingston1@navy.mil](mailto:mark.a.livingston1@navy.mil)

John Halinski  
 CEO S&R Inc (former Deputy  
 Administrator of TSA)  
[jwhalinski@hotmail.com](mailto:jwhalinski@hotmail.com)

Kyle Ballard  
 Senior Coordinator, Office to  
 Monitor and Combat  
 Trafficking in Persons, U.S.  
 Department of State  
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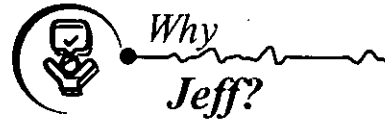
# Jeff Walker

## Project Manager

### Overview of Work History

Jeff, our proposed Project Manager, has over 14 years of experience in designing and delivering data related solutions within the Public-Sector industry. Currently, Jeff is the project manager for the Enterprise Business Intelligence (EBI) project team with The State of New Hampshire DHHS and leads his team in Concord to build out the existing EBI platform to include installation of analytics tools, training, and designing and delivering data marts and analytics dashboards. He plans to extend his experience from the EBI project and direct the team to successfully deliver the project.

Jeff has focused across the data analytics spectrum to include building analytics strategies, data governance, and design and delivery of full Data Warehouse and Analytics platforms.



- 14+ years of experience with delivering data related solutions
- Brings experiences from current PM role in New Hampshire
- Hands-on experience across the data analytics spectrum

### Educational Background

Prarie View A&M University

Bachelor of Business Administration in Management  
 Information Systems

### Relévant Project Experience

Project Name & Type	Duration & Role
New Hampshire Department of Health and Human Services  <b>Type:</b> HHS Analytics Platform	<b>Duration:</b> 7 months  <b>Role:</b> Leading the effort to collaborate with the DHHS business users and the DoIT team to perform platform and tool selection and installation of the EBI platform. Working with the DHHS business users to incorporate multiple data sources into the EBI platform and design and develop dashboards to allow for performance monitoring across multiple programs. Managing the team responsible for training of the Informatica Powercenter and Informatica Data Quality tools as well as Tableau Desktop, Tableau Prep, and Tableau Server for the DHHS organization.
Ohio Department of	<b>Duration:</b> 3 months  <b>Role:</b>

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<p><b>Administration Services</b></p> <p><b>Type: Enterprise Data Governance and Master Data Management</b></p>	<p>Oversaw a team responsible for gathering Master Data Management (MDM) requirements to master individuals across the Medicaid agency and Ohio Benefits Management system to create a single identifier and master demographics across the State. Led the Data Governance thread responsible for creating a data governance strategy across the multiple agencies to create an Enterprise governance structure for mastering individuals and providers.</p>
<p><b>Rhode Island Department of Health and Human Services</b></p> <p><b>Type: HHS Analytics Data Mart and Dashboards</b></p>	<p><b>Duration:</b> 66 months</p> <p><b>Role:</b>        Managed a Data Analytics effort to design data marts, combine all reconciliation data sources, and build Tableau Dashboards to support both executives and data analyst for the Health Insurance Exchange (HIX). Led a team responsible for data conversion activities (to include capturing control points, detailed validation, and exception reporting). Led the design and development of 1095 reporting to both CMS and the IRS. Managed the delivery of an enterprise reconciliation to facilitate reconciliation efforts between multiple data targets to include a Financial Management System, and 4 major Insurance Carriers. Architected data extracts to be provided out of the Integrated Eligibility platform into the States Medicaid data warehouse</p>

***Certifications Held or Honors Awarded***

- Oracle Endeca Server 2.3
- Informatica Data Quality 8.6
- Teradata DecisionCast End User Training
- Informatica Powercenter 8.0

***References***

<p><b>Ben Shaffer</b>        Chief Operations Officer        DHS, RI Executive        Office of Health and Human Services  <a href="mailto:Benjamin.Shaffer@ohhs.ri.gov">Benjamin.Shaffer@ohhs.ri.gov</a></p>	<p><b>Amy Black</b>        Data and Reporting Manager        Department of Administration,        Health Source Rhode Island  <a href="mailto:amy.black@jsi.com">amy.black@jsi.com</a></p>	<p><b>Elena Nicolella</b>        Executive Director,        New England States Consortium Systems Organization (NESCSO)  <a href="mailto:elena.nicolella@nescso.org">elena.nicolella@nescso.org</a></p>	<p><b>Andrew Chalsma</b>        Director of Data Analytics and Reporting        Quality Assurance and Improvement, NH DHHS  <a href="mailto:andrew.chalsma@dhhs.nh.gov">andrew.chalsma@dhhs.nh.gov</a></p>
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# Abhishek Pathak

## ETL & Data Wrangling Lead

### Overview of Work History

Abhishek has over 16 years of Information Technology experience. As a BI and Analytics practitioner, he has led engagements with the focus on system integration, data strategy, business and IT alignment, business value roadmaps, data integration, big data and analytics strategy, and enterprise implementations.

By using his global and cross-industry experience with a strong business acumen and planning and execution skills, Abhishek has led and successfully delivered many data analytics implementations across healthcare (state Medicaid and commercial plans/payers), banking and financial, and travel and hospitality industries.

He has hands-on experience with data integration, business intelligence, configuration management, quality assurance, and project management tools. He is experienced in providing technical leadership and coordination of software delivery activities including overall requirements analysis, systems analysis, design, integration, quality assurance, implementation and production support.



### Why Abhishek?

- 16+ years of Information Technology experience across multiple BI and Analytics activities
- Hands-on experience delivering large scale Enterprise Medicaid Systems and Decision Support Systems

### Educational Background

Georgia Institute of Technology

Master of Business Administration

Government Engineering College  
(Bhopal, India)

Bachelor of Engineering in Computer Science

### Relevant Project Experience

Project Name & Type	Duration & Role
<p><b>Louisiana State Medicaid System Integration</b></p> <p><b>Type:</b> Data Repository and Reporting Delivery</p>	<p><b>Duration:</b> 7 months</p> <p><b>Role:</b>                      Led the design and development of data repository and reporting work for the State of Louisiana to integrate the identified Provider Management module with the state's enterprise architecture (EA). Led the delivery of a centralized data repository that enables the State to consolidate provider and future modules' operational data over time to decrease reliance on individual module vendor's data storage. Designed the wireframes and built Splunk dashboards to monitor the services and database operations performance during the integration and data exchange. Led the</p>

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	requirement and entire SDLC process to build data repository, dashboards and analytical reporting.
<p><b>Health Plan</b></p> <p><b>Type:</b> Data Repository Implementation</p>	<p><b>Duration:</b> 8 months</p> <p><b>Role:</b>                  Led the strategic data lake implementation program within the finance organization. Assumed end-to-end program accountability to provide cost-effective and high value solutions to build a single unified data repository in Hadoop to support all the financial data reporting and analytics needs to support strategic and compliance reporting and data analysis. Led 30 person team, which included architect (Data/Integration), project managers, developers, business analyst, and BI testers to support end to end implementation including planning, requirement, development, quality assurance, scope management, risk assessment, budget management and resource utilization. Worked with the business and IT teams to develop the Agile delivery plan for the key functionality and data. He led the requirement sessions, design and development of data ingestion, integration, conformance and enrichment layers by leveraging big data technologies and frameworks within the Hadoop ecosystem (Fig, Hive, Sqoop) and IBM Big Integrate. Liaised &amp; coordinated with different technology and service vendors to support the implementation. Worked with different business teams and functional SMEs to define the common entities, attributes and their inter-relation. Responsible for developing and implementing recovery plans for off-schedule and unanticipated occurrences. Also responsible for preparing periodic management and customer reports and presentations. Tracked project against its schedule, budget and scope and periodic reporting status to IT and business leadership team.</p>
<p><b>State MMIS and PBM system</b></p> <p><b>Type:</b> Data Management and BI Strategy</p>	<p><b>Duration:</b> 7+ years</p> <p><b>Role:</b>                  Led the data management and business intelligence teams that provided data and analytics solutions and technical/architectural direction for several multi-million-dollar data enabled projects including MMIS, and Pharmacy Benefit Management (PBM) implementations and O&amp;M support. Led the data management strategy (Data Conversion and Interfaces) and implementation plans by working with the State, functional SMEs and application &amp; reporting teams. Designed and delivered large and complex Enterprise Medicaid Systems and Decision Support System for 3 States – NH, ND and AK in less than 18 months by leading the entire SDLC. Engaged with other project stakeholders through the entire SDLC to ensure that solution delivery is on-time, on-budget, on-scope and on-quality. Developed the reference architecture and reusable solution frameworks which reduced the data ingestion and transformation effort by 30% for a state’s implementation. Helped in streamlining the release management process which resulted in 80% reduction in deployment/environment related defects and release issues by improving the overall quality of the deliverables.</p>

***Certifications Held or Honors Awarded***

- Project Management Professional (PMP)
- Informatica



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*References*

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<b>Uma Bhusari</b> Data Management Lead, NH MMIS <a href="mailto:Uma.Bhusari@dhhs.nh.gov">Uma.Bhusari@dhhs.nh.gov</a>	<b>Rhonda Harris</b> Data Management and BI Lead, ND MMIS <a href="mailto:Ronda.Harris@Cognosante.com">Ronda.Harris@Cognosante.com</a>	<b>Tim Box</b> Data and Reporting Lead, LA PM SI (Deloitte) <a href="mailto:Tbox@Deloitte.com">Tbox@Deloitte.com</a>
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# Tim Hartman

## Data Scientist Lead

### Overview of Work History

Tim has extensive experience in healthcare analytics having recently worked at IBM Watson Healthcare building population healthcare analytic models. Tim has a Ph.D. in molecular physics from the University of Wisconsin and an MBA from the University of Chicago Booth Business School. He has spent the last five and a half years working on various projects requiring insights into complicated healthcare datasets. He has worked in population health analytics and developed methodology for identifying vulnerable patients and segmenting them into groups for different interventions, recently working to build and refine substance abuse predictive models. At a leading payer, he worked in payment integrity, using predictive analytics to identify fraud, waste and abuse to identify and rank provider risk. Recently Tim has worked with clients on projects projecting budget impacts, related to program changes, driving medical and pharmacy costs and identifying a range of possible alternatives to contain costs. In addition to having expertise with advanced statistical methodology (factor analysis, cluster analysis, dimension reduction, machine learning, etc.) and statistical/data manipulation tools (R, SAS, SQL, Hadoop, Python, Excel, etc.) Tim is experienced in presenting results to internal and external clients. He has a strong knowledge of the major issues facing healthcare today and is excited to take on roles that use both strategic and technical skills, in line with his education which includes both a highly quantitative doctorate and a strategic and management-oriented MBA.



### Why Tim?

- Extensive experience in healthcare analytics
- Hands-on experience building predictive analytics to identify fraud, waste and abuse, and rank provider risk
- Worked on IBM Watson Healthcare building population healthcare analytics models

### Educational Background

University of Chicago Booth School of Business	Master of Business Administration in Strategic Management and Analytic Management
University of Wisconsin	Doctor of Philosophy in Molecular Physics
Brown University	Master of Science in Physics
University of Illinois	Bachelor of Science in Mathematics and Engineering Physics

### Relevant Project Experience

Project Name & Type	Duration & Role

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<p><b>Population Health Analytics Program Development</b></p> <p><b>Type: Health plan analytics implementation</b></p>	<p><b>Duration:</b> 20 months</p> <p><b>Role:</b>                  Technical team lead in developing programs for health plans needing sophisticated methodology for identifying patients likely to be “vulnerable” (high-spend) in the next calendar year. Designed and implemented methodology based on discussions with subject matter experts (SMEs) who helped identify latent factors contributing to high member spend (i.e. non-adherence to medication, safety issues, susceptibility/demographics). The end result was a program that could be sold to client health plans that would a) identify a list of likely vulnerable patients from their population and b) recommend a relevant intervention to prevent the potential high-spend from materializing.</p>
<p><b>Payment Integrity</b></p> <p><b>Type: Advanced statistical analytics implementation</b></p>	<p><b>Duration:</b> 18 months</p> <p><b>Role:</b>                  Technical team lead in developing advanced methodologies for identifying overpaid healthcare (medical and pharmaceutical) claims before they were paid out (i.e. in “pre-pay”). Used advanced statistical techniques such as machine learning (random forest, GBM, GLM, etc.) to model likelihood of overpayment. Interacted heavily with SMEs in various subject areas to better understand the root causes of claim overpayment and use this knowledge to create model variables to improve predictive capability. Focused on enhancing usage of member data as complexity of member claim history correlates with probability of claim overpayment.</p>
<p><b>Payer Analytics</b></p> <p><b>Type: Predictive analytics implementation</b></p>	<p><b>Duration:</b> 15 months</p> <p><b>Role:</b>                  Team lead for developing predictive analytics capabilities for a subdivision of a large professional services firm using structured claims data (commercial, Medicare, Medicaid). Led projects for external clients throughout the project life cycle, from writing project proposals, to implementing the modelling, to building presentation decks for the final deliverable. Projects included cost estimation for employer health plans and estimation of cost savings due to baby boomer retirement from the employer’s workforce and possible replacement by younger workers. Led internal development of analysts/consultants in the usage of advanced analytics software.</p>

***Certifications Held or Honors Awarded***

- Professional, Academy for Healthcare Management (PAHM) certification by America’s Health Insurance Plans (AHIP)
- Fellow, Academy for Healthcare Management (FAHM) certification by America’s Health Insurance Plans (AHIP)



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*References*

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**Marinka Natale**  
Senior Director, Payment  
Integrity, Aetna (Formerly)  
[Marinka.Natale@gmail.com](mailto:Marinka.Natale@gmail.com)

**Karen Spratley**  
Senior Director, Payment  
Integrity, Aetna  
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**Greg Spino**  
Consulting Managing Director,  
GPS HST Core, Deloitte  
[gspino@deloitte.com](mailto:gspino@deloitte.com)

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# Kelly Neway

## Training Lead

### Overview of Work History

Kelly is a Senior Solution Manager specializing in Human Capital – Organization Transformation (OT), Technology Adoption. She has 19 years of change management, business process reengineering (BPR), system testing, training, implementation and operational experience with Government and Commercial clients. She has led large teams through complex transformations where she was responsible for organization transition planning, As-Is/To-Be and gap analyses, system requirements gathering/validation, test planning and execution, training development and delivery, knowledge transfer, implementation planning and support, and communications management.



### Why Kelly?

- 19+ years of change management, business process reengineering (BPR) and training experience
- Hands-on experience leading large teams through complex training implementations

### Educational Background

Pennsylvania State University

Bachelor of Science in Management and Human Resources

### Relevant Project Experience

Project Name & Type	Duration & Role
<b>Public Sector Project</b>  <b>Type: Process and training delivery</b>	<b>Duration:</b> 13 months  <b>Role:</b> Responsible for hiring and onboarding three waves of subcontractors for a total of 60 resources. Developed and delivered process and policy training followed by hands-on computer-based system training for three weeks for each wave of subcontractors. Developed and delivered three proficiency assessments to gauge knowledge, retention, and overall readiness prior to deployment to a production environment. Established operational procedures to reduce application backlog through daily assignment tracking, daily/weekly throughput targets, individual/team performance metrics, and overall Q&A support. Reduced the application backlog by 80% from 14,000 to 3,000 within 5 months. Developed and distributed daily and weekly executive status reports to communicate progress.
<b>Organization Transformation</b>	<b>Duration:</b> 38 months

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Attachment 31  
**STATE OF NEW HAMPSHIRE – Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA**

<p>–  <b>Communications Center of Excellence (Deloitte)</b></p> <p><b>Type:</b>  <b>Organizational Transformation</b></p>	<p><b>Role:</b>  Responsible for establishing and delivering USDC-based projects for the Human Capital OT practice (110 staff) in Mechanicsburg, PA and Orlando, FL. Worked closely with Deloitte onsite team leadership to manage approximately 60 concurrent projects for Government and Commercial sectors; project teams include various levels and range in size from one to ten staff. Focus areas included change management, training design/development/delivery, end user support, communications, and multimedia services. Additional responsibilities included oversight of the OT Communications Center of Excellence (Comms CoE) with 12 resources (48 projects completed, 12 projects currently) and the Actuarial &amp; Insurance Solutions practice with 8 resources.</p>
<p><b>State Government Client</b></p> <p><b>Type: Business Process Reengineering</b></p>	<p><b>Duration:</b> 60 months</p> <p><b>Role:</b>  Assisted state government client with business process reengineering (BPR), application design, development, testing, training, knowledge transfer, communications, and implementation of a custom application, which is used to track integrated case management and service delivery for injured workers. Led the business process reengineering effort consisting of 13 staff through the identification and documentation of As-Is and To-Be business processes, gap analysis, recommendations, and requirements validation. Activities included: development and facilitation of executive visioning session and project vision statement, planning, coordination, and communication of nearly 100 client agency sessions and focus group sessions within four months, development of 226 As-Is and 121 To-Be process flows using IndustryPrint, identification of 240 gaps and recommendations, analysis and documentation of 1600 business and functional requirements, and creation and submission of four deliverables, which provide the foundation for system design and development activities.</p>
<p><b>State Government Client</b></p> <p><b>Type: Business Process Reengineering</b></p>	<p><b>Duration:</b> 53 months</p> <p><b>Role:</b>  Assisted state government client with business process reengineering (BRP), application design, development, testing, training, knowledge transfer, communications, and implementation of a custom application to track integrated case management and service delivery to more than 1.4 million citizens. Coordinated the evaluation and selection of the team’s learning management system (LMS) and authoring tool. With a team of 30 staff and trainers, managed the following activities: training logistics for more than 30 facilities across the state, selection, management, and coordination of 26 trainers, training material development for 21 courses, statewide training delivery to 5,000 end users through 300 course offerings, and post-implementation support with more than 200 site visits.</p>
<p><b>State Government Client – Major</b></p>	<p><b>Duration:</b> 7 months</p> <p><b>Role:</b></p>

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<p><b>Medicaid System Enhancement</b></p> <p><b>Type: Training Liaison</b></p>	<p>Assisted state government client with application design, development, testing, training, and implementation of a major Medicaid eligibility system enhancement. Managed and coordinated implementation related activities such as workflow process analysis, system acceptance testing (SAT), end user training, and implementation planning and support. Responsible for assisting the client training organization with: evaluation and recommendation of pilot and statewide training approach and plans, development and modification of client training materials for 7,000 end users, and coordination and communication of updates regarding the training environment.</p>
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***Certifications Held or Honors Awarded***

N/A

***References***

<p><b>Deb Ferreira</b>          Human Capital OT Managing Director and USDC HC Offering Lead          Deloitte Consulting  <a href="mailto:deferreira@deloitte.com">deferreira@deloitte.com</a></p>	<p><b>Bryan Reed</b>          Commonwealth of Pennsylvania, Department of Labor &amp; Industry (DLI), Office of Information Technology (WCAIS Project Manager)  <a href="mailto:brreed@pa.gov">brreed@pa.gov</a></p>	<p><b>Ben Shaffer</b>          Chief Operations Officer          DHS, RI Executive Office of Health and Human Services  <a href="mailto:Benjamin.Shaffer@ohhs.ri.gov">Benjamin.Shaffer@ohhs.ri.gov</a></p>
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**Non-Key Personnel Resumes**



**Nii-Lante Lamptey**  
 Data Governance Lead

**Overview of Work History**

Nii-Lante has 13+ years of full software development life cycle and consulting experience and has been a practitioner in the firm’s Analytics and Information Management service line for +10 years. His Deloitte Public Sector experience includes structured and unstructured data management (enterprise content management, metadata management, master data management), data integration/data warehousing (DW), businesses intelligence, analytics, data visualization, service-oriented architecture and CRM. In addition, Nii-Lante has extensive experience in leadership roles including as a functional (e.g. requirements gathering, testing, communications/adoption) and technical lead, and program manager. Nii-Lante also has over 2 ½ (30 months) years of commercial experience in the Financial Services Industry. This includes major leadership and implementation roles in ETL architecture/development (Ab Initio), testing, project management and planning.

**Educational Background**

University of Virginia	Executive Master of Business Administration
University of Virginia	Bachelor of Science in Computer Engineering

**Relevant Project Experience**

Project Name & Type	Duration & Role
<p><b>Federal Government client</b></p> <p><b>Type:</b> Enterprise Data Management and Modernization Initiatives</p>	<p><b>Duration:</b> 51 months</p> <p><b>Role:</b> Led a portfolio of four projects (under a \$120M contract) on the delivery of master data management, metadata management and data visualization projects, providing senior vice presidents executive-level insight into operational performance, loan portfolio (\$2T) risk analysis, and financial institution performance and management. Managed three teams of 10+ personnel through the requirements gathering, design, development, and testing activities. Served as the day-to-day manager and managing client relationships. Led the implementation and enhancements efforts for a data mart/reporting initiative (using Business Objects) to provide clients with self-service and access to data via the web/desktops. Led a project and portfolio management implementation and process improvement recommendation for the client’s modernization initiatives to improve integrated program delivery, risk mitigation and visibility into project performance in a multi-contractor, multi-vendor environment.</p>

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<p><b>Government agency</b></p> <p><u>Type:</u> SharePoint 2010 Internet Implementation and Enhancements</p>	<p><u>Duration:</u> 13 months</p> <p><u>Role:</u> Led 10+ practitioners in the redesign and overall delivery of a highly visible, Internet facing portal for government agency and its stakeholders, issuers and investors. This included driving the development, testing and deployment SDLC activities for the team. Served as the day-to-day manager interfacing with the client and platform teams on a regular basis to support the implementation of the Web site through the full SDLC. Owned and led the development of core technical deliverables such as the Design Document, Implementation Plan, Test Plan and User's Guide. Managed project financials and budget for the project and managed these items in accordance to the project schedule. Led the status reporting, requirements refinement, and development walkthroughs of the site with the client. Led the operation and maintenance activities and implementation of the 30+ enhancements (e.g. advanced searching, user experience improvements) through the full development life cycle for deployment to the public facing Web site.</p>
<p><b>Civilian Housing Agency</b></p> <p><u>Type:</u> Asset Management Systems Enhancements/ Implementation</p>	<p><u>Duration:</u> 24 months</p> <p><u>Role:</u> Led 5 practitioners in the delivery of three key Salesforce/CipherCloud Integration projects for a civilian housing agency and the implementation of enhancements to Salesforce modules including HR, workflow and decision management. Managed the requirements gathering, design, development, testing and deployment activities for the team. Served as the day-to-day manager interfacing with the client and platform teams on a regular basis to support the implementation of issuer application portal. Managed project financials and budget for the project and managed these items in accordance to the project schedule. Coordinated infrastructure readiness activities with network, security, third-party and platform teams. Led status reporting, requirements refinement, and development walkthroughs of the solution with the client.</p>
<p><b>Civilian Agency</b></p> <p><u>Type:</u> Loan Servicing Data Repository Implementation</p>	<p><u>Duration:</u> 8 months</p> <p><u>Role:</u> Led 4 practitioners in the execution of the medium sized data integration project for a civilian agency's budget and economic modeling division. This solution allowed the agency to gain greater insight into its data and provide predictive capabilities to the portfolio per the GAO's recommendations. Managed the requirements gathering, design, development, testing and deployment activities for the team. Served as the day-to-day manager interfacing with the client and platform teams on a regular-basis to support the implementation through the full SDLC. Managed project financials and budget for the project and managed these items in accordance to the project schedule. Coordinated infrastructure readiness activities with the network and platform teams. Led status reporting, requirements refinement, and development walkthroughs of the solution with the client.</p>

***Certifications Held or Honors Awarded***



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- PMP training, PMI Member
  - Actively pursuing Harvard Publishing Management Certificates
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***References***

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**Derick Masengale**  
Managing Director  
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# Dipak Modi

## Security Lead

### Overview of Work History

A seasoned cybersecurity professional with over 13 years of professional services and consulting experience, Dipak brings strong subject matter experience in application, infrastructure & cloud security.

Dipak has extensive experience focused on design, architecture, implementation and management of enterprise solutions with a focus on Cybersecurity, has a deep understanding of security and privacy controls across a wide spectrum of regulations and guidelines, including but not limited to NIST 800-53, HIPAA, IRS 1075, MARS-E 2.0.

He brings experience in Identity, Credentials and Access Management (ICAM) and has worked on building several ICAM & cybersecurity programs across industries, using an array of industry leading products from vendors like IBM, Oracle, Sailpoint, HPE and CA.

Dipak has served state government clients for the past seven years and brings a strong understanding of the Health and Human services within the State government. Additionally, he has served several clients within the financial services and consumer and industrial products industries. Dipak also brings strong database modeling, data warehousing and business intelligence skills from his prior professional experiences.

### Educational Background

University of Maryland College Park      Bachelor of Science in Computer Science

### Relevant Project Experience

Project Name & Type	Duration & Role
Department of Medicaid Assistance Services (DMAS), Virginia  <u>Type:</u> Integration Services Solution	<u>Duration:</u> 7 months  <u>Role:</u> Security architect for the Integration Services Solution (ISS) module of the MMIS Modernization project. Designed the Identity, Credential, Access Management (ICAM) solution using IBM Security Suite of products for the platform. Responsible for the overall security of the solution delivered as a software as a service (SaaS) solution, built in an IBM Cloud infrastructure. Responsible for the regulatory compliance of the solution with NIST 800-53, MARS-E 2.0 and Commonwealth specific security and privacy regulations. Designed the Security monitoring and reporting use cases for Splunk for Enterprise Security. Designed the solution for securing real-time web-services using the IBM Datapower appliance. Led meetings with the department CIO and the project managers across the program to discuss and elaborate on the security

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Attachment 14  
 STATE OF NEW HAMPSHIRE – Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS – RFP 2019-043/RFP-2019-DPHS-19-DATAA

	<p>solution as envisioned by the CISO. Managed the day to day operations of the security team and responsible for managing the budget.</p>
<p><b>Department of Health and Human Services (DHHS), State of New Hampshire</b></p> <p><b>Type: Identity Management Solution</b></p>	<p><b>Duration:</b> 38 months</p> <p><b>Role:</b>          Security program manager for one of the crown jewel applications for the agency. Solution architect for the Identity management (IdM) solution for the IE application, responsible for the account life cycle management for both DHHS employees/contractors and citizens using the application. Wrote the detailed design specifications document for the IdM solution. Managed several security work threads aimed at improving the overall security posture of the department, including security and privacy risk assessments, security testing and vulnerability management activities, unstructured data management, third party risk management, security training development, disaster recovery/contingency plan creation, testing and updates. Led the development of the security and privacy compliance artifacts based on NIST 800-53 and MARS-E 2.0. Served as the security point-of-contact for the ISO and the Integrated Eligibility Program Manager. Managed the day to day operations of the security team and responsible for managing the budget.</p>
<p><b>Department of Human Resources (DHR), State of Maryland</b></p> <p><b>Type: AWS Security infrastructure</b></p>	<p><b>Duration:</b> 10 months</p> <p><b>Role:</b>          Security program manager for the MD THINK program, responsible for the overall security of the infrastructure built on the Amazon Web-Services (AWS) platform. Led the development of the security compliance artifacts based on NIST 800-53 set of security and privacy controls. Led the security program that included designing, implementing and managing services across identity and access management (IAM), security event and information management (SEIM), application security (vulnerability) testing, network security and regulatory compliance. Solution architect for the IAM solution for the MD THINK infrastructure platform built upon Sailpoint IdentityIQ, ForgeRock Directory Services (Open DJ) and ForgeRock Access Management (Open AM). Led the solution design for the SIEM solution for the platform built upon SPLUNK Enterprise Security. Led meetings with the department CTO, the Deputy CTO and the application team to draft a formal set of technical and functional requirements for the project.</p>
<p><b>Pennsylvania Liquor Control Board (PLCB), Pennsylvania</b></p> <p><b>Type: Identity Management Solution</b></p>	<p><b>Duration:</b> 8 months</p> <p><b>Role:</b>          Solution architect for the provisioning automation project. Led a team of security professionals responsible for the automation of the provisioning for Oracle e-Business Suite and Oracle Store Inventory Management ERP applications through IBM's Security Identity Manager. Led client meetings to draft the technical and functional requirements. Wrote the detailed design specifications document for the solution. Worked with the Department of Public Welfare (DPW), along with PLCB to implement the project with cross agency</p>

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	<p>infrastructure. Managed the day to day operations of the implementation team and reported on their progress along with communicating risks and issues to the client. Responsible for managing the budget by preparing the project’s financial status every period &amp; outlining the causes for deviations.</p>
<p><b>Department of Health and Social Services (DHSS), State of Delaware</b></p> <p><b>Type:</b>  <b>Authentication and Authorization implementation</b></p>	<p><b>Duration:</b> 18 months</p> <p><b>Role:</b>                  Worked as the Lead Security Architect for the Integrated Eligibility (IE) Modernization project built on the Microsoft .Net platform. Architected the authentication/authorization along with the security for the application’s web-service communications. Designed and documented the security solution comprising of Oracle Identity Manager, Oracle Access Manager, Oracle Adaptive Access Manager, Oracle Enterprise Gateway and HP Arcsight. Facilitated numerous conversations with the client educating them on the CMS and IRS requirements around multi-factor authentication, password policy, session timeouts, audit logging, reporting and FTI data usage. Assisted the Information resource management team in the preparation of the System Security Plan and the Information Security Risk Assessment. Managed the IT risk and compliance work streams overseeing the compliance documentation, SIEM implementation and vulnerability assessment efforts. Managed the day to day operations of the implementation team and reported on their progress along with communicating risks and issues to the client. Responsible for managing the budget by preparing the project’s financial status every period &amp; outlining the causes for deviations.</p>

***Certifications Held or Honors Awarded***

- Certified Information System Security Professional

***References***

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**Badrinath Nemani**  
 CyberSecurity Sr. Manager, Government & Public Services  
 Cyber Strategy, Deloitte & Touche LLP  
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# Manal Azer

## Clinician

### Overview of Work History

Experienced healthcare professional with a unique ability to bridge the gap between healthcare policy and clinical reality. Eleven years of experience across management consulting, nursing, and nonprofit leadership.

### Educational Background

Loyola University New Orleans	Master of Science in Nursing
Northern Virginia Community College	Associates of Science in Nursing
University of Maryland	Bachelor of Arts in Health Policy and Communication

### Relevant Project Experience

Project Name & Type	Duration & Role
<p>Centers for Medicare &amp; Medicaid Services</p> <p><b>Type:</b> Data extraction algorithm implementation</p>	<p><b>Duration:</b> 5 months</p> <p><b>Role:</b>                      Served as clinical subject matter expert (SME) for Centers for Medicare &amp; Medicaid Services Civil Money Penalties Reimbursement Program (CMS CMPRP). Supported CMPRP technical assistance and toolkit teams in delivering impactful targeted interventions and resources to nursing homes. Within data analytics team, developed clinically sound algorithms and technical specs for data extraction from CMS data sources.</p>
<p>Patient First</p> <p><b>Type:</b> Deliver patient care</p>	<p><b>Duration:</b> 29 months</p> <p><b>Role:</b>                      Ensured medical protocols are appropriately implemented and documented for all patient visits and follow-up care at high-volume care center. Delivered preventive and emergency care, clinical assessments, therapeutic interventions, and patient education. Supported controlled substance and prescription medication distribution.</p>
<p>Centers for Medicare &amp; Medicaid Services</p>	<p><b>Duration:</b> 120 months</p> <p><b>Role:</b></p>

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<p><b>Type: Clinical SME</b></p>	<p>Provided clinical SME and management support for CMS contracts including Home Health Value-Based Purchasing (HHVBP), Health Care Innovation Awards (HCIA) Hospital Quality Performance Measurement (MDS HMDM), and Medicare Care Choices Model (MCCM). Served as SME for technical assistant teams, demonstration models, national roundtables, and quality measure development projects. Directly advised federal clients for federal, state, and commercial healthcare projects.</p>
<p><b>Mission Life Center</b></p> <p><b>Type: Medical clinic operations oversight</b></p>	<p><b>Duration:</b> 24 months</p> <p><b>Role:</b>                  Engaged in strategic planning and oversight of all medical clinic operations for a primarily homeless population with chronic comorbidities and addiction. Directed quality assurance for a database of approximately 1,400 patients. Secured funding for provisions of medical care to underserved populations. Recruited and developed teams to support clinic sustainability, expand medical offerings, and launch community teaching initiatives.</p>
<p><b>The National Council</b></p> <p><b>Type: Medical clinic operations oversight</b></p>	<p><b>Duration:</b> 18 months</p> <p><b>Role:</b>                  Engaged in strategic planning and oversight of all medical clinic operations. Directed quality assurance for a database of approximately 1,400 patients. Developed a report on medication-assisted therapy (MAT) for treatment of individuals with narcotic addictions including the medical process, success and failure rates, and controversies surrounding MAT. Conducted literature reviews and focus groups with primary care physicians on Screening, Brief Intervention, and Referral to Treatment (SBIRT) tool efficacy for identifying patients who are at risk for illicit drug or alcohol dependence.</p>

***Certifications Held or Honors Awarded***

- Nightingale Award for Community Service
- Registered Nurse – Commonwealth of Virginia – Multistage Privilege
- Advanced Cardiovascular Life Support and Pediatric Advanced Life Support

***References***

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# Douglas Rosendale

## Physician

### Overview of Work History

Dr. Douglas Rosendale is the Chief Medical Interoperability Officer engaging across the government and public health sectors where he is focused on improving health quality and safety by advancing interoperability, informatics, and clinical and digital transformation initiatives. He has 25+ years of clinical practice, executive leadership, and health IT experience within the government and private sectors spanning clinical, technical, and informatics initiatives. Doug has a critical understanding of the governance, cultural, and technical architectures required to support health care transformation.

Prior to joining Deloitte, Dr. Rosendale was the founder and CEO of CAIRNformatics. He also served as the Senior Physician Advisor for Clinical Informatics at the VHA and also as the CMIO for the VA/DoD Interagency Program Office. He founded and chaired the Health IT Innovation Development program under the White House Office of Science and Technology Policy. Doug is a board certified surgeon and a Harvard trained informatics leader.

### Educational Background

Lee University	Bachelor of Science in Chemistry and Biology
Des Moines University	Doctorate of Osteopathy

### Relevant Project Experience

Project Name & Type	Duration & Role
<b>Deloitte Chief Medical Interoperability Officer (CMIO)</b>  <b>Type: Medical SME</b>	<b>Duration:</b> 12 months  <b>Role:</b> Lead the Deloitte healthcare interoperability strategy and engaged with federal clients including: Veterans Affairs, Department of Defense, Health and Human Services, as well as commercial partners engaged with Veterans and Service members care. Instituted the first “Clinical Informatics and Requirements Division” (CIRD) across VA/DoD in order to identify the clinical and technical systems required to support the various workflows and capabilities globally. This included “readiness” components for DoD, and also the seamless transfer of Service Members that become Veterans.
<b>White House Office of Science and Technology Policy (OSTP)</b>	<b>Duration:</b> 12 months  <b>Role:</b> As directed by the White House, developed the first national Online H1N1 clinical guidance application that was implemented across all of VA and launched on Flu.Gov, in order to direct patients toward the best care based on personal

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<p><b>Type: Medical SME</b></p>	<p>conditions. Also led the team that developed the VA Suicide Hot-Line application in order for the hot-line operators to have real-time access to all clinically relevant information globally.</p>
<p>Veterans Affairs/                  Department of Defense                  Interagency Program Office (IPO)</p> <p><b>Type: Medical SME</b></p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>                  Supported federal partners including Health and Human Services, VA, and DoD toward accomplishing a value-based model of healthcare that is enabled by interoperable information systems and secure network architectures. The grander vision is to promote an open interoperable architecture for our Service Members, Veterans, and US citizens in order to leverage technology for improved healthcare, healthy living, and a system that learns through cognitive information systems.</p>
<p>Veterans' Health Administration</p> <p><b>Type: Medical SME</b></p>	<p><b>Duration:</b> 2 years</p> <p><b>Role:</b>                  Oversaw the functional requirements and business process modeling for all of Veterans Health Administration (VHA). This included hundreds of clinical and administrative software systems that supported 170 hospitals, 1300 clinics, and 55K clinicians. Responsible for business process reengineering, requirements development, procurement oversight, standards, and implementation of all EHR systems across Veterans Health.</p>

***Certifications Held or Honors Awarded***

- American Board of Osteopathic Surgeons
- Fellow, American College of Surgeons
- Fellow, American College of Osteopathic Surgeons
- Colorado Medical License





# Neluka Wijegunawardena

## UI Designer

### Overview of Work History

Neluka has significant experience in data management and front-end development providing services related to health care data processing, data quality, and reporting for large federal projects. She also has experience with project management, work-stream leadership, and strategic roadmap development. She specifically supported audit sustainment efforts for a large Department of Defense (DoD) client and has also worked in a clinical healthcare setting for 2 years as a Senior Emergency Medicine Scribe at Inova Fairfax’s Level 1 Adult and Pediatric Trauma and Emergency Center.

### Educational Background

Virginia Polytechnic Institute and State University Bachelor of Science in Finance

### Relevant Project Experience

Project Name & Type	Duration & Role
Healthcare Sector client  <b>Type:</b> Interactive dashboard implementation	<b>Duration:</b> 7 months  <b>Role:</b> Led Tableau development team for the conversion of public facing client Web site application to interactive dashboard. Alteryx work stream lead who managed development and implementation of multiple Alteryx projects. Projects included continuous automated monitoring (Leading to early detection and resolution of over 5 major data errors within 1st year of pilot project), source to target testing, insight driven analysis, and data masking initiatives. Created and developed Google Analytics site and Google Data Studio dashboard that were successfully adopted across 11 client applications. Developed and implemented Python/Selenium scripts for testing automation pilot in Agile development environment.
Department of Defense client  <b>Type:</b> Data solutions	<b>Duration:</b> 23 months  <b>Role:</b> Served as Data Management and Operations Lead, directly managing 6 individuals. Team provided large-scale data solutions across engagement by leveraging Alteryx Designer, Excel, and SAP ECC 6.0 (MM, FI). Alteryx Designer workflows were created on a recurring basis for data preparation, cleansing, transformation, and testing (source to target). Workflow products were then distributed to multiple client teams for reporting use. Team also leveraged Alteryx to deliver data for ad hoc data requests. Project Management Lead for 50+

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resource engagement with management over engagement budget/cost workbook maintenance, deliverable tracking, work paper management, contract modification implementation, resource labor and travel tracking and invoicing. Participated in comprehensive accounting line level analysis with client Finance/Accounting leadership resulting in creation of formal recommendations in support of audit readiness to audit sustainment transition. Supported inventory business process tracking and reconciliation implementation efforts across vendor and customer enterprise resource planning systems resulting in formal process assessment reports.

***Certifications Held or Honors Awarded***

- N/A

***References***

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# Quinn Chasan

## Cloud Analytics

### Overview of Work History

Quinn Chasan is currently the Head of Customer Analytics with Google Cloud Platform implementations for the U.S. Public Sector. He runs all work that sits at the intersection of Cloud, Marketing Analytics, and Google Data for the US. He led 400+ unique initiatives across the US Government, leading marketing analytics efforts for the team for 4+ years, implementing improved efforts for 100+ public health campaigns within CMS, CDPH, NY, DOH, CDC, FDA, SAMHSA, and others. Quinn was one of the four Search product experts for 2+ years on attribution between Search and Web site analytics via Google Analytics. He consulted on marketing analytics for over 600 SMBs to improve tracking systems for customer experience on site and feeding that back into media outreach. He trained 50+ marketing analytics specialists in small groups across two languages, three countries, four business units, and five sectors. He is fluent in Google Media stack for consumer and user data: AdWords, DoubleClick, Google Analytics, Tag Manager, Search Console, etc.

### Educational Background

Claremont McKenna College	Bachelor of Arts in Government & Legal Studies Dual Major
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### Relevant Project Experience

Project Name & Type	Duration & Role
Google Cloud Platform Implementation  <u>Type:</u> Relationship Management	<u>Duration:</u> 7 months  <u>Role:</u> Responsible for all work that sits at the intersection of Cloud, Marketing Analytics, and Google Data for the US Public Sector. Big Data integration projects include military gaming platforms, opioid analysis, marijuana tourism, suicide prevention, healthcare exchange planning, etc. that require deep insights from both Google and the Customer.
Paid Media  <u>Type:</u> Relationship Management	<u>Duration:</u> 4 years  <u>Role:</u> Senior Account Manager for the US Government team, working with the US Department of Health and Human Services, as well as all related State Government entities (e.g. California Dept of Health), military clients (Army, Marines, Coast Guard, etc), and Civilian Revenue Agencies (USPS, Amtrak, etc). Led Google's media relationship with all US Healthcare Exchanges including operationalizing Covered California's Search media and their attribution work leading to CalHEERS, as well as Healthcare.gov, NY State of Health and a dozen others on

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improving attribution and simplifying customer journey by improved attribution processes. Managed a support team in Delhi that assisted with the technical implementation of paid-media-to-UX design decisions, providing ongoing client recommendations. Led integration efforts of Google Ad-backed data into clients Web site and media attribution models.

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***Certifications Held or Honors Awarded***

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- N/A
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# Sean Wohltman

## Cloud Engineer

### Overview of Work History

Sean has over 10 years of experience at Google developing and implementing innovative, cost saving, products and solutions for commercial and Public Sector customers. Most recently, Sean designed Google's Maps Imagery program on Google Cloud Platform which has delivered tens of millions of dollars in cost savings for imagery to state and local geospatial agencies over the last 4 years. Simultaneously, Sean helped NBC Universal use Google Cloud and Maps Platforms to launch the 2018 Jurassic World Alive mobile location based game at scale for millions of daily users. In a previous role at Google, Sean developed and implemented solutions for federal Defense and Intelligence customers to operate Google Earth on premises and in austere environments. Since 2010, Sean has also spent a significant portion of his time each year volunteering on Google's Crisis Response team, where he coordinates data sharing between state, local, and federal agencies and the public during major crisis events.

### Educational Background

Virginia Polytechnic and State University	Master of Science in Geographic Information Systems
Virginia Polytechnic and State University	Bachelor of Arts in Geography

### Relevant Project Experience

Project Name & Type	Duration & Role
<p>Launching "Jurassic World Alive" mobile game</p> <p><b>Type:</b> Google Cloud Platform implementation</p>	<p><b>Duration:</b> 11 months</p> <p><b>Role:</b> Technical Account Manager for real-world gaming partners Lúdia, Inc. and NBC Universal for launch of "Jurassic World Alive" mobile game. Handled all technical requirements for launch and developed several GCP based workflows for updating billions of real-world playable locations. Geo CE for Canada, Central and Eastern US, and select top accounts.</p>
<p>Google Earth Enterprise Open Source Launch</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b> Developed vision and go to market for GEE OS on Google Cloud Platform. Coordinated GEE Partner activities and customer engagements to drive GCP adoption, shared dataset ecosystem, and new pipeline for Google Maps Imagery Sales.</p>

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<p><b>Type:</b> Market strategy cloud platform</p>	
<p><b>Google Maps Imagery Sales</b></p> <p><b>Type:</b> Training development</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>                  Technical sales lead for relaunch of Google Maps Imagery Sales. Refined new imagery offering and led partner enablement and training on the Imagery sales process. Defined and delivered Go to Market training and tools for partners. Helped imagery partners double their sales forces and their respective pipelines for 2017. Began Google Earth Engine trusted tester trials for State and Local agencies.</p>
<p><b>Migrating Google Imagery customers from Google Maps Engine to Google Cloud Platform</b></p> <p><b>Type:</b> Cloud Migration</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>                  Technical sales lead for migrating Google Imagery customers from Google Maps Engine to Google Cloud Platform. Trained partners, coordinated internal teams, and moved all active customers from 2014 imagery business from GME to GCP in Q1. Provided cross product pre-sales support for Geospatial Technology provider, CartoDB.com, introduced them to Google Cloud Platform, helped them migrate to GCP and become a GCP customer.</p>
<p><b>Google Maps Engine Migration</b></p> <p><b>Type:</b> Cloud Migration</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>                  Contributed significantly to Google Maps Engine Migration efforts, focused largely on using Google Cloud Platform offerings as an alternative. Lead author for Serving Raster Data on Google Cloud Platform which served as technical foundation for Google Imagery sales program in 2015.</p>

***Certifications Held or Honors Awarded***

- Google Cloud Certified – Professional Cloud Architect





# Bryce Buffaloe

## Cloud Data Scientist

### Overview of Work History

Bryce has over 4+ years of experience managing and executing a wide array of data engineering projects. Bryce’s most recent projects include architecting and implementing a Google Cloud Platform serverless data pipeline, ETL, and data warehouse. In addition, Bryce has helped implement a number of data engineering solutions for federal clients including the design of linear regression models, optimization of high performance model serving, and data migration to Google Cloud. Bryce brings experience designing all phases of data engineering life cycle from initial planning, strategy development through solution implementation. Bryce is viewed a trusted advisor to his clients in data engineering and has helped numerous organizations grow and expand their big data and analytics footprint.

### Educational Background

Temple University Bachelor of Arts in Management Information Systems

### Relevant Project Experience

Project Name & Type	Duration & Role
<b>Cloud migrations to Google Cloud Platform</b>  <b>Type: Cloud migration</b>	<b>Duration:</b> 11 months  <b>Role:</b> Architected customer cloud migrations to Google Cloud Platform. Advised federal, state and local, and commercial customers on data engineering practices for data migration, model creation, model serving, and Google Cloud pre-built model consumption. Removed technical blockers from customer engagements, while providing industry best practices and solutions. Created of cloud-based data pipeline POC environment with partner to quickly connect multiple data sources to Google Cloud Platform serverless data lake and data warehouse solutions. Assisted customers with implementing data analytics solutions using social media, custom data sources, and public datasets.
<b>Technical Solution Plan Enablement</b>  <b>Type: GDPR assessment</b>	<b>Duration:</b> 3 months  <b>Role:</b> Responsible for west coast GDPR data assessment structure and partnership with 3rd party vendor. Worked with 3rd party vendors to create analytics driven sales pipelines for new and existing technologies. Supported commercial and Public Sector client teams in pre-sales and RFP responses. Lead new sales pursuits and solution architecture at a worldwide media company. Managed project teams to

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	meet client deliverables, while creating value adds and additional sales opportunities.
<b>Ecosystem Solution Architect</b>  <b>Type: Cloud migration</b>	<p><b>Duration:</b> 16 months</p> <p><b>Role:</b>                  Architected approaches and cost models for delivery and technology to position engagement teams for new and existing clients. Focused on supporting client teams engaged in devops, data engineering, cloud, and emerging technologies for delivery, new pursuits, workshops, trainings, and client presentations. Delivered data, cloud and container migration assessments, roadmaps, and implementation. Drove resale and services for projects through our operating groups and partners. Drove the creation of production beta offerings internally to create accelerators and go to market solutions for our clients. Advisor to clients and client teams on technology needs based on requirements, business strategy, goals, and expectations. Client Account Lead (CAL) for a worldwide media company delivering business growth strategy work, addressing operational and administrative needs, while aligning IT with business goals.</p>

***Certifications Held or Honors Awarded***

- AWS Solution Architect Associate
- Nutanix Platform Professional
- Nutanix Platform Sales Engineer
- CCNA
- CCNA Security
- Google Cloud Professional Cloud Architect
- Google Cloud Professional Data Engineer
- Certified Kubernetes Administrator (In Progress)



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## Section VII: Cost Proposal

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### Section VIII: Copy of the RFP and any signed Addendum (a)

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The Cost Proposal must describe the proposed cost of the Vendor Proposal based on and reflected by the inclusion of the completed tables listed in Appendix F: Pricing Worksheets:

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Our Cost Proposal is separately attached.



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## Section VIII: Copy of the RFP and any signed Addendum

(a)

Section VIII: Copy of the RFP and any signed Addendum (a)

Copy of the RFP and any signed Addendum (a)



Attachment 1  
STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA

STATE OF NEW HAMPSHIRE  
Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA

Department of Health and Human Services

Data Analytics Platform for Opioid Crisis

RFP 2019-043/RFP-2019-DPHS-19-DATAA

RFP ISSUED	Oct. 16, 2018
VENDOR CONFERENCE	Oct. 30, 2018; 9:00 a.m. EST
AT: 129 Pleasant St., Concord, NH 03301	
STATE POINT of CONTACT	Brian Owens Brian.owens@dhhs.nh.gov 603-271-9634
CONTRACT TYPE	<NOT TO EXCEED>
PROPOSALS DUE	Dec. 10, 2018, 2:00 p.m. EST

  
Gregory Spino





STATE OF NEW HAMPSHIRE  
Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA

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## 1. INTRODUCTION

- 1.1. The State of New Hampshire, acting through the Department of Health and Human Services (Department) is releasing this Request for Proposal (RFP) to procure a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.
- 1.2. Project Overview
  - 1.2.1. New Hampshire, like many states, is in the midst of responding to the opioid crisis. New Hampshire has been especially hard hit with one of the highest overdose rates in the country. At the same time the Department is limited in its capacity to manage the volume of information available throughout the state and nationally that relates to the opioid crisis. Data related to the opioid crisis in many respects presents the largest data management and analysis challenge of any issue faced not just by the Department but by the State as a whole.
  - 1.2.2. The Department maintains or has access to multiple systems that compile data on a variety of health and social issues that correlate with risk, progression, misuse and addiction to opioids and resulting health consequences, including overdose deaths. These systems organize and support various functional areas in delivering services to the citizens, as well as systems that capture information about the health and well-being of the general public. In addition, other NH state agencies and federal partners capture important data related to the opioid crisis. Improved use of data assets is essential to the Department's opioid response. Currently the primary extent of regular data reporting on opioids in New Hampshire is the monthly New Hampshire Drug Monitoring Initiative produced by the Department of Safety New Hampshire Information & Analysis Center (for a recent example, see <https://www.dhhs.nh.gov/dcbcs/bdas/documents/dmi-june-2018.pdf>).
  - 1.2.3. In aggregate, these systems maintain a large wealth of data and, historically, have been commissioned and operated to serve the purposes of varying Bureaus and Divisions within the Department and other state agencies and stakeholders outside the Department. Unlocking, consolidating and bringing this data into a holistic Data Analytics Platform (DAP), allows the Department to identify and drive meaningful change.



**STATE OF NEW HAMPSHIRE**  
**Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
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- 1.2.4. The Department, in partnership with the Department of Information Technology, is currently underway with implementation of the initial components of an Enterprise Business Intelligence platform using Oracle, Informatica PowerCenter Advanced Edition, Informatica Data Quality Standard Edition, and Tableau with an expected implementation of the infrastructure by 12/31/18.
- 1.2.5. There is an opportunity to organize data into information, identify meaningful social applications and develop realistic, fact-based, evidence-supported policies and programs; focusing the Department on how to best address the current opioid crisis. This opportunity requires coordination, consideration and dedication in order to make use of data and analytical resources by putting in place a holistic solution, which makes use of advanced analytical tools, for use by all levels of resources including Department subject matter experts, data scientists/analysts, program managers, and executives, as well as stakeholders outside the Department. Health and Human Services and Department of Information Technology staff will work in concert with the awarded vendor to implement a solution that will be maintained and operated by the State of New Hampshire subsequent to acceptance of the completed work.
- 1.2.6. This RFP provides interested Vendors with the information needed to understand the desired Data Analytics Platform (DAP), assess the level of effort required to meet the defined requirements and to submit a proposal for consideration that:
- 1.2.6.1. Enables the effective sharing, reuse, and governance of Enterprise Business and Technical Services through the deployment of the DAP;
  - 1.2.6.2. Enables the vision for an interoperable approach to the State's health and human services program data;
  - 1.2.6.3. Enables New Hampshire to replace the current Department data warehouse, which is a collection of unconnected data stores, with a true enterprise business intelligence DAP that will be developed and deployed through a phased approach for meeting the future technology needs of all of New Hampshire's DHHS programs as follows:



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- 1.2.6.3.1. Starting with the implementation of the essential technical components and capabilities to meet the State's functional needs for the opioid response, followed by the expansion of technical and functional capabilities to meet the needs of other Department programs;
- 1.2.6.3.2. Ensuring an agile design, development, and implementation approach to the Department enterprise DAP and opioid dashboard;
- 1.2.6.4. Strengthens data sharing, worker collaboration and decision support at all levels through a new Department Enterprise DAP driven by a robust governance model.
- 1.2.6.5. Ensuring that the proposed Department Enterprise DAP adhere to confidentiality and privacy requirements of state rules and state and federal laws, including, but not limited to; 42 CFR Part 2 and 45 CFR 160, 162 and 164.
- 1.2.7. The Department's intent is to evaluate the necessary software solution(s), implementation, maintenance and operations, and hosting services in the context of the RFP. The Department is interested in proposals that demonstrate a creative approach to meeting the requirements for the development of an Enterprise DAP, including a new Business Intelligence System and an Opioid Dashboard. This dashboard will be used for both external (anonymous) and internal (role-based) access and uses (e.g., Opioid Dashboard for both external (anonymous) and internal (role-based) access and uses.)
- 1.2.8. Prospective Vendors are encouraged to develop strategic partnerships in blending the capabilities and skills necessary to develop the best value solution for the Department.
- 1.2.9. The purpose of this RFP is to provide sufficient information to interested Vendors to prepare and submit proposals, presentations and demonstrations for consideration by the Department for:
  - 1.2.9.1. Designing, developing and implementing (DDI) the proposed Enterprise DAP and Business Intelligence System that will meet the known, expected, and future interoperability needs, integrated reporting, and shared analytics requirements of the Department and the State
  - 1.2.9.2. Project Management strategies to implement solutions in a short timeline



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- 1.2.9.3. Design and implementation of a State managed data governance and management model
- 1.2.9.4. Providing on-site user training and complete up-to-date operational, technical, and user documentation
- 1.2.9.5. Inventory, migration and training of key staff to perform the migration of existing data warehouse and reporting environment as it related to the Opioid dashboard data sources
- 1.2.9.6. Creation of an Opioid crisis dashboard leveraging multiple data sources to allow for real time information gathering (see Appendix D-1 for high-level requirements diagram)
- 1.2.9.7. Conducting a post-implementation review and sign off period
- 1.2.9.8. Hosting and/or on premise support for the proposed system during the phased DDI effort and proposed maintenance and operations costs for post full deployment if hosted
- 1.2.10. This RFP contains instructions governing the Proposals to be submitted and the material to be included herein; a description of the solution to be provided; general evaluation criteria; and other requirements to be met by each Proposal.
- 1.2.11. The DAP will facilitate analysis that will lead to:
  - 1.2.11.1. Strengthening the outcomes and value of the services provided by the Department
  - 1.2.11.2. Improving the care and well-being of individuals and families by enabling integrated analysis of Intra-Departmental and State data
  - 1.2.11.3. Promoting a Department organizational structure that encourages working across traditional boundaries and embraces change
  - 1.2.11.4. The DAP will support the Department in achieving these objectives through:
    - 1.2.11.4.1. Data cleansing and quality improvement
    - 1.2.11.4.2. Integrating opioid-related data sets
    - 1.2.11.4.3. Integrating other Department data
    - 1.2.11.4.4. Improving system performance
    - 1.2.11.4.5. Creating semantic interoperability between disparate data sets



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- 1.2.11.4.6. Creating hardware and software architecture principals that will allow future scalability for additional data,
- 1.2.11.4.7. Meta data management,
- 1.2.11.4.8. Data governance, and
- 1.2.11.4.9. Creating a system of consent and authorization so that protected health information, substance use disorder treatment information can be obtained, as needed, and revocations can be tracked.
- 1.2.11.5. The Department recognizes that a modern and contemporary information system is required to support the Department's response to the Opioid Crisis and improving Department programs' efficiencies, effectiveness, outcomes and quality of service.
- 1.2.11.6. High-Level Functionality for the Proposed System.
  - 1.2.11.6.1. The proposed system is to have a DAP that enables service levels, future upgrades, replacement, and augmentation allowing the system to be incrementally modernized throughout its life span. This is required to enable the system to fit the future Department needs without a complete replacement.
- 1.2.11.7. The proposed system will continue to scale after the contract completion to incorporate future data sets. Future systems that will be integrated into the system as time and funding permits will include but not limited to:
  - 1.2.11.7.1. Community Mental Health Services
  - 1.2.11.7.2. Illicit Drug Use Infectious Disease
  - 1.2.11.7.3. Injury Prevention
  - 1.2.11.7.4. Public Health Home Visiting
  - 1.2.11.7.5. United Healthcare Facilities Discharge Data Set (emergency department visits and inpatient discharges)
  - 1.2.11.7.6. Naloxone Distribution by Hubs
  - 1.2.11.7.7. Human Services Programs (e.g., SNAP, TANF)
  - 1.2.11.7.8. BRFS (Behavioral Risk Factor Surveillance System)



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- 1.2.11.7.9. YRBS (Youth Risk Behavior Survey)
- 1.2.11.7.10. NSDUH (National Survey on Drug Use and Health)
- 1.2.11.7.11. PRAMS (Perinatal Risk Assessment Monitoring System)
- 1.2.11.7.12. Prescription Drug Monitoring Program
- 1.2.11.7.13. New Hampshire Hospital Electronic Health Records
- 1.2.11.7.14. Housing, Employment Education
- 1.2.11.7.15. Criminal Justice
- 1.2.11.7.16. Prevention and Harm Reduction Programs
- 1.2.11.7.17. Suicide Prevention

1.2.12. Contract Award

The State plans to execute a Not to Exceed (NTE) \$2,278,642 Contract as a result of this RFP to include acquisition of necessary hardware and software to meet the deliverables of the proposed system. If an award is made, it shall be made based upon evaluation of the submitted Proposals in accordance with the review process outlined in Section 5: *Proposal Evaluation Process* below. The award will be based upon criteria, standards, and weighting identified in this RFP. The award may be awarded to a single or multiple vendors based upon evaluation of the submitted proposals.

1.2.13. Non-Exclusive Contract

Any resulting Contract from this RFP will be a Non-Exclusive Contract. The State reserves the right, at its discretion, to retain other Vendors to provide any of the Services or Deliverables identified under this procurement or make an award by item, part or portion of an item, group of items, or total Proposal. The Contractor shall not be responsible for any delay, act, or omission of such other Contractors, except that the Contractor shall be responsible for any delay, act, or omission of the other Contractors if such delay, act, or omission is caused by or due to the fault of the Contractor.



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If a Contract is awarded, the Vendor must obtain written consent from the State before any public announcement or news release is issued pertaining to any Contract award. Such permission, at a minimum, will be dependent upon approval of the Contract by Governor and Executive Council of the State of New Hampshire. A Contract award is contingent on approval by the Governor and Executive Council.

1.3. Contract Term

**Time is of the essence in the performance of a Vendor's obligations under the Contract.**

- 1.3.1. The Vendor shall be fully prepared to commence work within 10 days of contract approval by the G&C full execution of the Contract by the parties, and the receipt of required governmental approvals, including, but not limited to, Governor and Executive Council of the State of New Hampshire approval ("Effective Date").
- 1.3.2. The Vendor's initial term will begin on the Effective Date and extend through August, 31, 2019. The term may be extended up to four (4) years ("Extended Term") at the sole option of the State, subject to the parties prior written agreement on applicable fees for each extended term, up to but not beyond AUGUST, 31, 2023.
- 1.3.3. The Vendor shall commence work upon issuance of a Notice to Proceed by the State.
- 1.3.4. The State does not require the Vendor to commence work prior to the Effective Date; however, if the Vendor commences work prior to the Effective Date and a Notice to Proceed, such work shall be performed at the sole risk of the Vendor. In the event that the Contract does not become effective, the State shall be under no obligation to pay the Vendor for any costs incurred or Services performed; however, if the Contract becomes effective, all costs incurred prior to the Effective Date shall be paid under the terms of the Contract.
- 1.3.5. Contract Negotiations and Unsuccessful Bidder Notice
  - 1.3.5.1. If a Vendor is selected, the State will notify the selected Vendor in writing of their selection and the State's desire to enter into contract discussions. Until the State successfully completes discussions with the selected Vendor, all submitted Proposals remain eligible for selection by the State. In the event contract discussions are unsuccessful with the selected Vendor, the evaluation team may recommend another Vendor.



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1.3.5.2. In accordance with New Hampshire Statutes Chapter 21-G:37-a, no information shall be available to the public, the members of the general court or its staff, notwithstanding the provisions of RSA chapter 91-A: Access to Governmental Records and Meetings, concerning specific responses to this RFP, from the time the RFP is made public until the Contract is actually awarded, in order to protect the integrity of the public procurement process. This means unsuccessful Vendors shall not be notified until after the Governor and Executive Council have approved the resulting Contract. No information can be provided to non-selected Vendor until after Contracts are awarded, at which time non-selected applicants may submit a written request for more information about the reasons for not being selected and recommendations that may make future applications more effective. Such requests are not considered appeals. Once an applicant has submitted a letter, the State will attempt to accommodate such requests within a reasonable time.

1.3.6. VENDOR ETHICS

From the time this RFP is published until a contract is awarded, no bidder shall offer or give, directly or indirectly, any gift, expense reimbursement, or honorarium, as defined by RSA 15-B, to any elected official, public official, public employee, constitutional official, or family member of any such official or employee who will select, evaluate, or award the RFP. Any bidder that violates this section shall be subject to prosecution for an offense under RSA 640:2. Any bidder who has been convicted of an offense based on conduct in violation of RSA 21-G:38, which has not been annulled, or who is subject to a pending criminal charge for such an offense, shall be disqualified from bidding on this RFP and every such bidder shall be disqualified from bidding on any RFP or similar request for submission issued by any state agency.

1.4. Subcontractors

- 1.4.1. The Vendor shall identify all Subcontractors to be provided to deliver required Services subject to the terms and conditions of this RFP, including but not limited to, in Appendix H: *State of New Hampshire Terms and Conditions*, and Appendix H-25: *General Contract Requirements* herein.
- 1.4.2. The Vendor shall remain wholly responsible for performance of the entire Contract regardless of whether a Subcontractor is used. The State will consider the Vendor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from any Contract.





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**2. SCHEDULE OF EVENTS**

The following table provides the Schedule of Events for this RFP through Governor and Council approval and Notice to Proceed.

EVENT	DATE	TIME
RFP released to Vendors (on or about)	Oct., 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 18, 2018	9:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor inquiries	Nov. 13, 2018	2:00 pm
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 17	8:30 am
Vendor Presentation & Demo (2 hours)	Dec. 17	1:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 18	8:30 am
Selection / Notification	Dec. 19	10:00 am

**3. SOFTWARE, REQUIREMENTS AND DELIVERABLES**

3.1. Software

Each Proposal must present Software that can fully support the required functionality listed in Appendix C: *System Requirements and Deliverables*.

3.2. Requirements

3.2.1. Appendix B: *Minimum Standards for Proposal Consideration*, compliance with System requirements, use of proposed <COTS/SAAS> Software, Vendor Implementation experience, and proposed Project Team.



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- 3.2.2. Appendix C: *System Requirements and Deliverables*, for scope of work, requirements and Deliverables.
- 3.2.3. Appendix D: *Topics for Mandatory Narrative Responses* for Software, technical, Services and Project Management topics.
- 3.2.4. Appendix E: *Standards for Describing Vendor Qualifications* including Vendor corporate qualifications, team organization and key staff, Project Manager, and other key staff candidates' qualifications.

3.3. Deliverables

The State classifies Deliverables into three (3) categories: Written Deliverables, Software Deliverables, and Non-Software Deliverables. Pricing and scheduling information requirements for these Deliverables are provided in Appendix F: *Pricing Worksheets*. A set of required Deliverables as well as a list of Requirements for these Deliverables is detailed in Appendix C: *System Requirements and Deliverables*. Appendix D: *Topics for Mandatory Narrative Responses* solicits responses, which will expound on the Vendors' understanding of the implementation process, the manner of Service delivery and experience with similar projects related to the Software, technical Services, and Project Management topics.

4. INSTRUCTIONS

4.1. Proposal Submission, Deadline, and Location Instructions

- 4.1.1. Proposals submitted in response to this RFP must be received by the Department, no later than the time and date specified in Section 2: *Schedule of Events*. Proposals must be addressed to:

STATE OF NEW HAMPSHIRE  
Department of Health and Human Services  
c/o Brian Owens  
129 Pleasant St.  
CONCORD, NEW HAMPSHIRE 03301

- 4.1.2. Cartons containing Proposals must be clearly marked as follows:

STATE OF NEW HAMPSHIRE  
Department of Health and Human Services

RESPONSE TO  
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- 4.1.3. **Late submissions will not be accepted and will remain unopened.** Delivery of the Proposals shall be at the Vendors' expense. The time of receipt shall be considered when a Proposal has been officially documented by the Department, in accordance with its established policies, as having been received at the location designated above. The State accepts no responsibility for mislabeled mail. Any damage that may occur due to shipping shall be the Vendor's responsibility.
- 4.1.4. Vendors are permitted to submit only one (1) Proposal(s) in response to this RFP.
- 4.1.5. The State reserves the right to reject any and all Proposals and to waive informalities and minor irregularities in Proposals received and to accept any portion of a Proposal or all items bid if deemed in the best interest of the Secretary to do so.
- 4.1.6. All Proposals submitted in response to this RFP must consist of:
- 4.1.6.1. One (1) original and seven (7) clearly identified copies of the Proposal, including all required attachments,
  - 4.1.6.2. One (1) copy of the *Proposal Transmittal Form Letter* (described in Section 4.18.2: *Transmittal Form Letter*, herein) shall be signed by an official authorized to legally bind the Vendor and shall be marked "ORIGINAL."
  - 4.1.6.3. One (1) electronic copy on USB Flash Drive in MS WORD format.
- 4.1.7. The original and all copies shall be bound separately, delivered in sealed containers, and permanently marked as indicated above. A Vendor's disclosure or distribution of its Proposal other than to the State will be grounds for disqualification.

The cost Proposal must be labeled clearly and sealed separately from the main Proposal. Each cost Proposal (one (1) original and seven (7) copies must be bound separately.)

4.2. Proposal Inquiries

- 4.2.1. All inquiries concerning this RFP, including but not limited to, requests for clarifications, questions, and any changes to the RFP, shall be emailed, citing the RFP title, RFP number, page, section, and paragraph and submitted to the following RFP State Point of Contact:

Brian Owens

Department of Health and Human Services



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129 Pleasant St.  
Concord, NH 03301  
Telephone: 603-271-9634  
Email: BRIAN.OWENS@DHHS.NH.GOV

4.2.2. During the Vendor Inquiry Period (see Section 2: Schedule of Events) Vendors are encouraged to submit questions via email; however, the State assumes no liability for assuring accurate/complete email transmission/receipt and is not responsible to acknowledge receipt.

4.2.3. Inquiries must be received by the RFP State Point of Contact (see above) no later than the conclusion of the Vendor Inquiry Period (see Section 2: *Schedule of Events*). Inquiries received later than the conclusion of the Vendor Inquiry Period shall not be considered properly submitted and may not be considered.

4.2.4. The State intends to issue official responses to properly submitted inquiries on or before the date specified in Section 2: *Schedule of Events*; however, this date may be subject to change at the State's discretion. The State may consolidate and/or paraphrase questions for sufficiency and clarity. The State may, at its discretion, amend this RFP on its own initiative or in response to issues raised by inquiries, as it deems appropriate. Oral statements, representations, clarifications, or modifications concerning the RFP shall not be binding upon the State. Official responses will be made in writing and posted as an addendum to the Department of Administrative Services website.

4.2.5. Restriction of Contact With State Employees

From the date of release of this RFP until an award is made and announced regarding the selection of a Vendor, all communication with personnel employed by or under Contract with the State regarding this RFP is forbidden unless first approved by the RFP State Point of Contact listed in Section 4.2: *Proposal Inquiries*. State employees have been directed not to hold conferences and/or discussions concerning this RFP with any Vendor during the selection process, unless otherwise authorized by the RFP State Point of Contact.

4.3. Vendor Conference

4.3.1. A non-mandatory Vendor Conference will be held at the following location on the date and at the time identified in Section 2: *Schedule of Events*:

Department of Health and Human Services

129 Pleasant St.



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Concord, NH 03301

- 4.3.2. All Vendors who intend to submit Proposals are encouraged to attend the Vendor Conference. Attendance by teleconference is permitted. Conference numbers will be emailed to registrants upon request. Vendors are requested to RSVP via email by the date identified in Section 2: *Schedule of Events*, indicating the number of individuals who will attend the Vendor Conference. Vendors are allowed to send a maximum number of 2 representatives.
- 4.3.3. Vendors will have an opportunity to ask questions about the RFP and the State will make a reasonable attempt to answer questions it deems appropriate. Questions may include, without limitation, a request for clarification of the RFP; a request for changes to the RFP; suggestions or changes to the RFP that could improve the RFP competition or lower the offered price; and to Review any applicable Documentation.
- 4.3.4. Vendors must email inquiries at least twenty-four (24) hours prior to the Vendor Conference. No responses will be given prior to the Vendor Conference. Oral answers will not be binding on the State. The State's final response to Vendor inquiries and any requested changes to terms and conditions raised during the Vendor Inquiry Period will be posted to the website by the date specified as the final State responses to Vendor inquiries as specified in Section 2: *Schedule of Events*. Vendors are responsible for any costs associated with attending the Vendor Conference.

4.4. Alteration of RFP

The original RFP document is on file with the State of New Hampshire, Department of Administrative Services. Vendors are provided an electronic version of the RFP. Any alteration to this RFP or any file associated with this RFP is prohibited. Any such changes may result in a Proposal being rejected.

4.5. RFP Addendum

The State reserves the right to amend this RFP at its discretion, prior to the Proposal submission deadline. Any addendum issued in response to the RFP will be posted to the Department of Administrative Services website. In the event of an Addendum to this RFP, the State, at its sole discretion, may extend the Proposal submission deadline, as it deems appropriate.

4.6. Non-Collusion

The Vendor's signature on a Proposal submitted in response to this RFP guarantees that the prices, terms and conditions, and Services quoted have been established without collusion with other Vendors and without effort to preclude the State from obtaining the best possible competitive Proposal.



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4.7. Validity of Proposal

Proposals must be valid for one hundred and eighty (180) days following the deadline for submission of Proposals in Section 2: *Schedule of Events*, or until the Effective Date of any resulting Contract.

4.8. Property of the State

All material received in response to this RFP shall become the property of the State and will not be returned to the Vendor. Upon Contract award, the State reserves the right to use any information presented in any Proposal.

4.9. Confidentiality of a Proposal

A Proposal must remain confidential until the Effective Date of any resulting Contract as a result of this RFP. A Vendor's disclosure or distribution of Proposals other than to the State will be grounds for disqualification.

4.10. Public Disclosure

4.10.1. Subject to applicable law or regulations, the content of each Vendor's Proposal shall become public information upon the Effective Date of any resulting Contract.

4.10.2. Any information submitted as part of a response to this Request for Proposal (RFP) may be subject to public disclosure under RSA chapter 91-A: Access to Governmental Records and Meetings. In addition, in accordance with RSA chapter 21-G:37: Financial Information Regarding Requests for Bids and Proposals, any Contract entered into as a result of this RFP will be made accessible to the public online via the website Transparent NH (<http://www.nh.gov/transparentnh/>). Accordingly, business financial information and proprietary information such as trade secrets, business and financials models and forecasts, and proprietary formulas may be exempt from public disclosure under RSA chapter 91-A:5, IV: Exemptions. If you believe any information being submitted in response to a Request for Proposal, bid or information should be kept confidential as financial or proprietary information; you must specifically identify that information in a letter to the agency, and should mark/stamp the materials as such. Marking of the entire Proposal or entire sections of the Proposal (e.g. pricing) as confidential will neither be accepted nor honored. Notwithstanding any provision of this RFP to the contrary, Vendor pricing will be subject to disclosure upon approval of the Contract by Governor and Council.



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4.10.3. Generally, each Proposal shall become public information upon the approval of Governor and Council of the resulting Contract, as determined by the State, including but not limited to, RSA chapter 91-A: Access to Governmental Records and Meetings (Right to Know Law). The State will endeavor to maintain the confidentiality of portions of the Proposal that are clearly and properly marked confidential. If a request is made to the State to view portions of a Proposal that the Vendor has properly and clearly marked confidential, the State will notify the Vendor of the request and of the date and the State plans to release the records. A designation by the Vendor of information it believes exempt does not have the effect of making such information exempt. The State will determine the information it believes is properly exempted from disclosure. By submitting a Proposal, Vendors agree that unless the Vendor obtains a court order, at its sole expense, enjoining the release of the requested information, the State may release the requested information on the date specified in the State's notice without any liability to the Vendors.

**4.11. Security**

4.11.1. The State must ensure that appropriate levels of security are implemented and maintained in order to protect the integrity and reliability of its Information Technology resources, information, and services. State resources, information, and services must be available on an ongoing basis, with the appropriate infrastructure and security controls to ensure business continuity and safeguard State networks, Systems and Data.

4.11.2. The State will evaluate the degree to which the proposed System is designed and architected to ensure the confidentiality and integrity of its valued asset, Data.

**4.12. Non-Commitment**

Notwithstanding any other provision of this RFP, this RFP does not commit the State to award a Contract. The State reserves the right, at its sole discretion, to reject any and all Proposals, or any portions thereof, at any time; to cancel this RFP; and to solicit new Proposals under a new acquisition process.

**4.13. Proposal Preparation Cost**

By submitting a Proposal, a Vendor agrees that in no event shall the State be either responsible for or held liable for any costs incurred by a Vendor in the preparation of or in connection with the Proposal, or for work performed prior to the Effective Date of a resulting Contract.

**4.14. Oral Presentations/Interviews and Discussion**



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The State reserves the right to require Vendors to make oral presentations of their Proposals and/or to make available for oral presentations/interviews the IT consultants proposed to implement the COTS/SAAS application. All costs associated with oral presentations/interviews shall be borne entirely by the Vendor. Vendors may be requested to provide demonstrations of their proposed Systems as part of their presentations.

4.15. Required Contract Terms and Conditions

By submitting a Proposal, the Vendor agrees that the State of New Hampshire terms and conditions, contained in Appendix H: *State of New Hampshire Terms and Conditions* herein, shall form the basis of any Contract resulting from this RFP. In the event of any conflict between the State's terms and conditions and any portion of the Vendor's Proposal, the State's terms and conditions shall take precedence and supersede any and all such conflicting terms and conditions contained in the Vendor's Proposal.

4.16. Proposal Format

Proposals should follow the following format:

- 4.16.1.1. The Proposal should be provided in a three-ring binder.
- 4.16.1.2. The Proposal should be printed on white paper with dimensions of 8.5 by 11 inches with right and left margins of one (1) inch.
- 4.16.1.3. The Proposal should also be submitted electronically via CD.
- 4.16.1.4. The Proposal should use Times New Roman font with a size no smaller than eleven (11).
- 4.16.1.5. Each page of the Proposal should include a page number and the number of total pages and identification of the Vendor in the page footer.
- 4.16.1.6. Tabs should separate each section of the Proposal.
- 4.16.1.7. Exceptions for paper and font sizes are permissible for: graphical exhibits, which may be printed on white paper with dimensions of 11 by 17 inches; and material in appendices.

4.17. Proposal Organization

Proposals should adhere to the following outline and should not include items not identified in the outline.

- 4.17.1. Cover Page
- 4.17.2. Transmittal Form Letter
- 4.17.3. Table of Contents





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- 4.17.4. Section I: Executive Summary
  - 4.17.5. Section II: Glossary of Terms and Abbreviations
  - 4.17.6. Section III: Responses to Requirements and Deliverables
  - 4.17.7. Section IV: Narrative Responses
  - 4.17.8. Section V: Corporate Qualifications
  - 4.17.9. Section VI: Qualifications of key Vendor staff
  - 4.17.10. Section VII: Cost Proposal
  - 4.17.11. Section VIII: Copy of the RFP and any signed Addendum (a) -  
<required in original Proposal only>
  - 4.17.12. Section IX: Appendix
- 4.18. Proposal Content
- 4.18.1. Cover Page
    - 4.18.1.1. The first page of the Vendor's Proposal should be a cover page containing the following text:  
STATE OF NEW HAMPSHIRE  
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
  
RESPONSE TO DHHS RFP 2019-043/RFP-2019-DPHS-19-DATAA  
DATA ANALYTICS PLATFORM FOR OPIOID CRISIS
    - 4.18.1.2. The cover page should also include the Vendor's name, contact person, contact telephone number, address, city, State, zip code, fax number, and email address.
  - 4.18.2. Transmittal Form Letter

The Vendor must submit signed Transmittal Form Letter with their response using the Transmittal Form Letter Template provided herewith. Any electronic alteration to this Transmittal Form Letter is prohibited. Any such changes may result in a Proposal being rejected.

***Remainder of this page intentionally left blank***



Attachment 1  
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State of New Hampshire Proposal Transmittal Form Letter

Company  
Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To: NH DHHS State Point of Contact: BRIAN OWENS

Telephone 603-271-9634

Email: BRIAN.OWENS@DHHS.nh.gov

RE: Proposal Invitation Name: DATA ANALYTICS PLATFORM FOR OPIOID CRISIS

Proposal Number: 2019-043/RFP-2019-DPHS-19-DATAA

Proposal Due Date and Time: <MONTH- DAY- YEAR> AT <TIME>

Dear Sir:

Company Name: \_\_\_\_\_ hereby offers to sell to the State of New Hampshire the Services indicated in RFP NH DHHS RFP 2019-043/RFP-2019-DPHS-19-DATAA DATA ANALYTICS PLATFORM FOR OPIOID CRISIS at the price(s) quoted in Vendor Response Section VII: *Cost Proposal*, and Appendix F: *Pricing Worksheets*, in complete accordance with all conditions of this RFP and all Specifications set forth in the RFP and in the State of New Hampshire Terms and Conditions outlined in RFP Appendix H: *State of New Hampshire Terms and Conditions*.

Company Signor: \_\_\_\_\_ is authorized to legally obligate

Company Name: \_\_\_\_\_

We attest to the fact that:

The company has reviewed and agreed to be bound by all RFP terms and conditions including but not limited to Appendix H: *State of New Hampshire Terms and Conditions*, which shall form the basis of any Contract resulting from this RFP; No new terms and conditions have been added and no existing terms and conditions have been deleted in this RFP Proposal.

The Proposal is effective for a period of 180 days or until the Effective Date of any resulting Contract.

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Attachment 13 - Vendor Proposal  
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The prices quoted in the Proposal were established without collusion with other eligible Vendors and without effort to preclude the State of New Hampshire from obtaining the best possible competitive price; and

The Vendor has read and included a copy of RFP-2019-043/RFP-2019-DPHS-19-DATAA and any subsequent signed Addendum (a).

Our official point of contact is

\_\_\_\_\_

Title

\_\_\_\_\_

Telephone \_\_\_\_\_ Email \_\_\_\_\_

Authorized \_\_\_\_\_ Signature \_\_\_\_\_ Printed \_\_\_\_\_

Authorized \_\_\_\_\_ Signature \_\_\_\_\_



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4.18.3. Table of Contents

The Vendor must provide a table of contents with corresponding page numbers relating to its Proposal. The table of contents must conform to the outline provided in Section 4.17: *Proposal Organization*, but should provide detail, e.g., numbering, level of detail.

4.18.4. Section I: Executive Summary

The executive summary, which must not exceed five (5) pages, must identify how the Vendor satisfies the minimum standards for consideration, which are described in Appendix B: *Minimum Standards for Proposal Consideration*, to this Request for Proposals. The executive summary will also provide an overview of the Vendor's proposed Solution and Services. Vendors are encouraged to highlight those factors that they believe distinguish their Proposal.

4.18.5. Section II: Glossary of Terms and Abbreviations

The Vendor must provide a glossary of all terms, acronyms, and abbreviations used in its Proposal.

4.18.6. Section III: Responses to System Requirements and Deliverables

4.18.6.1. System requirements are provided in Appendix C: *System Requirements and Deliverables*.

4.18.6.2. Using the response tables in Appendix C: *System Requirements and Deliverables*, the Vendor must document the ability to meet the Requirements and Deliverables of this RFP.

4.18.7. Section IV: Narrative Responses

Section IV solicits narrative responses describing the Software, Technical, Services and Project Management topics defined for this RFP Project. Appendix D: *Topics for Mandatory Narrative Responses* is organized into sections, which correspond to the different deliverables and aspects of the scoring process of the Proposal. Discussion of each topic must begin on a new page.

4.18.8. Section V: Corporate Qualifications

Section V should provide corporate qualifications of all firms proposed to participate in the Project. Specific information to be provided is described in Appendix E: *Standards for Describing Vendor Qualifications - Section E-1: Required Information on Corporate Qualifications*.

4.18.9. Section VI: Qualifications of key Vendor staff



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This Proposal section must be used to provide required information on key Vendor staff. Specific information to be provided is described in Appendix E: *Standards for Describing Vendor Qualifications - Sections: E-2: Team Organization and Designation of Key Vendor Staff, E-3: Candidates for Project Manager, and E-4: Candidates for Key Vendor Staff Roles.*

4.18.10. Section VII: Cost Proposal

The Cost Proposal must describe the proposed cost of the Vendor Proposal based on and reflected by the inclusion of the completed tables listed in Appendix F: *Pricing Worksheets*;

**NOTE:** *Section VII Cost Proposal, must become public information and as such shall not be made confidential or proprietary. Proposals submitted with all or part of the Section VII labeled confidential or proprietary shall not be considered response and shall not be accepted.*

4.18.11. Section VIII: Copy of the RFP and any signed Addendum (a)

**NOTE:** *Required in original Proposal only.*

4.18.12. SECTION IX: APPENDIX- This section provided for extra materials as referenced in Appendix D: *Topics for Mandatory Narrative Responses* such as Product Literature, Ad Hoc/Federal Reporting, Interface Standards, Testing (For UAT Plan) and Status Meetings and Reports.

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## 5. PROPOSAL EVALUATION PROCESS

### 5.1. Scoring Proposals

- 5.1.1. Each Proposal will be evaluated and considered with regard to the Solution and Services proposed, qualifications of the Vendor and any Subcontractors, experience and qualifications of proposed candidates, and cost.
- 5.1.2. If the State, determines to make an award, the State will issue an intent to award notice to a Vendor based on these evaluations. Should the State be unable to reach agreement with the selected Vendor during Contract discussions, the State may then undertake Contract discussions with the second preferred Vendor and so on. Such discussions may continue at the sole option of the State, until an agreement is reached, or all Proposals are rejected.
- 5.1.3. The State will use a scoring scale of 1000 points, which shall be applied to the Solution as a whole. Points will be distributed among the following factors:
  - 5.1.3.1. 200 points – Proposed Software Solution;
  - 5.1.3.2. 250 points – Vendor's Technical, Service and Project Management Experience;
  - 5.1.3.3. 100 points – Vendor Company;
  - 5.1.3.4. 200 points – Staffing Qualifications;
  - 5.1.3.5. 250 points – Solution Cost (Rates and Pricing); and
  - 5.1.3.6. 1000 points – Total Possible Score.

### 5.2. Rights of the State in Evaluating Proposals

The State reserves the right to:

- 5.2.1. Consider any source of information including but not limited to: State employees, Internet research and rating agencies, in evaluating Proposals;
- 5.2.2. Omit any planned evaluation step if, in the State's view, the step is not needed;
- 5.2.3. At its sole discretion, reject any and all Proposals at any time; and
- 5.2.4. Open Contract discussions with the second highest scoring Vendor, if the State is unable to reach an agreement on Contract terms with the highest scoring Vendor.

### 5.3. Planned Evaluations



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The State plans to use the following process:

- 5.3.1. Initial screening;
- 5.3.2. Preliminary scoring of the Proposals;
- 5.3.3. Oral interviews and product demonstrations; and
- 5.3.4. Final evaluation of Proposals.

5.4. Initial Screening

The State will conduct an initial screening step to verify Vendor compliance with submission requirements and to confirm that the Proposal satisfies the conditions defined in Appendix B: *Minimum Standards for Proposal Consideration*. A Proposal that fails to satisfy either submission requirements or minimum standards may be rejected without further consideration.

5.4.1. Preliminary Scoring of Proposals

The State will establish an evaluation team to initially score Proposals and conduct reference checks.

5.4.2. Oral Interviews and Product Demonstrations

**Preliminary scores from the initial evaluation of the Proposals will be used to select Vendors to invite to oral interviews and product demonstrations.**

5.4.2.1. The purpose of oral interviews and product demonstrations is to clarify and expound upon information provided in the written Proposals. Vendors are prohibited from altering the basic substance of their Proposals during the oral interviews and product demonstrations.

5.4.2.2. For each invited Vendor, the oral interview and product demonstrations will be two (2) hours in length. A highly structured agenda will be used for oral interviews and product demonstrations to ensure standard coverage of each invited Vendor. Information gained from oral interviews and product demonstrations will be used to refine scores assigned from the initial review of the Proposals.

5.4.3. Best and Final Offer

The State will not be requesting a Best and Final Offer.

5.4.4. Final Evaluation



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The State will conduct final evaluations as a culmination of the entire process of reviewing Vendor Proposals and information gathering. Reference and background checks will be made for finalist or finalists as appropriate. After making a preliminary determination of award or awards, the State reserves the right to conduct site visits to a Vendor location and/or government site(s) that utilizes the Vendor Software.

**5.5. Scoring Detail**

The State will select a Vendor based upon the criteria and standards contained in this RFP.

**5.5.1. Scoring of the Proposed Software Solution**

5.5.1.1. The Vendor's Proposed Software Solution will be allocated a maximum score of (200) points. The main purpose of this section is to measure how well the Solution meets the business needs of the Agency. The contribution of scoring team members representing all stakeholders will be critical in this section.

5.5.1.2. Factors include but are not limited to:

5.5.1.3. Vendors must include a proposed architecture for the DAP, which integrates data from source systems and meets, or exceeds, the following minimal requirements:

5.5.1.3.1. Provides a framework for organization of data, information management and technology systems required to build and implement the system,

5.5.1.3.2. Allows for data components of the architecture to include internal and external sources of structured and unstructured data users require to analyze the opioid crisis,

5.5.1.3.3. Includes data integration, data cleansing and the development and implementation of data dimensional rules,

5.5.1.3.4. Describes the conceptual and logical technology components required to present information to users and enable them to analyze the data and its impacts,

5.5.1.3.5. Allows for the ability to drill down on report data to varying layers of detail,

5.5.1.3.6. Allow for the extraction of patterns and knowledge from large amounts of data,





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- 5.5.1.3.7. Provide predictive analysis, based upon data,
- 5.5.1.3.8. Provides browser-based solution to support all major browsers.
- 5.5.1.4. Software Architecture –
  - 5.5.1.4.1. Consider the following statistics and growth assumptions as baseline requirements for the formulation of their proposal to the State and sizing of all technical elements (e.g., servers, storage, networking, software) that are required to deliver the system to the state.
  - 5.5.1.4.2. Specify all equipment (if any) required for the development and operations of the solutions and requirements defined in this RFP. The equipment will be comprised of industry standard and readily available components. Define all requirements and provide a Bill of Materials for all items that will be ordered and implemented upon review and agreement by the Department
  - 5.5.1.4.3. The overall infrastructure and equipment must be sized in accordance with planned use and be inclusive of all hardware, storage, networking, backup/restore, database, file system, monitors and other items as required to comprehensively support development and ongoing operations for all required environments.
- 5.5.1.5. **Application** – <NOTE: Is there a user group for the application? How long has it been in operation? What is its market share? Is cost of upgrade shared by user groups or the sole responsibility of the State? Is this included with the cost of Software Maintenance? How are future upgrades determined? These and other factors will help the State to understand the costs and opportunities of using this Software in the future. >
- 5.5.1.6. **Features** – <NOTE: How well does the Solution do the things the System needs to do? >
- 5.5.1.7. **Compatibility with State Systems** – <NOTE: The degree to which the System uses technologies similar to other State systems, ease of System modification, integration and data storage. >



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- 5.5.1.8. **User Friendliness/Usability and Efficiency** – <NOTE: How quickly can users perform a needed task? How easy is it to learn, is it intuitive? Is its navigation and interface similar to other Software used? How steep is the learning curve? >
- 5.5.1.9. Criteria for these scores will be found in but are not limited to:
- 5.5.1.9.1. Proposal Section III: Responses to Requirements and Deliverables
  - 5.5.1.9.2. Attachment C-2: Requirements <NOTE: particularly business requirements>
  - 5.5.1.9.3. Proposal Section IV: Narrative Responses
  - 5.5.1.9.4. Vendor Presentation and Demonstration
- 5.5.2. **Scoring of Vendor Technical, Service, and Project Management Proposal**
- 5.5.2.1. Vendor proposed Services will be allocated a maximum score of **(250)** points. <NOTE: In this section the State will score the technical merits of how the Vendor proposes to carry out the implementation and maintain the Solution. The Implementation of the Solution will require the Vendor to customize or configure the application to meet the requirements of the State, monitor and ensure its operation throughout the Warranty Period and, if maintenance is to be provided, to be a partner in the Solution's operation throughout its useful life. Technical details of the System, administrative procedures, how the Vendor manages its team, the Project and the technical environment will be critical. How compatible the Vendor's procedures and technologies are with the State contribute to an assessment of risk both in the short and long term.>
- 5.5.2.2. Factors include but are not limited to:
- 5.5.2.3. **Protection of Data** – <NOTE: The degree to which continuous operations are insured against unexpected problems.>
- 5.5.2.4. **Compatibility with State IT Expertise and Training Approach** – < NOTE: What is the degree to which the System uses technologies which may be supported by State personnel.>



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- 5.5.2.5. **Project Execution** – < NOTE: Do company procedures facilitate: communication with the State, the early discovery and resolution of problems, efficient and effective operation through implementation and an effective support structure of the System.>
- 5.5.2.6. **Project Management Competence** – < NOTE: Administrative, management quality control and oversight.>
- 5.5.2.7. **Ongoing Operations** – < NOTE: Post warranty operation and support.>
- 5.5.2.8. Criteria for these scores will be found in but are not limited to:
  - 5.5.2.8.1. Proposal Section III: Responses to Requirements and Deliverables
  - 5.5.2.8.2. Proposal Section IV: Narrative Responses
  - 5.5.2.8.3. Attachment C-2: Requirements
  - 5.5.2.8.4. Proposed Work Plan
  - 5.5.2.8.5. References
- 5.5.3. **Scoring of Vendor Company**
  - 5.5.3.1. Vendor Company qualifications will be allocated a maximum score of (100). It must be established that the Vendor Company is capable of carrying out the Project through implementation, the Warranty Period and the maintenance period.
  - 5.5.3.2. Factors include but are not limited to:
    - 5.5.3.2.1. **How long in business** – <NOTE: A proven track record of operation for a number of years that the company will continue to support the System>.
    - 5.5.3.2.2. **How many years' experience with this product** – <NOTE: Demonstrated competence in working with the proposed product or Technology.>
    - 5.5.3.2.3. **Bench Strength and support structures** – <NOTE: The State will consider the depth of required technical skill within the company as well as the Vender's plan for knowledge transfer to State staff.>



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- 5.5.3.2.4. **References** – <NOTE: The measure of a company's worth is more accurate when made by a third party that has collaborated with the Vendor on a similar Project.>
- 5.5.3.2.5. **Litigation** – <NOTE: The relevance of involvement of the company in litigation will be considered.>
- 5.5.3.2.6. **Financial Strength** – <NOTE: Financial strength when measured by financial statements or a rating company is an indication of the company's ability to operate long term and through unexpected problems.>
- 5.5.3.2.7. Criteria for these scores will be found in but are not limited to:
  - 5.5.3.2.7.1. Proposal Section V: Corporate Qualifications
  - 5.5.3.2.7.2. Vendor Presentations
  - 5.5.3.2.7.3. References
  - 5.5.3.2.7.4. Financial Information

**5.5.4. Scoring of Vendor Staffing Qualifications**

- 5.5.4.1. Vendor Staff must have the training and experience to support the Vendor companies plans to implement and support the System. Vendor Company qualifications will be allocated a maximum score of (200)
- 5.5.4.2. Factors include but are not limited to:
  - 5.5.4.2.1. **Staff Training** – <NOTE: Staff must have relevant training to carry out the Project.>
  - 5.5.4.2.2. **Staff Certifications** – < NOTE: Staff may require specific Certification to support and configure needed equipment and Software.>
  - 5.5.4.2.3. **Staff Experience** – <Training and certification is important but experience with similar Projects will be a major contributor to a smooth Implementation.>



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5.5.4.2.4. Size and composition of Vendor Team – <Are there sufficient staff resources and sufficient qualifications and experience within the Vendor team to carry out the Project?>

5.5.4.2.5. Criteria for these scores will be found in but are not limited to:

5.5.4.2.5.1. Proposal Section V: Corporate Qualification

5.5.4.2.5.2. Proposal Section VI: Qualifications of Key Staff

5.5.4.2.5.3. Vendor Presentations

5.5.4.2.5.4. References

5.5.5. Scoring the Software Solution Cost

5.5.5.1. Vendor proposed Software Solution cost will be allocated a maximum score of (250) points. The State will consider the implementation services costs, provided in Tables F-1: *Activities/Deliverables/Milestones Pricing Worksheet*, F-4: *Software Licensing, Maintenance, and Support Pricing Worksheet* and, if appropriate, F-5: *Web Site Hosting, Maintenance, and Support Pricing Worksheet*. The cost information required in a Proposal is intended to provide a sound basis for comparing costs.

<NOTE: THE FOLLOWING FORMULA WILL BE USED TO ASSIGN POINTS FOR COSTS:>

<NOTE: VENDOR'S COST SCORE= (LOWEST PROPOSED COST / VENDOR'S PROPOSED COST) TIMES

NUMBER OF MAXIMUM POINTS FOR SOLUTION COSTS DEFINED IN SECTION 5.1: SCORING PROPOSALS.>

<NOTE: FOR THE PURPOSE OF THIS FORMULA, THE LOWEST PROPOSED COST IS DEFINED AS THE LOWEST COST PROPOSED BY A VENDOR WHO FULFILLS THE MINIMUM QUALIFICATIONS.>

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## APPENDIX A: BACKGROUND INFORMATION

### 1. A-1 Health and Human Services

- 1.1. The Health and Human Services is responsible for the health, safety and well-being of the citizens of New Hampshire. DHHS provides services for individuals, children, families and seniors, and administers programs and services such as mental health, developmental disability, substance abuse, and public health.
- 1.2. The mission of the Health and Human Services is to join communities and families in providing opportunities for citizens to achieve health and independence
- 1.3. Project Overview/Justification
- 1.4. In addition to the Project Overview section included in the Introduction the Goals and Objectives for CORbi:
  - 1.4.1. Implement a Data Governance and Analytic Strategy to focus the organizations resources (human and funding) to increase the availability of information for informed decision making.
  - 1.4.2. Automate and consolidate disparate information systems to provide a single place for the citizens of New Hampshire to visually obtain information surrounding the Opioid crisis.

### 2. A-2 Department of Information Technology and Technology Status

The Project will be conducted in cooperation with the New Hampshire Department of Information Technology (DoIT). DoIT coordinates the statewide Information Technology activities.

#### 2.1. A-2.1 Technical Architecture

Components of the State's technical architecture include:



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- 2.1.1. State Network Environment: The State of New Hampshire operates a Metropolitan-Area-Network (MAN) in the City of Concord, NH using a combination of leased and owned fiber optic cable. State of New Hampshire locations outside of the Concord, NH main facility are connected via multiple wide-area networks using various technologies including Carrier Ethernet Services, Microwave Wireless and VPN Tunnels over the Internet. State Agency Networks have varying levels of integration and connectivity to the statewide core for resource sharing and centralized administration by the Department of Information Technology (DoIT). State agencies connect to the State's central core network location in Concord to facilitate access to e-mail, the Internet, and the State's financial applications. Direct support is provided for twenty-one partner agencies; other State agencies support their own networks, out-source the support, or use the resources of another agency.
- 2.1.2. Internet Access: The State of New Hampshire has purchased thru ARIN its own External IP Address Range and Autonomous System Number. The State advertises its External IP Space and Autonomous System Number to two different Internet Service Providers so as to provide failover in the event of a single ISP network failure.
- 2.1.3. The State uses VMWare for Windows server virtualization and virtual hosts are deployed at two separate State campus sites. VMWare provides a highly scalable and high availability environment for the State's many Agencies. If a virtual host fails, VMWare automatically fails over all of the virtual servers on that host to another host. The EMC Networker product is used to manage backups for this environment utilizing Data Domain as the disk to disk repository.
- 2.1.4. For the State's Oracle enterprise systems, an Oracle/Linux Solution (OVM) is used for the virtual environment. Similar to the windows environment, this Solution provides a highly scalable and high availability environment and also utilizes the EMC Networker and Data Domain backup Solution. Data Domain is also employed to meet the backup requirements within OVM.
- 2.1.5. The state's current Enterprise Business Intelligence platform consists of Oracle, Informatica PowerCenter Advanced Edition, Informatica Data Quality Standard Edition, and Tableau.
- 2.2. A-2.2 Future Systems Environment



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- 2.2.1. Future design and development efforts should conform to the emerging environment as defined by current information technology initiatives, the New Hampshire Statewide Strategic Information Technology Plan, and the State's e-Government Architecture Plan.
- 2.2.2. This environment is end user centric, utilizing the Internet and Web whenever possible, promoting electronic transactions, and centralized common services (security, e-payment, content search), where possible.

### 3. A-3 Related Documents Required

Vendors are NOT required to submit these certificates with their Proposal. Vendors will be required to be a registered company in New Hampshire. The certificates will be requested from the selected Vendor prior to Contract approval.

- 3.1. Certificate of Good Standing/Authority (Appendix G-3-Item A) dated after April of the current year and available from the Department of State by calling (603) 271-3244 or (603) 271-3246. Forms are also available on: <http://sos.nh.gov/formslaws.aspx>
- 3.2. Certificate of Vote (Appendix G-3-Item B)
- 3.3. Proof of Insurance compliant with Appendix H: *State of New Hampshire Terms and Conditions*.

### 4. A-4 State Project Team

State high-level staffing for the Project will include:

- Project Sponsor;
- State Project Manager;
- State IT Manager;
- Technical Support Team;
- Business Process Owners; and
- User Acceptance Testing Team.

#### 4.1. A-4.1 Project Sponsor

The Project Sponsor, Lisa Morris and Katja Fox, will be responsible for securing financing and resources, addressing issues brought to his attention by the State Project Manager, and assisting the State Project Manager in promoting the Project throughout the State. The Project Sponsor or an appropriate designee will be available to resolve issues on a timely basis.





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4.2. A-4.2 State Project Manager

The State Project Manager from the Health and Human Services Project Management Office Project, will be responsible for everything that the Project does or fails to do, and has the primary responsibility for seeing to the Project's success.

- 4.2.1. The State Project Manager for Health and Human Services, will be responsible for working with the Health and Human Services staff, State IT Manager, and the Vendor to ensure appropriate execution of the contract. The State Project Manager will be primary point of contact for the Vendor and business user and will interact with the Vendor to address questions or concerns encountered by users as they arise.

Primary Responsibilities include:

- 4.2.1.1. Leading the Project;
- 4.2.1.2. Promoting the Project statewide;
- 4.2.1.3. Developing Project strategy and approach;
- 4.2.1.4. Engaging and managing all Vendors;
- 4.2.1.5. Managing significant issues and risks; and
- 4.2.1.6. Managing stakeholders' concerns.

4.3. A-4.3 State IT Manager –

The State IT Manager will provide IT support to the State Project Manager and be the liaison for State IT requirements.

4.4. A-4.4 State technical support team

The State's Technical Support Team supports the current Safety Database tracking software. During this project this team will serve as subject matter experts and will be heavily involved in early planning and design activities for the System Tracking replacement environment.

Primary responsibilities include:

- 4.4.1. Supporting the project as a technical resource and subject matter expert;
- 4.4.2. Assisting with data conversion planning and design;
- 4.4.3. Assisting with data clean-up prior to conversion; and
- 4.4.4. Assisting in the development of system security, operational support models, and system architecture planning activities.



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**4.5. A-4.5 Business Process Owners**

The State's Business Process Owners will serve as subject matter experts and will be heavily involved throughout all aspects of the implementation.

Primary responsibilities include:

- 4.5.1. Participate in gap analysis work sessions;
- 4.5.2. Serve as subject matter experts in regard to the current system and existing business processes;
- 4.5.3. Help define "to be" business processes;
- 4.5.4. Active involvement in testing activities; and
- 4.5.5. Serve as liaisons between business operational departments and the Vendor's project team.

**4.6. A-4.6 User Acceptance Testing (UAT) Team**

N/A

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APPENDIX B: MINIMUM STANDARDS FOR PROPOSAL CONSIDERATION

**APPENDIX B: MINIMUM STANDARDS FOR PROPOSAL CONSIDERATION**

A Proposal that fails to satisfy the requirements in this section may be rejected without further consideration.

**1. B-1 Submission requirements**

- 1.1. The Proposal is date and time stamped before the deadline as defined in Section 2: *Schedule of Events*. The Vendor has sent the proper number of copies with the original version of the Proposal marked "ORIGINAL" and the copies marked "COPY" as defined in Section 4.1: *Proposal Submission, Deadline, and Location Instructions*.
- 1.2. The original Proposal includes a signed Transmittal Letter accepting all terms and conditions of the RFP without exception.
- 1.3. The proposed escrow agreement shall be submitted with the Vendor's Proposal for Review by the State.

**2. B-2 Compliance with System Requirements**

System requirements and Deliverables are listed in Appendix C: *System Requirements and Deliverables* in this RFP. The proposed Vendor's Solution must be able to satisfy all mandatory requirements listed.

**3. B-3 Current Use of Vendor Proposed Software – Current Implemented Sites of Vendor proposed Software or Solution <NOTE: IF APPLICABLE>**

Components that constitute the Vendor's proposed Software or Solution suite must be fully implemented and Operational in at least three (3) government entities comparable in size and complexity to the State of New Hampshire within the last four (4) years. The specific Vendor proposed Software version and functionality must be described.

**4. B-4 Vendor Implementation Service Experience** The Implementation Vendor must have completed the Vendor proposed Software or Solution Implementation for at least <three> (3) government clients comparable in size and complexity to the State of New Hampshire within the last <four> (4) years. The specific Vendor proposed Software or solution must be described.

**5. B-5 Proposed Project Team**

The proposed Project Team must include individuals with substantial experience in:

- 5.1. Each of the disciplines relating to his or her stated project role.



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- 5.2. Implementing a system that meets the requirements outlined in this RFP.
- 5.3. The discipline of effective Agile Project Management.
- 5.4. The discipline of effective risk and issue management.
- 5.5. The discipline of data analysis, data mining, data modeling, data visualization, analytics and statistical analysis for like solutions.
- 5.6. The discipline of predictive and statistical analysis.
- 5.7. Operational support of government entities comparable in size and complexity.
- 5.8. Successful system roll-out.
- 5.9. Compliance with <Regulations or Publications etc.>
- 5.10. Effective use of software change management best practice.
- 5.11. Effective use of defect tracking tools that allow for reporting on test results.
- 5.12. System modification in order to satisfy unique needs of the Health and Human Services in New Hampshire.
- 5.13. Data privacy, data suppression (e.g. The discipline of data analysis, data mining, data modeling, data visualization, data privacy, data suppression, analytics and statistical analysis for like solutions.)
- 5.14. For the purpose of evaluating compliance with this requirement, the Vendor team is permitted to include Subcontractors.

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**APPENDIX C: SYSTEM REQUIREMENTS AND DELIVERABLES**

**APPENDIX C: SYSTEM REQUIREMENTS AND DELIVERABLES**

**1. C-1 SCOPE OF WORK**

See Section 1.1 Project Overview

**2. C-2 REQUIREMENTS**

Vendors shall complete the requirements checklist (Table C-2 General Requirements Vendor Response Checklist). Table C-2 is included as an attachment to RFP 2019-043.

**3. C-3 DELIVERABLES**

Vendors shall complete the response checklist Table C-3 Deliverables Vendor Response Checklist.

3.1. Table C-3 Deliverables Vendor Response Checklist

Reference	Activity, Deliverable, or Milestone	Deliverable Type	Projected Date	Delivery
<b>PLANNING AND PROJECT MANAGEMENT</b>				
1	Conduct Project Kickoff Meeting	Non-Software		
2	Project Status Reports	Written		
3	Work Plan	Written		
4	Infrastructure Plan, including Software and Hardware requirements	Written		
5	Security Plan	Written		
6	Communications and Change Management Plan	Written		
7	Agile Project Management Plan	Written		
9	Systems Interface Plan and Design/Capability	Written		



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10	Testing Plan	Written	
11	Data Conversion Plan and Design	Written	
12	Deployment Plan	Written	
13	Comprehensive Training Plan and Curriculum	Written	
14	End User Support Plan	Written	
16	Documentation of Operational Procedures	Written	
<b>INSTALLATION</b>			
17	Provide Software Licenses if needed	Written	
18	Provide Fully Tested Data Conversion Software or solution	Software	
19	Provide Software Installed, Configured, and Operational to Satisfy State Requirements	Software	
<b>TESTING</b>			
20	Conduct continuous integration and continuous delivery testing plan	Non-Software	
22	Perform Production Tests	Non-Software	
23	Test In-Bound and Out-Bound Interfaces	Software	
24	Conduct System Performance (Load/Stress) Testing	Non-Software	
25	Certification of 3 <sup>rd</sup> Party Pen Testing and Application Vulnerability Scanning.	Non-Software	
<b>SYSTEM DEPLOYMENT</b>			



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26	Converted Data Loaded into Production Environment	Software	
28	Conduct Training	Non-Software	
29	Cutover to New Software and solution	Non-Software	
30	Provide Documentation	Written	
31	Execute Security Plan	Non-Software	
<b>OPERATIONS.</b>			
32	Ongoing Hosting Support if applicable	Non-Software	
33	Ongoing Support & Maintenance if applicable	Software	
34	Conduct Project Exit Meeting	Non-Software	

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**APPENDIX D: TOPICS FOR MANDATORY AND NARRATIVE RESPONSES**

**APPENDIX D: TOPICS FOR MANDATORY NARRATIVE RESPONSES**

This section provides a series of technical topics that the State of New Hampshire will consider in selecting a Solution for the Data Analytics Platform for Opioid Crisis. Vendors must limit narrative responses describing the Software, Technical, Services and Project Management topics defined for this Project. The following table identifies specific topics for narratives. A page limit is identified for each topic. If a response to a topic exceeds the page limit, the State will limit its consideration to the prescribed page limit.

This section provides a series of topics related to the proposed Software Solution described in RFP.

Topic	Page Limit
<b>D-1 Proposed Software Solution</b>	
Topic 1 – Description of Solution	10
Topic 2 – Software Architecture	7
Topic 3 – Data Governance and Management	10
Topic 4 – User Friendliness and Usability	10
Topic 5 – IT Standards	2
Topic 6 – Data Import/Export and Migration	7
<b>D-2 Technical, Services and Project Management Experience</b>	
<b>D-2.1 Security and Protection of Data</b>	
Topic 7 – System Security	10
Topic 8 – Backup and Recovery	2
Topic 9 – Assurance of Business Continuity	3
Topic 10 – Skills and Experience	10
Topic 11 – Project Management Methodology	10
<b>D-2.2 State Personnel and Training</b>	





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Topic	Page Limit
Topic 12 - User Training Approach	3
Topic 13 - Preparation of State Staff	3
<i>D-2.3 Project Execution</i>	
Topic 14 - Implementation Approach	10
Topic 15 - Testing	6
Topic 16 - Migration Strategy	3
Topic 17 - Environment Setup	2
<i>D-2.4 Project Management Competence</i>	
Topic 18 - System Acceptance Criteria	6
Topic 19 - Status Meetings and Reports	3
Topic 20 - Risk and Issue Management	3
Topic 21 - Scope Control	2
Topic 22 - Quality Assurance Approach	6
Topic 23 - Work Plan	No Limit
<i>D-2.5 Ongoing Operations</i>	
Topic 24 - Hosted or On Premise System	5
Topic 25 - Support and Maintenance	2

**1. D-1 PROPOSED SOFTWARE SOLUTION**

1.1. Topic 1 - Description of Solution

Response Page Limit: 10

The State will evaluate whether the proposed Solution includes the required features.

- 1.1.1. Provide a detailed description of your proposed Software Solution, including features and functionality.



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- 1.1.2. Describe the approach for design, development and implementation of the required solution functionality. Include this information for each functional requirements area: general system, business requirements, data governance, project management, training, migration and inventory and training.
- 1.1.3. Provide specific details of the implementation strategy to meet all functional requirements. Provide solution specific information including a web based demonstration of the solution. Generic and marketing description will be considered as insufficient responses. Additionally, the Vendor is to define their methodology for developing design-level use cases and workflows to meet all requirements.
- 1.1.4. As a part of the implementation strategy, identify and explain functionality implications associated with the phased implementation. All functionality may be leveraged for programs being implemented post acceptance of the final delivery of services. Define exception handling processes where appropriate as well as any dependencies on existing systems or components of the new Solution that are needed to provide the specified functionality.
- 1.1.5. Is your product used for a similar functionality at another State agency? If so, provide a description of the system and environment.
- 1.1.6. In what ways does your proposed Solution adhere to the business and technical requirements?
- 1.1.7. Is your product dependent on an existing solution not included in this proposal?
- 1.1.8. In what ways does your proposed solution improve our current enterprise data warehouse system capabilities?
- 1.1.9. In what ways does your proposed solution provide enhanced ease of use for both the inspectors and the administrative users?
- 1.1.10. Provide an appendix with sales literature describing the functionality of the proposed Software. Provide a table with references to pages in the appendix that describe functionality addressed for all appropriate topics for narrative responses.
- 1.1.11. How does your solution meet best practices surrounding a Development, Stage, Production environment requiring change management practices between environments while meeting a goal of continuous integration and continuous delivery? Environments required by the State are



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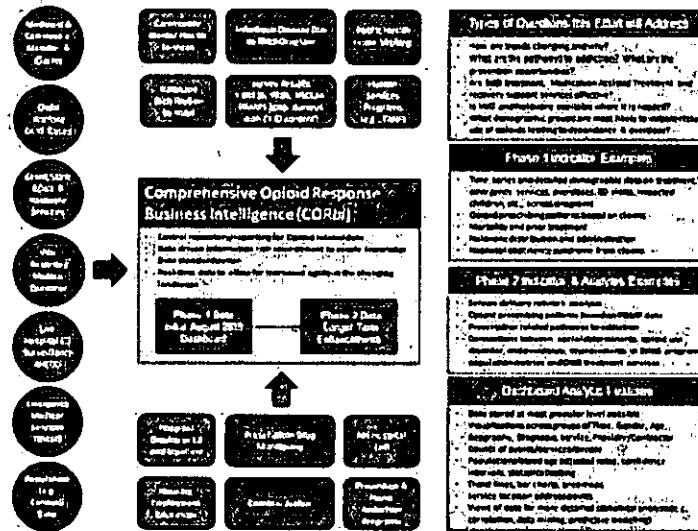
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- 1.1.11.1. Development
- 1.1.11.2. Testing
- 1.1.11.3. Training
- 1.1.11.4. Production
- 1.1.12. How does your solution address sizing requirements in accordance with planned use? Be inclusive of all hardware, storage, networking, backup/restore, database, file system, monitors and other items as required to comprehensively support the development and ongoing operational effort.
- 1.1.13. How does the solution address the ability to pull real-time data from multiple sources and display/track progress over time toward specific goals?
- 1.1.14. Provide examples of parameters in your presentation that are configurable by the end-user.
- 1.1.15. Describe the solutions drill-down capability that will support detail level data displays.
- 1.1.16. Describe the proposed solution's ability to provide static/historical and dynamic (i.e. real-time) reporting for all program and functional areas.
- 1.1.17. What types of built-in (pre-defined) and end-user definable (ad-hoc) reporting capabilities are included in the proposal?
- 1.1.18. What types of graphical data presentations (e.g., GIS) will the proposed solution offer?
- 1.1.19. How does the proposed solution provide user-defined reporting views / screens based upon different roles, security profiles, etc. of various stakeholders?
  - 1.1.19.1. How does configuration for this functionality occur within the proposed solution?
- 1.1.20. What is the proposed solution's capability for end-user report / data exportation at the report and raw data levels? The proposed solution will export to: Excel, CSV, XML, PDF as well as integrate with current technology solutions to include Tableau.
- 1.1.21. How will the solution allow for statistical analysis on population-based and client based information to drive service, program and overall business decisions?



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- 1.1.22. Describe the model summarizing your understanding of how the data relates to the focused population.
- 1.1.23. Describe the solutions and structure of data security (PHI or data suppression requirements) for external (anonymous) and internal (role-based) access and uses.
- 1.1.24. How will the solution allow for statistical analysis (e.g. R Programming) on population-based and client based information to drive service, program and overall business decisions?
- 1.1.25. Describe how your solution will be used to deliver an Opioid Crisis Dashboard based upon the following model:





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	progressing to misuse, addiction and related consequence	engaging in substance misuse to prevent progression and related familial, social and financial consequence to them, their communities and the state as whole.	data Child Protect. Crim. Just All Claims	DOS/Court DHHS
2	Identifying <u>individuals</u> already engaging in substance misuse but not yet meeting diagnostic criteria for addiction.  To utilize effective lower cost early intervention services to prevent progression to addiction and related consequence. Including fatal and non-fatal overdose, impacts on families and communities (including institutions), causing or exacerbating other behavioral health and or medical conditions and causing or exacerbating involvement with criminal justice, child welfare and or other social service systems.	Developing risk factor algorithms utilizing All Claims, DCFY, Hospital Discharge Data to analyze a host of co-morbid medical conditions (disease, accidents/injury) associated with substance misuse cross referencing with PII and DID level risk factor multipliers to target early intervention directed at these individuals to reduce risk and progression to SUD.	All Claims Child Protec. AHEDD  SVI	DHHS DHHS  DHHS

1.1.27. Utilizing data to mitigate the progression from risk to misuse and to addiction and death – Crisis Intervention / Case Management

Reference	Names / Purpose	Objective	Data Source	Owner
1	Identifying <u>Populations</u> at Risk for Opioid Overdose.  Reducing / preventing fatal and non-fatal Opioids (and polysubstance) overdose by	Using data to more strategically and efficiently reach out to groups at	Vital Records OD Deaths TEMSIS	SOS DOJ/OCME DOS/EMS



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	identifying high risk <u>groups</u>	greatest risk to prevent fatal and non-fatal opioid overdose	AHEDD	DPHS
2	Identifying <u>individuals</u> at Risk for Opioid Overdose.  Reducing fatal and non-fatal Overdose by mitigating risk for <u>individuals</u> with multiple risk factors for opioid overdose	Identify and conducting crisis intervention / intensive case management services / Naloxone kits: targeting individuals at greatest risk for fatal and non-fatal opioid overdose	Same as above + PDMP and All Claims Data OTP Data	Same as above + BOP DHSS DHSS
3	Using data for Naloxone distribution to those at greatest risk for overdose  Reducing / preventing fatal and non-fatal Opioids overdose by making Naloxone directly available to individuals that are continuing illicit opioid use while receiving SUD treatment from Programs administered by BDAS / DHHS or from MAT services provided Opioid Treatment Programs (OTPs)	Using data to be more strategic and efficient in broadly distributing Naloxone Kits to groups at greatest risk and directly to individuals at greatest risk for opioid overdose	WITS IT system  Individual Overdose Risk Assessment data	DHHS  DHSS
4	Emerging Threats / Situational Awareness Reports	Utilizing multiple data sets for situational awareness and to identify emerging threats before there are outbreaks that pose a threat to health and safety	To be determined	

1.1.28. Utilizing Data to Inform Policy – Strategic Planning – Programming



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- 1.1.28.1. Data analysis outlined above can be utilized to identify categories (population level strategies, prevention, early intervention, SUD / MAT treatment, crisis intervention and recovery services) and types of integrated / coordinated services that will best meet the Department's overall quality and outcomes objectives
- 1.1.29. Determining the Effectiveness of Policies – Strategies and Services
  - 1.1.29.1. By particular elements (examples: Prescribing regulation, NH PDMP program, school based substance misuse prevention programs, SUD treatment Services, or at a systems level (the effectiveness of the system overall)
- 1.1.30. Utilizing data to report out on client demographics, provider process and quality data and client outcomes
  - 1.1.30.1. Client demographic data by provider process data (locations, type and quantity of services provided), quality and cost of services and client outcomes.
- 1.2. Topic 2 – Software Architecture
  - Response Page Limit: 7
  - The State will evaluate the degree to which the architecture can be supported over an extended period, including the ease of support.
  - Provide a description of the technical architecture of the proposed Solution.
  - 1.2.1. What are the benefits of your proposed platform?
  - 1.2.2. Is the proposed solution based upon a 3-tiered, browser-based architecture?
  - 1.2.3. Does any part of the proposed Solution require Software (other than a browser) to be installed on the client workstation? If yes, describe Software that must be installed and the access authorization level required to install it.
  - 1.2.4. What add-on or third-party Software is required to support the functionality desired by the State?
  - 1.2.5. What programming languages are used for development, configuration, and customization of the proposed Solution?
  - 1.2.6. What components of the Software, such as middleware, are proprietary?
  - 1.2.7. Is your solution dependent on open source software?





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- 1.2.8. What is the growth potential of the proposed System?
- 1.2.9. What is the timeframe for technical obsolescence of the proposed Software? (For the purpose of this question, the version of the proposed Software would be considered obsolete when support is no longer available.)
- 1.2.10. How will the proposed solution allow for end users to share dashboards to social media (e.g. Twitter, Facebook, Google+ or other social media websites)?

1.3. Topic 3 – Data Governance and Management

Response Page Limit: 10

The State will evaluate the degree to which the governance plan will be adopted and streamline as well as provide a Department and Statewide direction to keep pace with evolving demands.

Data Governance and Management should include but not be limited to the following:

- 1.3.1. How will your solution meet the departments needs to establish a robust governance structure for its strategic move to implement a managed infrastructure and enterprise Data Analytics Platform (DAP)?
- 1.3.2. How will this solution increase delivery of business benefits for New Hampshire, including faster time-to-market, lower costs, better consistency, and increased agility?
- 1.3.3. How will the solution change the planning, development, and operation of application systems, and require new methods of collaboration among project teams within the Department?
- 1.3.4. What will be the base structure of the Governance process and how will it ensure that the infrastructure, shared business and technical services being deployed will become shared assets across all the agencies in State of New Hampshire?
- 1.3.5. How will the solution address a systematic method for the Department to make decisions?
- 1.3.6. What will your process be to identify who has the authority to make decisions, establish the precepts (i.e., principles, policies, standards, and guidelines) that influence decisions?
- 1.3.7. How will the solution reduce risks and ensure that people accomplish the State's strategy, goals, and priorities?



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- 1.3.8. How will the solution implement, and subsequently optimize governance for compliance by balancing between directives that require interpretation (people make such decisions) and routine or repetitive directives (computer systems best perform these decisions)?
- 1.3.9. What tools and/or technologies will be required to enable DAP Governance within the State?
- 1.3.10. How will your solution provide a strategy that enables the State to document the roles and responsibilities, as well as provide the recommendations required staffing for the day to day design, development and implementation of the Department Enterprise DAP solution.
- 1.3.11. How will your solution address the Department's roles and responsibilities, as well as providing the required staffing for the day to day design, development and implementation of the Department Enterprise DAP solution?
- 1.3.12. How will your solution fill, leverage as well as, if applicable, re-define the following roles?
- 1.3.12.1. Architects: seasoned professionals with a wide knowledge of the IT infrastructure, and have gone through long implementation cycles for complex business requirements. Architects are the "nervous system" of the DAP Competency Center and its permanent connection to the business; at the same time, sitting with the developers, architects stay involved in implementation issues, which keeps their vision up-to-date. Architects also play a key role with developers in selecting DAP and integration technologies for future projects.
- 1.3.12.2. Developers: provide detailed internal applications knowledge. During the early stage of the DAP Competency Center, developers and architects must agree on the scope of decision making. More-senior developers typically provide day-to-day project management for DAP projects. Security skills are also necessary, especially when PII is involved. Statistical analysis skills are also necessary.



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- 1.3.12.3. Quality assurance (QA): responsible for testing the integration work being implemented. Although the QA staff should leverage its experience in application development projects, they will face different challenges when testing DAP and integration projects. The team will learn DAP and integration-specific QA skills (for example, exception testing for integration middleware message queue overflow).
- 1.3.12.4. Database Administrators should be included in the DAP Competency Center. Work streams three, four and five involve data integration from different sources. As the integration work beyond the three work streams differentiates further into multistep integration and composite applications, data modeling expertise and enterprise data knowledge will continue to be crucial, especially when complex entities, such as the single view of the citizen/consumer become established assets of the DAP Competency Center.
- 1.3.12.5. Operations and system administration staff should participate at least for the initial three to six months of the operation of the integrated solution. Once integration projects complete successfully, they will be moved into production. Because of the presence of development and QA staff in the DAP Competency Center, it will be easier to solve day-to-day issues, and the operation of the solution will be smoother. Operations staff in the DAP Competency Center must also agree to specific configuration management issues with other groups (for example, development, application Vendors and integration products), before the integrated solution is moved to production.



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- 1.3.12.6. Business analysts, or business-process owners, are required for the DAP Competency Center when business process management or business activity monitoring requirements are present and, in general, when the DAP Competency Center starts to demonstrate business value. Architects always sit between business and the IT department, while business analysts live in the business. Business analysts' involvement is crucial to DAP Competency Center activities, such as the definition of high-level, coarse granularity reusable services in a service-oriented architecture (DAP), or the setup of an electronic channel to exchange business information with state partners.
- 1.3.13. How will the proposed DAP governance solution provide decision-making guidance for all stages in the service lifecycle-from planning to retirement?
- 1.3.14. How will the solution address specific lifecycle stages and issues associated with the following?
- 1.3.14.1. User Security Management Services
- 1.3.15. How will the solution ensure strategic alignment between the deployed technology and the future-state business processes and operational model?
- 1.3.16. What is the proposed change control process for considering and accepting or denying changes (policy, planning, design, processes, etc.) throughout the project?
- 1.3.17. How will the proposed solution develop and obtain buy-in for a stakeholder and communication management plan?
- 1.3.18. How will your methodology address organizational assessments and gap analyses for the affected divisions and programs and facilitate the development of appropriate organizational structures and job descriptions?

**1.4. Topic 4 – User Friendliness and Usability**

Response Page Limit: 10

The State values Software that is compatible with its intended user's ability to use it easily and successfully.

- 1.4.1. To what extent is the Software used in the proposed solution intuitive based on the likelihood that the user has experienced other applications with similar graphic user interfaces.



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- 1.4.2. How efficient is the Software in terms of the number of operations required to perform basic tasks.
  - 1.4.3. How does the Vendor's proposed training process support the application.
  - 1.4.4. How much time is required to make new users fully functional and able to input into the system?
  - 1.4.5. Explain any function driven capabilities that exist in the proposed application.
  - 1.4.6. How does the solution address advanced analysis such as predictive analysis, root cause analysis, actionable information to determine cost effectiveness, identification of "hotspotters" (clients in communities with multiple complex health conditions who are high-utilizers of care, services, etc.)?
  - 1.4.7. How will a user guidance and/or help functions be developed into the system?
- 1.5. Topic 5 – IT Standards  
Response Page Limit: 2
- The State will evaluate the degree to which IT standards used in the Vendor provided product are compliant with other State Systems, or utilize existing State standards.
- The proposed Solution must comply with Open Standards and Open Data Formats as mandated by RSA chapter 21-R: Open Standards (HB418 2012).
- 1.5.1. Describe the degree to which your solution complies with information technology standards mentioned on the State of NH web site: <http://www.nh.gov/doi/vendor>
  - 1.5.2. Is the proposed application considered Open Source Software?
  - 1.5.3. Does it comply with Open Standards, including but not limited to Open Data Formats?
  - 1.5.4. Describe the degree to which the proposed Solution meets the requirements of RSA chapter 21-R:10, 21-R:11, 21-R:13.
  - 1.5.5. Identify what industry standards are incorporated in to the Solution.
  - 1.5.6. Identify whether standards employed are national in origin or are unique to the proposed Software.
- 1.6. Topic 6 – Data Import/Export Standards and Migration  
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The State will evaluate the ease of interfacing with our current Data import and export layouts for Data exchange.

The State anticipates that this system will expand to be leveraged and interfaced by any department within the state as well as external organizations based on approved and compliance based data sharing agreements. Describe the mechanisms and tools included in the proposed System to implement these interfaces. Be sure to address the following aspects of this topic:

- 1.6.1. What types of interfaces are possible with the proposed System (e.g., online, batch, etc.)?
- 1.6.2. What file and database formats can the solution receive?
- 1.6.3. What Data is available to other systems? What Data may be imported/updated from other systems and how is this managed?
- 1.6.4. What data (if any) isn't available for import/export and how is this managed?
- 1.6.5. What tools are provided with the System for the development of interfaces?
- 1.6.6. What scheduling tools are required for initiation of interfaces? Are these tools included with the proposed solution?
- 1.6.7. Are there any constraints upon the timing of batch interfaces?
- 1.6.8. Does the System employ standard definitions or file layouts for interfaces? If so, include a sample in an appendix.
- 1.6.9. What standard interface formats are used with the proposed Software? What degree of flexibility is available?
- 1.6.10. How does your solution meet the objective of providing a seamless and productive environment for users.
- 1.6.11. How does your solution meet all mandatory State requirements and is consistent with the standards and requirements detailed in this RFP.
- 1.6.12. How does your solution meet the requirement of the provision of development, testing/verification, training, certification, and production environments to be used to develop, deploy, maintain, and operate the integrated system.
- 1.6.13. How will the proposed solution provide the State of New Hampshire the processes, tools and training to be able to continue the integration of data sources into the Data Analytics platform?



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**2. D-2 Technical, Services and Project Management Experience**

**2.1. D-2.1 Security and Protection of Data**

**2.1.1. Topic 7 – System Security**

Response Page limit: 10

The State will evaluate the degree to which System issues can be avoided.

Software Systems must be reliable, regardless of how they are delivered. The State's workers and citizens expect government Services and information to be reliable and available on an ongoing basis to ensure business continuity.

The State must ensure that appropriate levels of security are implemented and maintained in order to protect the integrity and reliability of its Information Technology resources, information, and Services. State resources, information, and Services must be available on an ongoing basis, with the appropriate infrastructure and security controls to ensure business continuity and safeguard State networks, Systems and Data.

The State will evaluate the degree to which the proposed System is designed and architected to ensure the confidentiality and integrity of its valued asset, Data.

**2.1.1.1. Describe the System security design and architectural features incorporated into the proposed Software. At a minimum, discuss the following:**

**2.1.1.1.1. The identification and authentication methods used to ensure that users and any interfacing applications are identified and that their identities are properly verified.**

**2.1.1.1.2. The authorization methods used to ensure that users and client applications can only access Data and services for which they have been properly authorized.**

**2.1.1.1.3. The immunity methods used to ensure that unauthorized malicious programs (e.g., viruses, worms and Trojan horses) do not infect the application.**



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- 2.1.1.1.4. The methods used to ensure that communications and Data integrity are not intentionally corrupted via unauthorized creation, modification or deletion.
- 2.1.1.1.5. The methods used to ensure that the parties to interactions with the application cannot later repudiate or rebut those interactions.
- 2.1.1.1.6. The Intrusion Detection methods used to ensure the detection, recording and review of attempted access or modification by unauthorized individuals.
- 2.1.1.1.7. The privacy methods used to ensure that confidential Data and sensitive communications are kept private.
- 2.1.1.1.8. The System maintenance methods used to ensure that System maintenance does not unintentionally disrupt the security mechanisms of the application or supporting hardware.
- 2.1.1.1.9. The testing methods conducted to load and stress test your Software or Solution to determine its ability to withstand Denial of Service (DoS) attacks.
- 2.1.1.1.10. The ability of your Software to be installed in a "locked-down" fashion so as to turn off unnecessary features (user accounts, operating System services, etc.) thereby reducing the Software's security vulnerabilities and attack surfaces available to System hackers and attackers.
- 2.1.1.1.11. The notification and escalation process in the event of an intrusion.
- 2.1.1.2. Describe the System assurance provisions incorporated into the proposed Software. At a minimum, discuss the following:
  - 2.1.1.2.1. What process or methodology is employed within the proposed Software to ensure Data integrity?





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2.1.1.2.2. To what degree does your approach rely on System assurance capabilities of the relational database management system (RDMS)?

2.1.1.2.3. If multiple databases are employed, what extra procedures are employed to ensure synchronization among databases?

2.1.2. Topic 8 – Backup and Recovery

Response Page Limit: 2

The State will evaluate the degree to which proposed backup and recovery processes protect mission-critical Data, ease of use of these processes, and impact of these processes on operation of the System.

The State seeks a sound backup and recovery provision as part of the Solution. Describe the tools used for backup and recovery of applications and Data. Describe the impact of the proposed backup process on the operation of the System. Also, address the following:

2.1.2.1. Use of and method for logging and journaling;

2.1.2.2. Single points of failure and recommended approaches for their elimination;

2.1.2.3. Approach to redundancy;

2.1.2.4. Please enumerate your high-level methodology for creation of a Disaster Recovery Plan; and

2.1.2.5. Impact of Software license fees.

2.1.3. The State believes that additional Software license fees solely related to redundancy for backup and recovery would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.

2.1.4. Topic 9 – Assurance of Business Continuity

Response Page Limit: 3

The State will evaluate the degree to which the proposed plan to assure business continuity mitigates risk to the State, and it's potential for implementation (cost effective and easy to implement).



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- 2.1.4.1. The State intends to consider provision for assurance of business continuity as an optional component of the Solution. Please provide a plan for business continuity if a disaster occurs at the data center that is hosting the proposed Solution. This is an optional requirement and will be included or excluded depending on any additional cost associated with the plan.
- 2.1.4.2. The State believes that additional Software License fees solely related to redundancy for assurance of business continuity would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.
- 2.1.4.3. Please enumerate your high-level methodology for creation of a Business Continuity Plan.

2.1.5. Topic 10 – Skills and Experience

Response Page Limit: 10

The State will evaluate the degree to which the proposed Solution provides for the skills and experience to meet the requirements in this RFP.

- 2.1.5.1. Describe in detail the skills and experience that your vendor will bring to the State to assist in meeting the requirements and narrative included in this RFP.
- 2.1.5.2. Describe at least two (2) other solutions that you have completed that relates to the requirements for this RFP
- 2.1.5.3. Describe the manner in which users and system administrators can view transactional Data.
- 2.1.5.4. Please describe your experience with organizations similar to the Health and Human Services and discuss what historical data they have and have not converted/migrated into the new system.
- 2.1.5.5. How many years of historical data is typically converted in a project similar to this one? Describe how you will help Health and Human Services determine the right number of years to convert.

2.1.6. Topic 11 – Project Management Methodology

Response Page Limit: 5



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The State will evaluate the Vendor's approach to project management methodology.

- 2.1.6.1. Describe the methodologies used for organizing teams to implement solutions in an iterative Agile methodology.
- 2.1.6.2. Describe how your approach meets the requirements for project management and testing the security of the Software application and hosting environment.
- 2.1.6.3. How can you ensure the security and confidentiality of the State Data collected on the system?
- 2.1.6.4. What security validation Documentation will be shared with the State?
- 2.1.6.5. Do you use internal or external resources to conduct security testing?

2.2. D-2.2 State Personnel and Training

2.2.1. Topic 12 – User Training Approach

Response Page Limit: 3

The State will evaluate whether the training approach is likely to prepare users adequately to use the new System from the day of deployment, including maximum knowledge transfer to allow the State to conduct its own training in the future.

The State understands the importance of training for a successful Software Implementation. The State seeks a detailed discussion of training alternatives in addition to a recommended training approach.

- 2.2.1.1. Describe the process for an assessment of needs; identifying casual, power, and specialty users; developing a curriculum for each audience; and conducting, evaluating, and refining training courses.
- 2.2.1.2. Questions to address include, but are not limited to, the following:
  - 2.2.1.2.1. What type of training (instructor led vs. computer based) will be used for each purpose and why?
  - 2.2.1.2.2. What methods will be employed to evaluate training activities?
  - 2.2.1.2.3. How will training be coordinated with other user support activities?



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- 2.2.1.2.4. Will manuals be adequate to enable trained users to research answers to their own questions?
- 2.2.1.2.5. If the perception is that they are not adequate, can those manuals be quickly revised?
- 2.2.1.2.6. How will the State be prepared to conduct ongoing training after Implementation is completed?
- 2.2.1.2.7. Are training manuals on-line and maintained as part of a maintenance agreement?

2.2.2. Topic 13 - Preparation of State Staff

Response Page Limit: 3

The State will evaluate whether the provisions to prepare State staff participating in the Project will enable the staff to contribute appropriately.

- 2.2.2.1. Describe how State staff assigned to the Project Team will be prepared to contribute.
- 2.2.2.2. Provide an overview of Project Team interactions and dependencies between functions.

2.3. D-2.3 Project Execution

2.3.1. Topic 14 – Implementation Approach

Response Page Limit: 10

The State will evaluate the quality of analysis, reasonableness, and flexibility evident in the proposed Implementation approach.

Provide one or more feasible Implementation plans. For each plan provided:

- 2.3.1.1. Identify timeframes for major milestones, including timing for discontinuing legacy Systems if applicable;
- 2.3.1.2. Discuss cost implications of the plan, including implications on maintenance fees; and
- 2.3.1.3. Address the level of risk associated with the plan.
- 2.3.1.4. What are the highlights (key selling points) of your proposed approach?



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2.3.1.5. What makes your proposed implementation approach unique in consideration of your competitors?

2.3.1.6. To assist the State in evaluation of the Implementation Plan or plans discussed, identify the Implementation Plan used as a basis for the cost Proposal.

2.3.2. Topic 15 – Testing

Response Page Limit: 6 – Appendix Required

The State will evaluate the quality of support the Vendor will supply to assist State testing staff and the effectiveness of the proposed Defect tracking and resolution process. The ability of the State Project leadership to participate in analysis, classification, and establishment of priorities for suspected Defects will also be evaluated.

State staff will conduct Acceptance Testing, but support from the selected Vendor is required; refer to Appendix G-2: Testing. To define the type of support that will be provided, address the following questions:

2.3.2.1. Describe your testing methodology and include a proposed test plan.

2.3.2.2. Will configured Software be delivered in functional components for State Acceptance Testing?

2.3.2.3. How much time should the State allow to complete User Acceptance Testing of a component?

2.3.2.4. What test management and test driver tools will be employed in quality assurance testing prior to delivery of code to the State? Will these tools be available to the State for use in Acceptance Testing?

2.3.2.5. What support will be provided to prepare State staff during Acceptance Testing? How will on-site support for the State testing team be provided?

2.3.2.6. How will members of the testing team be prepared to test the configured Software?

2.3.2.7. What Documentation of configured Software will be available to the testing team?

2.3.2.8. Based on experience in similar Projects, how many and what types of Defects are likely to be encountered in Acceptance Testing? (Include metrics from other Projects to support this response.)



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- 2.3.2.9. How much time is available for comprehensive testing and correction of Defects prior to Implementation? Based on metrics from similar Projects, is it sufficient? (Provide information from other Projects to support this response.)
- 2.3.2.10. If frequency exceeds the expected level, what corrective actions will be instituted?
- 2.3.2.11. How quickly will a suspected Defect be investigated, and what classifications are planned for suspected Defects?
- 2.3.2.12. How quickly will Software Defects be corrected?
- 2.3.2.13. What specific Software tools will be used to isolate performance problems?
- 2.3.2.14. What tools will be used to document and track status of suspected Defects?
- 2.3.2.15. Will these tools be available to the State after the Project is completed?
- 2.3.2.16. What role will the State play in classification and prioritization of Defects?
- 2.3.2.17. Will System performance be measured and documented using the State's infrastructure and Data? If yes, how?
- 2.3.2.18. Provide a sample User Acceptance Test Plan from a completed Project as an appendix.
- 2.3.2.19. Testing Prior to UAT:
  - 2.3.2.19.1. The State has a specific approach it generally requires for testing. Please read Appendix G2 (Testing Requirements) for this approach. Please describe your typical testing methodology and how challenging you feel it may be to adopt the State's standard.
  - 2.3.2.19.2. Utilize the first five pages of this topic to describe the approach you have proposed to testing. Be sure to cover as applicable:
    - 2.3.2.19.2.1. Installation and Environment Testing
    - 2.3.2.19.2.2. Unit Testing
    - 2.3.2.19.2.3. System Testing



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- 2.3.2.19.2.4. Regression Testing
- 2.3.2.19.2.5. Performance Tuning and Stress Testing
- 2.3.2.19.2.6. Data Conversion Testing and Data Validation
- 2.3.2.19.2.7. Security Review/Testing

2.3.2.19.3. What test management and test driver tools will be employed in quality assurance testing prior to delivery of code to the State? Will these tools be available to the State for use in Acceptance Testing?

2.3.3. Topic 16 – Migration Strategy

Response Page Limit: 3

The State will evaluate the degree to which the Vendor will ensure that Data conversion is effective and impacts State staff to the minimum extent possible.

- 2.3.3.1. It is our assumption that the Data Conversion/Migration Plan is a deliverable that will ultimately lay out the plan required to convert and migrate data from Health and Human Services systems to the new environment. Please discuss your high-level approach to carrying out data conversion/migration activities. Be sure to discuss software tools and processes used to support this effort.
- 2.3.3.2. Describe the approach that will be used for assessing Data quality and conducting Data cleansing prior to conversion. Please be sure to include whose responsibility it will be and the process you are proposing to deal with incomplete records in the legacy system.
- 2.3.3.3. Discuss the use of automated tools in Data conversion. When will automated tools be used? When will manual intervention be required?
  - 2.3.3.3.1. What data do you know will be challenging to convert/migrate and why? What special approach will you recommend as part of the planning document to help reduce the impact of this challenge on this project?



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- 2.3.3.3.2. Please discuss your approach to working with the Agency to document a data conversion/migration plan and process. Please also describe how you will determine how much historical data is available and what is appropriate to be made available within the new system.
- 2.3.3.3.3. Define expectations for State and Vendor roles during the development of the data conversion/migration plan and process.
- 2.3.3.3.4. What lessons learned can you share with us from other implementations that are important to understand as part of development of the data conversion/migration plan and process?

**2.3.4. Topic 17 – Environment Setup**

**Response Page Limit: 2**

The State will evaluate whether proposed environments are sufficient to satisfy Project needs, including phased Implementation.

- 2.3.4.1. Describe the different Software and hardware environments required for the concurrent development, testing, and production of the proposed Solution. Discuss how the proposed environments support the Implementation of the hosted Solution, including all necessary training.
- 2.3.4.2. The State believes that additional Software License fees solely related to establishing environments for normal development lifecycle would be inappropriate. If the Proposal differs from this standard, describe and provide rationale for the difference.
- 2.3.4.3. Discuss how the proposed environments support the Implementation of the hosted Solution, including all necessary training.

**2.4. D2.4 Project Management Competence**

**2.4.1. Topic 18 – System Acceptance Criteria**

**Response Page Limit: 6**





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The State will evaluate whether proposed Acceptance criteria will assure the State that the new System is functioning effectively before being turned over for State for User Acceptance Testing.

- 2.4.1.1. Propose measurable criteria for State final Acceptance of the System.
- 2.4.1.2. Discuss how the proposed criteria serve the interest of the State.

2.4.2: Topic 19 – Status Meetings and Reports

Response Page Limit: 3 – Appendix Required

The State will evaluate the degree to which Project reporting will serve the needs of State Project leaders.

The State believes that effective communication and reporting are essential to Project success. At a minimum, the State expects the following:

- 2.4.2.1. Introductory Meeting: Participants will include Vendor Key Project Staff and State Project leaders from both the Health and Human Services and the Department of Information Technology. This meeting will enable leaders to become acquainted and establish any preliminary Project procedures.
- 2.4.2.2. Kickoff Meeting: Participants will include the State and Vendor Project Teams and major stakeholders. This meeting is to establish a sound foundation for activities that will follow.
- 2.4.2.3. Status Meetings: Participants will include, at a minimum, Vendor Project Manager and the State Project Manager. These meetings, which will be conducted at least biweekly, will address overall Project status and any additional topics needed to remain on Schedule and within budget. A status and error report from the Vendor will serve as the basis for discussion.
- 2.4.2.4. The Work Plan: must be Reviewed at each Status Meeting and updated, at minimum, on a biweekly basis, in accordance with the Contract.
- 2.4.2.5. Special Meetings: Need may arise for a special meeting with State leaders or Project stakeholders to address specific issues.



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- 2.4.2.6. Exit Meeting: Participants will include Project leaders from the Vendor and the State. Discussion will focus on lessons learned from the Project and on follow up options that the State may wish to consider.
- 2.4.2.7. The State expects the Vendor to prepare agendas for and minutes of meetings. Meeting will include an updated Work Plan. Drafting of formal presentations, such as a presentation for the kickoff meeting, will also be a Vendor responsibility.
- 2.4.2.8. Vendor shall submit status reports in accordance with the Schedule and terms of the Contract. All status reports shall be prepared in formats approved by the State. The Vendor's Project Manager shall assist the State's Project Manager, or itself produce reports related to Project Management as reasonably requested by the State, all at no additional cost to the State. Vendor shall produce Project status reports, which shall contain, at a minimum, the following:
  - 2.4.2.8.1. Project Status as it relates to Work Plan
  - 2.4.2.8.2. Deliverable status
  - 2.4.2.8.3. Accomplishments during weeks being reported
  - 2.4.2.8.4. Planned activities for the upcoming two (2) week period
  - 2.4.2.8.5. Future activities
  - 2.4.2.8.6. Issues and Concerns requiring resolution
  - 2.4.2.8.7. Report and remedies in case of falling behind Schedule
- 2.4.2.9. Be sure to cover the following:
  - 2.4.2.9.1. Timing, duration, recommended participants and agenda for the kickoff meeting;
  - 2.4.2.9.2. Frequency and standard agenda items for status meetings;
  - 2.4.2.9.3. Availability for special meetings; and
  - 2.4.2.9.4. Agenda for the exit meeting.



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- 2.4.2.10. As an appendix, provide an example of status reports prepared for another Project. Names of the Project and of any individuals involved may be removed.
- 2.4.2.11. As reasonably requested by the State, Vendor shall provide the State with information or reports regarding the Project. Vendor shall prepare special reports and presentations relating to Project Management, and shall assist the State in preparing reports and presentations, as reasonably requested by the State, all at no additional cost to the State.

**2.4.3. Topic 20 – Risk and Issue Management**

Response Page Limit: 3

The State will evaluate the extent to which the proposed approach will contribute to the timely identification and effective action on issues and risks. The State will also evaluate whether the approach recognizes and addresses appropriate State involvement in risk and issue management.

- 2.4.3.1. Provide proposed methodologies for risk and issue management. Discuss State and Vendor responsibilities. The State seeks a clear means to compare planned versus actual status, including percentages, at a sufficiently detailed level to ensure the State can adequately monitor the progress of the Project. Be sure to identify any essential time constraints on State actions. Escalation procedures will be defined in a Contract between the State and the Vendor.

**2.4.4. Topic 21 – Scope Control**

Response Page Limit: 2

The State will evaluate the degree to which proposed modifications in scope are scrutinized to ensure that only essential changes are approved. Evaluation will also address the quality and timeliness of information that will be available about a proposed scope change.

- 2.4.4.1. Suggest an approach for scope control. Describe how the approach has been employed effectively on another Project.
- 2.4.4.2. Demonstrate your firm's ability to manage scope creep by discussing tools and methodologies, as well as past Project experiences.



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2.4.5. Topic 22- Quality Assurance Approach

Response Page Limit: 6

The State will evaluate the degree to which proposed procedures will ensure that Deliverables require limited modification when submitted for approval.

2.4.5.1. The State has identified three categories of Deliverables:

2.4.5.1.1. Written Deliverables, such as a training plan;

2.4.5.1.2. Software Deliverables, such a configured Software module; and

2.4.5.1.3. Non-Software Deliverables, such as conduct of a training course.

2.4.5.2. Describe the methodology that will be employed to assure that each type of Deliverable is of high quality before submission for State consideration. Discussion should include but not be limited to:

2.4.5.2.1. Provision for State input to the general content of a Written Deliverable prior to production;

2.4.5.2.2. The standard for Vendor internal Review of a Written Deliverable prior to formal submission; and

2.4.5.2.3. Testing of Software Deliverables prior to submission for Acceptance Testing.

2.4.6. Topic 23 - Work Plan

Response Page Limit: None

The State will evaluate whether the Vendor's preliminary proposed Work Plan includes a description of the Schedule, tasks, Deliverables, major milestones, task dependencies, and a payment Schedule. The Work Plan shall also address resource allocations (both State and Vendor team members). This narrative should reflect current Project Management "best practices" and be consistent with narratives on other topics. The Software to be used to support the ongoing management of the Project should also be described in the Work Plan.



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The State sees a Work Plan as essential to reaching a comprehensive agreement with a Vendor. Consequently, the State will seek to refine the proposed Work Plan prior to Contract approval with the selected Vendor and to incorporate the refined Work Plan by reference into a Contract.

- 2.4.6.1. Provide a preliminary Work Plan depicting tasks, task dependencies, Schedule, milestones, Deliverables, and payment Schedule. Include the deliverables outlined in Appendix C (System Requirements and Deliverables) and include other deliverables that you, based on past experience, would recommend be developed on this project.
- 2.4.6.2. Define both proposed Written and Software Deliverables. Include sufficient detail that the State will be able to identify departures from the Plan in sufficient time to seek corrective action. In particular, provide information about staffing.
- 2.4.6.3. Describe all Deliverables to be produced in the Project. Ensure that all Deliverables and milestones are identified in the Work Plan. Identify and discuss the following:
  - 2.4.6.3.1. All assumptions upon which the Work Plan is based;
  - 2.4.6.3.2. Descriptions of recommended roles by activity and time required for both State and Vendor members of the Project Team;
  - 2.4.6.3.3. Assignments of members of the Vendor's team identified by role to specific tasks; and
  - 2.4.6.3.4. Critical success factors for the Project.
- 2.4.6.4. Discuss how this Work Plan will be used and State access to Plan details including resource allocation.
- 2.4.6.5. Discuss frequency for updating the Plan, at a minimum weekly and for every status meeting. Explain how the State will know whether the Project is on Schedule and within budget.

2.5. D2.5 Ongoing Operations

2.5.1. Topic 24 – Hosted System If Applicable

Response Page limit: 5



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Describe the hosting plan including hardware and software platforms, software utilities, telecommunications resources, security measures and business continuity plans. Include a description of servers, computers, software, programming capability and other equipment and technical resources which will be used to design, develop, implement and maintain the application.

- 2.5.1.1. Provide the type and speed of the connection;
- 2.5.1.2. Information on redundancy;
- 2.5.1.3. Disaster recovery;
- 2.5.1.4. Security;
- 2.5.1.5. Interim staffing for peak help desk demand periods and transition to a permanent arrangement;
- 2.5.1.6. Development of a help desk knowledge base; and
- 2.5.1.7. Metrics based on help desk inquiries.

2.5.2. Topic 25 – Support and Maintenance If Applicable

Response Page Limit: 2

The State will evaluate whether the Vendor's proposed support and maintenance plan includes a description of the types and frequency of support, detailed maintenance tasks – including Scheduled maintenance and upgrades, and any other dependencies for on-going support and maintenance of the system. This narrative should reflect current "best practices" for these tasks.

- 2.5.2.1. For how many of your clients do you provide typical software maintenance and support in operational years and what percent of your clients does this represent?
- 2.5.2.2. For how many of your clients do you provide support and maintenance of the operational environment on behalf of the State and what percent of your clients does this represent?
- 2.5.2.3. What do you find to be the optimal amount of support?
- 2.5.2.4. Describe how general support and maintenance skills are transferred to State technical support personnel for knowledge sharing.
- 2.5.2.5. Describe how are support and maintenance issues are tracked detailing methodology and if any additional software is required.
- 2.5.2.6. Describe process for maintenance of the general knowledge base.



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- 2.5.2.7. Describe any particular procedures required to handle escalation and emergency calls.
- 2.5.2.8. Detail the plan for preventive maintenance and for upgrade installations.
- 2.5.2.9. Detail the types and frequency of support tasks required.

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APPENDIX E: STANDARDS FOR DESCRIBING VENDOR QUALIFICATIONS

**APPENDIX E: STANDARDS FOR DESCRIBING VENDOR QUALIFICATIONS**

Vendor qualifications are important factors in selecting <CORbi Software and accompanying Implementation and follow on support Services. To facilitate evaluation of Vendor qualifications, the State seeks information about:

- Corporate qualifications of each Vendor proposed to participate in the Project;
- Proposed team organization and designation of key staff;
- Individual qualifications of candidates for the role of Project Manager; and
- Individual qualifications of candidates for other key staff roles.

This Appendix identifies specific information that must be submitted.

**1. E-1 Required Information on Corporate Qualifications**

**Information is required on all Vendors who will participate in the Project. Vendors submitting a Proposal must identify any Subcontractor(s) to be used.**

**1.1. E-1.1 Vendor and Subcontractors**

The Vendor submitting a Proposal to this Project must provide the following information:

**1.1.1. E-1.1.1 Corporate Overview (2 page limit)**

Identify the proposed role of the firm on the Project. Describe the major business areas of the firm. Provide a high-level description of the firm's organization and staff size. Discuss the firm's commitment to the public sector, experience with this type of Project Implementation and experience in New Hampshire.

**1.1.2. E-1.1.2 Financial Strength**

**1.1.2.1. Provide at least one of the following:**

**1.1.2.1.1. The current Dunn & Bradstreet report on the firm; or**

**1.1.2.1.2. The firm's two most recent audited financial statements; and the firm's most recent un-audited, quarterly financial statement; or**





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1.1.2.1.3. The firm's most recent income tax return. For example, either a copy of the IRS Form 1065, U.S. Return of Partnership Income or Schedule E (IRS Form 1040) Supplemental Income and Loss (for partnerships and S corporations) OR IRS Form 1120, U.S. Corporation Income Return. These forms are typically submitted when a Vendor does not have audited financial statements.

1.1.3. E-1.1.3 Litigation

Identify and describe any claims made by clients during the last ten (10) years. Discuss merits, current status and, if available, outcome of each matter.

1.1.4. E-1.1.4 Prior Project Descriptions (3 limited to 3 pages each)

Provide descriptions of no more than three (3) similar projects completed in the last < four (4) years. Each Project description should include:

1.1.4.1. An overview of the project covering type of client, objective, project scope, role of the firm and outcome;

1.1.4.2. Project measures including proposed cost, actual project cost, proposed project schedule and actual project schedule;

1.1.4.3. Names and contact information (name, title, address and current telephone number) for one or two references from the client; and

1.1.4.4. Names and project roles of individuals on the proposed team for the New Hampshire Project that participated in the project described.

1.1.5. E-1.1.5 Subcontractor Information

Vendors must provide information on any Subcontractors proposed to work on this Project. Required information shall include but not be limited to:

1.1.5.1. Identification of the proposed Subcontractor and a description of the major business areas of the firm and their proposed role on the Project;

1.1.5.2. A high-level description of the Subcontractor's organization and staff size;

1.1.5.3. Discussion of the Subcontractor's experience with this type of Project;



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- 1.1.5.4. Resumes of key personnel proposed to work on the Project; and
- 1.1.5.5. Two references from companies or organizations where they performed similar services (if requested by the State).

## 2. E-2 Team Organization and Designation of key Vendor staff

Provide resumes of key personnel proposed to work on the Project and an organizational chart depicting the Vendor Project Team. This chart should identify key staff required from the Vendor, any Subcontractors, and the State.

Define the responsibilities and length of assignment for each of the roles depicted in the organizational chart. Identify the positions that should be designated key staff. Ensure that designation of key Vendor staff includes subject matter experts in the following areas:

- Data Analysis
- Data Analytics
- Data Quality
- Statistics
- Data Governance
- User Experience (UX) and User Interface (UI)
- Data Modeling
- Data Visualizations
- Project Management
- Training
- Data Migration

A single team member may be identified to fulfill the experience requirement in multiple areas.

### 2.1. E-2.1 State Staff Resource Worksheet

Append a completed State Staff Resource Worksheet to indicate resources expected of organization. Expected resources must not exceed those outlined in Appendix A: *Background Information* - Section A-4: *State Project Team*. The required format follows.



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Table E-2: Proposed State Staff Resource Hours Worksheet

State Role	Initiation	Configuration	Implementation	Close Out	Total
Project Manager					
Position 1					
Position 2					
Position 3					
Position 4					
Position 5					
State Total					

**3. E-3 Candidates for Project Manager**

Although the State recognizes that staff availability is somewhat uncertain, qualifications of the Project Manager are particularly critical. Therefore, the State requires that the Project Manager be identified with some degree of certainty.

For the Project Manager candidate, provide a resume not to exceed five (5) pages in length addressing the following:

- 3.1. The candidate's educational background;
- 3.2. An overview of the candidate's work history;
- 3.3. The candidate's project experience, including project type, project role and duration of the assignment;
- 3.4. Any significant certifications held by or honors awarded to the candidate; and
- 3.5. At least three (3) references, with contact information, that can address the candidate's performance on past projects.

**4. E-4 Candidates for key Vendor staff Roles**

Provide a resume not to exceed ten (10) pages for each key Vendor staff position on the Project Team. Each resume should address the following:

- 4.1. The individual's educational background;
- 4.2. An overview of the individual's work history;



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- 4.3. The individual's project experience, including project type, project role and duration of the assignment;
- 4.4. Any significant certifications held by or honors awarded to the candidate; and
- 4.5. At least three (3) references, with contact information, that can address the individual's performance on past projects.

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**APPENDIX F: PRICING WORKSHEETS**

**APPENDIX F: PRICING WORKSHEETS**

A Vendor's Cost Proposal must be based on the worksheets formatted as described in this Appendix.

The Vendor must assume all reasonable travel and related expenses. All labor rates will be "Fully Loaded", including, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses.

**1. F-1 Activities/Deliverables/Milestones Pricing Worksheet**

The Vendor must include, within the Not-to-Exceed for IT service activities, tasks and preparation of required Deliverables, pricing for the Deliverables required based on the proposed approach, and methodology and tools. The following format must be used to provide this information.

*Table F-1: Activities/Deliverables/Milestones Pricing Worksheet <SAMPLE TABLE>*

	Activity, Deliverable, or Milestone	Deliverable Type	Projected Delivery Date	Price
<b>PLANNING AND PROJECT MANAGEMENT</b>				
1	Conduct Project Kickoff Meeting	Non-Software		
2	Project Status Reports	Written		
3	Work Plan	Written		
4	Infrastructure Plan, including Desktop and Network Configuration Requirements	Written		
5	Security Plan	Written		
6	Communications and Change Management Plan	Written		
7	Requirements Trace ability Matrix	Written		
8	Software Configuration Plan	Written		
9	Systems Interface Plan and Design/Capability	Written		



Attachment 11  
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10	Testing Plan	Written		
11	Data Conversion Plan and Design	Written		
12	Deployment Plan	Written		
13	Comprehensive Training Plan and Curriculum	Written		
14	End User Support Plan	Written		
15	Business Continuity Plan	Written		
16	Documentation of Operational Procedures	Written		
INSTALLATION				
17	Provide Software Licenses if needed	Written		
18	Provide Fully Tested Data Conversion Software	Software		
19	Provide Software Installed, Configured, and Operational to Satisfy State Requirements	Software		
TESTING				
20	Conduct Integration Testing	Non-Software		
21	Conduct User Acceptance Testing	Non-Software		
22	Perform Production Tests	Non-Software		
23	Test In-Bound and Out-Bound Interfaces	Software		
24	Conduct System Performance (Load/Stress) Testing	Non-Software		
25	Certification of 3 <sup>rd</sup> Party Pen Testing and Application Vulnerability Scanning	Non-Software		
SYSTEM DEPLOYMENT				



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26	Converted Data Loaded into Production Environment	Software		
27	Provide Tools for Backup and Recovery of all Applications and Data	Software		
28	Conduct Training	Non-Software		
29	Cutover to New Software	Non-Software		
30	Provide Documentation	Written		
31	Execute Security Plan	Non-Software		
<b>OPERATIONS</b>				
32	Ongoing Hosting Support	Non-Software		
33	Ongoing Support & Maintenance	Software		
34	Conduct Project Exit Meeting	Non-Software		

**2. F-2 Proposed Vendor Staff, Resource Hours and Rates Worksheet**

Use the Proposed Vendor Staff Position, Resource Hours and Rates Worksheet to indicate the individuals that will be assigned to the Project, hours and applicable rates. Names must be provided for individuals designated for key roles, but titles are sufficient for others. Information is required by phase.

*Table F-2: Proposed Vendor Staff, Resource Hours and Rates Worksheet*

Title	Name	Initiation	Implementation	Project Close out	Hourly Rate	Hours Rate X
Project Manager						
Data Analyst						
Database Specialist						
Scrum Master						



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Data Scientist						
Position #1						
Position #2						
Position #3						
TOTALS						

**3. F-3 Future Vendor Rates Worksheet**

The State may request additional Services from the selected Vendor and requires rates in the event that additional Service is required. The following format must be used to provide this information. "SFY" refers to State Fiscal Year. The New Hampshire State Fiscal Year runs from July 1 through June 30 of the following calendar year. Positions not identified in the Proposed Position Worksheet may be included in the Future Vendor Rates Worksheet.

*Table F-3: Future Vendor Rates Worksheet*

Position Title	SFY 201X	SFY 201X	SFY 201X	SFY 201X
Project Manager				
Position #1				
Position #2				
Position #3				





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**4. F-4 HARDWARE COST worksheet**

Table F-4: Hardware

Hardware Name	Initial Cost	Maintenance Support and Upgrades				
		Year 1	Year 2	Year 3	Year 4	Year 5

**5. F-5 Software Licensing, Maintenance, and Support Pricing Worksheet**

Table F-5: Software Licensing, Maintenance, and Support Pricing Worksheet

Software Name	Initial Cost	Maintenance Support and Upgrades				
		Year 1	Year 2	Year 3	Year 4	Year 5



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**6. F-6 Web Site Hosting, Maintenance, and Support Pricing Worksheet**

Table F-6: Web Site Hosting, Maintenance, and Support Pricing Worksheet

HOSTED SERVICES	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Web Site Hosting Fee						
Technical Support and updates						
Maintenance and Updates						
GRAND TOTAL						

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APPENDIX G-1: SECURITY

## 1. APPENDIX G-1 SECURITY

### 1.1. G-1.1 Application Security

IT Security involves all functions pertaining to the securing of State Data and systems through the creation and definition of security policies, procedures and controls covering such areas as Identification, Authentication and non-repudiation. This shall include but is not limited to:

- 1.1.1. Develop Software applications based on industry best practices and incorporating information security throughout the Software development life cycle;
- 1.1.2. Perform a Code Review prior to release of the application to the State to move it into production. The code Review may be done in a manner mutually agreeable to the selected VENDOR and the State. Copies of the final, remediated results shall be provided to the State for Review and audit purposes;
- 1.1.3. Follow Change Control Procedures (CCP) relative to release of code;
- 1.1.4. Develop applications following security-coding guidelines as set forth by organizations such as, but not limited to Open Web Application Security Project (OWASP) Top 10, SANS Common Weakness Enumeration (CWE) Top 25 or CERT Secure Coding; and
- 1.1.5. Make available to the for review and audit purposes all Software development processes and require training for application developers on secure coding techniques.

### 1.2. G-1.2 PCI DSS Payment Application Data Security Standard (PA DSS)

Whereas the Vendor provides a Commercial Off the Shelf (COTS) product used by the Health and Human Services, which transmits, processes or stores cardholder Data and therefore must meet PA-DSS validation requirements

Whereas the Vendor access to the production environment which transmits, processes or stores cardholder data and therefore is considered a "service provider" under Requirement 12.8 of the PCI DSS Compliance.

The Vendor agrees to the following provisions:

- 1.2.1. PCI DSS Payment Application Data Security Standard (PA DSS) - As the Vendor's product is part of the processing, transmission, and/or storage of cardholder Data it is hereby agreed that:
  - 1.2.1.1. Vendor agrees to participate in the Payment Card Security Standards Council (PCI) Payment Application Data Security Standards program (PA DSS);



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- 1.2.1.2. Vendor agrees to provide evidence of compliance with PA DSS prior to Contract approval; and
- 1.2.1.3. Vendor will immediately notify the NH DoIT Chief Information Security Officer if it learns its application is no longer PA DSS compliant and will immediately provide the DOIT of the steps being taken to remediate the non-compliance status. In no event should Vendor's notification to the DoIT be later than seven (7) calendar days after Vendor learns it is no longer PA DSS compliant.
- 1.2.2. PCI DSS Requirement 12.8, Service Provider – If the Vendor provides Services on the production environment used in the processing, transmission and/or storage of cardholder Data, it is hereby agreed that:
  - 1.2.2.1. Vendor agrees that it is responsible for the security of all cardholder Data that it obtains or possesses, including but not limited to the functions relating to storing, processing, and transmitting the cardholder Data;
  - 1.2.2.2. Vendor attests that, as of the Effective Date of this Amendment, it has complied with all applicable requirements to be considered PCI DSS compliant, and has performed the necessary steps to validate its compliance with the PCI DSS; and
  - 1.2.2.3. Vendor agrees to supply the current status of Vendor's PCI DSS compliance, and evidence of its most recent validation of compliance upon execution of this addendum to Agency. Vendor must supply to Agency an attestation of compliance at least annually.
  - 1.2.2.4. Vendor will immediately notify Agency if it learns that it is no longer PCI DSS compliant and will immediately provide Agency the steps being taken to remediate the non-compliance status. In no event shall Vendor's notification to Agency be later than seven (7) calendar days after Vendor learns it is no longer PCI DSS compliant.
  - 1.2.2.5. Vendor acknowledges that any indemnification provided for under the Contract referenced above applies to the failure of the Vendor to be and to remain PCI DSS compliant.



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APPENDIX G-2: TESTING REQUIREMENTS

## 2. APPENDIX G-2 TESTING REQUIREMENTS

All testing and Acceptance addressed herein shall apply to testing the System. This shall include planning, test scenario development, Data and System preparation for testing, and execution of Unit Testing, System integration testing, conversion/migration testing, installation testing, performance, and stress testing, Security Review and testing, and support of the State during User Acceptance Testing (UAT).

### 2.1. G-2.1 Test Planning and Preparation

- 2.1.1. The overall Test Plan will guide all testing. The Vendor provided, State approved, Test Plan will include, at a minimum, identification, preparation, and Documentation of planned testing, a requirements traceability matrix, test variants, test scenarios, test cases, test scripts, test Data, test phases, unit tests, expected results, and a tracking method for reporting actual versus expected results as well as all errors and problems identified during test execution.
- 2.1.2. It is crucial that client training and testing activities not be abbreviated in order to meet Project Implementation Schedules. Therefore, the State requires that the testing activities be represented both in terms of effort and duration.
- 2.1.3. Vendors must disclose in their Proposals the scheduling assumptions used in regard to the Client resource efforts during testing.
- 2.1.4. State testing will commence upon the Vendor Project Manager's Certification, in writing, that the Vendor's own staff has successfully executed all prerequisite Vendor testing, along with reporting the actual testing results, prior to the start of any testing executed by State staff.
- 2.1.5. The State will commence its testing within five (5) business days of receiving Certification from the Vendor that the State's personnel have been trained and the System is installed, configured, complete, and ready for State testing. The testing will be conducted by the State in an environment independent from the Vendor's development environment. The Vendor must assist the State with testing in accordance with the Test Plan and the Work Plan, utilizing test and live Data to validate reports, and conduct stress and performance testing, at no additional cost.

### 2.2. G-2.2 Testing

- 2.2.1. Testing begins upon completion of the Software configuration as required and user training according to the Work Plan. Testing ends upon issuance of a letter of UAT Acceptance by the State.



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2.2.2. Vendor must demonstrate that their testing methodology can be integrated with the State standard methodology described in Table G-2.2 State Recommended Testing Methodology.

2.3. Table G-2.2 State Recommended Testing Methodology, please propose your methodology and use the following as a guideline.

Reference	Topic	Guideline
1	Unit Testing	<p>Application components are tested on an individual basis to verify that the inputs, outputs, and processing logic of each application component functions without errors. Unit Testing is performed in either the development environment or a testing environment.</p> <p>The goal is to find errors in the smallest unit of Software. If successful, subsequent integration testing should only reveal errors related to the integration between application components.</p>
2	System Integration Testing	<ul style="list-style-type: none"> <li>a. Validates the integration between the individual unit application components and verifies that the new System meets defined requirements and supports execution of interfaces and business processes. The Systems Integration Test is performed in a test environment.</li> <li>b. Emphasizes end-to-end business processes and the flow of information across applications. It includes all key business processes and interfaces being implemented, confirms Data transfers with external parties, and includes the transmission or printing of all electronic and paper documents.</li> <li>c. The State will conduct System Integration Testing, utilizing scripts developed, as identified in the Test Plan, to validate the functionality of the System and its interfaces. The State will also use System Integration Testing to validate modifications, fixes and other System interactions with the Vendor supplied Software Solution.</li> </ul>
3	Conversion /Migration Validation Testing	The Conversion/Migration Validation Testing should replicate the entire flow of the converted Data through the Software Solution. As the Software Solution is interfaced to legacy or third-party applications, the testing verifies that the resulting converted legacy Data performs correctly.
4	Installation Testing	Application components are installed in the System test environment to test the installation routines and are refined for the eventual production environment. This activity serves as a dry run of the installation steps in preparation for configuring the production System.
5	User Acceptance	The User Acceptance Test (UAT) is a Verification process performed in a copy of the production environment. The User Acceptance Test verifies System



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	Testing (UAT)	<p>functionality against predefined Acceptance criteria that support the successful execution of approved business processes.</p> <ol style="list-style-type: none"> <li>The Vendor's Project Manager must certify in writing, that the Vendor's own staff has successfully executed all prerequisite Vendor testing, along with reporting the actual testing results prior to the start of any testing executed by State staff.</li> <li>The State will be presented with a State approved Test Plan, test scenarios, test cases, test scripts, test Data, and expected results, as well as written Certification of the Vendor's having completed the prerequisite tests, prior to the State staff involvement in any testing activities.</li> <li>UAT will also serve as a performance and stress test of the System. It may cover any aspect of the new System, including administrative procedures such as backup and recovery. The results of the UAT provide evidence that the new System meets the User Acceptance criteria as defined in the Work Plan</li> </ol> <p>Upon successful conclusion of UAT and successful System deployment, the State will issue a letter of UAT Acceptance and the respective Warranty Period shall commence as described in Appendix H: <i>State of New Hampshire Terms and Conditions - Section H-25.10.1: Warranty Period.</i></p>
6	Performance Tuning and Stress Testing	<p>Vendor shall develop and document hardware and Software configuration and tuning of System infrastructure as well as assist and direct the State's System Administrators and Database Administrators in configuring and tuning the infrastructure to support the Software throughout the Project</p> <p>Performance Tuning and Stress Testing</p> <p><u>Scope</u></p> <p>The scope of performance testing shall measure the system level metrics critical for the development of the applications infrastructure and operation of the applications in the production environment. It will include the measurement of response rates of the application for end-user transactions and resource utilization (of various servers and network) under various load conditions. These response rates shall become the basis for changes and retesting until optimum system performance is achieved.</p> <p>The application transactions shall be identified with specific roles and selected transactions shall be recorded for the performance measurements. These will be compared to baselines to determine if object and/or system performance increases as changes are made.</p> <p>Performance testing shall consider the full scope of the application infrastructure with emphasis on the most heavily used or shared transactions. Performance testing of the application will profile the identified user transactions and assist in the identifying performance gaps to improve the most critical parts of the</p>





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	<p>applications.</p> <p>Performance testing and tuning shall occur in the final production environment and shall use a copy of the final production database to provide the best results.</p> <p>Vendor must lead this effort. Responsibilities include identifying appropriate tunable parameters and their default and recommended settings, developing scripts, which accurately reflect business load and coordinating reporting of results.</p> <p><u>Test types</u></p> <p>Performance testing shall use two different types of tests to determine the stability of the application. They are baseline tests and load tests</p> <p><u>Baseline Tests:</u> Baseline tests shall collect performance Data and load analysis by running scripts where the output is broken down into business transactions or functions. The test is like a single user executing a defined business transaction. During baseline testing, each individual script is run to establish a baseline for transaction response time, throughput and other user-based metrics. Usually each business transaction is executed multiple times during a single test run to obtain an average for the user-based metrics required for the performance testing evaluations. It must be noted that changes made to the code after baseline testing is completed will skew the results collected to date. All effort will be made to provide a code test base that is tested in the environment for problems prior to the establishment of the baseline, which are used in future testing and tuning efforts. Any changes introduced into the environment after performance testing has started can compromise the accuracy of the results and will force a decision to be made whether baseline results need to be recreated.</p> <p><u>Load Tests:</u> Load testing will determine if the behavior of a system can be sustained over a long period of time while running under expected conditions. Load tests helps to verify the ability of the application environment under different load conditions based on workload distribution. System response time and utilization is measured and recorded.</p> <p><u>Tuning</u></p> <p>Tuning will occur during both the development of the application and load testing. Tuning is the process whereby the application performance is maximized. This can be the result of making code more efficient during development as well as making tuning parameter changes to the environment.</p> <p>For infrastructure tuning, parameters will be identified for all components prior to undertaking the load testing efforts. This should include a list of the variables,</p>
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	<p>their definitions, the default settings, range of acceptable settings and the settings as testing begins. This will permit the team to identify the areas of most potential gain and a starting point. Tuning is a process which is repeated until the team feels that the systems are running at or near optimum performance.</p> <p><u>Implementing Performance and Stress Test</u></p> <p>Performance and Stress test Tools must be provided by the Vendor for this effort. Consideration must be given to licensing with respect to continued use for Regression Testing. If the Vendor is familiar with open source low/no cost tools for this purpose those tools should be identified in your response.</p> <p><u>Scheduling Performance and Stress Testing</u></p> <p>Vendor shall perform test planning. The steps for planning include identification of application functionality as well as what percentage of normal daily use is represented by each function. This information will become the foundation for scripting so that tests closely represent what loads in production will look like.</p> <p>Vendor shall provide definition and expectations from testing. This definition should include who is in charge of testing and coordinating results, anticipated run times, logs required for tracking, their locations and which technician is responsible to track and provide them following each test to the team.</p> <p>Initial test runs shall be completed to establish that the tests and Data sets can be run to completion without errors. The ratio of types of transactions which makeup the test shall be Reviewed prior to the beginning of testing and then again once testing has begun to make sure that testing accurately reflects the system performing in production.</p> <p>Initial tests shall be used to establish a baseline from which all subsequent tests will be compared. Tests will be considered for baseline status once two of them have been run within 2% of each other in key and overall performance areas. No changes to the test scripts or Data sets (with the exception of restores after each test) can be done to the test environment once tuning has begun so as to not damage the comparison to baseline results. The systems must be restarted prior to each test run to assure all cache is cleaned out. All effort will be made to run these tests at a time when system and network infrastructure utilization doesn't impact the results. Tests will be run in close proximity to our infrastructure to eliminate the public network from our environment.</p> <p>Post test reporting and result assessment will be Scheduled following each test. The team will compare these results to the baseline and a determination must be made to make additional changes to the parameter being tuned or return to the prior configuration and select another parameter to tune while keeping in mind that significant changes to any one parameter may require the retesting of some</p>
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		<p>others. Careful work on identifying dependencies up front should minimize this impact.</p> <p>If Defects are identified in the application during testing, they will be recorded; however, changes to the application code should be avoided if possible so as not to affect baseline comparisons. If a change to the application is required new baselines will be established (and possibly the execution of prior tests to validate changes with the new application) before testing can continue.</p> <p>When performing capacity testing against a GUI the focus will be on the ability of the interface to respond to user input.</p> <p>During stress/load testing the tester will attempt to stress or load an aspect of the system to the point of failure. The goal being to determine weak points in the system architecture. The tester will identify peak load conditions at which the program will fail to handle required processing loads within required time spans.</p> <p>During Performance testing the tester will design test case scenarios to determine if the system meets the stated performance criteria (i.e. A Login request shall be responded to in 1 second or less under a typical daily load of 1000 requests per minute.). In both cases, the tester will determine the capacity of the system under a known set of conditions.</p>
7	Regression Testing	<p>As a result, of the user testing activities, problems will be identified that require correction. The State will notify the Vendor of the nature of the testing failures in writing. The Vendor will be required to perform additional testing activities in response to State and/or user problems identified from the testing results.</p> <p>Regression Testing means selective re-testing to detect faults introduced during the modification effort, both to verify that the modifications have not caused unintended adverse effects, and to verify that the modified and related (possibly affected) System components still meet their specified requirements.</p> <ol style="list-style-type: none"> <li>a. For each minor failure of an Acceptance Test, the Acceptance Period shall be extended by corresponding time defined in the Test Plan.</li> <li>b. The Vendor shall notify the State no later than five (5) business days from the Vendor's receipt of written notice of the test failure when the Vendor expects the corrections to be completed and ready for retesting by the State. The Vendor will have up to five (5) business days to make corrections to the problem unless specifically extended in writing by the State.</li> <li>c. When a programming change is made in response to a problem identified during user testing, a Regression Test Plan should be</li> </ol>



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		<p>developed by the Vendor based on the understanding of the program and the change being made to the program. The Test Plan has two objectives:</p> <ol style="list-style-type: none"> <li>1. Validate that the change/update has been properly incorporated into the program; and</li> <li>2. Validate that there has been no unintended change to the other portions of the program.</li> </ol> <p>d. The Vendor will be expected to:</p> <ol style="list-style-type: none"> <li>1. Create a set of test conditions, test cases, and test data that will validate that the change has been incorporated correctly;</li> <li>2. Create a set of test conditions, test cases, and test data that will validate that the unchanged portions of the program still operate correctly; and</li> <li>3. Manage the entire cyclic process.</li> </ol> <p>e. The Vendor will be expected to execute the Regression Test, provide actual testing results, and certify its completion in writing to the State prior to passing the modified Software application to the users for retesting.</p> <p>In designing and conducting such Regression Testing, the Vendor will be required to assess the risks inherent to the modification being implemented and weigh those risks against the time and effort required for conducting the Regression Tests. In other words, the Vendor will be expected to design and conduct Regression Tests that will identify any unintended consequences of the modification while taking into account Schedule and economic considerations.</p> <p>In their Proposals Vendors must acknowledge their responsibilities for regression testing as described in this section.</p>				
8	Security Review and Testing	<p>IT Security involves all functions pertaining to the securing of State Data and Systems through the creation and definition of security policies, procedures and controls covering such areas as Identification, Authentication and non-repudiation.</p> <p>All components of the Software shall be Reviewed and tested to ensure they protect the State's hardware and Software and its related Data assets.</p> <table border="1" data-bbox="690 1465 1352 1627"> <tr> <td data-bbox="690 1465 917 1516">Service Component</td> <td data-bbox="917 1465 1352 1516">Defines the set of capabilities that:</td> </tr> <tr> <td data-bbox="690 1516 917 1627">Identification and Authentication</td> <td data-bbox="917 1516 1352 1627">Supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users.</td> </tr> </table>	Service Component	Defines the set of capabilities that:	Identification and Authentication	Supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users.
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		<table border="1"> <tr> <td>Access Control</td> <td>Supports the management of permissions for logging onto a computer or network.</td> </tr> <tr> <td>Encryption</td> <td>Supports the encoding of Data for security purposes</td> </tr> <tr> <td>Intrusion Detection</td> <td>Supports the detection of illegal entrance into a computer system.</td> </tr> <tr> <td>Verification</td> <td>Supports the confirmation of authority to enter a computer system, application or network.</td> </tr> <tr> <td>Digital Signature</td> <td>Guarantees the unaltered state of a file.</td> </tr> <tr> <td>User Management</td> <td>Supports the administration of computer, application and network accounts within an organization.</td> </tr> <tr> <td>Role/Privilege Management</td> <td>Supports the granting of abilities to users or groups of users of a computer, application or network.</td> </tr> <tr> <td>Audit Trail Capture and Analysis</td> <td>Supports the identification and monitoring of activities within an application or system.</td> </tr> <tr> <td>Input Validation</td> <td>Ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.</td> </tr> </table> <p>In their Proposal, the Vendors must acknowledge their responsibilities for security testing. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability. Tests shall, at a minimum, cover each of the service components. Test procedures shall include 3<sup>rd</sup> party Penetration Tests (pen test) or code analysis and review.</p> <p>Prior to the System being moved into production, the Vendor shall provide results of all security testing to the Department of Information Technology for Review and Acceptance. All Software and hardware shall be free of malicious code (malware).</p>	Access Control	Supports the management of permissions for logging onto a computer or network.	Encryption	Supports the encoding of Data for security purposes	Intrusion Detection	Supports the detection of illegal entrance into a computer system.	Verification	Supports the confirmation of authority to enter a computer system, application or network.	Digital Signature	Guarantees the unaltered state of a file.	User Management	Supports the administration of computer, application and network accounts within an organization.	Role/Privilege Management	Supports the granting of abilities to users or groups of users of a computer, application or network.	Audit Trail Capture and Analysis	Supports the identification and monitoring of activities within an application or system.	Input Validation	Ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.
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9	Penetration Testing	1. Implement a methodology for penetration testing that includes the following:																		



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		<ul style="list-style-type: none"> <li>a. Is based on industry-accepted penetration testing approaches (for example, NIST SP800-115);</li> <li>b. Includes coverage for the entire CDE perimeter and critical systems;</li> <li>c. Includes testing from both inside and outside the network;</li> <li>d. Includes testing to validate any segmentation and scope-reduction controls;</li> <li>e. Defines application-layer penetration tests to include, at a minimum, the vulnerabilities listed in <u>PCI DSS Compliance Requirement 6.5</u>;</li> <li>f. Defines network-layer penetration tests to include components that support network functions as well as Operating Systems;</li> <li>g. Includes Review and consideration of threats and vulnerabilities experienced in the last 12 months; and</li> <li>h. Specifies retention of penetration testing results and remediation activities results.</li> </ul> <ol style="list-style-type: none"> <li>2. Perform external penetration testing at least annually and after any significant infrastructure or application upgrade or modification (such as an operating system upgrade, a sub-network added to the environment, or a web server added to the environment).</li> <li>3. Perform internal penetration testing at least annually and after any significant infrastructure or application upgrade or modification (such as an operating system upgrade a sub-network added to the environment, or a web server added to the environment).</li> <li>4. Exploitable vulnerabilities found during penetration testing are corrected and testing is repeated to verify the corrections</li> <li>5. If segmentation is used to isolate the CDE from other networks, perform penetration tests at least annually and after any changes to segmentation controls/methods to verify that the segmentation methods are Operational and effective, and isolate all out-of-scope systems from in-scope systems.</li> </ol>
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APPENDIX G-3: CERTIFICATES

**3. APPENDIX G-3: CERTIFICATES**

3.1. A. Certificate of Good Standing

As a condition of Contract award, the Vendor, if required by law, must furnish a Certificate of Authority/Good Standing dated after April 1, 2018, from the Office of the Secretary of State of New Hampshire. If your company is not registered, an application form may be obtained from:

Secretary of State  
State House Annex  
25 Capitol Street  
Concord, New Hampshire 03301  
603-271-3244

If your company is registered, a Certification thereof may be obtained from the Secretary of State.

*<Note: Sovereign states or their agencies may be required to submit suitable substitute Documentation concerning their existence and authority to enter into a Contract>*

3.2. B. Certificate of Authority/Vote

The Certificate of Authority/Vote authorizes, by position, a representative(s) of your corporation to enter into an Agreement or amendment with the State of New Hampshire. This ensures that the person signing the Agreement is authorized as of the date he or she is signing it to enter into Agreements for that organization with the State of New Hampshire

The officer's signature must be either notarized or include a corporate seal that confirms the title of the person authorized to sign the Agreement. The date the Board officer signs must be on or after the date the amendment is signed. The date the notary signs must match the date the Board officer signs.

You may use your own format for the Certificate of Authority/Vote as long as it contains the necessary language to authorize the Agreement signatory to enter into Agreements and amendments with the State of New Hampshire as of the date they sign.

3.2.1. B.1 CERTIFICATE OF AUTHORITY/VOTE CHECKLIST

3.2.1.1. B.1.1 SOURCE OF AUTHORITY

Authority must come from the governing body, either:

3.2.1.1.1. A majority voted at a meeting; or



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3.2.1.1.2. The body provided unanimous consent in writing; or

3.2.1.1.3. The organization's policy or governing document.

3.2.2. B.1.2 SOURCE OF AUTHORITY WAS IN EFFECT ON DAY AGREEMENT OR AMENDMENT WAS SIGNED

Certificate must show that the person signing the Contract had authority when they signed the Agreement or Amendment, either:

3.2.2.1. Authority was granted the same day as the day the Agreement or Amendment was signed; or

3.2.2.2. Authority was granted after the day the Agreement or amendment was signed and the governing body ratifies and accepts the earlier execution; or

3.2.2.3. Authority was granted prior to the day the Agreement or amendment was signed and it has not been amended or repealed as of the day the Contract was signed.

3.2.3. B.1.3 APPROPRIATE PERSON SIGNED THE CERTIFICATE

The person signing the certificate may be the same person signing the Agreement or Amendment only if the certificate states that the person is the sole director (for corps) or sole member (for LLCs).

3.3. C. Certificate of Insurance

3.3.1. C.1 Comprehensive general liability insurance against all claims of bodily injury, death or property damage (\$1,000,000 per occurrence and \$2,000,000 aggregate)

~~3.3.2. C.1.2 Certificate Holder must be: State of NH, <AGENCY NAME>, Commissioner, <AGENCY ADDRESS>, Concord, NH, 03301~~

3.4. Workers Compensation

3.4.1. D.1 Workers Compensation coverage may be indicated on the insurance form described above.

3.4.1.1. D.1.2 Workers Compensation coverage must comply with State of NH RSA 281-A

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**APPENDIX H: STATE OF NEW HAMPSHIRE TERMS AND CONDITIONS**

**APPENDIX H – STATE OF NEW HAMPSHIRE TERMS AND CONDITIONS**

FORM NUMBER P-37 (version 5/8/15)

**AGREEMENT**

The State of New Hampshire and the Vendor hereby mutually agree as follows:

**GENERAL PROVISIONS**

1.1 State Agency Name		1.2 State Agency Address	
1.3 Contractor Name		1.4 Contractor Address	
1.5 Contractor Phone Number	1.6 Account Number	1.7 Completion Date	1.8 Price Limitation
1.9 Contracting Officer for State Agency		1.10 State Agency Telephone Number	
1.11 Contractor Signature		1.12 Name and Title of Contractor Signatory	
1.13 Acknowledgement: State of _____, County of _____ On _____, before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public or Justice of the Peace  [Seal]			
1.13.2 Name and Title of Notary or Justice of the Peace			



Attachment 1  
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**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

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1.14 State Agency Signature  Date:	1.15 Name and Title of State Agency
1.16 Approval by the N.H. Department of Administration, Division of Personnel (if applicable) By: Director, On:	
1.17 Approval by the Attorney General (Form, Substance and Execution) (if applicable) By: On:	
1.18 Approval by the Governor and Executive Council (if applicable) By: On:	



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**2. EMPLOYMENT (CONTRACTOR/SERVICES TO BE PERFORMED).** The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

**3. EFFECTIVE DATE/COMPLETION OF SERVICES.**

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.18, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.14 ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any prices incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

**4. CONDITIONAL NATURE OF AGREEMENT.**

Notwithstanding any provision of this Agreement to the

contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

**5. CONTRACT PRICE/PRICE LIMITATION/PAYMENT.**

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

**6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.**



Attachment 1 of 1  
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6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. This may include the requirement to utilize auxiliary aids and services to ensure that persons with communication disabilities, including vision, hearing and speech, can communicate with, receive information from, and convey information to the Contractor. In addition, the Contractor shall comply with all applicable copyright laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

#### 7. PERSONNEL

7.1 The Contractor shall at its own expense provide all

personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

#### 8. EVENT OF DEFAULT/REMEDIES.

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

- 8.1.1 failure to perform the Services satisfactorily or on schedule;
- 8.1.2 failure to submit any report required hereunder; and/or
- 8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

- 8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two(2) days after giving the Contractor notice of termination;



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- 8.2.2. give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;
- 8.2.3. set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or
- 8.2.4. treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

9. DATA/ACCESS/CONFIDENTIALITY/  
PRESERVATION.

9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

10. TERMINATION. In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

11. CONTRACTOR'S RELATION TO THE STATE. In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

12. ASSIGNMENT/DELEGATION  
/SUBCONTRACTS.

The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice and consent of the State. None of the Services shall be subcontracted by the Contractor without the prior written notice and consent of the State.

13. INDEMNIFICATION. The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.



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**14. INSURANCE.**

14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate ; and

14.1.2 special cause of loss coverage form covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than thirty (30) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation or modification of the policy.

**15. WORKERS' COMPENSATION.**

15.1 By signing this agreement, the Contractor agrees,

certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A (*Workers' Compensation*).

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

16. **WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

17. **NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

18. **AMENDMENT.** This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no such approval is required under the circumstances pursuant to State law, rule or policy.



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**19. CONSTRUCTION OF AGREEMENT AND TERMS.**

This Agreement shall be construed in accordance with the

laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party.

**20. THIRD PARTIES.** The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

**21. HEADINGS.** The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

**22. SPECIAL PROVISIONS.** Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

**23. SEVERABILITY.** In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

**24. ENTIRE AGREEMENT.** This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.



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**25. APPENDIX H-25: GENERAL CONTRACT REQUIREMENTS**

25.1. H-25.1 State of NH Terms and Conditions and Contract Requirements

The Contract terms set forth in Appendix H: *State of New Hampshire Terms and Conditions* shall constitute the core for any Contract resulting from this RFP.

25.2. H-25.2 Vendor Responsibilities

25.2.1. The Vendor shall be solely responsible for meeting all requirements, and terms and conditions specified in this RFP, its Proposal, and any resulting Contract, regardless of whether or not it proposes to use any Subcontractor.

25.2.2. The Vendor may subcontract Services subject to the provisions of the RFP, including but not limited to, the terms and conditions in Appendix H: *State of New Hampshire Terms and Conditions*. The Vendor must submit with its Proposal all information and documentation relating to the Subcontractor necessary to fully respond to the RFP, which must include terms and conditions consistent with this RFP. The Vendor shall remain wholly responsible for performance of the entire Contract regardless of whether a Subcontractor is used. The State will consider the Vendor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from any Contract.

25.3. H-25.3 Project Budget/Price Limitation

The State has funds budgeted for this Project, subject to Appendix H: *State of New Hampshire Terms and Conditions*, P-37, General Provision - Section 4: *Conditional Nature of Agreement*, and P-37, General Provision - Section 5: *Contract Price/Price Limitation/Payment*.

25.4. H-25.4 State Contracts

The State of New Hampshire intends to use, wherever possible, existing statewide software and hardware Contracts to acquire supporting Software and hardware.

25.5. H-25.5 Vendor Staff

25.5.1. In the Proposal the Vendor shall assign and identify a Project Manager and key Vendor staff, in accordance with the Requirements and Deliverables of Appendix C: *System Requirements and Deliverables* and Appendix E: *Standards for Describing Vendor Qualifications*.





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- 25.5.2. The Vendor's selection of a Project Manager will be subject to the prior approval of the State. The State's approval process may include, without limitation, at the State's discretion, Review of the proposed Project Manager's resume, qualifications, references and background checks, and an interview. The Vendor's Project Manager must be qualified to perform the obligations required of the position under the Contract, have full authority to make binding decisions, and shall function as the Vendor's representative for all administrative and management matters. The Project Manager must be available to promptly respond during Normal Working Hours within two (2) hours to inquiries from the State, and be at the site as needed. The Vendor must use his or her best efforts on the Project.
- 25.5.3. The Vendor shall not change key Vendor staff and Project Manager commitments (collectively referred to as "Project Staff") unless such replacement is necessary due to sickness, death, termination of employment, or unpaid leave of absence. Any such changes to the Vendor's Project Staff shall require the prior written approval of the State. Replacement Project Staff shall have comparable or greater skills with regard to performance of the Project as the staff being replaced and be subject to the provisions of this RFP and any resulting Contract.
- 25.5.4. The State, at its sole expense, may conduct reference and background checks on the Vendor's Project Staff. The State shall maintain the confidentiality of reference and background screening results. The State reserves the right to reject the Vendor's Project Staff as a result of such reference and background checks. The State also reserves the right to require removal or reassignment of the Vendor's Key Project Staff found unacceptable to the State.
- 25.5.5. Notwithstanding anything to the contrary, the State shall have the option to terminate the Contract, at its discretion, if it is dissatisfied with the Vendor's replacement Project Staff.
- 25.6. H-25.6 Work Plan
- 25.6.1. Vendor shall submit a preliminary Work Plan in its Proposal. The Work Plan shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, major milestones, task dependencies, and payment Schedule. A final Work Plan will be due five (5) business days after Contract award upon approval by Governor and Executive Council.



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- 25.6.2. The Vendor shall update the Work Plan as necessary, but no less than every two weeks to accurately reflect the status of the Project, including without limitation, the Schedule, tasks, Deliverables, major milestones, task dependencies, and payment Schedule. Any updates to the Work Plan shall require the written approval of the State prior to final incorporation into the Contract.
- 25.6.3. Unless otherwise agreed in writing by the State, changes to the Work Plan shall not relieve the Vendor from liability to the State for any damages resulting from the Vendor's failure to perform its obligations under the Contract, including without limitation, performance in accordance with the Schedule.
- 25.6.4. In the event of a delay in the Schedule, the Vendor must immediately notify the State in writing. The written notification will identify the nature of the delay, i.e., specific actions or inactions of the Vendor or State causing the problem; its estimated duration period to reconciliation; specific actions that need to be taken to correct the problem; and the expected Schedule affect the Project.
- 25.6.5. In the event the Vendor requires additional time to correct Deficiencies, the Schedule shall not change unless previously agreed in writing by the State, except that the Schedule shall automatically extend on a day-to-day basis to the extent that the delay does not result from Vendor's failure to fulfill its obligations under the Contract. To the extent that the State's execution of its major tasks takes longer than described in the Work Plan, the Schedule shall automatically extend on a day-to-day basis.
- 25.6.6. Notwithstanding anything to the contrary, the State shall have the option to terminate the Contract for default, at its discretion, if it is dissatisfied with the Vendor's Work Plan or elements within the Work Plan.
- 25.7. H-25.7 Change Orders
- 25.7.1. The State may make changes or revisions at any time by written Change Order. Within five (5) business days of a Vendor's receipt of a Change Order, the Vendor shall advise the State, in detail, of any impact on cost (e.g., increase or decrease), the Schedule, or the Work Plan.



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- 25.7.2. A Vendor may request a change within the scope of the Contract by written Change Order, identifying any impact on cost, the Schedule, or the Work Plan. The State shall attempt to respond to a Vendor's requested Change Order within five (5) business days. The State, which includes the requesting Agency and the Department of Information Technology, must approve all Change Orders in writing. The State shall be deemed to have rejected the Change Order if the parties are unable to reach an Agreement in writing.
- 25.7.3. All Change Order requests from a Vendor to the State, and the State Acceptance of a Vendor's estimate for a State requested change, will be acknowledged and responded to, either Acceptance or rejection, in writing. If accepted, the Change Order(s) shall be subject to the Contract amendment process, as determined to apply by the State.

25.8. H-25.7 Deliverables

The Vendor shall provide the State with the Deliverables and Services in accordance with the time frames in the Work Plan. All Deliverables shall be subject to the State's Acceptance as set forth in Appendix H: *State of New Hampshire Terms and Conditions - Section H-25.9: Testing and Acceptance*, herein. Upon its submission of a Deliverable, the Vendor represents that it has performed its obligations under the Contract associated with the Deliverable.

By unconditionally accepting a Deliverable, the State reserves the right to reject any and all Deliverables in the event the State detects any Deficiency in the System, in whole or in part, through completion of all Acceptance Testing, including but not limited to, Software/System Acceptance Testing, and any extensions thereof.

For each denial of Acceptance, the Acceptance Period may be extended, at the option of the State, by the corresponding time required to correct the Deficiency, retest or Review.

25.8.1. H-25.7.1 Written Deliverables Review

The State will Review the Written Deliverables for an Acceptance Period of five (5) business days after receiving written Certification from the Vendor that the Written Deliverable is final, complete, and ready for Review. The State will notify the Vendor in writing of its Acceptance or Non-Acceptance of a Deliverable by the end of the five (5) day Review Period. If any Deficiencies exist, the State will notify the Vendor in writing of the Deficiency and the Vendor must correct the Deficiency within five (5) business days of receiving notice from the State at no charge to the State. Upon receipt of the corrected Deliverable, the State will have five (5) business days to Review the corrected Written Deliverable and notify the Vendor in writing of its Acceptance or rejection thereof.

25.8.2. H-25.7.2 Software Deliverables Review



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Described in Section H-25.9: *Testing and Acceptance, herein.*

25.8.3. H-25.7.3 Non-Software Deliverables Review

The State will Review Non-Software Deliverables to determine whether any Deficiency exists and notify the Vendor in writing of its Acceptance or non-acceptance of the Non-Software Deliverable. The Vendor must correct the Deficiencies within five (5) business days, or within the period identified in the Work Plan, as applicable. Following correction of the Deficiency, the State will notify the Vendor in writing of its Acceptance or rejection of the Deliverable.

25.9. H-25.8 Licenses

The State has defined the Software License grant rights, terms and conditions, and has documented the evaluation criteria.

25.9.1. H-25.8.1 Software License Grant

The Software License shall grant the State a worldwide, perpetual, irrevocable, non-exclusive, non-transferable, limited license to use the Software and its associated Documentation, subject to the terms of the Contract.

The State may allow its agents and Vendors to access and use the Software, and in such event, the State shall first obtain written Agreement from such agents and Vendors that each shall abide by the terms and conditions set forth herein.

25.9.2. H-25.8.2 Software and Documentation Copies

The Vendor shall provide the State with a sufficient number of hard copy versions of the Software's associated Documentation and one (1) electronic version in Microsoft WORD and PDF format. The State shall have the right to copy the Software and its associated Documentation for its internal business needs. The State agrees to include copyright and proprietary notices provided to the State by the Vendor on such copies.

25.9.3. H-25.8.3 Restrictions

Except as otherwise permitted under the Contract, the State agrees not to:

- 25.9.3.1. Remove or modify any program markings or any notice of Vendor's proprietary rights;
- 25.9.3.2. Make the programs or materials available in any manner to any third party for use in the third party's business operations, except as permitted herein; or
- 25.9.3.3. Cause or permit reverse engineering, disassembly or recompilation of the programs.

25.9.4. H-25.8.4 Title



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The Vendor must hold the right to allow the State to use the Software or hold all title, right, and interest (including all ownership and intellectual property rights) in the Software and its associated Documentation.

25.9.5. H-25.8.5 Third Party

The Vendor shall identify all third party contracts to be provided under the Contract with the Vendor's Proposal. The terms in any such contracts must be consistent with this RFP and any resulting Contract, including, but not limited to Appendix H: *State of New Hampshire Terms and Conditions - General Provisions Form P-37*.

25.10. H-25.9 Testing and Acceptance

The State requires that an integrated and coherent approach to complete System testing, Security Review and Testing, Deficiency correction, Acceptance, and training, and that Warranty Services be provided to ensure a successful Project.

In its Proposal, the Vendor is to include its proposed Test Plan methodology and any scheduling assumptions used regarding the client resource efforts required during testing. After Contract award, the Vendor will be required to customize its proposed Test Plan methodology to reflect the needs of the Project and include the details of its Test Plan methodology in the detailed Work Plan (the first Project Deliverable). A separate Test Plan and set of test materials will be prepared for each Software function or module.

In addition, the Vendor will provide a mechanism for reporting actual test results vs. expected results and for the resolution and tracking of all errors and problems identified during test execution. The Vendor will also provide training as necessary to the State staff responsible for test activities.

See Appendix G-1 for Testing Requirements

25.10.1. H-25.9.1 Remedies

- 25.10.1.1. If the Vendor fails to correct a Deficiency within the period of time allotted by the State, the Vendor shall be deemed to have committed an Event of Default, pursuant Appendix H: *State of New Hampshire Terms and Conditions - P-37, General Provisions - Section 8: Event of Default/Remedies*, and H-25.14: *Termination*, and the State Shall have the right, at its option, to pursue the remedies in Section H-25.14.1: *Termination for Default* as well as to return the Vendor's product and receive a refund for all amounts paid to the Vendor, including but not limited to, applicable license fees, within ninety (90) days of notification to the Vendor of the State's refund request



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25.10.1.2. Notwithstanding any provision of the Contract, the State's option to terminate the Contract and pursue the stated remedies will remain in effect until the Vendor completes the Contract to the satisfaction of the State.

25.10.2. H-25.9.2 System Acceptance

Upon completion of the Warranty Period, the State will issue a Letter of Final System Acceptance.

25.11. H-25.10 Warranty

25.11.1. H-25.10.1 Warranty Period

The Warranty Period will initially commence upon the State issuance of a Letter of Acceptance for UAT and will continue for ninety (90) days. If within the last thirty (30) calendar days of the Warranty Period, the System Software fails to operate as specified, the Warranty Period will cease, the Vendor will correct the Deficiency, and a thirty (30) calendar day Warranty Period will begin. Any further Deficiencies with the Software must be corrected and run fault free for thirty (30) days.

25.11.2. H-25.10.2 Warranties

25.11.2.1. H-25.10.2.1 System

The Vendor shall warrant that the System must operate to conform to the Specifications, terms, and requirements of the Contract.

25.11.2.2. H-25.10.2.2 Software

The Vendor shall warrant that the Software is properly functioning within the System, compliant with the requirements of the Contract, and will operate in accordance with the Specifications. Software shall be archived and or version controlled through the use of Harvest Software.

25.11.2.3. H-25.10.2.3 Non-Infringement



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The Vendor shall warrant that it has good title to, or the right to allow the State to use all Services, equipment, and Software provided under this Contract, and that such Services, equipment, and Software ("Material") do not violate or infringe any patent, trademark, copyright, trade name or other intellectual property rights or misappropriate a trade secret of any third party.

25.11.2.4. H-25.10.2.4 Viruses; Destructive Programming

The Vendor shall warrant that the Software will not contain any viruses, destructive programming, or mechanisms designed to disrupt the performance of the Software in accordance with the Specifications.

25.11.2.5. H-25.10.2.5 Compatibility

The Vendor shall warrant that all System components, including any replacement or upgraded System Software components provided by the Vendor to correct Deficiencies or as an Enhancement, shall operate with the rest of the System without loss of any functionality.

25.11.2.6. H-25.10.2.6 Professional Services

The Vendor shall warrant that all Services provided under the Contract will be provided in a professional manner in accordance with industry standards and that Services will comply with performance standards.

25.11.3. H-25.10.3 Warranty Services

The Vendor shall agree to maintain, repair, and correct Deficiencies in the System Software, including but not limited to the individual modules or functions, during the Warranty Period at no additional cost to the State, in accordance with the Specifications and terms and requirements of the Contract, including without limitation, correcting all errors, and Defects and Deficiencies; eliminating viruses or destructive programming; and replacing incorrect, Defective or Deficient Software and Documentation.

Warranty Services shall include, without limitation, the following:



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- 25.11.3.1. Maintain the System Software in accordance with the Specifications, terms, and requirements of the Contract;
- 25.11.3.2. Repair or replace the System Software or any portion thereof so that the System operates in accordance with the Specifications, terms, and requirements of the Contract;
- 25.11.3.3. The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, twenty four (24) hours per day and seven (7) days a week with an email / telephone response within two (2) hours of request, with assistance response dependent upon issue severity;
- 25.11.3.4. On-site additional Services within four (4) business hours of a request;
- 25.11.3.5. Maintain a record of the activities related to Warranty Repair or maintenance activities performed for the State; and
- 25.11.3.6. For all Warranty Services calls, the Vendor shall ensure the following information will be collected and maintained:
  - 25.11.3.6.1. Nature of the Deficiency;
  - 25.11.3.6.2. Current status of the Deficiency;
  - 25.11.3.6.3. Action plans, dates, and times;
  - 25.11.3.6.4. Expected and actual completion time;
  - 25.11.3.6.5. Deficiency resolution information;
  - 25.11.3.6.6. Resolved by;
  - 25.11.3.6.7. Identifying number i.e. work order number; and
  - 25.11.3.6.8. Issue identified by.
- 25.11.3.7. The Vendor must work with the State to identify and troubleshoot potentially large-scale Software failures or Deficiencies by collecting the following information:
  - 25.11.3.7.1. Mean time between reported Deficiencies with the Software;
  - 25.11.3.7.2. Diagnosis of the root cause of the problem; and
  - 25.11.3.7.3. Identification of repeat calls or repeat Software problems.





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- 25.11.3.8. All Deficiencies found during the Warranty Period and all Deficiencies found with the Warranty Releases shall be corrected by the Vendor no later than five (5) business days, unless specifically extended in writing by the State, at no additional cost to the State.
- 25.11.3.9. If in the Event of Default, the Vendor fails to correct the Deficiency within the allotted period of time (see above), the State shall have the right, at its option: 1) declare the Vendor in default, terminate the Contract, in whole or in part, without penalty or liability to the State; 2) return the Vendor's product and receive a refund for all amounts paid to the Vendor, including but not limited to, applicable license fees within ninety (90) days of notification to the Vendor of the State's intent to request a refund; 3) and to pursue its remedies available at law or in equity.
- 25.11.3.10. Notwithstanding any provision of the Contract, the State's option to terminate the Contract and pursue the remedies above will remain in effect until satisfactory completion of the full Warranty Period.

25.12. H-25.11 Ongoing Software Maintenance and Support Levels

The Vendor shall maintain and support the system in all material respects as described in the applicable program Documentation after delivery and the Warranty Period of ninety (90) days through the completion of the Contract term.

The Vendor will not be responsible for maintenance or support for Software developed or modified by the State.

25.12.1. H-25.11.1 Maintenance Releases

The Vendor shall make available to the State the latest program updates, general maintenance releases, selected functionality releases, patches, and Documentation that are generally offered to its customers, at no additional cost.

25.12.2. H-25.11.2 Vendor Responsibility

The Vendor shall be responsible for performing on-site or remote technical support in accordance with the Contract Documents, including without limitation the requirements, terms, and conditions contained herein.

As part of the Software maintenance Agreement, ongoing Software maintenance and support levels, including all new Software releases, shall be responded to according to the following:



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- 25.12.2.1. a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request;
- 25.12.2.2. b. Class B & C Deficiencies -The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action;
- 25.12.3. The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract;
- 25.12.4. The Vendor shall maintain a record of the activities related to warranty repair or maintenance activities performed for the State;
- 25.12.5. For all maintenance Services calls, the Vendor shall ensure the following information will be collected and maintained:
  - 25.12.5.1. Nature of the Deficiency;
  - 25.12.5.2. Current status of the Deficiency;
  - 25.12.5.3. Action plans, dates, and times;
  - 25.12.5.4. Expected and actual completion time;
  - 25.12.5.5. Deficiency resolution information;
  - 25.12.5.6. Resolved by;
  - 25.12.5.7. Identifying number i.e. work order number; and
  - 25.12.5.8. Issue identified by.
- 25.12.6. The Vendor must work with the State to identify and troubleshoot potentially large-scale System failures or Deficiencies by collecting the following information: 1) mean time between reported Deficiencies with the Software; 2) diagnosis of the root cause of the problem; and 3) identification of repeat calls or repeat Software problems.



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25.12.7. If the Vendor fails to correct a Deficiency within the allotted period of time Stated above, the Vendor shall be deemed to have committed an Event of Default, pursuant to Appendix H: *State of New Hampshire Terms and Conditions* - Section H-25.14.1: *Termination for Default*, and the State shall have the right, at its option, to pursue the remedies in H-25.14: *Termination*, as well as to return the Vendor's product and receive a refund for all amounts paid to the Vendor, including but not limited to, applicable license fees, within ninety (90) days of notification to the Vendor of the State's refund request

25.13.H-25.12 Administrative Specifications

25.13.1.H-25.12.1 Travel Expenses

The State will not be responsible for any travel or out of pocket expenses incurred in the performance of the Services.

The Vendor must assume all travel and related expenses by "fully loading" the proposed labor rates to include, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses.

25.13.2.H-25.11.2 Shipping and Delivery Fee Exemption

The State will not pay for any shipping or delivery fees unless specifically itemized in the Contract.

25.13.3.H-25.12.3 Project Workspace and Office Equipment

The State agency will work with the Vendor to determine the requirements for providing all necessary workspace and office equipment, including desktop computers for the Vendor's staff. If a Vendor has specific requirements, they must be included in the Vendor's Proposal.

25.13.4.H-25.12.4 Work Hours

Vendor personnel shall provide Services between the Work Hours of <8:00 a.m. and 5:00 p.m. EST, eight (8) hour days, forty (40) hour weeks>, excluding State of New Hampshire holidays. Changes to this Schedule may be made upon Agreement with the State Project Manager.

25.13.5.H-25.12.5 Access/Cooperation

As applicable, and reasonably necessary, and subject to the applicable State and federal laws and regulations and restrictions imposed by third parties upon the State, the State will provide the Vendor with access to all program files, libraries, personal computer-based systems, software packages, network systems, security systems, and hardware as required to complete the contracted Services.



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The State will use reasonable efforts to provide approvals, authorizations, and decisions reasonably necessary to allow the Vendor to perform its obligations under the Contract.

25.13.6. H-25.12.6 State-Owned Documents and Data

The Vendor shall provide the State access to all Documents, State Data, materials, reports, and other work in progress relating to the Contract ("State Owned Documents"). Upon expiration or termination of the Contract with the State, Vendor shall turn over all State-owned Documents, State Data, material, reports, and work in progress relating to this Contract to the State at no additional cost to the State. State-Owned Documents must be provided in both printed and electronic format.

25.13.7. H-25.12.7 Intellectual Property

<NOTE: MAY NEED TO BE CHANGED - WORDING DEPENDS ON THE OWNERSHIP STATUS OF ANY CUSTOM CODE DEVELOPED>

Title, right, and interest (including all ownership and intellectual property rights) in the Software, and its associated Documentation, shall remain with the Department of Health and Human Services.

Upon successful completion and/or termination of the Implementation of the Project, Health and Human Services shall own and hold all, title, and rights in any solution modifications <Custom Code> developed in connection with performance of obligations under the Contract, or modifications to the Vendor provided Software, and their associated Documentation including any and all performance enhancing operational plans and the Vendors' special utilities. The Vendor shall license back to the State the right to produce, publish, or otherwise use such Software, source code, object code, modifications, reports, and Documentation developed under the Contract.

In no event shall the Vendor be precluded from developing for itself, or for others, materials that are competitive with, or similar to Custom Software, modifications developed in connection with performance of obligations under the Contract. In addition, the Vendor shall be free to use its general knowledge, skills, experience, and any other ideas, concepts, know-how, and techniques that are acquired or used in the course of its performance under this Agreement.

25.13.8. H-25.12.8 IT Required Work Procedures

All work done must conform to standards and procedures established by the Department of Information Technology and the State.

25.13.9. H-25.12.9 Computer Use



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In consideration for receiving access to and use of the computer facilities, network, licensed or developed Software, Software maintained or operated by any of the State entities, systems, equipment, Documentation, information, reports, or Database Administrator of any kind (hereinafter "Information"), Vendor understands and agrees to the following rules:

- 25.13.9.1. Every Authorized User has the responsibility to assure the protection of information from unauthorized access, misuse, theft, damage, destruction, modification, or disclosure;
- 25.13.9.2. That information shall be used solely for conducting official State business, and all other use or access is strictly forbidden including, but not limited to, personal, or other private and non-State use and that at no time shall Vendor access or attempt to access any information without having the express authority to do so;
- 25.13.9.3. That at no time shall Vendor access or attempt to access any information in a manner inconsistent with the approved policies, procedures, and /or Agreements relating to system entry/access;
- 25.13.9.4. That all Software Licensed, developed, or being evaluated by the State cannot be copied, shared, distributed, sub-licensed, modified, reverse engineered, rented, or sold, and that at all times Vendor must use utmost care to protect and keep such Software strictly confidential in accordance with the license or any other Agreement executed by the State. Only equipment or Software owned, licensed, or being evaluated by the State, can be used by the Vendor. Personal Software (including but not limited to palmtop sync Software) shall not be installed on any equipment; and
- 25.13.9.5. That if the Vendor is found to be in violation of any of the above-stated rules, the User may face removal from the State Contract, and/or criminal or civil prosecution, if the act constitutes a violation of law.

25.13.10. H-25.12.10 Email Use

Mail and other electronic communication messaging systems are State of New Hampshire property and are to be used for business purposes only. Email is defined as "internal email systems" or "State-funded email systems." Vendors understand and agree that use of email shall follow State standard policy (available upon request).



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**25.13.11. H-25.12.11 Internet/Intranet Use**

The Internet/Intranet is to be used for access to and distribution of information in direct support of the business of the State of New Hampshire according to State standard policy (available upon request).

**25.13.12. H-25.12.12 Regulatory/Governmental Approvals**

Any Contract awarded under the RFP shall be contingent upon the Vendor obtaining all necessary and applicable regulatory or other governmental approvals.

**25.13.13. H-25.12.13 Force Majeure**

**25.13.13.1.** Neither Vendor nor the State shall be responsible for delays or failures in performance resulting from events beyond the control of such party and without fault or negligence of such party. Such events shall include, but not be limited to, acts of God, strikes, lock outs, riots, and acts of War, epidemics, acts of Government, fire, power failures, nuclear accidents, earthquakes, and unusually severe weather.

**25.13.13.2.** Except in the event of the foregoing, Force Majeure events shall not include Vendor's inability to hire or provide personnel needed for the Vendor's performance under the Contract.

**25.13.14. H-25.12.14 Confidential Information**

**25.13.14.1.** In performing its obligations under the Contract, the Vendor may gain access to information of the State, including Confidential Information. "State Confidential Information" shall include, but not be limited to, information exempted from public disclosure under New Hampshire RSA chapter 91-A: Access to Public Records and Meetings (see e.g. RSA chapter 91-A: 5 Exemptions). The Vendor shall not use the State Confidential Information developed or obtained during the performance of, or acquired, or developed by reason of the Contract, except as is directly connected to and necessary for the Vendor's performance under the Contract.



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- 25.13.14.2. The Vendor agrees to maintain the confidentiality of and to protect from unauthorized use, disclosure, publication, and reproduction (collectively "release"), all State Confidential Information of the State that becomes available to the Vendor in connection with its performance under the Contract, regardless of its form.
- 25.13.14.3. Subject to applicable federal or State laws and regulations, Confidential Information shall not include information which: (i) shall have otherwise become publicly available other than as a result of disclosure by the receiving party in Breach hereof; (ii) was disclosed to the receiving party on a non-confidential basis from a source other than the disclosing party, which the receiving party believes is not prohibited from disclosing such information as a result of an obligation in favor of the disclosing party; (iii) is developed by the receiving party independently of, or was known by the receiving party prior to, any disclosure of such information made by the disclosing party; or (iv) is disclosed with the written consent of the disclosing party. A receiving party also may disclose Confidential Information to the extent required by an order of a court of competent jurisdiction.
- 25.13.14.4. Any disclosure of the State's information shall require prior written approval of the State. The Vendor shall immediately notify the State if any request, subpoena or other legal process is served upon the Vendor regarding the State's Confidential Information, and the Vendor shall cooperate with the State in any effort it undertakes to contest the request, the subpoena or other legal process, at no additional cost to the State.
- 25.13.14.5. In the event of unauthorized use or disclosure of the State's Confidential Information, the Vendor shall immediately notify the State, and the State shall immediately be entitled to pursue any remedy at law and in equity, including, but not limited to injunctive relief.



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25.13.14.6. Insofar as the Vendor seeks to maintain the confidentiality of its confidential or proprietary information, the Vendor must clearly identify in writing the information it claims to be confidential or proprietary. The Vendor acknowledges that the State is subject to the Right to Know Law, RSA chapter 91-A. The State shall maintain the confidentiality of the identified Confidential Information insofar as it is consistent with applicable State or federal laws or regulations, including but not limited to, RSA chapter 91-A. In the event the State receives a request for the information identified by the Vendor as confidential, the State shall notify the Vendor and specify the date the State will be releasing the requested information. At the request of the State, the Vendor shall cooperate and assist the State with the collection and Review of the Vendor's information, at no additional expense to the State. Any effort to prohibit or enjoin the release of the information shall be the Vendor's sole responsibility and at the Vendor's sole expense. If the Vendor fails to obtain a court order enjoining the disclosure, the State shall release the information on the date specified in the State's notice to the Vendor without any State liability to the Vendor.

25.13.14.7. This Contract Agreement, Appendix H: State of New Hampshire Terms and Conditions - Section H-25.12.14: Confidential Information shall survive the termination or conclusion of a Contract.

25.13.15. H-25.12.14 Data Breach

In the event of a Data Breach, the Vendor shall comply with provisions of NH RSA 359-C.

25.14. H-25.13 Pricing

25.14.1. H-25.13.1 Activities/Deliverables/Milestones Dates and Pricing

The Vendor must include, within the fixed price for IT service activities, tasks, and preparation of required Deliverables, pricing for the Deliverables required based on the proposed approach, and methodology and tools. A fixed price must be provided for each Deliverable. Pricing worksheets are provided in Appendix F: *Pricing Worksheets*.

25.14.2. H-25.13.2 Software Licensing, Maintenance, Enhancements, and Support Pricing





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- 25.14.2.1. The Vendor must provide the minimum Software support and Services through Software Licensing, maintenance, Enhancements, and support as detailed in Section H-25.11: Ongoing Software Maintenance and Support Levels.
- 25.14.2.2. For Software Licensing, maintenance, and support costs, complete a worksheet including all costs in the table. A worksheet is provided in Appendix F: *Pricing Worksheets*, under Table F-4: *Software Licensing, Maintenance, and Support Pricing Worksheet*, and Table F-5: *Web Site Hosting, Maintenance, and Support Pricing Worksheet*.
- 25.14.3. H-25.13.3 Invoicing
  - 25.14.3.1. The Vendor shall submit correct invoices to the State for all amounts to be paid by the State. All invoices submitted shall be subject to the State's written approval, which shall not be unreasonably withheld. The Vendor shall only submit invoices for Services or Deliverables as permitted by the Contract. Invoices must be in a format as determined by the State and contain detailed information, including without limitation: itemization of each Deliverable and identification of the Deliverable for which payment is sought, and the Acceptance date triggering such payment; date of delivery and/or installation; monthly maintenance charges; any other Project costs or retention amounts if applicable.
  - 25.14.3.2. Upon acceptance of a properly documented invoice, the State will pay the invoice within thirty (30) days of invoice issuance. Invoices will not be backdated and shall be promptly dispatched.
  - 25.14.3.3. If the State receives an invoice and the amount on the invoice is calculated incorrectly, the State shall notify the Vendor of the alleged error prior to the due date of such payment. The State and the Vendor agree to use commercially reasonable efforts to resolve the invoicing error within fifteen (15) days from such notification to the Vendor. The State shall promptly pay upon resolution of such dispute or within such fifteen (15) day period of an agreed-upon amount, whichever is later, and no late charges shall apply to that amount or the originally invoiced amount.
- 25.14.4. H-25.13.4 Overpayments to the Vendor



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The Vendor shall promptly, but no later than fifteen (15) business days, pay the State the full amount of any overpayment or erroneous payment upon discovery or notice from the State.

**25.14.5. H-25.13.5 Credits**

The State may apply credits due to the State, arising out of this Contract, against the Vendor's invoices with appropriate information attached.

**25.14.6. H-25.13.6 Records Retention and Access Requirements**

**25.14.6.1.** The Vendor shall agree to the conditions of all applicable State and federal laws and regulations, which are incorporated herein by this reference, regarding retention and access requirements, including without limitation, retention policies consistent with the Federal Acquisition Regulations (FAR) Subpart 4.7 Vendor Records Retention.

**25.14.6.2.** The Vendor and its Subcontractors shall maintain books, records, documents, and other evidence of accounting procedures and practices, which properly and sufficiently reflect all direct and indirect costs, invoiced in the performance of their respective obligations under the Contract. The Vendor and its Subcontractors shall retain all such records for three (3) years following termination of the Contract, including any extensions. Records relating to any litigation matters regarding the Contract shall be kept for one (1) year following the termination of all litigation, including the termination of all appeals or the expiration of the appeals period.

**25.14.6.3.** Upon prior notice and subject to reasonable time frames, all such records shall be subject to inspection, examination, audit and copying by personnel so authorized by the State and federal officials so authorized by law, rule, regulation or Contract, as applicable. Access to these items will be provided within Merrimack County of the State of New Hampshire, unless otherwise agreed by the State. Delivery of and access to such records shall be at no cost to the State during the three (3) year period following termination of the Contract and one (1) year term following litigation relating to the Contract, including all appeals or the expiration of the appeal period. The Vendor shall include the record retention and Review requirements of this section in any of its subcontracts.



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25.14.6.4. The State agrees that books, records, documents, and other evidence of accounting procedures and practices related to the Vendor's cost structure and profit factors shall be excluded from the State's Review unless the cost or any other Services or Deliverables provided under the Contract is calculated or derived from the cost structure or profit factors.

25.14.7. H-25.13.7 Accounting Requirements

The Vendor shall maintain an accounting system in accordance with generally accepted accounting principles. The costs applicable to the Contract shall be ascertainable from the accounting system and the Vendor shall maintain records pertaining to the Services and all other costs and expenditures.

25.15. H-25.14 Termination

25.15.1. H-25.14.1 Termination for Default

25.15.1.1. Any one or more of the following acts or omissions of the Vendor shall constitute an Event of Default hereunder ("Event of Default"):

25.15.1.1.1. a. Failure to perform the Services satisfactorily or on Schedule;

25.15.1.1.2. b. Failure to submit any report required; and/or

25.15.1.1.3. c. To perform any other covenant, term or condition of the Contract.

25.15.1.2. Upon the occurrence of any Event of Default, the State may take any one or more, or all, of the following actions:



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- 25.15.1.2.1. Unless otherwise provided in the Contract, the State shall provide the Vendor written notice of default and require it to be remedied within, in the absence of a greater or lesser Specification of time, within thirty (30) days from the date of notice, unless otherwise indicated within by the State ("Cure Period"). If the Vendor fails to cure the default within the Cure Period, the State may terminate the Contract effective two (2) days after giving the Vendor notice of termination, at its sole discretion, treat the Contract as Breached and pursue its remedies at law or in equity or both;
- 25.15.1.2.2. Give the Vendor a written notice specifying the Event of Default and suspending all payments to be made under the Contract and ordering that the portion of the Contract price which would otherwise accrue to the Vendor during the period from the date of such notice until such time as the State determines that the Vendor has cured the Event of Default shall never be paid to the Vendor;
- 25.15.1.2.3. Set off against any other obligations the State may owe to the Vendor any damages the State suffers by reason of any Event of Default;
- 25.15.1.2.4. Treat the Contract as breeched and pursue any of its remedies at law or in equity, or both; and
- 25.15.1.2.5. Procure Services that are the subject of the Contract from another source and the Vendor shall be liable for reimbursing the State for the replacement Services, and all administrative costs directly related to the replacement of the Contract and procuring the Services from another source, such as costs of competitive bidding, mailing, advertising, applicable fees, charges or penalties, and staff time costs; all of which shall be subject to the limitations of liability set forth in the Contract.



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- 25.15.1.3. In the Event of Default by the State, the Vendor shall provide the State with written notice of default, and the State shall cure the default within thirty (30) days.
- 25.15.1.4. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive termination or Contract Conclusion.
- 25.15.1.5. This section H-25.14 shall survive termination or Contract Conclusion.
- 25.15.2. H-25.14.2 Termination for Convenience
  - 25.15.2.1. The State may, at its sole discretion, terminate the Contract for convenience, in whole or in part, by thirty (30) days written notice to the Vendor. In the event of such termination for convenience, the State shall pay the Vendor the agreed upon price, if separately stated, for Deliverables for which Acceptance has been given by the State. Amounts for Services or Deliverables provided prior to the date of termination for which no separate price is stated will be paid, in whole or in part, generally in accordance with Appendix F: *Pricing Worksheets*.
  - 25.15.2.2. During the thirty (30) day period, the Vendor shall wind down and cease its Services as quickly and efficiently as reasonably possible, without performing unnecessary Services or activities and by minimizing negative effects on the State from such winding down and cessation of Services.
- 25.15.3. H-25.14.3 Termination for Conflict of Interest
  - 25.15.3.1. The State may terminate the Contract by written notice if it determines that a conflict of interest exists, including but not limited to, a violation by any of the parties hereto of applicable laws regarding ethics in public acquisitions and procurement and performance of Contracts.



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- 25.15.3.2. In such case, the State shall be entitled to a pro-rated refund of any current development, support and maintenance costs. The State shall pay all other Contracted payments that would have become due and payable if the Vendor did not know, or reasonably did not know, of the conflict of interest.
- 25.15.3.3. In the event the Contract is terminated as provided above pursuant to a violation by the Vendor, the State shall be entitled to pursue the same remedies against the Vendor as it could pursue in the event of a default of the Contract by the Vendor.
- 25.15.4. H-25.14.4 Termination Procedure
- 25.15.4.1. Upon termination of the Contract, the State, in addition to any other rights provided in the Contract, may require the Vendor to deliver to the State any property, including without limitation, Software and Written Deliverables, for such part of the Contract as has been terminated.
- 25.15.4.2. After receipt of a notice of termination, and except as otherwise directed by the State, Vendor shall:
- 25.15.4.2.1. Stop work under the Contract on the date, and to the extent specified, in the notice;
- 25.15.4.2.2. Promptly, but in no event longer than thirty (30) days after termination, terminate its orders and subcontracts related to the work which has been terminated and settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the State to the extent required, which approval or ratification shall be final for the purpose of this Section;
- 25.15.4.2.3. Take such action as the State directs, or as necessary to preserve and protect the property related to the Contract which is in the possession of Vendor and in which State has an interest;



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25.15.4.2.4. Transfer title to the State and deliver in the manner, at the times, and to the extent directed by the State, any property which is required to be furnished to State and which has been accepted or requested by the State; and

25.15.4.2.5. Provide written Certification to the State that Vendor has surrendered to the State all said property.

25.16. H-25.15 Limitation of Liability

25.16.1. H-25.15.1 State

25.16.1.1. Subject to applicable laws and regulations, in no event shall the State be liable for any consequential, special, indirect, incidental, punitive, or exemplary damages. Subject to applicable laws and regulations, the State's liability to the Vendor shall not exceed the total Contract price set forth in Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Section 1.8: Price Limitation*.

25.16.1.2. Notwithstanding the foregoing and any provision of this Contract to the contrary, in no event does the State waive its sovereign immunity or any applicable defenses or immunities.

25.16.2. H-25.15.2 The Vendor

Subject to applicable laws and regulations, in no event shall the Vendor be liable for any consequential, special, indirect, incidental, punitive or exemplary damages and the Vendor's liability to the State shall not exceed two times (2X) the total Contract price set forth in Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Section 1.8: Price Limitation*. Notwithstanding the foregoing, the limitation of liability shall not apply to the Vendor's indemnification obligations set forth in Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Section 1.8: Price Limitation*, and Appendix H: *State of New Hampshire Terms and Conditions, Contract Agreement P-37 General Provisions - Sections 13: Indemnification*, and confidentiality obligations in Section H-25.12.14: *Confidential Information*, and Data Breach obligations in Section H-25.12.15: *Data Breach* which shall be unlimited.

25.16.3. H-25.15.3 State's Immunity



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Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive termination or Contract Conclusion.

**25.16.4. H-25.15.4 Survival**

This Contract Agreement, Section H-25.15: Limitation of Liability shall survive termination or Contract Conclusion.

**25.17. H-25.16 Change of Ownership**

In the event that the Vendor should change ownership for any reason whatsoever, the State shall have the option of continuing under the Contract with the Vendor, its successors or assigns for the full remaining term of the Contract; continuing under the Contract with the Vendor, its successors or assigns for such period of time as determined necessary by the State; or immediately terminate the Contract without liability to the Vendor, its successors or assigns.

**25.18. H-25.17 Assignment, Delegation and Subcontracts**

25.18.1. The Vendor shall not assign, delegate, subcontract, or otherwise transfer any of its interest, rights, or duties under the Contract without the prior written consent of the State. Such consent will not be unreasonably withheld. Any attempted transfer, assignment, delegation, or other transfer made without the State's prior written consent shall be null and void and may constitute an Event of Default at the sole discretion of the State.

25.18.2. The Vendor shall remain wholly responsible for performance of the entire Contract regardless of whether assignees, delegates, Subcontractors or other transferees ("Assigns") are used, unless otherwise agreed to in writing by the State and the Assigns fully assumes in writing any and all obligations and liabilities under the Contract from the Effective Date. In the absence of a written assumption of full obligations and liabilities of the Contract, any permitted assignment, delegation, subcontract or other transfer shall neither relieve the Vendor of any of its obligations under the Contract nor shall it affect any remedies available to the State against the Vendor that may arise from any Event of Default of the provisions of the Contract. The State will consider the Vendor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from the Contract.

**25.19. H-25.18 Dispute Resolution**





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**APPENDIX H-25: GENERAL CONTRACT REQUIREMENTS**

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Prior to the filing of any formal proceedings with respect to a dispute (other than an action seeking injunctive relief with respect to intellectual property rights or Confidential information), the party believing itself aggrieved (the "Invoking Party") shall call for progressive management involvement in the dispute negotiation by written notice to the other party. Such notice shall be without prejudice to the Invoking Party's right to any other remedy permitted by this Agreement.

**25.20. H-25.19**      **Venue and Jurisdiction**

The Contract shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successor and assigns. Any action on the Contract may only be brought in the State of New Hampshire Merrimack County Superior Court.

**25.21. H-25.20**      **Project Holdback**

The State will withhold 10% of the agreed Deliverables pricing tendered by the Vendor in this engagement until successful completion of the Warranty Period as defined in Appendix H: State of New Hampshire Terms and Conditions - Section H-25.10.1: Warranty Period.

**25.22. H-25.21**      **Escrow of Code**

Vendor will enter into a source and configuration code escrow Agreement, with a State approved escrow agent. The proposed escrow Agreement shall be submitted with the Vendor's Proposal for Review by the State. The escrow Agreement requires the Vendor to put the Vendor Software source and configuration code in escrow. The source code shall be released to the State if one of the following events has occurred:

- 25.22.1. The Vendor has made an assignment for the benefit of creditors;
- 25.22.2. The Vendor institutes or becomes subject to a liquidation or bankruptcy proceeding of any kind;
- 25.22.3. A receiver or similar officer has been appointed to take charge of all or part of the Vendor's assets;
- 25.22.4. The Vendor or its Subcontractor terminates its maintenance and operations support Services for the State for the Software or has ceased supporting and maintaining the Software for the State, whether due to its ceasing to conduct business generally or otherwise, except in cases where the termination or cessation is a result of the non-payment or other fault of the State;
- 25.22.5. Vendor defaults under the Contract; or



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25.22.6. Vendor ceases its on-going business operations or that portion of its business operations relating to the licensing and maintenance of the Software.

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**TERMS AND DEFINITIONS**

The following general contracting terms and definitions apply except as specifically noted elsewhere in this document.

Acceptance	Notice from the State that a Deliverable has satisfied Acceptance Test or Review.
Acceptance Letter	An Acceptance Letter provides notice from the State that a Deliverable has satisfied Acceptance Tests or Review.
Acceptance Period	The timeframe during which the Acceptance Test is performed.
Acceptance Test Plan	The Acceptance Test Plan provided by the Vendor and agreed to by the State that describes at a minimum, the specific Acceptance process, criteria, and Schedule for Deliverables.
Acceptance Test and Review	Tests performed to determine that no Defects exist in the application Software or the System.
Access Control	Supports the management of permissions for logging onto a computer or network.
Agreement	A Contract duly executed and legally binding.
Appendix	Supplementary material that is collected and appended at the back of a document.
Audit Trail Capture and Analysis	Supports the identification and monitoring of activities within an application or system.
Authorized User	The Vendor's employees, Contractors, Subcontractors or other agents who need to access the State's Personal Data to enable the Contractor to perform the Services required.
Best and Final Offer (BAFO)	For negotiated procurements, a Vendor's final offer following the conclusion of discussions.
Breach or Breach of Security	Unlawful and unauthorized acquisition of unencrypted computerized Data that materially compromises the security, confidentiality or integrity of personal information maintained by a person or commercial entity.
Business Hours	Vendor personnel shall work normal business hours between



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	8:00 a.m. and 5:00 p.m. EST, eight (8) hour days, forty (40) hour weeks, excluding State of New Hampshire holidays. Changes to this Schedule may be made upon agreement with the State Project Manager.
CCP	Change Control Procedures
Certification	The Vendor's written declaration with full supporting and written Documentation (including without limitation test results as applicable) that the Vendor has completed development of the Deliverable and certified its readiness for applicable Acceptance Testing or Review.
Change Control	Formal process for initiating changes to the proposed Solution or process once development has begun.
Change Order	Formal Documentation prepared for a proposed change in the Specifications.
Completion Date	End date for the Contract. (See Contract Agreement, P-37 General Provisions, Block 1.7)
Confidential Information	Information required to be kept Confidential from unauthorized disclosure <i>under the Contract</i> .
Contract	An Agreement between the State of New Hampshire and a Vendor, which creates binding obligations for each party to perform as specified in the Contract Documents.
Contract Agreement	Part 1, 2, and 3. The Documentation consisting of the P-37 General Provisions, IT Provisions, and the Exhibits which represents the understanding and acceptance of the reciprocal legal rights and duties of the parties with respect to the Scope of Work.
Contract Conclusion	Refers to the conclusion of the Contract, for any reason, including but not limited to, the successful Contract completion, termination for convenience, or termination for default.
Contract Documents	Documents that comprise this Contract. (See Part 2, IT Provisions – Section 1.1)
Contract Managers	The persons identified by the State and the Vendor who shall be responsible for all Contractual authorization and administration of the Contract. These responsibilities shall include but not be limited to processing Contract Documentation, obtaining executive approvals, tracking costs and payments, and representing the parties in all Contract



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	administrative activities.
Contract Price	The total, not to exceed amount to be paid by the State to the Contractor for product and Services described in the Contract Agreement. This amount is listed in Part 1, P-37 General Provisions – Section 1.8: <i>Price Limitation</i> , as well as Part-3, Exhibit B – Paragraph 2: <i>Contract Price</i> .
Contractor	The Contractor and its employees, subcontractors, agents and affiliates who are providing the Services agreed to under the Contract.
Contracted Vendor/Vendor	The Vendor whose Proposal or quote was awarded the Contract with the State and who is responsible for the Services and Deliverables of the Contract.
Conversion/Migration Validation Test	A test to ensure that a Data conversion process correctly takes Data from a legacy system and successfully converts it to form that can be used by the new system.
COTS	Commercial Off the Shelf Software.
CR	Change Request
Cure Period	The thirty (30) day period following written notification of a default within which a Contracted Vendor must cure the default identified.
Custom Code	Code developed by the Vendor specifically for this Project for the State of New Hampshire.
Custom Software	Software developed by the Vendor specifically for this Project for the State of New Hampshire.
Data	State's records, files, forms, Data and other documents or information, in either electronic or paper form, that will be used /converted by the Vendor during the Contract Term.
Data Breach	The unauthorized access by a non-authorized persons(s) that results in the use, disclosure or theft of the State's unencrypted Non-Public Data.
DBA	Database Administrator
Deficiencies/Defects	A failure, Deficiency, or Defect in a Deliverable resulting in a Deliverable, the Software, or the System, not conforming to its Specifications.



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	<p>Class A Deficiency – <i>Software</i> - Critical, does not allow System to operate, no work around, demands immediate action; <i>Written Documentation</i> - missing significant portions of information or unintelligible to State; <i>Non Software</i> - Services were inadequate and require re-performance of the Service.</p> <p>Class B Deficiency – <i>Software</i> - important, does not stop operation and/or there is a work around and user can perform tasks; <i>Written Documentation</i> - portions of information are missing but not enough to make the document unintelligible; <i>Non Software</i> - Services were Deficient, require reworking, but do not require re-performance of the Service.</p> <p>Class C Deficiency – <i>Software</i> - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; <i>Written Documentation</i> - minimal changes required and of minor editing nature; <i>Non Software</i> - Services require only minor reworking and do not require re-performance of the Service.</p>
Deliverable	A Deliverable is any Written, Software, or NonSoftware Deliverable (letter, report, manual, book, other), provided by the Contractor to the State or under the terms of a Contract requirement.
Department	An agency of the State
Department of Information Technology (DoIT)	The Department of Information Technology established under <u>RSA chapter 21-R</u> by the Legislature effective September 5, 2008.
Digital Signature	Certification that guarantees the unaltered state of a file, also known as "code signing".
Documentation	All information that describes the installation, operation, and use of the Software, either in printed or electronic format.
Effective Date	The Contract and all obligations of the parties hereunder shall become effective on the date the Governor and the Executive Council of the State of New Hampshire approves the Contract.
Encryption	Supports the transformation of Data for security purposes.
Enhancements	Updates, additions, modifications to, and new releases for the Software, and all changes to the Documentation as a



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	result of Enhancements, including, but not limited to, Enhancements produced by Change Orders.
Event of Default	Any one or more of the following acts or omissions of a Vendor shall constitute an Event of Default hereunder ("Event of Default"): <ul style="list-style-type: none"> <li>a. Failure to perform the Services satisfactorily or on Schedule;</li> <li>b. Failure to submit any report required; and/or</li> <li>c. Failure to perform any other covenant, term or condition of the Contract.</li> </ul>
Firm Fixed Price Contract	A Firm Fixed Price Contract provides a price that is not subject to increase, i.e., adjustment on the basis of the Vendor's cost experience in performing the Contract.
Fully Loaded	Rates are inclusive of all allowable expenses, including, but not limited to: meals, hotel/housing, airfare, car rentals, car mileage, and out of pocket expenses.
GAAP	Generally Accepted Accounting Principles.
Governor and Executive Council	The New Hampshire Governor and Executive Council.
GUI	Graphical user interface.
Harvest	Software to archive and/or control versions of Software.
Identification and Authentication	Supports obtaining information about those parties attempting to log on to a system or application for security purposes and the validation of those users.
Implementation	The process for making the System fully Operational for processing the Data.
Implementation Plan	Sets forth the transition from development of the System to full operation, and includes without limitation, training, business and technical procedures.
Information Technology (IT)	Refers to the tools and processes used for the gathering, storing, manipulating, transmitting, sharing, and sensing of information including, but not limited to, Data processing, computing, information systems, telecommunications, and various audio and video technologies.
Input Validation	Ensure that the value entered by users or provided by other applications meets the size, type and format expected.



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	Protecting the application from cross site scripting, SQL injection, buffer overflow, etc.
Intrusion Detection	Supports the detection of illegal entrance into a computer system.
Invoking Party	In a dispute, the party believing itself aggrieved.
Key Project Staff	Personnel identified by the State and by the Contracted Vendor as essential to work on the Project.
Licensee	The State of New Hampshire
Non-Exclusive Contract	A Contract executed by the State that does not restrict the State from seeking alternative sources for the Deliverables or Services provided under the Contract.
Non-Public Information	Data, other than Personal Data, that is not subject to distribution to the public as public information. It is deemed to be sensitive and confidential by the State because it contains information that is exempt by statute, ordinance or administrative rule from access by the general public as public information.
Non-Software Deliverables	Deliverables that are not Software Deliverables or Written Deliverables, e.g., meetings, help support, Services, other.
Notice to Proceed (NTP)	The State Contract Manager's written direction to the Vendor to begin work on the Contract on a given date and time.
Open Data Formats	A Data format based on an underlying Open Standard.
Open Source Software	Software that guarantees the user unrestricted use of the Software as defined in <u>RSA chapter 21-R:10</u> and <u>RSA chapter 21-R:11</u> .
Open Standards	Specifications for the encoding and transfer of computer Data that is defined in <u>RSA chapter 21-R:10</u> and <u>RSA chapter 21-R:13</u> .
Operating System	System is fully functional, all Data has been loaded into the System, is available for use by the State in its daily operations.
Operational	Operational means that the System is operating and fully functional, all Data has been loaded; the System is available for use by the State in its daily operations, and the State has issued an Acceptance Letter.





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Order of Precedence	The order in which Contract/Documents control in the event of a conflict or ambiguity. A term or condition in a document controls over a conflicting or ambiguous term or condition in a document that is lower in the Order of Precedence.
Personal Data	Data that includes information relating to a person that identifies the person by name and has any of the following Personally Identifiable Information (PII): government-issued identification numbers (e.g., Social Security, driver's license, passport); financial account information, including account number, credit or debit card numbers; or Protected Health Information (PHI) relating to a person.
Project	The planned undertaking regarding the entire subject matter of an RFP and Contract and the activities of the parties related hereto.
Project Team	The group of State employees and Contracted Vendor's personnel responsible for managing the processes and mechanisms required such that the Services are procured in accordance with the Work Plan on time, on budget and to the required Specifications and quality.
Project Managers	The persons identified who shall function as the State's and the Vendor's representative with regard to Review and Acceptance of Contract Deliverables, invoice sign off, and Review and approval of Change Requests (CR) utilizing the Change Control Procedures (CCP).
Project Staff	State personnel assigned to work with the Vendor on the Project.
Proposal	The submission from a Vendor in response to the Request for a Proposal or Statement of Work.
Regression Test Plan	A plan integrated into the Work Plan used to ascertain whether fixes to Defects have caused errors elsewhere in the application/process.
Review	The process of Reviewing Deliverables for Acceptance.
Review Period	The period set for Review of a Deliverable. If none is specified then the Review Period is five (5) business days.
RFP (Request for Proposal)	A Request For Proposal solicits Proposals to satisfy State functional requirements by supplying Data processing product and/or Service resources according to specific terms and conditions.



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Role/Privilege Management	Supports the granting of abilities to users or groups of users of a computer, application or network.
Schedule	The dates described in the Work Plan for deadlines for performance of Services and other Project events and activities under the Contract.
Services	The work or labor to be performed by the Vendor on the Project as described in the Contract.
Software	All Custom Software and COTS Software provided by the Vendor under the Contract.
Software-as-a-Service (SaaS)	The capability provided to the State to use the Contractor's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin-client interface such as a Web browser (e.g., Web-based email) or a program interface. The State does not manage or control the underlying cloud infrastructure including network, servers, Operating Systems, storage or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.
Software Deliverables	All Custom Software and COTS Software and Enhancements.
Software License	Licenses provided to the State under this Contract.
Solution	The Solution consists of the total Solution, which includes, without limitation, Software and Services, addressing the requirements and terms of the Specifications. The off-the-shelf Software and configured Software customized for the State provided by the Vendor in response to this RFP.
Specifications	The written Specifications that set forth the requirements which include, without limitation, this RFP, the Proposal, the Contract, any performance standards, Documentation, applicable State and federal policies, laws and regulations, State technical standards, subsequent State-approved Deliverables, and other Specifications and requirements described in the Contract Documents. The Specifications are, by this reference, made a part of the Contract as though completely set forth herein.
State	STATE is defined as: State of New Hampshire



Attachment 1 - Vendor Proposal  
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	<p>&lt;AGENCY &gt;</p> <p>&lt;Address&gt;</p> <p>&lt;City, State, Zip&gt;</p> <p>Reference to the term "State" shall include applicable agencies.</p>
Statement of Work (SOW)	A Statement of Work clearly defines the basic requirements and objectives of a Project. The Statement of Work also defines a high level view of the architecture, performance and design requirements, the roles and responsibilities of the State and the Vendor. The Contract Agreement SOW defines the results that the Vendor remains responsible and accountable for achieving.
State's Confidential Records	State's information regardless of its form that is not subject to public disclosure under applicable state and federal laws and regulations, including but not limited to <u>RSA chapter 91-A: Access to Governmental Records and Meetings</u> .
State Data	All Data created or in any way originating with the State, and all Data that is the output of computer processing of or other electronic manipulation of any Data that was created by or in any way originated with the State, whether such Data or output is stored on the State's hardware, the Contractor's hardware or exists in any system owned, maintained or otherwise controlled by the State or by the Contractor.
State Fiscal Year (SFY)	The New Hampshire State Fiscal Year extends from July 1 <sup>st</sup> through June 30 <sup>th</sup> of the following calendar year.
State Project Leader	State's representative with regard to Project oversight.
State's Project Manager (PM)	State's representative with regard to Project Management and technical matters. Agency Project Managers are responsible for Review and Acceptance of specific Contract Deliverables, invoice sign off, and Review and approval of a Change Request (CR).
Subcontractor	A person, partnership, or company not in the employment of, or owned by, the Vendor, which is performing Services under this Contract under a separate Contract with or on behalf of the Vendor.
System	All Software, specified hardware, and interfaces and extensions, integrated and functioning together in accordance with the Specifications.



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TBD	To Be Determined
Technical Authorization	Direction to a Vendor, which fills in details, clarifies, interprets, or specifies technical requirements. It must be: <ol style="list-style-type: none"> <li>1. Consistent with Statement of Work within statement of Services;</li> <li>2. not constitute a new assignment; and</li> <li>3. not change the terms, documents of Specifications of the SOW.</li> </ol>
Test Plan	A plan, integrated in the Work Plan, to verify the code (new or changed) works to fulfill the requirements of the Project. It may consist of a timeline, a series of tests and test Data, test scripts and reports for the test results as well as a tracking mechanism.
Term	Period of the Contract from the Effective Date through termination.
Transition Services	Services and support provided when the Contracted Vendor is supporting system changes.
UAT	User Acceptance Test.
Unit Test	Developers create their own test Data and test scenarios to verify the code they have created or changed functions properly as defined.
User Acceptance Testing (UAT)	Tests done by knowledgeable business users who are familiar with the scope of the Project. They create/develop test cases to confirm the System was developed according to specific user requirements. The test cases and scripts/scenarios should be mapped to business requirements outlined in the user requirements documents.
User Management	Supports the administration of computer, application and network accounts within an organization.
Vendor/ Contracted Vendor	The Vendor whose Proposal or quote was awarded the Contract with the State and who is responsible for the Services and Deliverables of the Contract.
Verification	Supports the confirmation of authority to enter a computer system, application or network.
Virtual Private Network (VPN)	Extends a private network across a public network, and



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	enables users to send and receive Data across shared or public networks as if their computing devices were directly connected to the private network
Warranty Period	A period of coverage during which the Contracted Vendor is responsible for providing a guarantee for products and Services delivered as defined in the Contract.
Warranty Releases	Code releases that are done during the Warranty Period.
Warranty Services	The Services to be provided by the Vendor during the Warranty Period.
Work Plan	The overall plan of activities for the Project created in accordance with the Contract. The plan and delineation of tasks, activities and events to be performed and Deliverables to be produced under the Project as specified in Appendix C: <i>System Requirements and Deliverables</i> . The Work Plan shall include a detailed description of the Schedule, tasks/activities, Deliverables, critical events, task dependencies, and the resources that would lead and/or participate on each task.
Written Deliverables	Non-Software written Deliverable Documentation (letter, report, manual, book, other) provided by the Vendor either in paper or electronic format.



Attachment 18, Section 1  
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DO NOT RETURN

SAMPLE CONTRACT

REFERENCE FOR APPENDIX A ONLY

Appendix

New Hampshire Department of Health and Human Services  
Exhibit C



SPECIAL PROVISIONS

Contractors Obligations: The Contractor covenants and agrees that all funds received by the Contractor under the Contract shall be used only as payment to the Contractor for services provided to eligible individuals and, in the furtherance of the aforesaid covenants, the Contractor hereby covenants and agrees as follows:

1. **Compliance with Federal and State Laws:** If the Contractor is permitted to determine the eligibility of individuals such eligibility determination shall be made in accordance with applicable federal and state laws, regulations, orders, guidelines, policies and procedures.
2. **Time and Manner of Determination:** Eligibility determinations shall be made on forms provided by the Department for that purpose and shall be made and remade at such times as are prescribed by the Department.
3. **Documentation:** In addition to the determination forms required by the Department, the Contractor shall maintain a data file on each recipient of services hereunder, which file shall include all information necessary to support an eligibility determination and such other information as the Department requests. The Contractor shall furnish the Department with all forms and documentation regarding eligibility determinations that the Department may request or require.
4. **Fair Hearings:** The Contractor understands that all applicants for services hereunder, as well as individuals declared ineligible have a right to a fair hearing regarding that determination. The Contractor hereby covenants and agrees that all applicants for services shall be permitted to fill out an application form and that each applicant or re-applicant shall be informed of his/her right to a fair hearing in accordance with Department regulations.
5. **Gratuities or Kickbacks:** The Contractor agrees that it is a breach of this Contract to accept or make a payment, gratuity or offer of employment on behalf of the Contractor, any Sub-Contractor or the State in order to influence the performance of the Scope of Work detailed in Exhibit A of this Contract. The State may terminate this Contract and any sub-contract or sub-agreement if it is determined that payments, gratuities or offers of employment of any kind were offered or received by any officials, officers, employees or agents of the Contractor or Sub-Contractor.
6. **Retroactive Payments:** Notwithstanding anything to the contrary contained in the Contract or in any other document, contract or understanding, it is expressly understood and agreed by the parties hereto, that no payments will be made hereunder to reimburse the Contractor for costs incurred for any purpose or for any services provided to any individual prior to the Effective Date of the Contract and no payments shall be made for expenses incurred by the Contractor for any services provided prior to the date on which the individual applies for services or (except as otherwise provided by the federal regulations) prior to a determination that the individual is eligible for such services.
7. **Conditions of Purchase:** Notwithstanding anything to the contrary contained in the Contract, nothing herein contained shall be deemed to obligate or require the Department to purchase services hereunder at a rate which reimburses the Contractor in excess of the Contractors costs, at a rate which exceeds the amounts reasonable and necessary to assure the quality of such service, or at a rate which exceeds the rate charged by the Contractor to ineligible individuals or other third party funders for such service. If at any time during the term of this Contract or after receipt of the Final Expenditure Report hereunder, the Department shall determine that the Contractor has used payments hereunder to reimburse items of expense other than such costs, or has received payment in excess of such costs or in excess of such rates charged by the Contractor to ineligible individuals or other third party funders, the Department may elect to:
  - 7.1. Renegotiate the rates for payment hereunder, in which event new rates shall be established;
  - 7.2. Deduct from any future payment to the Contractor the amount of any prior reimbursement in excess of costs;

Exhibit C - Special Provisions

Contractor Initials \_\_\_\_\_

06/27/14

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Date \_\_\_\_\_



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DO NOT RETURN

REFERENCE FOR APPENDIX A ONLY

SAMPLE CONTRACT

Appendix

New Hampshire Department of Health and Human Services

Exhibit C



- 7.3. Demand repayment of the excess payment by the Contractor in which event failure to make such repayment shall constitute an Event of Default hereunder. When the Contractor is permitted to determine the eligibility of individuals for services, the Contractor agrees to reimburse the Department for all funds paid by the Department to the Contractor for services provided to any individual who is found by the Department to be ineligible for such services at any time during the period of retention of records established herein.

RECORDS: MAINTENANCE, RETENTION, AUDIT, DISCLOSURE AND CONFIDENTIALITY:

8. **Maintenance of Records:** In addition to the eligibility records specified above, the Contractor covenants and agrees to maintain the following records during the Contract Period:
- 8.1. **Fiscal Records:** books, records, documents and other data evidencing and reflecting all costs and other expenses incurred by the Contractor in the performance of the Contract, and all income received or collected by the Contractor during the Contract Period, said records to be maintained in accordance with accounting procedures and practices which sufficiently and properly reflect all such costs and expenses, and which are acceptable to the Department, and to include, without limitation, all ledgers, books, records, and original evidence of costs such as purchase requisitions and orders, vouchers, requisitions for materials, inventories, valuations of in-kind contributions, labor time cards, payrolls, and other records requested or required by the Department.
- 8.2. **Statistical Records:** Statistical, enrollment, attendance or visit records for each recipient of services during the Contract Period, which records shall include all records of application and eligibility (including all forms required to determine eligibility for each such recipient), records regarding the provision of services and all invoices submitted to the Department to obtain payment for such services.
- 8.3. **Medical Records:** Where appropriate and as prescribed by the Department regulations, the Contractor shall retain medical records on each patient/recipient of services.
9. **Audit:** Contractor shall submit an annual audit to the Department within 60 days after the close of the agency fiscal year. It is recommended that the report be prepared in accordance with the provision of Office of Management and Budget Circular A-133, "Audits of States, Local Governments, and Non Profit Organizations" and the provisions of Standards for Audit of Governmental Organizations, Programs, Activities and Functions, issued by the US General Accounting Office (GAO standards) as they pertain to financial compliance audits.
- 9.1. **Audit and Review:** During the term of this Contract and the period for retention hereunder, the Department, the United States Department of Health and Human Services, and any of their designated representatives shall have access to all reports and records maintained pursuant to the Contract for purposes of audit, examination, excerpts and transcripts.
- 9.2. **Audit Liabilities:** In addition to and not in any way in limitation of obligations of the Contract, it is understood and agreed by the Contractor that the Contractor shall be held liable for any state or federal audit exceptions and shall return to the Department, all payments made under the Contract to which exception has been taken or which have been disallowed because of such an exception.
10. **Confidentiality of Records:** All information, reports, and records maintained hereunder or collected in connection with the performance of the services and the Contract shall be confidential and shall not be disclosed by the Contractor, provided however, that pursuant to state laws and the regulations of the Department regarding the use and disclosure of such information, disclosure may be made to public officials requiring such information in connection with their official duties and for purposes directly connected to the administration of the services and the Contract; and provided further, that the use or disclosure by any party of any information concerning a recipient for any purpose not directly connected with the administration of the Department or the Contractor's responsibilities with respect to purchased services hereunder is prohibited except on written consent of the recipient, his attorney or guardian.

Exhibit C - Special Provisions

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Attachment 1 of Report to the  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
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Notwithstanding anything to the contrary contained herein the covenants and conditions contained in the Paragraph shall survive the termination of the Contract for any reason whatsoever.

11. **Reports: Fiscal and Statistical:** The Contractor agrees to submit the following reports at the following times if requested by the Department.
  - 11.1. **Interim Financial Reports:** Written interim financial reports containing a detailed description of all costs and non-allowable expenses incurred by the Contractor to the date of the report and containing such other information as shall be deemed satisfactory by the Department to justify the rate of payment hereunder. Such Financial Reports shall be submitted on the form designated by the Department or deemed satisfactory by the Department.
  - 11.2. **Final Report:** A final report shall be submitted within thirty (30) days after the end of the term of this Contract. The Final Report shall be in a form satisfactory to the Department and shall contain a summary statement of progress toward goals and objectives stated in the Proposal and other information required by the Department.
12. **Completion of Services: Disallowance of Costs:** Upon the purchase by the Department of the maximum number of units provided for in the Contract and upon payment of the price limitation hereunder, the Contract and all the obligations of the parties hereunder (except such obligations as, by the terms of the Contract are to be performed after the end of the term of this Contract and/or survive the termination of the Contract) shall terminate, provided however, that if, upon review of the Final Expenditure Report the Department shall disallow any expenses claimed by the Contractor as costs hereunder the Department shall retain the right, at its discretion, to deduct the amount of such expenses as are disallowed or to recover such sums from the Contractor.
13. **Credits:** All documents, notices, press releases, research reports and other materials prepared during or resulting from the performance of the services of the Contract shall include the following statement:
  - 13.1. The preparation of this (report, document etc.) was financed under a Contract with the State of New Hampshire, Department of Health and Human Services, with funds provided in part by the State of New Hampshire and/or such other funding sources as were available or required, e.g., the United States Department of Health and Human Services.
14. **Prior Approval and Copyright Ownership:** All materials (written, video, audio) produced or purchased under the contract shall have prior approval from DHHS before printing, production, distribution or use. The DHHS will retain copyright ownership for any and all original materials produced, including, but not limited to, brochures, resource directories, protocols or guidelines, posters, or reports. Contractor shall not reproduce any materials produced under the contract without prior written approval from DHHS.
15. **Operation of Facilities: Compliance with Laws and Regulations:** In the operation of any facilities for providing services, the Contractor shall comply with all laws, orders and regulations of federal, state, county and municipal authorities and with any direction of any Public Officer or officers pursuant to laws which shall impose an order or duty upon the contractor with respect to the operation of the facility or the provision of the services at such facility. If any governmental license or permit shall be required for the operation of the said facility or the performance of the said services, the Contractor will procure said license or permit, and will at all times comply with the terms and conditions of each such license or permit. In connection with the foregoing requirements, the Contractor hereby covenants and agrees that, during the term of this Contract the facilities shall comply with all rules, orders, regulations, and requirements of the State Office of the Fire Marshal and the local fire protection agency, and shall be in conformance with local building and zoning codes, by-laws and regulations.
16. **Equal Employment Opportunity Plan (EEOP):** The Contractor will provide an Equal Employment Opportunity Plan (EEOP) to the Office for Civil Rights, Office of Justice Programs (OCR), if it has received a single award of \$500,000 or more. If the recipient receives \$25,000 or more and has 50 or

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Contractor Initials \_\_\_\_\_

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Attachment 5147 - Letter Report  
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more employees, it will maintain a current EEO on file and submit an EEO Certification Form to the OCR, certifying that its EEO is on file. For recipients receiving less than \$25,000, or public grantees with fewer than 50 employees, regardless of the amount of the award, the recipient will provide an EEO Certification Form to the OCR certifying it is not required to submit or maintain an EEO. Non-profit organizations, Indian Tribes, and medical and educational institutions are exempt from the EEO requirement, but are required to submit a certification form to the OCR to claim the exemption. EEO Certification Forms are available at: <http://www.ojp.usdoj/about/ocr/pdfs/cert.pdf>.

17. **Limited English Proficiency (LEP):** As clarified by Executive Order 13166, Improving Access to Services for persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination on the basis of limited English proficiency (LEP). To ensure compliance with the Omnibus Crime Control and Safe Streets Act of 1968 and Title VI of the Civil Rights Act of 1964, Contractors must take reasonable steps to ensure that LEP persons have meaningful access to its programs.

18. **Pilot Program for Enhancement of Contractor Employee Whistleblower Protections:** The following shall apply to all contracts that exceed the Simplified Acquisition Threshold as defined in 48 CFR 2.101 (currently, \$150,000)

CONTRACTOR EMPLOYEE WHISTLEBLOWER RIGHTS AND REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS (SEP 2013)

(a) This contract and employees working on this contract will be subject to the whistleblower rights and remedies in the pilot program on Contractor employee whistleblower protections established at 41 U.S.C. 4712 by section 828 of the National Defense Authorization Act for Fiscal Year 2013 (Pub. L. 112-239) and FAR 3.908.

(b) The Contractor shall inform its employees in writing, in the predominant language of the workforce, of employee whistleblower rights and protections under 41 U.S.C. 4712, as described in section 3.908 of the Federal Acquisition Regulation.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in all subcontracts over the simplified acquisition threshold.

19. **Subcontractors:** DHHS recognizes that the Contractor may choose to use subcontractors with greater expertise to perform certain health care services or functions for efficiency or convenience, but the Contractor shall retain the responsibility and accountability for the function(s). Prior to subcontracting, the Contractor shall evaluate the subcontractor's ability to perform the delegated function(s). This is accomplished through a written agreement that specifies activities and reporting responsibilities of the subcontractor and provides for revoking the delegation or imposing sanctions if the subcontractor's performance is not adequate. Subcontractors are subject to the same contractual conditions as the Contractor and the Contractor is responsible to ensure subcontractor compliance with those conditions.

When the Contractor delegates a function to a subcontractor, the Contractor shall do the following:

- 19.1. Evaluate the prospective subcontractor's ability to perform the activities, before delegating the function  
19.2. Have a written agreement with the subcontractor that specifies activities and reporting responsibilities and how sanctions/revocation will be managed if the subcontractor's performance is not adequate  
19.3. Monitor the subcontractor's performance on an ongoing basis

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- 19.4. Provide to DHHS an annual schedule identifying all subcontractors, delegated functions and responsibilities, and when the subcontractor's performance will be reviewed
- 19.5. DHHS shall, at its discretion, review and approve all subcontracts.

If the Contractor identifies deficiencies or areas for improvement, are identified, the Contractor shall take corrective action.

**DEFINITIONS**

As used in the Contract, the following terms shall have the following meanings:

**COSTS:** Shall mean those direct and indirect items of expense determined by the Department to be allowable and reimbursable in accordance with cost and accounting principles established in accordance with state and federal laws, regulations, rules and orders.

**DEPARTMENT:** NH Department of Health and Human Services.

**FINANCIAL MANAGEMENT GUIDELINES:** Shall mean that section of the Contractor Manual which is entitled "Financial Management Guidelines" and which contains the regulations governing the financial activities of contractor agencies which have contracted with the State of NH to receive funds.

**PROPOSAL:** If applicable, shall mean the document submitted by the Contractor on a form or forms required by the Department and containing a description of the Services to be provided to eligible individuals by the Contractor in accordance with the terms and conditions of the Contract and setting forth the total cost and sources of revenue for each service to be provided under the Contract.

**UNIT:** For each service that the Contractor is to provide to eligible individuals hereunder, shall mean that period of time or that specified activity determined by the Department and specified in Exhibit B of the Contract.

**FEDERAL/STATE LAW:** Wherever federal or state laws, regulations, rules, orders, and policies, etc. are referred to in the Contract, the said reference shall be deemed to mean all such laws, regulations, etc. as they may be amended or revised from the time to time.

**CONTRACTOR MANUAL:** Shall mean that document prepared by the NH Department of Administrative Services containing a compilation of all regulations promulgated pursuant to the New Hampshire Administrative Procedures Act, NH RSA Ch 541-A, for the purpose of implementing State of NH and federal regulations promulgated thereunder.

**SUPPLANTING OTHER FEDERAL FUNDS:** The Contractor guarantees that funds provided under this Contract will not supplant any existing federal funds available for these services.

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Attachment 16, Letter to Proposer  
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**Appendix**   
Exhibit C-1



**REVISIONS TO GENERAL PROVISIONS**

1. Subparagraph 4 of the General Provisions of this contract, Conditional Nature of Agreement, is replaced as follows:
  4. **CONDITIONAL NATURE OF AGREEMENT.**  
Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including without limitation, the continuance of payments, in whole or in part, under this Agreement are contingent upon continued appropriation or availability of funds, including any subsequent changes to the appropriation or availability of funds affected by any state or federal legislative or executive action that reduces, eliminates, or otherwise modifies the appropriation or availability of funding for this Agreement and the Scope of Services provided in Exhibit A, Scope of Services, in whole or in part. In no event shall the State be liable for any payments hereunder in excess of appropriated or available funds. In the event of a reduction, termination or modification of appropriated or available funds, the State shall have the right to withhold payment until such funds become available, if ever. The State shall have the right to reduce, terminate or modify services under this Agreement immediately upon giving the Contractor notice of such reduction, termination or modification. The State shall not be required to transfer funds from any other source or account into the Account(s) identified in block 1.6 of the General Provisions, Account Number, or any other account, in the event funds are reduced or unavailable.
2. Subparagraph 10 of the General Provisions of this contract, Termination, is amended by adding the following language:
  - 10.1 The State may terminate the Agreement at any time for any reason, at the sole discretion of the State, 30 days after giving the Contractor written notice that the State is exercising its option to terminate the Agreement.
  - 10.2 In the event of early termination, the Contractor shall, within 15 days of notice of early termination, develop and submit to the State a Transition Plan for services under the Agreement, including but not limited to, identifying the present and future needs of clients receiving services under the Agreement and establishes a process to meet those needs.
  - 10.3 The Contractor shall fully cooperate with the State and shall promptly provide detailed information to support the Transition Plan including, but not limited to, any information or data requested by the State related to the termination of the Agreement and Transition Plan and shall provide ongoing communication and revisions of the Transition Plan to the State as requested.
  - 10.4 In the event that services under the Agreement, including but not limited to clients receiving services under the Agreement are transitioned to having services delivered by another entity including contracted providers or the State, the Contractor shall provide a process for uninterrupted delivery of services in the Transition Plan.
  - 10.5 The Contractor shall establish a method of notifying clients and other affected individuals about the transition. The Contractor shall include the proposed communications in its Transition Plan submitted to the State as described above.

Exhibit C-1 – Revisions to Standard Provisions

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Attachment 3, Version 1.0  
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Exhibit D



**CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS**

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 et seq.), and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

**ALTERNATIVE I - FOR GRANTEEES OTHER THAN INDIVIDUALS**

**US DEPARTMENT OF HEALTH AND HUMAN SERVICES - CONTRACTORS**  
**US DEPARTMENT OF EDUCATION - CONTRACTORS**  
**US DEPARTMENT OF AGRICULTURE - CONTRACTORS**

This certification is required by the regulations implementing Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 et seq.). The January 31, 1989 regulations were amended and published as Part II of the May 25, 1990 Federal Register (pages 21681-21691), and require certification by grantees (and by inference, sub-grantees and sub-contractors), prior to award, that they will maintain a drug-free workplace. Section 3017.630(c) of the regulation provides that a grantee (and by inference, sub-grantees and sub-contractors) that is a State may elect to make one certification to the Department in each federal fiscal year in lieu of certificates for each grant during the federal fiscal year covered by the certification. The certificate set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government wide suspension or debarment. Contractors using this form should send it to:

Commissioner  
NH Department of Health and Human Services  
129 Pleasant Street,  
Concord, NH 03301-6505

1. The grantee certifies that it will or will continue to provide a drug-free workplace by:
  - 1.1. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
  - 1.2. Establishing an ongoing drug-free awareness program to inform employees about
    - 1.2.1. The dangers of drug abuse in the workplace;
    - 1.2.2. The grantee's policy of maintaining a drug-free workplace;
    - 1.2.3. Any available drug counseling, rehabilitation, and employee assistance programs; and
    - 1.2.4. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
  - 1.3. Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
  - 1.4. Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will
    - 1.4.1. Abide by the terms of the statement; and
    - 1.4.2. Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
  - 1.5. Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph 1.4.2 from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency

Exhibit D - Certification regarding Drug Free  
Workplace Requirements  
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Attachment 101  
STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
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- has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
- 1.6. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph 1.4.2, with respect to any employee who is so convicted
    - 1.6.1. Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
    - 1.6.2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
  - 1.7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6.
2. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant.

Place of Performance (street address, city, county, state, zip code) (list each location)

Check  if there are workplaces on file that are not identified here.

Contractor Name:

I

Date

Name:  
Title:

CUDHHS/110713

Exhibit D - Certification regarding Drug Free  
Workplace Requirements  
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Data Analytics Platform for Opioid Crisis  
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Exhibit E



CERTIFICATION REGARDING LOBBYING

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Section 319 of Public Law 101-121, Government wide Guidance for New Restrictions on Lobbying, and 31 U.S.C. 1352, and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

US DEPARTMENT OF HEALTH AND HUMAN SERVICES - CONTRACTORS  
US DEPARTMENT OF EDUCATION - CONTRACTORS  
US DEPARTMENT OF AGRICULTURE - CONTRACTORS

Programs (Indicate applicable program covered):

- \*Temporary Assistance to Needy Families under Title IV-A
- \*Child Support Enforcement Program under Title IV-D
- \*Social Services Block Grant Program under Title XX
- \*Medicaid Program under Title XIX
- \*Community Services Block Grant under Title VI
- \*Child Care Development Block Grant under Title IV

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement (and by specific mention sub-grantee or sub-contractor).
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement (and by specific mention sub-grantee or sub-contractor), the undersigned shall complete and submit Standard Form LLL, (Disclosure Form to Report Lobbying, in accordance with its instructions, attached and identified as Standard Exhibit E-1).
3. The undersigned shall require that the language of this certification be included in the award document for sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Contractor Name: \_\_\_\_\_

Date \_\_\_\_\_

Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Exhibit E - Certification Regarding Lobbying

Contractor Initials \_\_\_\_\_

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Attachment 3 of RFP 2019-043  
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New Hampshire Department of Health and Human Services

Exhibit F



**CERTIFICATION REGARDING DEBARMENT, SUSPENSION  
AND OTHER RESPONSIBILITY MATTERS**

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of Executive Order of the President, Executive Order 12549 and 45 CFR Part 76 regarding Debarment, Suspension, and Other Responsibility Matters, and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

**INSTRUCTIONS FOR CERTIFICATION**

1. By signing and submitting this proposal (contract), the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. If necessary, the prospective participant shall submit an explanation of why it cannot provide the certification. The certification or explanation will be considered in connection with the NH Department of Health and Human Services' (DHHS) determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when DHHS determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, DHHS may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the DHHS agency to whom this proposal (contract) is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549: 45 CFR Part 76. See the attached definitions.
6. The prospective primary participant agrees by submitting this proposal (contract) that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by DHHS.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," provided by DHHS, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or involuntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List (of excluded parties).
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and

Exhibit F -- Certification Regarding Debarment, Suspension  
And Other Responsibility Matters  
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Date \_\_\_\_\_

CUD#46/10713



Attachment 137 of New Proposal  
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Exhibit F



information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

- 10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal government, DHHS may terminate this transaction for cause or default.

**PRIMARY COVERED TRANSACTIONS**

- 11. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  - 11.1. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - 11.2. have not within a three-year period preceding this proposal (contract) been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or a contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - 11.3. are not presently indicted for otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
  - 11.4. have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- 12. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal (contract).

**LOWER TIER COVERED TRANSACTIONS**

- 13. By signing and submitting this lower tier proposal (contract), the prospective lower tier participant, as defined in 45 CFR Part 76, certifies to the best of its knowledge and belief that it and its principals:
  - 13.1. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.
  - 13.2. where the prospective lower tier participant is unable to certify to any of the above, such prospective participant shall attach an explanation to this proposal (contract).
- 14. The prospective lower tier participant further agrees by submitting this proposal (contract) that it will include this clause entitled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion - Lower Tier Covered Transactions," without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

Contractor Name: \_\_\_\_\_

Date \_\_\_\_\_

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_

Exhibit F - Certification Regarding Debarment, Suspension  
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Exhibit G



**CERTIFICATION OF COMPLIANCE WITH REQUIREMENTS PERTAINING TO  
FEDERAL NONDISCRIMINATION, EQUAL TREATMENT OF FAITH-BASED ORGANIZATIONS AND  
WHISTLEBLOWER PROTECTIONS**

The Contractor identified in Section 1.3 of the General Provisions agrees by signature of the Contractor's representative as identified in Sections 1.11 and 1.12 of the General Provisions, to execute the following certification:

Contractor will comply, and will require any subgrantees or subcontractors to comply, with any applicable federal nondiscrimination requirements, which may include:

- the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. Section 3789d) which prohibits recipients of federal funding under this statute from discriminating, either in employment practices or in the delivery of services or benefits, on the basis of race, color, religion, national origin, and sex. The Act requires certain recipients to produce an Equal Employment Opportunity Plan;
- the Juvenile Justice Delinquency Prevention Act of 2002 (42 U.S.C. Section 5672(b)) which adopts by reference, the civil rights obligations of the Safe Streets Act. Recipients of federal funding under this statute are prohibited from discriminating, either in employment practices or in the delivery of services or benefits, on the basis of race, color, religion, national origin, and sex. The Act includes Equal Employment Opportunity Plan requirements;
- the Civil Rights Act of 1964 (42 U.S.C. Section 2000d, which prohibits recipients of federal financial assistance from discriminating on the basis of race, color, or national origin in any program or activity);
- the Rehabilitation Act of 1973 (29 U.S.C. Section 794), which prohibits recipients of Federal financial assistance from discriminating on the basis of disability, in regard to employment and the delivery of services or benefits, in any program or activity;
- the Americans with Disabilities Act of 1990 (42 U.S.C. Sections 12131-34), which prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation;
- the Education Amendments of 1972 (20 U.S.C. Sections 1681, 1683, 1685-86), which prohibits discrimination on the basis of sex in federally assisted education programs;
- the Age Discrimination Act of 1975 (42 U.S.C. Sections 6106-07), which prohibits discrimination on the basis of age in programs or activities receiving Federal financial assistance. It does not include employment discrimination;
- 28 C.F.R. pt. 31 (U.S. Department of Justice Regulations – OJJDP Grant Programs); 28 C.F.R. pt. 42 (U.S. Department of Justice Regulations – Nondiscrimination; Equal Employment Opportunity; Policies and Procedures); Executive Order No. 13279 (equal protection of the laws for faith-based and community organizations); Executive Order No. 13559, which provide fundamental principles and policy-making criteria for partnerships with faith-based and neighborhood organizations;
- 28 C.F.R. pt. 38 (U.S. Department of Justice Regulations – Equal Treatment for Faith-Based Organizations); and Whistleblower protections 41 U.S.C. §4712 and The National Defense Authorization Act (NDAA) for Fiscal Year 2013 (Pub. L. 112-239, enacted January 2, 2013) the Pilot Program for Enhancement of Contract Employee Whistleblower Protections, which protects employees against reprisal for certain whistle blowing activities in connection with federal grants and contracts.

The certificate set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government wide suspension or debarment.

Exhibit G

Contractor Initials \_\_\_\_\_

Certification of Compliance with requirements pertaining to Federal Nondiscrimination, Equal Treatment of Faith-Based Organizations and Whistleblower protections

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Rev. 10/21/14

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Date \_\_\_\_\_



Attachment 3 of Proposal  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

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Appendix

New Hampshire Department of Health and Human Services

Exhibit G



In the event a Federal or State court or Federal or State administrative agency makes a finding of discrimination after a due process hearing on the grounds of race, color, religion, national origin, or sex against a recipient of funds, the recipient will forward a copy of the finding to the Office for Civil Rights, to the applicable contracting agency or division within the Department of Health and Human Services, and to the Department of Health and Human Services Office of the Ombudsman.

The Contractor identified in Section 1.3 of the General Provisions agrees by signature of the Contractor's representative as identified in Sections 1.11 and 1.12 of the General Provisions, to execute the following certification:

1. By signing and submitting this proposal (contract) the Contractor agrees to comply with the provisions indicated above.

Contractor Name: \_\_\_\_\_

Date \_\_\_\_\_

Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Exhibit G

Certification of Compliance with requirements pertaining to Federal Non-discrimination, Equal Treatment of Faith-Based Organizations and Whistleblower protections

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Attachment 1 to RFP 2019-043  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

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SAMPLE CONTRACT

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Appendix

New Hampshire Department of Health and Human Services

Exhibit H



**CERTIFICATION REGARDING ENVIRONMENTAL TOBACCO SMOKE**

Public Law 103-227, Part C - Environmental Tobacco Smoke, also known as the Pro-Children Act of 1994 (Act), requires that smoking not be permitted in any portion of any indoor facility owned or leased or contracted for by an entity and used routinely or regularly for the provision of health, day care, education, or library services to children under the age of 18, if the services are funded by Federal programs either directly or through State or local governments, by Federal grant, contract, loan, or loan guarantee. The law does not apply to children's services provided in private residences, facilities funded solely by Medicare or Medicaid funds, and portions of facilities used for inpatient drug or alcohol treatment. Failure to comply with the provisions of the law may result in the imposition of a civil monetary penalty of up to \$1000 per day and/or the imposition of an administrative compliance order on the responsible entity.

The Contractor identified in Section 1.3 of the General Provisions agrees, by signature of the Contractor's representative as identified in Section 1.11 and 1.12 of the General Provisions, to execute the following certification:

1. By signing and submitting this contract, the Contractor agrees to make reasonable efforts to comply with all applicable provisions of Public Law 103-227, Part C, known as the Pro-Children Act of 1994.

Contractor Name: \_\_\_\_\_

Date \_\_\_\_\_

Name: \_\_\_\_\_  
Title: \_\_\_\_\_

CU/DHHS/110713

Exhibit H - Certification Regarding  
Environmental Tobacco Smoke  
Page 1 of 1

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Date \_\_\_\_\_



Attachment 1  
STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
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SAMPLE CONTRACT

REFERENCE FOR APPENDIX A ONLY

Appendix

New Hampshire Department of Health and Human Services



Exhibit I

HEALTH INSURANCE PORTABILITY ACT  
BUSINESS ASSOCIATE AGREEMENT

The Contractor identified in Section 1.3 of the General Provisions of the Agreement agrees to comply with the Health Insurance Portability and Accountability Act, Public Law 104-191 and with the Standards for Privacy and Security of Individually Identifiable Health Information, 45 CFR Parts 160 and 164 applicable to business associates. As defined herein, "Business Associate" shall mean the Contractor and subcontractors and agents of the Contractor that receive, use or have access to protected health information under this Agreement and "Covered Entity" shall mean the State of New Hampshire, Department of Health and Human Services.

(1) Definitions.

- a. "Breach" shall have the same meaning as the term "Breach" in section 164.402 of Title 45, Code of Federal Regulations.
- b. "Business Associate" has the meaning given such term in section 160.103 of Title 45, Code of Federal Regulations.
- c. "Covered Entity" has the meaning given such term in section 160.103 of Title 45, Code of Federal Regulations.
- d. "Designated Record Set" shall have the same meaning as the term "designated record set" in 45 CFR Section 164.501.
- e. "Data Aggregation" shall have the same meaning as the term "data aggregation" in 45 CFR Section 164.501.
- f. "Health Care Operations" shall have the same meaning as the term "health care operations" in 45 CFR Section 164.501.
- g. "HITECH Act" means the Health Information Technology for Economic and Clinical Health Act, Title XIII, Subtitle D, Part 1 & 2 of the American Recovery and Reinvestment Act of 2009.
- h. "HIPAA" means the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191 and the Standards for Privacy and Security of Individually Identifiable Health Information, 45 CFR Parts 160, 162 and 164 and amendments thereto.
- i. "Individual" shall have the same meaning as the term "individual" in 45 CFR Section 160.103 and shall include a person who qualifies as a personal representative in accordance with 45 CFR Section 164.501(g).
- j. "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 CFR Parts 160 and 164, promulgated under HIPAA by the United States Department of Health and Human Services.
- k. "Protected Health Information" shall have the same meaning as the term "protected health information" in 45 CFR Section 160.103, limited to the information created or received by Business Associate from or on behalf of Covered Entity.

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Exhibit I  
Health Insurance Portability Act  
Business Associate Agreement  
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Attachment 1 of RFP 2019-043  
STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
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Exhibit I

- i. **"Required by Law"** shall have the same meaning as the term "required by law" in 45 CFR Section 164.103.
- m. **"Secretary"** shall mean the Secretary of the Department of Health and Human Services or his/her designee.
- n. **"Security Rule"** shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 CFR Part 164, Subpart C, and amendments thereto.
- o. **"Unsecured Protected Health Information"** means protected health information that is not secured by a technology standard that renders protected health information unusable, unreadable, or indecipherable to unauthorized individuals and is developed or endorsed by a standards developing organization that is accredited by the American National Standards Institute.
- p. **Other Definitions** - All terms not otherwise defined herein shall have the meaning established under 45 C.F.R. Parts 160, 162 and 164, as amended from time to time, and the HITECH Act.

(2) **Business Associate Use and Disclosure of Protected Health Information.**

- a. Business Associate shall not use, disclose, maintain or transmit Protected Health Information (PHI) except as reasonably necessary to provide the services outlined under Exhibit A of the Agreement. Further, Business Associate, including but not limited to all its directors, officers, employees and agents, shall not use, disclose, maintain or transmit PHI in any manner that would constitute a violation of the Privacy and Security Rule.
- b. Business Associate may use or disclose PHI:
- i. For the proper management and administration of the Business Associate;
  - ii. As required by law, pursuant to the terms set forth in paragraph d. below; or
  - iii. For data aggregation purposes for the health care operations of Covered Entity.
- c. To the extent Business Associate is permitted under the Agreement to disclose PHI to a third party, Business Associate must obtain, prior to making any such disclosure, (i) reasonable assurances from the third party that such PHI will be held confidentially and used or further disclosed only as required by law or for the purpose for which it was disclosed to the third party; and (ii) an agreement from such third party to notify Business Associate, in accordance with the HIPAA Privacy, Security, and Breach Notification Rules of any breaches of the confidentiality of the PHI, to the extent it has obtained knowledge of such breach.
- d. The Business Associate shall not, unless such disclosure is reasonably necessary to provide services under Exhibit A of the Agreement, disclose any PHI in response to a request for disclosure on the basis that it is required by law, without first notifying Covered Entity so that Covered Entity has an opportunity to object to the disclosure and to seek appropriate relief. If Covered Entity objects to such disclosure, the Business

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Exhibit I  
Health Insurance Portability Act  
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Exhibit I

Associate shall refrain from disclosing the PHI until Covered Entity has exhausted all remedies.

- e. If the Covered Entity notifies the Business Associate that Covered Entity has agreed to be bound by additional restrictions over and above those uses or disclosures or security safeguards of PHI pursuant to the Privacy and Security Rule, the Business Associate shall be bound by such additional restrictions and shall not disclose PHI in violation of such additional restrictions and shall abide by any additional security safeguards.

(3) Obligations and Activities of Business Associate.

- a. The Business Associate shall notify the Covered Entity's Privacy Officer immediately after the Business Associate becomes aware of any use or disclosure of protected health information not provided for by the Agreement including breaches of unsecured protected health information and/or any security incident that may have an impact on the protected health information of the Covered Entity.
- b. The Business Associate shall immediately perform a risk assessment when it becomes aware of any of the above situations. The risk assessment shall include, but not be limited to:
- o The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification;
  - o The unauthorized person used the protected health information or to whom the disclosure was made;
  - o Whether the protected health information was actually acquired or viewed
  - o The extent to which the risk to the protected health information has been mitigated.

The Business Associate shall complete the risk assessment within 48 hours of the breach and immediately report the findings of the risk assessment in writing to the Covered Entity.

- c. The Business Associate shall comply with all sections of the Privacy, Security, and Breach Notification Rule.
- d. Business Associate shall make available all of its internal policies and procedures, books and records relating to the use and disclosure of PHI received from, or created or received by the Business Associate on behalf of Covered Entity to the Secretary for purposes of determining Covered Entity's compliance with HIPAA and the Privacy and Security Rule.
- e. Business Associate shall require all of its business associates that receive, use or have access to PHI under the Agreement, to agree in writing to adhere to the same restrictions and conditions on the use and disclosure of PHI contained herein, including the duty to return or destroy the PHI as provided under Section 3 (l). The Covered Entity shall be considered a direct third party beneficiary of the Contractor's business associate agreements with Contractor's intended business associates, who will be receiving PHI

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Exhibit I  
Health Insurance Portability Act  
Business Associate Agreement  
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Contractor Initials \_\_\_\_\_

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Attachment 1 to RFP 2019-043  
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Data Analytics Platform for Opioid Crisis  
DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA

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New Hampshire Department of Health and Human Services



Exhibit I

pursuant to this Agreement, with rights of enforcement and indemnification from such business associates who shall be governed by standard Paragraph #13 of the standard contract provisions (P-37) of this Agreement for the purpose of use and disclosure of protected health information.

- f. Within five (5) business days of receipt of a written request from Covered Entity, Business Associate shall make available during normal business hours at its offices all records, books, agreements, policies and procedures relating to the use and disclosure of PHI to the Covered Entity, for purposes of enabling Covered Entity to determine Business Associate's compliance with the terms of the Agreement.
- g. Within ten (10) business days of receiving a written request from Covered Entity, Business Associate shall provide access to PHI in a Designated Record Set to the Covered Entity, or as directed by Covered Entity, to an individual in order to meet the requirements under 45 CFR Section 164.524.
- h. Within ten (10) business days of receiving a written request from Covered Entity for an amendment of PHI or a record about an individual contained in a Designated Record Set, the Business Associate shall make such PHI available to Covered Entity for amendment and incorporate any such amendment to enable Covered Entity to fulfill its obligations under 45 CFR Section 164.526.
- i. Business Associate shall document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an individual for an accounting of disclosures of PHI in accordance with 45 CFR Section 164.528.
- j. Within ten (10) business days of receiving a written request from Covered Entity for a request for an accounting of disclosures of PHI, Business Associate shall make available to Covered Entity such information as Covered Entity may require to fulfill its obligations to provide an accounting of disclosures with respect to PHI in accordance with 45 CFR Section 164.528.
- k. In the event any individual requests access to, amendment of, or accounting of PHI directly from the Business Associate, the Business Associate shall within two (2) business days forward such request to Covered Entity. Covered Entity shall have the responsibility of responding to forwarded requests. However, if forwarding the individual's request to Covered Entity would cause Covered Entity or the Business Associate to violate HIPAA and the Privacy and Security Rule, the Business Associate shall instead respond to the individual's request as required by such law and notify Covered Entity of such response as soon as practicable.
- l. Within ten (10) business days of termination of the Agreement, for any reason, the Business Associate shall return or destroy, as specified by Covered Entity, all PHI received from, or created or received by the Business Associate in connection with the Agreement, and shall not retain any copies or back-up tapes of such PHI. If return or destruction is not feasible, or the disposition of the PHI has been otherwise agreed to in the Agreement, Business Associate shall continue to extend the protections of the Agreement, to such PHI and limit further uses and disclosures of such PHI to those purposes that make the return or destruction infeasible, for so long as Business

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Exhibit I  
Health Insurance Portability Act  
Business Associate Agreement  
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Attachment 1 to RFP 2019-043  
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Appendix

New Hampshire Department of Health and Human Services



Exhibit I

Associate maintains such PHI. If Covered Entity, in its sole discretion, requires that the Business Associate destroy any or all PHI, the Business Associate shall certify to Covered Entity that the PHI has been destroyed.

(4) Obligations of Covered Entity

- a. Covered Entity shall notify Business Associate of any changes or limitation(s) in its Notice of Privacy Practices provided to individuals in accordance with 45 CFR Section 164.520, to the extent that such change or limitation may affect Business Associate's use or disclosure of PHI.
- b. Covered Entity shall promptly notify Business Associate of any changes in, or revocation of permission provided to Covered Entity by individuals whose PHI may be used or disclosed by Business Associate under this Agreement, pursuant to 45 CFR Section 164.506 or 45 CFR Section 164.508.
- c. Covered entity shall promptly notify Business Associate of any restrictions on the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 CFR 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(5) Termination for Cause

In addition to Paragraph 10 of the standard terms and conditions (P-37) of this Agreement the Covered Entity may immediately terminate the Agreement upon Covered Entity's knowledge of a breach by Business Associate of the Business Associate Agreement set forth herein as Exhibit I. The Covered Entity may either immediately terminate the Agreement or provide an opportunity for Business Associate to cure the alleged breach within a timeframe specified by Covered Entity. If Covered Entity determines that neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.

(6) Miscellaneous

- a. Definitions and Regulatory References. All terms used, but not otherwise defined herein, shall have the same meaning as those terms in the Privacy and Security Rule, amended from time to time. A reference in the Agreement, as amended to include this Exhibit I, to a Section in the Privacy and Security Rule means the Section as in effect or as amended.
- b. Amendment. Covered Entity and Business Associate agree to take such action as is necessary to amend the Agreement, from time to time as is necessary for Covered Entity to comply with the changes in the requirements of HIPAA, the Privacy and Security Rule, and applicable federal and state law.
- c. Data Ownership. The Business Associate acknowledges that it has no ownership rights with respect to the PHI provided by or created on behalf of Covered Entity.
- d. Interpretation. The parties agree that any ambiguity in the Agreement shall be resolved to permit Covered Entity to comply with HIPAA, the Privacy and Security Rule.

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Exhibit I  
Health Insurance Portability Act  
Business Associate Agreement  
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Contractor Initials \_\_\_\_\_

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Attachment 3, Section 11  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

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 REFERENCE FOR APPENDIX A ONLY  
 New Hampshire Department of Health and Human Services

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**Appendix**



**Exhibit I**

- e. **Segregation.** If any term or condition of this Exhibit I or the application thereof to any person(s) or circumstance is held invalid, such invalidity shall not affect other terms or conditions which can be given effect without the invalid term or condition; to this end the terms and conditions of this Exhibit I are declared severable.
- f. **Survival.** Provisions in this Exhibit I regarding the use and disclosure of PHI, return or destruction of PHI, extensions of the protections of the Agreement in section (3) I, the defense and indemnification provisions of section (3) e and Paragraph 13 of the standard terms and conditions (P-37), shall survive the termination of the Agreement.

IN WITNESS WHEREOF, the parties hereto have duly executed this Exhibit I.

_____	_____
The State	Name of the Contractor
_____	_____
Signature of Authorized Representative	Signature of Authorized Representative
_____	_____
Name of Authorized Representative	Name of Authorized Representative
_____	_____
Title of Authorized Representative	Title of Authorized Representative
_____	_____
Date	Date

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Exhibit I  
 Health Insurance Portability Act  
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Attachment 11  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

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 REFERENCE FOR APPENDIX A ONLY  
 New Hampshire Department of Health and Human Services

SAMPLE CONTRACT  
**Appendix**   
 Exhibit J



**CERTIFICATION REGARDING THE FEDERAL FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT (FFATA) COMPLIANCE**

The Federal Funding Accountability and Transparency Act (FFATA) requires prime awardees of individual Federal grants equal to or greater than \$25,000 and awarded on or after October 1, 2010, to report on data related to executive compensation and associated first-tier sub-grants of \$25,000 or more. If the initial award is below \$25,000 but subsequent grant modifications result in a total award equal to or over \$25,000, the award is subject to the FFATA reporting requirements, as of the date of the award.

In accordance with 2 CFR Part 170 (Reporting Subaward and Executive Compensation Information), the Department of Health and Human Services (DHHS) must report the following information for any subaward or contract award subject to the FFATA reporting requirements:

1. Name of entity
2. Amount of award
3. Funding agency
4. NAICS code for contracts / CFDA program number for grants
5. Program source
6. Award title descriptive of the purpose of the funding action
7. Location of the entity
8. Principle place of performance
9. Unique identifier of the entity (DUNS #)
10. Total compensation and names of the top five executives if:
  - 10.1. More than 80% of annual gross revenues are from the Federal government, and those revenues are greater than \$25M annually and
  - 10.2. Compensation information is not already available through reporting to the SEC.

Prime grant recipients must submit FFATA required data by the end of the month, plus 30 days, in which the award or award amendment is made.

The Contractor identified in Section 1.3 of the General Provisions agrees to comply with the provisions of The Federal Funding Accountability and Transparency Act, Public Law 109-282 and Public Law 110-252, and 2 CFR Part 170 (Reporting Subaward and Executive Compensation Information), and further agrees to have the Contractor's representative, as identified in Sections 1.11 and 1.12 of the General Provisions execute the following Certification:

The below named Contractor agrees to provide needed information as outlined above to the NH Department of Health and Human Services and to comply with all applicable provisions of the Federal Financial Accountability and Transparency Act.

Contractor Name: \_\_\_\_\_

Date \_\_\_\_\_

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_

CUDHHS/10713

Exhibit J – Certification Regarding the Federal Funding  
 Accountability And Transparency Act (FFATA) Compliance  
 Page 1 of 2

Contractor Initials \_\_\_\_\_  
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Attachment 1 - Lead on Report  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
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**Appendix**   
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REFERENCE FOR APPENDIX A ONLY



**FORM A**

As the Contractor identified in Section 1.3 of the General Provisions, I certify that the responses to the below listed questions are true and accurate.

1. The DUNS number for your entity is: \_\_\_\_\_
2. In your business or organization's preceding completed fiscal year, did your business or organization receive (1) 80 percent or more of your annual gross revenue in U.S. federal contracts, subcontracts, loans, grants, sub-grants, and/or cooperative agreements; and (2) \$25,000,000 or more in annual gross revenues from U.S. federal contracts, subcontracts, loans, grants, subgrants, and/or cooperative agreements?

\_\_\_\_\_ NO                      \_\_\_\_\_ YES

If the answer to #2 above is NO, stop here

If the answer to #2 above is YES, please answer the following:

3. Does the public have access to information about the compensation of the executives in your business or organization through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986?

\_\_\_\_\_ NO                      \_\_\_\_\_ YES

If the answer to #3 above is YES, stop here

If the answer to #3 above is NO, please answer the following:

4. The names and compensation of the five most highly compensated officers in your business or organization are as follows:

Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____
Name: _____	Amount: _____

CUI/DHHS/110713

Exhibit J - Certification Regarding the Federal Funding  
 Accountability And Transparency Act (FFATA) Compliance  
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APPENDIX

REFERENCE FOR APPENDIX A ONLY

New Hampshire Department of Health and Human Services

Exhibit K

DHHS Information Security Requirements



A. Definitions

The following terms may be reflected and have the described meaning in this document:

1. "Breach" means the loss of control, compromise, unauthorized disclosure, unauthorized acquisition, unauthorized access, or any similar term referring to situations where persons other than authorized users and for an other than authorized purpose have access or potential access to personally identifiable information, whether physical or electronic. With regard to Protected Health Information, "Breach" shall have the same meaning as the term "Breach" in section 164.402 of Title 45, Code of Federal Regulations.
2. "Computer Security Incident" shall have the same meaning "Computer Security Incident" in section two (2) of NIST Publication 800-61, Computer Security Incident Handling Guide, National Institute of Standards and Technology, U.S. Department of Commerce.
3. "Confidential Information" or "Confidential Data" means all confidential information disclosed by one party to the other such as all medical, health, financial, public assistance benefits and personal information including without limitation, Substance Abuse Treatment Records, Case Records, Protected Health Information and Personally Identifiable Information.

Confidential Information also includes any and all information owned or managed by the State of NH - created, received from or on behalf of the Department of Health and Human Services (DHHS) or accessed in the course of performing contracted services - of which collection, disclosure, protection, and disposition is governed by state or federal law or regulation. This information includes, but is not limited to Protected Health Information (PHI), Personal Information (PI), Personal Financial Information (PFI), Federal Tax Information (FTI), Social Security Numbers (SSN), Payment Card Industry (PCI), and or other sensitive and confidential information.

4. "End User" means any person or entity (e.g., contractor, contractor's employee, business associate, subcontractor, other downstream user, etc.) that receives DHHS data or derivative data in accordance with the terms of this Contract.
5. "HIPAA" means the Health Insurance Portability and Accountability Act of 1996 and the regulations promulgated thereunder.
6. "Incident" means an act that potentially violates an explicit or implied security policy, which includes attempts (either failed or successful) to gain unauthorized access to a system or its data, unwanted disruption or denial of service, the unauthorized use of a system for the processing or storage of data; and changes to system hardware, firmware, or software characteristics without the owner's knowledge, instruction, or consent. Incidents include the loss of data through theft or device misplacement, loss or misplacement of hardcopy documents, and misrouting of physical or electronic

V4. Last update 04.04.2018

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Security Requirements  
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APPENDIX

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New Hampshire Department of Health and Human Services

Exhibit K

DHHS Information Security Requirements



mail, all of which may have the potential to put the data at risk of unauthorized access, use, disclosure, modification or destruction.

7. "Open Wireless Network" means any network or segment of a network that is not designated by the State of New Hampshire's Department of Information Technology or delegate as a protected network (designed, tested, and approved, by means of the State, to transmit) will be considered an open network and not adequately secure for the transmission of unencrypted PI, PFI, PHI or confidential DHHS data.
8. "Personal Information" (or "PI") means information which can be used to distinguish or trace an individual's identity, such as their name, social security number, personal information as defined in New Hampshire RSA 359-C:19, biometric records, etc., alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name, etc.
9. "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. Parts 160 and 164, promulgated under HIPAA by the United States Department of Health and Human Services.
10. "Protected Health Information" (or "PHI") has the same meaning as provided in the definition of "Protected Health Information" in the HIPAA Privacy Rule at 45 C.F.R. § 160.103.
11. "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. Part 164, Subpart C, and amendments thereto.
12. "Unsecured Protected Health Information" means Protected Health Information that is not secured by a technology standard that renders Protected Health Information unusable, unreadable, or indecipherable to unauthorized individuals and is developed or endorsed by a standards developing organization that is accredited by the American National Standards Institute.

I. RESPONSIBILITIES OF DHHS AND THE CONTRACTOR

A. Business Use and Disclosure of Confidential Information.

1. The Contractor must not use, disclose, maintain or transmit Confidential Information except as reasonably necessary as outlined under this Contract. Further, Contractor, including but not limited to all its directors, officers, employees and agents, must not use, disclose, maintain or transmit PHI in any manner that would constitute a violation of the Privacy and Security Rule.
2. The Contractor must not disclose any Confidential Information in response to a

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request for disclosure on the basis that it is required by law, in response to a subpoena, etc., without first notifying DHHS so that DHHS has an opportunity to consent or object to the disclosure.

3. If DHHS notifies the Contractor that DHHS has agreed to be bound by additional restrictions over and above those uses or disclosures or security safeguards of PHI pursuant to the Privacy and Security Rule, the Contractor must be bound by such additional restrictions and must not disclose PHI in violation of such additional restrictions and must abide by any additional security safeguards.
4. The Contractor agrees that DHHS Data or derivative there from disclosed to an End User must only be used pursuant to the terms of this Contract.
5. The Contractor agrees DHHS Data obtained under this Contract may not be used for any other purposes that are not indicated in this Contract.
6. The Contractor agrees to grant access to the data to the authorized representatives of DHHS for the purpose of inspecting to confirm compliance with the terms of this Contract.

II. METHODS OF SECURE TRANSMISSION OF DATA

1. Application Encryption. If End User is transmitting DHHS data containing Confidential Data between applications, the Contractor attests the applications have been evaluated by an expert knowledgeable in cyber security and that said application's encryption capabilities ensure secure transmission via the internet.
2. Computer Disks and Portable Storage Devices. End User may not use computer disks or portable storage devices, such as a thumb drive, as a method of transmitting DHHS data.
3. Encrypted Email. End User may only employ email to transmit Confidential Data if email is encrypted and being sent to and being received by email addresses of persons authorized to receive such information.
4. Encrypted Web Site. If End User is employing the Web to transmit Confidential Data, the secure socket layers (SSL) must be used and the web site must be secure. SSL encrypts data transmitted via a Web site.
5. File Hosting Services, also known as File Sharing Sites. End User may not use file hosting services, such as Dropbox or Google Cloud Storage, to transmit Confidential Data.
6. Ground Mail Service. End User may only transmit Confidential Data via *certified* ground mail within the continental U.S. and when sent to a named individual.
7. Laptops and PDA. If End User is employing portable devices to transmit Confidential Data said devices must be encrypted and password-protected.
8. Open Wireless Networks. End User may not transmit Confidential Data via an open

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wireless network. End User must employ a virtual private network (VPN) when remotely transmitting via an open wireless network.

9. Remote User Communication. If End User is employing remote communication to access or transmit Confidential Data, a virtual private network (VPN) must be installed on the End User's mobile device(s) or laptop from which information will be transmitted or accessed.
10. SSH File Transfer Protocol (SFTP), also known as Secure File Transfer Protocol. If End User is employing an SFTP to transmit Confidential Data, End User will structure the Folder and access privileges to prevent inappropriate disclosure of information. SFTP folders and sub-folders used for transmitting Confidential Data will be coded for 24-hour auto-deletion cycle (i.e. Confidential Data will be deleted every 24 hours).
11. Wireless Devices. If End User is transmitting Confidential Data via wireless devices, all data must be encrypted to prevent inappropriate disclosure of information.

### III. RETENTION AND DISPOSITION OF IDENTIFIABLE RECORDS

The Contractor will only retain the data and any derivative of the data for the duration of this Contract. After such time, the Contractor will have 30 days to destroy the data and any derivative in whatever form it may exist, unless, otherwise required by law or permitted under this Contract. To this end, the parties must:

#### A. Retention

1. The Contractor agrees it will not store, transfer or process data collected in connection with the services rendered under this Contract outside of the United States. This physical location requirement shall also apply in the implementation of cloud computing, cloud service or cloud storage capabilities, and includes backup data and Disaster Recovery locations.
2. The Contractor agrees to ensure proper security monitoring capabilities are in place to detect potential security events that can impact State of NH systems and/or Department confidential information for contractor provided systems.
3. The Contractor agrees to provide security awareness and education for its End Users in support of protecting Department confidential information.
4. The Contractor agrees to retain all electronic and hard copies of Confidential Data in a secure location and identified in section IV. A.2
5. The Contractor agrees Confidential Data stored in a Cloud must be in a FedRAMP/HITECH compliant solution and comply with all applicable statutes and regulations regarding the privacy and security. All servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a

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whole, must have aggressive intrusion-detection and firewall protection.

6. The Contractor agrees to and ensures its complete cooperation with the State's Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure.

B. Disposition

1. If the Contractor will maintain any Confidential Information on its systems (or its sub-contractor systems), the Contractor will maintain a documented process for securely disposing of such data upon request or contract termination; and will obtain written certification for any State of New Hampshire data destroyed by the Contractor or any subcontractors as a part of ongoing, emergency, and or disaster recovery operations. When no longer in use, electronic media containing State of New Hampshire data shall be rendered unrecoverable via a secure wipe program in accordance with industry-accepted standards for secure deletion and media sanitization, or otherwise physically destroying the media (for example, degaussing) as described in NIST Special Publication 800-88, Rev 1, Guidelines for Media Sanitization, National Institute of Standards and Technology, U. S. Department of Commerce. The Contractor will document and certify in writing at time of the data destruction, and will provide written certification to the Department upon request. The written certification will include all details necessary to demonstrate data has been properly destroyed and validated. Where applicable, regulatory and professional standards for retention requirements will be jointly evaluated by the State and Contractor prior to destruction.
2. Unless otherwise specified, within thirty (30) days of the termination of this Contract, Contractor agrees to destroy all hard copies of Confidential Data using a secure method such as shredding.
3. Unless otherwise specified, within thirty (30) days of the termination of this Contract, Contractor agrees to completely destroy all electronic Confidential Data by means of data erasure, also known as secure data wiping.

IV. PROCEDURES FOR SECURITY

- A. Contractor agrees to safeguard the DHHS Data received under this Contract, and any derivative data or files, as follows:
  1. The Contractor will maintain proper security controls to protect Department confidential information collected, processed, managed, and/or stored in the delivery of contracted services.
  2. The Contractor will maintain policies and procedures to protect Department confidential information throughout the information lifecycle, where applicable, (from creation, transformation, use, storage and secure destruction) regardless of the media used to store the data (i.e., tape, disk, paper, etc.).

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3. The Contractor will maintain appropriate authentication and access controls to contractor systems that collect, transmit, or store Department confidential information where applicable.
4. The Contractor will ensure proper security monitoring capabilities are in place to detect potential security events that can impact State of NH systems and/or Department confidential information for contractor provided systems.
5. The Contractor will provide regular security awareness and education for its End Users in support of protecting Department confidential information.
6. If the Contractor will be sub-contracting any core functions of the engagement supporting the services for State of New Hampshire, the Contractor will maintain a program of an internal process or processes that defines specific security expectations, and monitoring compliance to security requirements that at a minimum match those for the Contractor, including breach notification requirements.
7. The Contractor will work with the Department to sign and comply with all applicable State of New Hampshire and Department system access and authorization policies and procedures, systems access forms, and computer use agreements as part of obtaining and maintaining access to any Department system(s). Agreements will be completed and signed by the Contractor and any applicable sub-contractors prior to system access being authorized.
8. If the Department determines the Contractor is a Business Associate pursuant to 45 CFR 160.103, the Contractor will execute a HIPAA Business Associate Agreement (BAA) with the Department and is responsible for maintaining compliance with the agreement.
9. The Contractor will work with the Department at its request to complete a System Management Survey. The purpose of the survey is to enable the Department and Contractor to monitor for any changes in risks, threats, and vulnerabilities that may occur over the life of the Contractor engagement. The survey will be completed annually, or an alternate time frame at the Departments discretion with agreement by the Contractor, or the Department may request the survey be completed when the scope of the engagement between the Department and the Contractor changes.
10. The Contractor will not store, knowingly or unknowingly, any State of New Hampshire or Department data offshore or outside the boundaries of the United States unless prior express written consent is obtained from the Information Security Office leadership member within the Department.
11. Data Security Breach Liability. In the event of any security breach Contractor shall make efforts to investigate the causes of the breach, promptly take measures to prevent future breach and minimize any damage or loss resulting from the breach. The State shall recover from the Contractor all costs of response and recovery from

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Attachment 5, Vendor Proposal  
STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
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the breach, including but not limited to: credit monitoring services, mailing costs and costs associated with website and telephone call center services necessary due to the breach.

12. Contractor must, comply with all applicable statutes and regulations regarding the privacy and security of Confidential Information, and must in all other respects maintain the privacy and security of PI and PHI at a level and scope that is not less than the level and scope of requirements applicable to federal agencies, including, but not limited to, provisions of the Privacy Act of 1974 (5 U.S.C. § 552a), DHHS Privacy Act Regulations (45 C.F.R. §5b), HIPAA Privacy and Security Rules (45 C.F.R. Parts 160 and 164) that govern protections for individually identifiable health information and as applicable under State law.
13. Contractor agrees to establish and maintain appropriate administrative, technical, and physical safeguards to protect the confidentiality of the Confidential Data and to prevent unauthorized use or access to it. The safeguards must provide a level and scope of security that is not less than the level and scope of security requirements established by the State of New Hampshire, Department of Information Technology. Refer to Vendor Resources/Procurement at <https://www.nh.gov/doit/vendor/index.htm> for the Department of Information Technology policies, guidelines, standards, and procurement information relating to vendors.
14. Contractor agrees to, maintain a documented breach notification and incident response process. The Contractor will notify the State's Privacy Officer, and additional email addresses provided in this section, of any security breach within two (2) hours of the time that the Contractor learns of its occurrence. This includes a confidential information breach, computer security incident, or suspected breach which affects or includes any State of New Hampshire systems that connect to the State of New Hampshire network.
15. Contractor must restrict access to the Confidential Data obtained under this Contract to only those authorized End Users who need such DHHS Data to perform their official duties in connection with purposes identified in this Contract.
16. The Contractor must ensure that all End Users:
  - a. comply with such safeguards as referenced in Section IV A. above, implemented to protect Confidential Information that is furnished by DHHS under this Contract from loss, theft or inadvertent disclosure.
  - b. safeguard this information at all times.
  - c. ensure that laptops and other electronic devices/media containing PHI, PI, or PFI are encrypted and password-protected.
  - d. send emails containing Confidential Information only if encrypted and being sent to and being received by email addresses of persons authorized to receive such information.

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- e. limit disclosure of the Confidential Information to the extent permitted by law.
- f. Confidential Information received under this Contract and individually identifiable data derived from DHHS Data, must be stored in an area that is physically and technologically secure from access by unauthorized persons during duty hours as well as non-duty hours (e.g., door locks, card keys, biometric identifiers, etc.).
- g. only authorized End Users may transmit the Confidential Data, including any derivative files containing personally identifiable information, and in all cases, such data must be encrypted at all times when in transit, at rest, or when stored on portable media as required in section IV above.
- h. in all other instances Confidential Data must be maintained, used and disclosed using appropriate safeguards, as determined by a risk-based assessment of the circumstances involved.
- i. understand that their user credentials (user name and password) must not be shared with anyone. End Users will keep their credential information secure. This applies to credentials used to access the site directly or indirectly through a third party application.

Contractor is responsible for oversight and compliance of their End Users. DHHS reserves the right to conduct onsite inspections to monitor compliance with this Contract, including the privacy and security requirements provided in herein, HIPAA, and other applicable laws and Federal regulations until such time the Confidential Data is disposed of in accordance with this Contract.

V. LOSS REPORTING

The Contractor must notify the State's Privacy Officer, Information Security Office and Program Manager of any Security Incidents and Breaches within two (2) hours of the time that the Contractor learns of their occurrence.

The Contractor must further handle and report Incidents and Breaches involving PHI in accordance with the agency's documented Incident Handling and Breach Notification procedures and in accordance with 42 C.F.R. §§ 431.300 - 306. In addition to, and notwithstanding, Contractor's compliance with all applicable obligations and procedures, Contractor's procedures must also address how the Contractor will:

1. Identify Incidents;
2. Determine if personally identifiable information is involved in Incidents;
3. Report suspected or confirmed Incidents as required in this Exhibit or P-37;
4. Identify and convene a core response group to determine the risk level of Incidents and determine risk-based responses to Incidents; and

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**New Hampshire Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**

**ADDENDUM #1**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. Delete and replace Section 2, Schedule of Events, with the following:

EVENT	DATE	TIME
RFP released to Vendors (on or about)	Oct. 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory, or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 30, 2018	10:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor Inquiries	Nov. 13, 2018	2:00 pm
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 17	8:30 am
Vendor Presentation & Demo (2 hours)	Dec. 17	1:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 18	8:30 am
Selection / Notification	Dec. 19	10:00 am

  
 Gregory Spino





**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #2**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. Update the time of the Vendor Conference listed on the Cover page to read:

Vendor Conference.....Oct. 30, 2018; 10:00 a.m. EST

Gregory Spino





New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis

**ADDENDUM #3**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. Update the date for Proposals Due listed on the Cover page to read:

Proposals Due.....Dec. 10, 2018, 2:00 p.m. EST

Gregory Spino





**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #4**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. Add Attachment C-2 to the Request for Proposals:

A handwritten signature in black ink, appearing to read 'Gregory Spino'.

Gregory Spino



Attachment C-2  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

Attachment C-2

Vendor Instructions	
Vendor Response Column:	Place a
<p>"Yes" if the current release of the software can fully support All the functionality described in the row, without special customization. A "Yes" can only be used if the delivery method is Standard (see delivery method instructions below). Otherwise, enter an "No"; A "No" can only be used with delivery method Future, Custom, or Not Available/Not Proposing (see delivery method instructions below).</p>	
<p><b>Criticality Column:</b>                      (M) Indicates a requirement that is "Mandatory". The State considers it to be of such great importance that it must be met in order for the proposal to be accepted. If the proposer believes that there is something about their proposal that either obviates the need for this requirement or makes it of less importance this must be explained within the comments. The State retains the right to accept a proposal if the need of the requirement is reduced or eliminated by another feature of the proposal.                      (P) Indicates a requirement which is "Preferred". This requirement is considered by the State to be of great usefulness but the lack of this feature is not considered serious enough to disqualify the proposal.                      (O) Indicates a requirement which is "Optional". This requirement is considered by the State to be one which useful or potentially useful but not a central feature of the Project.</p>	
<p><b>Delivery Method Column:</b>                      Complete the delivery method using a Standard, Future, Custom, or Not Available/Not Proposing (as defined below) that indicates how the requirement will be delivered.                      Standard - Feature/function is included in the proposed system and available in the current software release.                      Future - Feature/function will be available in a future release. (Provide anticipated delivery date, version, and service release in the comment area.)                      Custom - Feature/function can be provided with custom modifications. (Respondent must provide estimated hours and average billing rate or flat cost for the software modification in the comment area. These cost estimates should add up to the total cost for software modifications found in the cost summary table in Section X of the RFP).                      Not Available/Not Proposing - Feature/function has not been proposed by the Vendor. (Provide brief description of why this functionality was not proposed.)</p>	
<p><b>Comments Column:</b>                      For all Delivery Method responses vendors must provide a brief explanation of how the requirement will be met. Free form text can be entered into this column.</p>	

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INSTRUCTIONS

Project Requirements

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BUSINESS REQUIREMENTS					
Req #	State Requirements Requirement Description	Criticality	Vendor		
			Response	Delivery Method	Comments
<b>Functional</b>					
B1.1					
B1.2	Design and implementation of data visualization standards via a style guide and example templates specifically leveraging existing toolsets and web portals currently in place at the state to create a consistent way for data to be organized and graphically displayed to meet both user design and user experience requirements.				
B1.3	Create a method to inventory data sources associated with the building of the Opioid Crisis dashboard and an ongoing process to add to the inventory of the system and recommend a strategy for future use of data analytics and business intelligence toolsets as well as create a dashboard in which the source is tagged as internal or external (to the Department) and whether the data contains personally identified information (PII) or De-identified Information (DI)				
B1.4	Provide professional services to augment internal capabilities associated with the following skill sets: Business analysis, use case development, user persona development, Data and statistical analysis generally, Data and statistical analysis specific to the opioid crisis, Data integration and transformation, Data visualization including geographical information system, Hardware architecture and design, Software configuration and training.				
B1.5	If the proposal is a cloud/hosted solution provide and establish hardware and software and/or cloud services for operation by the State needed to augment the Department's infrastructure.				
B1.6	Implement no later than August 15, 2019 opioid dashboards based on requirements				
B1.7	Provide a detailed description of how you would address charts included in the Introduction section				

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1. BUSINESS REQUIREMENTS





Attachment 10  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

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B1.4	Provide context sensitive "Help" screens/tips and dashboard instructions				
B1.9	Automated reports/notifications/alerts to users based on subscription or opt in/out functionality				
B1.10	Design, develop and implement a holistic Data Analytics Platform (DAP) that consolidates data from multiple, currently disparate Department, other State of New Hampshire and Federal sources, systems and formats to meet the needs of the state's opioid response and provide the foundation for all other needs of the Department programs.				
B2.1	Include support for the future use of advanced statistical analysis techniques, predictive analytics and machine learning				
B2.2	Be intuitive and easy to learn, understand, navigate and use.				
B2.3	Provide and support average less than 5 seconds with a majority of 1 second query response times, with or without user customization.				
B2.4	Process and load datasets in a fast, smooth, efficient manner to meet no older 24 hour stale data				

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1. BUSINESS REQUIREMENTS



Attachment 13 - Vendor Proposal  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
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82.5	<p>The selected vendor must leverage (where applicable for the vendor solution) current technologies in place at State of New Hampshire and provide recommendations for alternatives based on proposed strategy to include but not limited to:</p> <ul style="list-style-type: none"> <li>Oracle databases,</li> <li>Dimensionally modeled data marts,</li> <li>Extract, Transform, Load (ETL) software - Informatica,</li> <li>Statistical analysis tools/software and server - R Programming and RStudio Server/Connect, and</li> <li>Supplementary BI tools leveraging Tableau for dashboards which:                             <ul style="list-style-type: none"> <li>Consolidate and arranges numbers, metrics and Department defined scorecards, Key Performance, and other, metrics,</li> <li>Can be tailored for specific roles and display metrics targeted for a single point of view,</li> <li>Includes a customizable interface,</li> <li>Includes the ability to pull real-time data</li> </ul> </li> </ul>				
82.6	<p>Design, develop and implement an overarching data model, which:</p> <ul style="list-style-type: none"> <li>Combines appropriate data elements from various sources, as needed to achieve reporting and alert functions,</li> <li>Includes interfaces, source mapping and user interfaces; required to achieve data consolidation and build the DAP,</li> <li>Identifies current and future state of source systems and processes,</li> <li>Possesses the processing capabilities to provide large dataset analysis, including highly complex numerical analysis of textual, structured, non-structured, spatial and other data sources,</li> <li>Provide metadata tagging of data sources/elements,</li> <li>Allows fast and flexible data integration so that data sources are able to be integrated in the analytical environment and analyzed with limited advanced notice.</li> </ul>				

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1. BUSINESS REQUIREMENTS



Attachment 11  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

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B2.7	Vendors must include a proposed architecture for the DAP, which integrates data from source systems and meets, or exceeds, the following minimal requirements:				
B2.8	Provides a framework for organization of data, information management and technology systems required to build and implement the system.				
B2.9	Allows for data components of the architecture to include internal and external sources of structured and unstructured data users require to analyze the opioid crisis.				
B2.10	Includes data integration, data cleansing and the development and implementation of data dimensional rules.				
<b>Technical</b>					
B3.1	Describes the conceptual and logical technology components required to present information to users and enable them to analyze the data and its impacts.				
B3.2	Allows for the ability to drill down on report data by varying levels of geographic, provider, program, service and client demographic details				
B3.3	Allow for the extraction of patterns and knowledge from large amounts of data.				
B3.4	Provide predictive or statistical analysis model, based upon data type and attributes				
B3.5	Provides browser-based solution to support all major browsers.				
B3.6	Internal multi-tenant sandbox to provide statistical analysis areas to look at data with access to the dimensional based data to design and develop visualizations on an ad-hoc development based methodology				
B3.7	Internal role based authentication to provide view, modify and delete as well as external facing role based solution with ability to define group or user defined access				
B3.8	Provide a methodology to track web traffic and report on number of viewers, number of this and/or other measures.				
B3.9	State Sizing and Growth Assumptions				

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1. BUSINESS REQUIREMENTS



Attachment 1  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
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B3.30	Develop capacity to make data and information available in meeting the Department's Federal Reporting requirements and necessary for Federal grant applications				
<b>SUBHEAD</b>					
B4.1	The new System must accommodate the anticipated number of users and workstations at each location. In order to support initial sizing expectations, prior to completion of capacity planning as part of this project, the State has estimated the first phase system must accommodate approximately 2,000 internal users (25% active users, 5% concurrent) in and for future use, 250,000 external users (10% active users, 2% concurrent) at this time, and all of these users are expected to have a workstation that will access the System. These initial estimates will be replaced with the final user sizing in the Capacity Plan deliverable as part of the design phase. Workstations, network, servers, storage and WAN connectivity will be recommended by the vendor to ensure sizing to access and utilize the system.				
B4.2	The new shared infrastructure and functional capabilities need be designed to be operational 24 hours per day (hours to be determined by the state), 7 days per week, and 52 weeks per year. The centralized servers and resources and public facing web site will be designed to be operational 7 days per week and 24 hours per day. No single disruption is anticipated to last longer than 8 hours. The System as a whole will be available for use 99 percent of the timeless mutually agreed and scheduled service/maintenance intervals.				
B4.3	The new System must support transparent failover capabilities using high-availability architectural elements.				
B4.4	Specify all equipment (if any) required for the development and operations of the solutions and requirements defined in this RFP. The equipment will be comprised of industry standard and readily available components.				
B4.5	Creating/viewing population-based or individual-based alerts and notifications				
B4.6	Subscribing/Un-subscribing to alerts/notifications of interest				
B4.7	Sending notifications through preferred notification method				

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1. BUSINESS REQUIREMENTS



Attachment 1 - Bidder Proposal  
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B4.8	Scheduling of distribution of reports and notifications based on user input via an "opt in" model				
B4.9	Describe the proposed solution to meet 508 compliance and DoIT compliance requirements. The authentication and authorization solution must be ADA compliant.				
B4.10	Determining who originates and approves DAP investment proposals.				
B4.11	Determining the approved technologies and products developers must use to build services.				
B4.12	Defining the procedure for requesting permission to use a service.				
B4.13	Identifying (and executing) what service and system testing is required before deploying a service enhancement.				
B4.14	Promulgate policies, standards, and guidelines				
B4.15	Facilitation of processes				
B4.16	Collection, analysis and visualization of metrics				
B4.17	Administer the integration metadata - for example, DAP metadata (such as Web Services Description Language) or business-to-business metadata (such as electronic data interchange/XML document standards).				
B4.18	Monitor the associated governance procedures, through one or more repositories.				
B4.19	Role-based Access and User Provisioning - Technology component that enables what information a particular user is authorized to access.				
B4.20	Users' access rights shall be based on what roles they play in the enterprise (State and Counties) and/or what groups they belong to for external entities.				
B4.21	Role-Based Access shall include the capability to enforce who can update data versus access and view only. Further, the update authority should be defined at the field level within a panel.				

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Attachment 14  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
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B4.22	Authentication of user identities - Technology component that verifies the identities of those seeking to access client data. Shall include strong authentication supported by an appropriate infrastructure for identity and access management.				
B4.23	The solution must have a mechanism for Annual Reconciliation of users to determine if access is still needed.				
B4.24	Configure, install and train on the existing Tableau environment to allow for the usage of R Programming				
B4.25	Logging of activity - For financial, operational, and legal reasons, the solution must record all activities in a log, which must be searchable to allow administrators to identify any abnormal pattern of activity.				
B4.26	The solution must include the capability to monitor activity continually according to a set of pre-defined rules, and to notify administrators when abnormal activity is detected				
B4.27	Authorization - Authorization shall provide access control through enforcement, and be used to determine the specific scope of access to grant to an identity. It must provide real-time access policy decisions and enforcement (based on identities, attributes, roles, rules, entitlements and so on). Users must be able to access only what their job functions allow them to access. For instance, if a person is a "manager," then he or she is granted the access necessary to create or edit a performance review; however, if a person is not a manager, then he or she should be able to review only his or her own performance review, and only at a specific stage of the review cycle. Web access management (WAM), externalized authorization management, identity-aware networks and digital rights management tools are examples of authorization technologies.				

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Attachment 1  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
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B4.28	Administration - Administration shall offer a means of performing identity-related tasks (for instance, adding a user account to a specific system). Administration tools must provide an automated means of performing identity-related work that would otherwise be performed by a human; examples include tasks such as creating, updating or deleting identities (including credentials and attributes), and administering access policies (rules and entitlements). User provisioning shall be considered a part of administration technology. Helpdesk agents shall have override capabilities to correct data and account errors.				
B4.29	Establishment of an agile State enterprise technology platform based on an DAP architecture				
B4.30	The selected vendor must work with Department to ensure strategic alignment between the deployed technology and the future-state business processes and operational model. This collaboration is to occur, at a minimum, through the following activities:				
B4.31	Work with Department Executive Leadership and OIS to refine the overall vision for the project and to develop a strategic plan for managing change;				
B4.32	Cultivate ownership and teamwork among stakeholders at executive levels				
B4.33	Define a change control process for considering and accepting or denying changes (policy, planning, design, processes, etc.) throughout the project				
<b>Training</b>					
	Work with the Department to develop and deliver training as appropriate to State users				

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Attachment 16) Vendor Proposals  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
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<p>The System training, in addition to focusing on the navigation and use of the System, must also focus on how the System is integrated into the day-to-day work of end users including access level, new business processes and/or workflows that the System will support. Additionally, training for the usage of the back-end environment, informatica and database dimensional design will be provided to a team consisting of State of New Hampshire database administrators, system administrators and business analysts responsible for the on-going maintenance and support of the system (outlined further in the Technical training section).</p>				
<p>The selected vendor must provide the State Project Manager with documented evidence of each trainee's competence to operate the System and integrate its support in to their day-to-day work. Training must be of sufficient length to ensure adequate comprehension. Training must be provided "just in time" prior to deployment and must comprehensively address all System operations as well as security considerations.</p>				
<p>The selected vendor must organize and provide formal orientation and training before System deployment, to the State development and operations staff so that they are enabled to manage and maintain the System.</p>				
<p>The Contractor will also involve the State's technical staff in any enhancements to the System to enable the staff to become familiar with the process.</p>				

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Attachment 3 of 3  
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<p>Effective training that will provide the required skills to use this new automated tool is critical to the successful implementation and use of the new System. The selected vendor must develop user training curricula, schedules, training materials and training evaluation materials. The selected vendor must maintain an online training environment that allows trainees to access the new System. The selected vendor must conduct face-to-face, hands-on, user training in logical groupings at regional locations determined by the State, and for managing all training planning and logistics.</p>				
<b>Inventory and Migration</b>				
<p>The selected vendor shall develop a prioritized list of data sources to integrate and migrate into the Enterprise Data Warehouse. The selected vendor must identify and prioritize data sources required to support each implementation phase. Additionally, the selected vendor is required to integrate each respective data source into the Enterprise Data Warehouse. The following are the initial list of data sources to be migrated into the EDV and utilized to create the Opioid Crisis dashboard:</p>				
<p>Medicaid and Comprehensive Health Care Information System (CHIS): Pharmacy, physical, behavioral health care claims for all NH Medicaid services and for most commercially insured population in New Hampshire. Medicaid member data will be integrated into the EBI warehouse under a separate effort by Spring 2019.)</p>				
<p>Child protection investigations and findings including whether opioid or other substance use is possible factor in the case. Child Welfare System/DCYF Cases</p>				



Attachment 1 - **STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
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<p>Automated Hospital Emergency Department Data (AHEDO): State-wide surveillance system collects real-time data from all 26 New Hampshire acute care hospital emergency departments to detect clusters or monitor potential health threats in the population such as respiratory illness during influenza season, injuries during snow storms, and drug overdoses during the current opioid crisis.)</p>				
<p>Vital Records Data: Real time birth and mortality records certificates. Data collected by the NH Division of Vital Records for NH residents and births or deaths occurring in NH. NH resident out-of-state births are reported to NH through an interstate exchange agreement.</p>				
<p>Drug overdose deaths data by Fentanyl (no other drugs), Fentanyl and Other Drugs (excluding heroin), Heroin (no other drugs), Heroin and Other Drugs (excluding fentanyl), Heroin and Fentanyl, Unknown Opioids, Other Opiates/Opioids determined by the Medical Examiner. Medical Examiner Report</p>				
<p>Emergency Medical Services (EMS) Trauma Emergency Medical Services Information System (TEMSIS): medical responses on Naloxone administration incidents data. A data collection and analysis capability system that provides for the evaluation of the emergency medical and trauma services system (TEMSIS).</p>				
<p>Grant/State BDAS Treatment Services: Medication assisted treatment with Opioid/opiate, methamphetamine, &amp; cocaine/crack admissions to state funded facilities. An array of levels of care including outpatient, intensive outpatient, partial hospitalization, residential, withdrawal management, and peer and non-peer recovery support services.</p>				
<p>Population Data: Base data used for calculation of population based rates.</p>				

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Attachment 16) STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
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	NH Health WISDOM: Data access for public health indicators via interactive dashboards and community profiles. Customize and display data in maps, graphs, and tables related to the NH State Health Improvement Plan, NH Environmental Public Health Tracking Program, and the NH Occupational Health Surveillance Program.				
	To help ensure that the selected vendor and the State Project team fully understand the extent of the work needed for data conversion, a detailed study of conversion issues and requirements will be required of the selected vendor.				
	Conducting selected data source analysis to determine conversion requirements				
	Reviewing conversion analysis with the State Project team, prepare detailed data conversion plan (addressing manual and electronic data)				
	Defining strategies for verifying and/or correcting existing data				
	Developing data conversion scripts and test data conversion scripts				
	In this task the selected vendor must address data migration issues and a plan must be in place to ensure the validation of all conversion routines and the accuracy and completeness of all data.				
<b>Data Governance</b>					
	Design and implementation of a data governance strategy				
	A DAP Initiative requires an Infrastructure reference model that provides guidance for selecting technologies and products when implementing and deploying services. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):				
	Defining methods to ensure that the services infrastructure supports robust, secure, scalable, and interoperable operations.				
	Identifying what are the approved or standard technologies and products for service development and deployment.				

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Attachment 167 Vendor Proposal  
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Designing and implementing methods, patterns, and technologies that will be used to support security, reliability, transaction, and instrumentation requirements.				
Determining who determines which technologies and products go onto the standards list.				
Defining who needs to approve future technology and product decisions as standards evolve in the future.				
<b>Service Design and Development</b>				
Service design and development precepts delegate decisions about services to the appropriate architects and developers. The Vendor must design and implement a DAP governance system that addresses the following requirements (at a minimum):				
Defining a method(ology) to ensure that services are built the right way.				
Determining the appropriate types of models that must be implemented.				
Identifying sign off or approval requirements for service models.				
Determining the design patterns that should be used to support DAP principles.				
Identifying sign off or approval requirements system or service design decisions.				
Establishing technology standards for a future project.				
Determining technology selection sign off or approval requirements.				
Establishing standard designs for message formats.				
Determining interface sign off or approval procedures.				
Defining the required testing for DAP projects.				
Establishing completed project acceptance requirements and procedures.				
Creating a "prototyping or early experience" capability to experiment with and design enhancements to rules-engines by the program group for review and approval prior to entering a more formal development, testing and release process.				

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Attachment 16 for New Hampshire  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
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	Configuration and release management				
	Configuration management precepts establish which developers or administrators are responsible for configuring a service and preparing it for production deployment. The Vendor must build on and extend New Hampshire's release management processes, or develop one if the existing process is mutually determined to be not suitable. Requirements in this area are to include the following:				
	Establishing objective criterion to ensure that services are stable upon production release.				
	Defining entire deployable units including its dependencies.				
	Defining who is responsible for creating and version managing configuration files and deployment packages.				
	Establishing clear responsibilities and requirements for system testing, performance testing, and capacity planning.				
	Defining the service staging and promotion process.				
	Defining and implementing services registration procedures.				
	Defining what information must be captured pertaining to a service.				
	Defining service provision and instrumentation requirements.				
	Establishing sign off or approvals required to migrate a service into production.				
	Contract management				
	Contract management precepts shall define the policies and processes that potential service consumers use to obtain permission to access a service. The proposed DAP governance solution may extend the existing provisioning governance system if suitable, or build a new one as appropriate. The Vendor must design and implement precepts in the following areas:				
	Ensuring that new consumers don't crash the system through use, operation or load.				
	Establishing the procedures for requesting permission to use a service.				

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Attachment 14) **STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
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Identifying required information to request permission to use a service.				
Establishing an impact analysis to be performed before granting permission to new consumers.				
Determining appropriate sign offs or approvals to granting permissions to access the system.				
Establishing a framework to negotiate service level agreements (SLAs) for use of the system.				
Defining and implementing SLAs be reported and enforced.				
Establishing processes to address modifications or additional resources that may be required to support the SLAs.				
Defining appropriate testing practices and procedures that are required before a new consumer can be provisioned.				
Establishing a process to provision new consumers				
Service monitoring and control				
Service monitoring and control precepts must be designed and implemented in such a manner as to define responsibilities for issues related to operating a service. The Vendor may build on and extend or develop new service management and operations governance by defining and implementing precepts that address the following:				
Establishing controls and reporting to ensure that services behave as expected.				
Defining instrumentation and reporting to track service consumption and utilization.				
Establishing methods and reporting procedures to detect, eliminate and prevent against unauthorized service access.				
Create tracking and reporting for service SLA compliance and violations.				
Identification of notifications and escalation contacts and procedures for service issues and outages				
Service monitoring and control capabilities must be built into the DAP runtime infrastructure. DAP governance standards must define where and how to use, report on and enhance SLAs.				
Incident management				

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Attachment 3 STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
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	Incident management precepts shall define and implement responsibilities for monitoring and managing problems and issues that arise during the operation of the service. The Vendor must build on and extend or develop new incident management governance by implementing precepts that cover the following (at a minimum):				
	Design and implementation of processes and procedures to manage incidents and failures				
	Definition/identification of responsibilities for end-to-end service exception and fault tracking				
	Definition/identification of responsibilities for end-to-end service error identification and resolution.				
	Definition of the escalation path for SLA violations.				
	Change management				
	Change control management precepts shall define and implement responsibilities for managing system enhancement requests and service versioning. The Vendor must build on and extend or develop and implement new change management governance by defining precepts that cover (at a minimum):				
	Implement a process to manage change requests and to ensure that enhancements don't introduce defects in the system.				
	Design and implement procedures for requesting service enhancements.				
	Define what information is required when requesting a service enhancement.				
	Design an impact analysis process to be performed before a service enhancement request is accepted.				
	Define sign off or approval requirements for service enhancement requests.				
	Define roles, responsibilities and sequence of events pertaining to the implementation of an enhancement.				
	Develop guidelines to assist the State in paying for or funding an enhancement.				

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Attachment 11) ~~STATE OF NEW HAMPSHIRE~~ - Department of Health and Human Services  
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	Define recommended methods and a process for addressing enhancement requests associated with regulatory requirements.				
	Define methods to enable service versioning and version control/migration.				
	Establish guidelines on how long should a previous version(s) of the service be maintained and subsequently retired.				
	Define what degree of service and system testing is required before deploying a service enhancement.				
	Establish leading practices to mitigate current consumer disruption when deploying an enhancement.				
	Develop procedures to notify consumers of the enhancement or changes to the system.				
	Develop and implement processes to fall back to a system previous version upon discovery of a critical defect.				
	Data Management				
	Design and implementation of a data management strategy including data warehousing, data quality, and data integration capabilities. The strategy will incorporate current practices and the vendor will work with the current teams.				

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1. BUSINESS REQUIREMENTS





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APPLICATION REQUIREMENTS						
State Requirements				Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments	
<b>GENERAL SPECIFICATIONS</b>						
A1.1	Ability to access data using open standards access protocol (please specify supported versions in the comments field).	M				
A1.2	Data is available in commonly used format over which no entity has exclusive control, with the exception of National or international standards. Data is not subject to any copyright, patent, trademark or other trade secret regulation.	M				
A1.3	Web-based compatible and in conformance with the following W3C standards: HTML5, CSS 2.1, XML 1.1	M				
<b>APPLICATION SECURITY</b>						
A2.1	Verify the identity or authenticate all of the system client applications before allowing use of the system to prevent access to inappropriate or confidential data or services.	M				
A2.2	Verify the identity and authenticate all of the system's human users before allowing them to use its capabilities to prevent access to inappropriate or confidential data or services.	M				
A2.3	Enforce unique user names for internal facing solution	M				
A2.4	Enforce complex passwords for Administrator Accounts in accordance with DoIT's statewide User Account and Password Policy	M				
A2.5	Enforce the use of complex passwords for general users using capital letters, numbers and special characters in accordance with DoIT's statewide User Account and Password Policy.	M				
A2.6	Encrypt passwords in transmission and at rest within the database.	M				
A2.7	Establish ability to expire passwords after a definite period of time in accordance with DoIT's statewide User Account and Password Policy	M				
A2.8	Provide the ability to limit the number of people that can grant or change authorizations.	M				
A2.9	Establish ability to enforce session timeouts during periods of inactivity.	M				
A2.10	The application shall not store authentication credentials or sensitive data in its code.	M				
A2.11	Log all attempted accesses that fail identification, authentication and authorization requirements.	M				
A2.12	The application shall log all activities to a central server to prevent parties to application transactions from denying that they have taken place.	M				

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2. APPLICATION -SOFTWARE



Attachment 1, Vendor Proposal  
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Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
A2.13	All logs must be kept for (6 months)	M			
A2.14	The application must allow a human user to explicitly terminate a session. No remnants of the prior session should then remain.	M			
A2.15		M			
A2.16	The application Data shall be protected from unauthorized use when at rest	M			
A2.17	The application shall keep any sensitive Data or communications private from unauthorized individuals and programs.	M			
A2.18	Subsequent application enhancements or upgrades shall not remove or degrade security requirements.	M			
A2.19	Utilize change management documentation and procedures	M			

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2. APPLICATION -SOFTWARE



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TESTING					
State Requirements			Vendor		
Req #	Requirement Description	Priority	Vendor Response	Discovery Method	Comments
<b>APPLICATION SECURITY TESTING</b>					
T1.3	All components of the software shall be reviewed and tested to ensure they protect the State's web site and its related Data assets.	M			
T1.2	The Vendor shall be responsible for providing documentation of security testing, as appropriate. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide the necessary confidentiality, integrity and availability.	M			
T1.5	Provide evidence that supports the fact that Identification and Authentication testing has been securely accomplished, supports obtaining information about those parties attempting to log onto a system or application for security purposes and the validation of users.	M			
T1.4	Test the Access Control; supports the management of permissions for logging onto a computer or network.	M			
T1.5	Test for encryption; supports the encoding of data for security purposes, and for the ability to access the data in a decrypted format from required tools.	M			
T1.6	Test the Intrusion Detection; supports the detection of illegal entrance into a computer system.	M			
T1.7	Test the Verification feature; supports the confirmation of authority to enter a computer system, application or network.	M			
T1.8	Test the User Management feature; supports the administration of computer, application and network accounts within an organization.	M			
T1.9	Test Role/Privilege Management; supports the granting of abilities to users or groups of users of a computer, application or network.	M			
T1.10	Test Audit Trail Capture and Analysis; supports the identification and monitoring of activities within an application or system.	M			
T1.11	Test Input Validation; ensures the application is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.	M			
T1.12	For web applications, ensure the application has been tested and hardened to prevent critical application security flaws. (At a minimum, the application shall be tested against all flaws outlined in the Open Web Application Security Project (OWASP) Top Ten ( <a href="http://www.owasp.org/index.php/OWASP_Top_Ten_Project">http://www.owasp.org/index.php/OWASP_Top_Ten_Project</a> )).	M			

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1 TESTING



Attachment C-1  
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11.11	Provide the State with validation of 3rd party security reviews performed on the application and system environment. The review may include a combination of vulnerability scanning, penetration testing, static analysis of the source code, and expert code review (please specify proposed methodology in the comments field).	M			
11.14	Prior to the system being moved into production, the Vendor shall provide results of all security testing to the Department of Information Technology for review and acceptance.	M			
11.15	Vendor shall provide documented procedure for migrating application models from the User Acceptance Test Environment to the Production Environment.	M			
<b>STANDARD TESTING</b>					
12.1	The Vendor must test the software and the systems using an industry standard and State approved testing methodology.	M			
12.2	The Vendor must perform application stress testing and tuning.	M			
12.3	The Vendor must provide documented procedure for how to sync Production with a separate testing environment.	M			
12.4	The vendor must define and test disaster recovery procedures.	M			

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I TESTING



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HOSTING-CLOUD REQUIREMENTS					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>OPERATIONS</b>					
H1.1	Vendor shall provide an ANSI/TIA-942 Tier 3 Data Center or equivalent. A tier 3 data center requires 1) Multiple independent distribution paths serving the IT equipment, 2) All IT equipment must be dual-powered and fully compatible with the topology of a site's architecture and 3) Concurrently maintainable site infrastructure with expected availability of 99.982%	M			
H1.2	Vendor shall maintain a secure hosting environment providing all necessary hardware, software, and Internet bandwidth to manage the application and support users with permission based logins.	M			
H1.3	The Data Center must be physically secured – restricted access to the site to personnel with controls such as biometric, badge, and others security solutions. Policies for granting access must be in place and followed. Access shall only be granted to those with a need to perform tasks in the Data Center.	M			
H1.4	Vendor shall install and update all server patches, updates, and other utilities within 60 days of release from the manufacturer.	M			
H1.5	Vendor shall monitor System, security, and application logs.	M			
H1.6	Vendor shall manage the sharing of data resources.	M			
H1.7	Vendor shall manage daily backups, off-site data storage, and restore operations.	M			
H1.8	The Vendor shall monitor physical hardware.	M			
H1.9	Remote access shall be customized to the State's business application. In instances where the State requires access to the application or server resources not in the DMZ, the Vendor shall provide remote desktop connection to the server through secure protocols such as a Virtual Private Network (VPN).	M			
H1.10	The Vendor shall report any breach in security in conformance with State of NH RSA 359-C:20. Any person engaged in trade or commerce that is subject to RSA 358-A:3, 1 shall also notify the regulator which has primary regulatory authority over such trade or commerce. All other persons shall notify the New Hampshire Attorney General's Office.	M			
<b>DISASTER RECOVERY</b>					

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Attachment 14) Vendor Proposal  
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H2.1	Vendor shall have documented disaster recovery plans that address the recovery of lost State data as well as their own. Systems shall be architected to meet the defined recovery needs.	M			
H2.2	The disaster recovery plan shall identify appropriate methods for procuring additional hardware in the event of a component failure. In most instances, systems shall offer a level of redundancy so the loss of a drive or power supply will not be sufficient to terminate services however, these failed components will have to be replaced.	M			
H2.3	Vendor shall adhere to a defined and documented back-up schedule and procedure.	M			
H2.4	Back-up copies of data are made for the purpose of facilitating a restore of the data in the event of data loss or system failure.	M			
H2.5	Scheduled backups of all servers must be completed regularly. The minimum acceptable frequency is differential backup daily, and complete backup weekly.	M			
H2.6	Tapes or other back-up media tapes must be securely transferred from the site to another secure location to avoid complete data loss with the loss of a facility.	M			
H2.7	Data recovery – In the event that recovery back to the last backup is not sufficient to recover State Data, the Vendor shall employ the use of database logs in addition to backup media in the restoration of the database(s) to afford a much closer to real-time recovery. To do this, logs must be moved off the volume containing the database with a frequency to match the business needs.	M			
<b>HOSTING SECURITY</b>					
H3.1	The Vendor shall employ security measures ensure that the State's application and data is protected and how the system will meet all Federal and State requirements currently in law and rules protecting sensitive personal health information, as outlined in the Health Insurance Portability and Accountability Act (HIPAA) and the more stringent Title 42 Code of Federal Regulations (CFR) Part 2: (Confidentiality of Substance Use Disorder Patient Records regulation), as outlined by the Federal Substance Abuse Mental Health Services Administration (SAMHSA) and the Office of the National Coordinator for Health Information Technology (ONC)	M			
H3.2	If State data is hosted on multiple servers, data exchanges between and among servers must be encrypted.	M			

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H3.3	All servers and devices must have currently-supported and hardened operating systems, the latest anti-viral, anti-hacker, anti-spam, anti-spyware, and anti-malware utilities. The environment, as a whole, shall have aggressive intrusion-detection and firewall protection.	M			
H3.4	All components of the Infrastructure shall be reviewed and tested to ensure they protect the State's hardware, software, and its related data assets. Tests shall focus on the technical, administrative and physical security controls that have been designed into the System architecture in order to provide confidentiality, integrity and availability.	M			
H3.5	The Vendor shall ensure its complete cooperation with the State's Chief Information Officer in the detection of any security vulnerability of the hosting infrastructure.	M			
H3.6	The Vendor shall authorize the State to perform scheduled and random security audits, including vulnerability assessments, of the Vendor' hosting Infrastructure and/or the application upon request.	M			
H3.7	All servers and devices must have event logging enabled. Logs must be protected with access limited to only authorized administrators. Logs shall include System, Application, Web and Database logs.	M			
H3.8	Operating Systems (OS) and Databases (DB) shall be built and hardened in accordance with guidelines set forth by CIS, NIST or NSA.	M			
H3.9	The Vendor shall notify the State's Project Manager of any security breaches within two (2) hours of the time that the Vendor learns of their occurrence.	M			
H3.10	The Vendor shall be solely liable for costs associated with any breach of State data housed at their location(s) including but not limited to notification and any damages assessed by the courts.	M			
H3.11	The cloud services if used will be FEDRAMP compliant	M			
<b>SERVICE LEVEL AGREEMENT</b>					
H4.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M			
H4.2	The vendor shall maintain the hardware and Software in accordance with the specifications, terms, and requirements of the Contract, including providing upgrades and fixes as required.	M			
H4.3	The vendor shall repair or replace the hardware or software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M			

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H4.4	All hardware and software components of the Vendor hosting infrastructure shall be fully supported by their respective manufacturers at all times. All critical patches for operating systems, databases, web services, etc, shall be applied within sixty (60) days of release by their respective manufacturers.				
H4.5	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm- Monday through Friday EST.	M			
H4.6	The Vendor shall conform to the specific deficiency class as described: <ul style="list-style-type: none"> <li>o Class A Deficiency - Software - Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation - missing significant portions of information or unintelligible to State; Non Software - Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency - Software - Important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation - portions of information are missing but not enough to make the document unintelligible; Non Software - Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency - Software - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation - minimal changes required and of minor editing nature; Non Software - Services require only minor reworking and do not require re-performance of the Service.</li> </ul>	M			
H4.7	As part of the maintenance agreement, ongoing support issues shall be responded to according to the following: <ul style="list-style-type: none"> <li>a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request;</li> <li>b. Class B &amp; C Deficiencies - The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract;</li> </ul>	M			

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H4.8	The hosting server for the State shall be available twenty-four (24) hours a day, 7 days a week except for during scheduled maintenance.	M			
H4.9	A regularly scheduled maintenance window shall be identified (such as weekly, monthly, or quarterly) at which time all relevant server patches and application upgrades shall be applied.	M			
H4.10	If The Vendor is unable to meet the uptime requirement, The Vendor shall credit State's account in an amount based upon the following formula: (Total Contract Item Price/365) x Number of Days Contract Item Not Provided. The State must request this credit in writing.	M			
H4.11	The Vendor shall use a change management policy for notification and tracking of changes requests as well as critical outages.	M			
H4.12	A critical outage will be designated when a business function cannot be met by a nonperforming application and there is no work around to the problem.	M			
H4.13	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: Server up-time; All change requests implemented, including operating system patches; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with Initial response time as well as time to close.	M			
H4.14	The Vendor will give two-business days prior notification to the State Project Manager of all changes/updates and provide the State with training due to the upgrades and changes.	M			

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Project Requirements

Attachment C-2

SUPPORT & MAINTENANCE REQUIREMENTS					
Req #	State Requirements		Vendor		
	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>SUPPORT &amp; MAINTENANCE REQUIREMENTS:</b>					
SI.1	The Vendor's System support and maintenance shall commence upon the Effective Date and extend through the end of the Contract term, and any extensions thereof.	M			
SI.2	Maintain the hardware and Software in accordance with the Specifications, terms, and requirements of the Contract, including providing upgrades and fixes as required.	M			
SI.3	Repair Software, or any portion thereof, so that the System operates in accordance with the Specifications, terms, and requirements of the Contract.	M			
SI.4	The State shall have unlimited access, via phone or Email, to the Vendor technical support staff between the hours of 8:30am to 5:00pm Monday through Friday EST.	M			
SI.5	The Vendor response time for support shall conform to the specific deficiency class as described below or as agreed to by the parties: <ul style="list-style-type: none"> <li>o Class A Deficiency - Software - Critical, does not allow System to operate, no work around, demands immediate action; Written Documentation - missing significant portions of information or unintelligible to State; Non Software - Services were inadequate and require re-performance of the Service.</li> <li>o Class B Deficiency - Software - important, does not stop operation and/or there is a work around and user can perform tasks; Written Documentation - portions of information are missing but not enough to make the document unintelligible; Non Software - Services were deficient, require reworking, but do not require re-performance of the Service.</li> <li>o Class C Deficiency - Software - minimal, cosmetic in nature, minimal effect on System, low priority and/or user can use System; Written Documentation - minimal changes required and of minor editing nature; Non Software - Services require only minor reworking and do not require re-performance of the Service.</li> </ul>	M			
SI.6	The Vendor shall make available to the State the latest program updates, general maintenance releases, selected functionality releases, patches, and Documentation that are generally offered to its customers, at no additional cost.	M			

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5. SUPPORT & MAINTENANCE



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Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
SI.7	For all maintenance Services calls, The Vendor shall ensure the following information will be collected and maintained: 1) nature of the Deficiency; 2) current status of the Deficiency; 3) action plans, dates, and times; 4) expected and actual completion time; 5) Deficiency resolution information; 6) Resolved by; 7) Identifying number (i.e. work order number, 8) Issue identified by)	P			
SI.8	The Vendor must work with the State to identify and troubleshoot potentially large-scale System failures or Deficiencies by collecting the following information: 1) mean time between reported Deficiencies with the Software; 2) diagnosis of the root cause of the problem; and 3) identification of repeat calls or repeat Software problems.	P			
SI.9	As part of the Software maintenance agreement, ongoing software maintenance and support issues, shall be responded to according to the following or as agreed to by the parties: a. Class A Deficiencies - The Vendor shall have available to the State on-call telephone assistance, with issue tracking available to the State, eight (8) hours per day and five (5) days a week with an email / telephone response within two (2) hours of request; or the Vendor shall provide support on-site or with remote diagnostic Services, within four (4) business hours of a request; b. Class B & C Deficiencies -The State shall notify the Vendor of such Deficiencies during regular business hours and the Vendor shall respond back within four (4) hours of notification of planned corrective action; The Vendor shall repair or replace Software, and provide maintenance of the Software in accordance with the Specifications, Terms and Requirements of the Contract; or as agreed between the parties	M			
SI.10	The Vendor shall use a change management policy for notification and tracking of change requests as well as critical outages.	M			
SI.11	A critical outage will be designated when a business function cannot be met by a non-performing application and there is no work around to the problem.	M			
SI.12	The Vendor shall maintain a record of the activities related to repair or maintenance activities performed for the State and shall report quarterly on the following: All change requests implemented; All critical outages reported including actual issue and resolution; Number of deficiencies reported by class with initial response time as well as time to close.	M			

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3. SUPPORT & MAINTENANCE



Attachment 1 - Vendor Report  
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Project Requirements

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PROJECT MANAGEMENT					
State Requirements			Vendor		
Req #	Requirement Description	Criticality	Vendor Response	Delivery Method	Comments
<b>PROJECT MANAGEMENT</b>					
P1.1	Vendor shall participate in an initial kick-off meeting to initiate the Project.	M			
P1.2	Vendor shall provide Project Staff as specified in the RFP.	M			
P1.3	Vendor shall submit a finalized Work Plan within ten (10) days after Contract award and approval by Governor and Council. The Work Plan shall include, without limitation, a detailed description of the Schedule, tasks, Deliverables, critical events, task dependencies, and payment Schedule. The plan shall be updated no less than <every two weeks.>	M			
P1.4	Vendor shall provide detailed <bi-weekly or monthly> status reports on the progress of the Project, which will include expenses incurred year to date.	M			
P1.5	All user, technical, and System Documentation as well as Project Schedules, plans, status reports, and correspondence must be maintained as project documentation. (Define how- WORD format- on-Line, in a common library or on paper)	M			
P1.6	The selected vendor must define an integrated project management plan, which;				
P1.7	Includes cost estimates for specific work to be performed,				
P1.8	Defines Department Training as a component of the implementation plan.				
P1.9	Clearly defines the approach and methodology to be used in each phase of the project.				
P1.10	Includes a discovery, detailed requirements and prioritization component phase of the project.				

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6. PROJECT MANAGEMENT



Attachment C-2  
 STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
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Project Requirements

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<p>PL.11</p>	<p>The Department has historically followed a waterfall approach to enacting changes. This is usually accomplished by having requirements meetings, followed by vendor design based on the requirements, with a development, unit test, integration test, system test and regression testing. Finally ending up with a migration to production and training and post-production review. With this RFP the goal will be to adjust to a more agile approach, allowing the organization to adapt and change as needed more efficiently and effectively in order to meet the business needs. The goals will be to provide a bi-weekly demonstration of work for review and planning for next steps. The new process will be based on the following scope as a baseline to the strategy:</p>				
<p>PL.12</p>	<p>Team Formation: The Department in concert with the awarded vendor will identify the required team members for the duration of the product delivery. The team will consist of a product owner, scrum master, and other team members. There will be several teams based on the amount of features being worked on at any given time. Additionally, there will be operational teams to commit to and complete features associated with user stories and tasks to keep the system running as well as product enhancement teams to commit and complete features associated with user stories and tasks to meet the changes required by the business.</p>				
<p>PL.13</p>	<p>Process: The awarded vendor will plan and implement a process similar to the following:</p>				
<p>PL.14</p>	<p>Backlog Creation and refinement: The Product Owner working with team members and the business will create a prioritized backlog of work in the form of high level features. This will be an on-going process that must be completed prior to each Sprint Planning Meeting. Additionally, the Product Owner(s) will breakdown the features into prioritized user stories related to the originating features for use in the Sprint Planning meeting.</p>				

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6. PROJECT MANAGEMENT



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P1.15	Sprint Planning Meeting: This meeting will minimally consist of all team members facilitated by the Scrum Master and will be focused on clarifying the details of the prioritized backlog items, re-prioritizing as needed and obtaining commitment from the team to complete user stories from the backlog in the proposed sprint not to exceed 4 weeks with a preferred cadence of 2 weeks. Additionally the team will then create detailed tasks and commit to the items individually. The commitments will be managed using a KanBan tool to be provided by the vendor and agreed to by both parties for the teams use throughout the contract period.				
P1.16	Sprint: The sprint will consist of daily standup meetings (not to exceed 10 minutes) to discuss roadblocks, any clarification needs associated with work accomplished the previous day or planned for the current day, or other important items to the team. The team will work in concert with each other preferably within the same location and will require a meeting room provided by the awarded vendor for impromptu meetings to move tasks forward.				
P1.17	Sprint Review Meeting: Demonstrate working product associated with commitments from the sprint planning meeting. Communicate items to focus on in the next sprint.				
P1.18	Daily Meeting: Consist of the team members that have committed to completing tasks in the sprint and will be no longer than 10 minutes answering the following questions:				
P1.19	What did I complete yesterday?				
P1.20	What am I doing today?				
P1.21	Are there any roadblocks keeping me from completing my commitments?				
	Develop and obtain buy-in for a stakeholder and communication management plan and work with the Department to craft appropriate communication messages throughout the project				

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6. PROJECT MANAGEMENT



Attachment A, Section 1  
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Conduct organizational assessments and gap analyses for the affected divisions and programs and facilitate the development of appropriate organizational structures and job descriptions

Work with the Department to define business processes, including use cases, workflows, and business rules

The project must utilize agile-like software development principles and practices

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6. PROJECT MANAGEMENT



Attachment 1 - RFP Responses  
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Will not meet  
Will partially meet  
Wholly meet







**New Hampshire Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**

**ADDENDUM #5**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. Delete and replace Section 2, Schedule of Events, with the following:

EVENT	DATE	TIME
RFP released to Vendors (on or about)	Oct. 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 30, 2018	10:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor inquiries	Nov. 16, 2018	
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 17	8:30 am
Vendor Presentation & Demo (2 hours)	Dec. 17	1:00 pm
Vendor Presentation & Demo (2 hours)	Dec. 18	8:30 am
Selection / Notification	Dec. 19	10:00 am

Gregory Spino





**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

**ADDENDUM #6**

On October 16, 2018, the New Hampshire Department of Health and Human Services published a Request for Proposals, requesting proposals from vendors who are qualified to provide a software system and associated services for the Department to implement a scalable Opioid Crisis Response Management Business Intelligence dashboard.

The Department is publishing this addendum to:

1. Delete and replace Section 4, Instructions, Sub-section 4.16 Proposal Format, Paragraph 4.16.1, Sub-paragraph 4.16.1.3, with the following:

4.16.1.3 The Proposal should also be submitted electronically via USB Flash Drive

2. Delete Section 5, Proposal Evaluation Process, Sub-section 5.5 Scoring Detail, Paragraph 5.5.1 Scoring of the Proposed Software Solution, Sub-paragraph 5.5.1.2.
3. Delete and replace Section 2, D-2 Technical, Services and Project Management Experience, Sub-section 2.1, D-2.1 Security and Protection of Data, Paragraph 2.1.6, with the following:

2.1.6. Topic 11 – Project Management Methodology

Response Page Limit: 10

The State will evaluate the Vendor's approach to project management methodology.

2.1.6.1 Describe the methodologies used for organizing teams to implement solutions in an iterative Agile methodology.

2.1.6.2 Describe how your approach meets the requirements for project management and testing the security of the Software application and hosting environment.

2.1.6.3 How can you ensure the security and confidentiality of the State Data collected on the system?

2.1.6.4 What security validation Documentation will be shared with the State?

2.1.6.5 Do you use internal or external resources to conduct security testing?

Gregory Spino





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- 4. Delete and replace Section 1, D-1 Proposed Software Solution, Sub-section 1.1 Topic 1 – Description of Solution, Paragraph 1.1.9, with the following:**

**1.1.9 In what ways does your proposed solution provide enhanced ease of use for administrative users?**

- 5. Delete and replace Section 2, Schedule of Events, with the following:**

EVENT	DATE	TIME
RFP released to Vendors (on or about)	Oct., 16, 2018	12:00 pm
Notification to the State of the number of representatives attending the (Mandatory or Optional) Vendor Conference	Oct. 23, 2018	2:00 pm
(Mandatory or Optional) Vendor Conference; location identified in Section 4.3: Vendor Conference	Oct. 30, 2018	10:00 am
Vendor Inquiry Period ends (final inquiries due)	Nov. 5, 2018	2:00 pm
Final State responses to Vendor inquiries	Nov. 16, 2018	
Final date for Proposal submission	Dec. 10, 2018	2:00 pm
Vendor Presentation & Demo (2 hours)	Jan. 3, 2019	
Vendor Presentation & Demo (2 hours)	Jan. 4, 2019	
Vendor Presentation & Demo (2 hours)	Jan. 7, 2019	
Selection / Notification	Jan. 11, 2019	



New Hampshire Department of Health and Human Services  
**Data Analytics Platform for Opioid Crisis**



**OFFICIAL RESPONSES TO VENDOR QUESTIONS**  
**Data Analytics Platform for Opioid Crisis**

No.	Question	Answer
1.	Section 1, Introduction, Sub-section 1.1: Within the Department, which area is the main customer/releasing the RFP?	The Department of Health and Human Services, Department of Public Health Services, Bureau of Infectious Disease is releasing this RFP.
2.	Section 1, Introduction, Sub-section 1.1, Paragraph 1.1.18 AND Section 1, Introduction, Sub-section 1.1, Paragraph 1.1.28: Will the system benefit from a capability to interact with Geo-Analytic (GIS) layers on a map?	Yes.
3.	Section 1, Introduction, Sub-section 1.2 Project Overview: a) Can you expand the business and analytical requirements for the environment? b) What is the inventory of software? c) What is the Department's overarching strategy of an opioid module compared to an opioid platform? d) What investments have been made to date to infrastructure? e) -How many systems does the Department maintain or have access to; in regards to this effort?	a) Vendors should define how they will leverage the current infrastructure. Additionally, they should describe any additional software and/or hardware required to effectively clean the data and successfully link disparate data sources in order to create an enterprise data analytics environment. The resulting environment must allow data visualizations to be dynamically updated in both the external de-identified system and internal multi-tenant solution, allowing for client information to be rendered for use by the Department. b) 15 Tableau Creator Licenses (most current version) 8 core Tableau Server license 15 user Tableau eLearning for Creator 4 core Informatica Data Quality SE Development & Production 4 core PowerCenter AE Development & Production

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Attachment 16  
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**Data Analytics Platform for Opioid Crisis**



No.	Question	Answer
		<p>8 core Oracle Database Enterprise Edition w/Diagnostics and Tuning Packs</p> <p>IBM Cognos BI (version 10.2.1) is also currently used to report health-related data in NH Health WISDOM. Cognos license and support will end in March, 2020.</p> <p>c) The goal is to have a Data Analytics Platform (DAP) in which various dashboards may be contained to include the Opioid dashboard deliverable of this RFP. This dashboard will meet or exceed the current requirements set forth in this RFP. The Opioid dashboard deliverable utilizing the first 8 data sources will need to be designed to allow for scaling out to consume additional data sources and indicators to allow for a continuous evolution of the dynamic dashboard environment.</p> <p>d) 2 Database Servers: HPE BL460c Blades, 512GB, 3.2GHZ 8 cores                  2 App Servers: 10 core HPE BL460c Blades, 512GB, 2.4GHZ, 10 cores                  Red Hat Enterprise Server Linux and Linux for Virtual Datacenters                  8 core VPP L4 VMware vSphere 6 with Operations Management Enterprise PI</p> <p>e) Currently the Department has direct access to the following systems for Phase 1:</p> <ul style="list-style-type: none"> <li>• Medicaid and Commercial Claims,</li> <li>• Child Welfare Cases,</li> <li>• Drug and Alcohol System treatment data and naloxone distribution,</li> <li>• Vital Records,</li> <li>• Hospital ED Surveillance and Population Data systems.</li> </ul>

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No.	Question	Answer
		and • more limited access to Medical Examiner and Emergency Medical Services data systems.
4.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.12 AND Section 1, Introduction, Sub-section 1.3 Contract Term, Paragraph 1.3.2:</p> <p>a) The RFP states a plan to execute a Not to Exceed (NTE) of \$2,278,642. Is this amount for the base year starting from the Effective Date to August 31, 2019 or is this for the base plus four option years through August 31, 2023?</p> <p>b) Does the Department expect the NTE to cover a Data Analytics Platform (DAP)?</p>	<p>a) A contract which results from this RFP will include a price limitation Not to Exceed \$2,278,642 and a Completion Date of August 31, 2019.</p> <p>b) The NTE is geared at covering all of the requirements listed in the RFP to include at a high level the design, proposal, implementation and training associated with a Data Management &amp; Governance plan, Agile Project Management strategy and toolset to move the project to completion, Training for system administrators, analysts, database administrators, and end users on the appropriate tools sets, creation of the Opioid dashboard leveraging the identified 8 data sources with the ability to scale to many additional data sources as well as the process and training to migrate the existing Cognos reports based external data analytics platform over to the proposed solution. To the extent possible, the contractor will leverage existing hardware and software.</p>
5.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.2:</p> <p>What metrics and/or outcomes will be used to demonstrate that the DAP improves the care and well-being of individuals and families?</p>	<p>Many metrics will be discovered through the integration of data into a centralized business intelligence and data analytics platform. Some of the expected outcomes will be a better understanding of where services may be needed, which services are utilized more, graphical and information based model showing paths to addiction.</p> <p>Generally the Department intends to use the dashboard to aid in identifying hot-spot communities/demographic groups/causes, gaps in services, and Impacts of financial investments made in certain services for individuals with OUD/SUD. This will help to direct resources and program design to areas that will improve</p>

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No.	Question	Answer
		<p>Individuals access to care and ideally reduce opioid overdose fatalities.</p> <p>Another outcome will be used in the DAP is to enhance data visualization and interactivity functions to present opioid-related health statistic data. The DAP will provide more comprehensive understandings regarding mobility and mortality rates.</p> <p>In addition to the multiple quality metrics collected by the Department that are identified in the CMS Adult Core Set, which includes the "use of opioids" at high levels in persons without cancer" and the concurrent use of opioids and benzodiazepines. The Department has also identified a number of other quality metrics for Substance Use Disorders (SUD) treatment services including, initiation (access), engagement and retention in services, clinically appropriate services and treatment completion. Likewise the Department has identified number outcome metrics for SUD treatment services including those identified in the National Outcome Measures (NOMS) made available by the Federal Substance Abuse Mental Health Services Administration (SAMHSA). The Department requires the ability to conduct multivariate analysis of these and a variety of other healthcare and socioeconomic data to improve service quality and outcomes. Including the ability to compare PHI with published non - PHI data. This information will be utilized to identify and resolve quality issues at the service type, program or systems level and to address any service quality issues experienced by clients across the system or by particular demographic groups and or in certain geographical areas.</p>
6.	Section 1, Introduction, Sub-section 1.2	Some of the desired types of change is a more integrated view of

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No.	Question	Answer
	<p>Project Overview, Paragraph 1.2.3:</p> <p>What is the desired type of change resulting from the DAP?</p>	<p>the data associated with the Opioid crisis across different data sources as well as the implementation of a data management and governance strategy coupled with a project management, training and sustainability plan to continue the efforts forward.</p> <p>For the New Hampshire Department of Health and Human Services to establish extraordinary internal and external facing data analytics capacity to:</p> <ul style="list-style-type: none"> <li>• Better understand the variety of interconnected health and social issues impacting clients served across different (and sometimes multiple) program areas.</li> <li>• Utilizing data to improve service quality and design, including better integration and coordination of services</li> <li>• Monitor and improve performance, efficiency and effectiveness of programs</li> </ul>
7.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.4 AND Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.6, Sub-paragraph 1.2.6.3:</p> <p>Has the Department decided to use Oracle, Informatica and Tableau for this solution?</p>	<p>The Department has decided to utilize existing investments in Oracle, Informatica and Tableau in the data analytics platform. Additional software and hardware as applicable should be detailed out in the response and shall indicate how the solution will integrate with existing technology.</p>
8.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.4:</p> <p>a) Is capacity, licensing available?                      b) Is the vendor expected to help with or participate in the implementation of the Enterprise Business Intelligence</p>	<p>a) See Answer # 3.                      Additionally 3 more Tableau Creator licenses and training will be purchased by DPHS in the coming months for a total of 18 Creator Licenses.</p> <p>b) The expectation is that the selected vendor will identify and leverage the existing Enterprise Intelligence Platform where</p>

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No.	Question	Answer
	Platform?	applicable to their solution. The goal is not to limit the potential options by the current technology in place within the organization; however in order to maximize the investment that the State of New Hampshire has made on the platform it is recommended that the solution identify how the existing platform will be utilized to meet the deliverables of the RFP. Currently the platform is an on premise solution in the state data center administered by Department of Information Technology staff and Department staff. The preference will be for the proposed solution to enhance the existing environment that the State has to successfully meet the deliverables of the RFP.
	c) How does the state expect the DAP will interact or integrate with the Enterprise Business Intelligence (EBI) platform?	c) The DAP is a part of the Enterprise Business Intelligence (EBI) platform. The two platforms leverage the same toolsets and provide a dynamic dashboard based environment from which reports, analysis and decision making can be obtained.
	d) Please clarify the current hosting environment of the Enterprise Business Intelligence platform that is being implemented in partnership with the Department of Information Technology. Is this hosted in a State data center or by a third-party Vendor?	d) Currently the platform is an on premise solution in the state data center administered by Department of Information Technology staff and DHHS staff. The preference will be for the proposed solution to enhance the existing environment that the State has to successfully meet the deliverables of the RFP, although additional enhancements need not be on premise if the solution is best implemented another way.
	e) When will the Enterprise Business Intelligence (EBI) be available?	e) The EBI which entails the hardware and associated software described in the inventory in question 2.b. will be available at the end of December 2018.
	f) Will the EBI include all of the data sources referenced in this RFP and those data elements housed in Oracle?	f) The RFP deliverable of the Opioid dashboard will need to include the professional services required to bring in or model the 8 data sources referenced in this RFP into the EBI platform for use with the Data Analytics Environment. The
	g) Can the successful bidder build their solution using the data sources contained in the EBI?	
	h) How many data sources compose the data warehouse?	
	i) How frequently are data sources refreshed?	
	j) What volume of data does the Department anticipate will be processed through the DAP?	
	k) What interfaces are in place to send and receive data? (SFTP, WebAPI, etc)	
	l) In what format(s) does raw data typically arrive into the data warehouse	

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No.	Question	Answer
	<p>prior to processing? (CSV, XML, JSON, etc.)</p>	<p>current EBI platform is in development, but it will contain Medicaid claims data in a modeled form, and source system copies of additional data sets which will need to be modeled as part of the new effort. As explained in question 1 this RFP is to provide the professional services to design and implement a solution with associated training to bring multiple disparate data sources together into a data warehouse environment to be leveraged by existing software and hardware and augmented with additional software and hardware as applicable to create a data analytics platform in which the State of New Hampshire may leverage to create dynamic visualizations and reports of data to be used to address the Opioid crisis and be able to scale out to continue to integrate data sources into the environment from other HHS, State Agency's, providers, partners, and vendors as applicable.</p> <p>g) The successful bidder will need to propose the process and provide the necessary professional services to bring the data sources into the data warehouse and EBI to be used for the Opioid dashboard and data analytics platform, see question 5. F. for more information.</p> <p>h) The data warehouse is constantly evolving at the time of this response the data warehouse currently houses 25 data sources.</p> <p>i) See Answer 14</p> <p>j) &lt;= 250 Million records per single batch window</p> <p>k) Depending on the solution the bidder should propose the preferred methods of send/receive</p> <p>l) Flat files, Oracle, SQL Server, DB4</p>

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No.	Question	Answer
9.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.6.3, Sub-paragraph 1.2.6.3:</p> <p>a) Will the Department serve as a System Integrator (SI) or will there be an SI vendor performing this role?</p> <p>b) Is the Department's expectation that that the selected DAP vendor will also be responsible for building an Enterprise Data Warehouse?</p> <p>c) Has the Department contracted with a vendor to build the new data warehouse?</p> <p>d) If so, who is the vendor?</p>	<p>a) The Department, in conjunction with the Department of Information Technology, will serve as the system integrator for this solution; however the professional services component of the contract will need to address the necessary resources to augment the State of New Hampshire's current staffing to successfully address system integration as well as data cleansing, creation of data warehouses, data marts, multi-dimensional database views, and associated training of existing state of New Hampshire staff to sustain and scale the solution.</p> <p>b) The DAP vendor will assist in continued architectural design of the data warehouse and analytics platform.</p> <p>c) Currently the department has an existing contract to build out the enterprise business intelligence platform including the new data warehouse.</p> <p>d) The current vendor supporting this effort is Deloitte.</p>
10.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.6.3, Sub-paragraph 1.2.6.5:</p> <p>Are vendors required to secure data within a Low or Moderate Environment, as defined in FIPS Publication 199 Standards for Security Categorization of Federal Information and Information Systems?</p>	<p>Using Federal Information Processing Standards (FIPS) Publication 199 standards the Security Categorization (SC) for this data is Confidentiality-High, Integrity-High, and Availability-Moderate. Vendors will be required to secure the data based on this SC.</p>
11.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.8:</p> <p>Can the Department provide a list of vendors who attended the bidders?</p>	<p>See Attachment #1</p>

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No.	Question	Answer
	conference?	
12.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.9, Sub-paragraph 1.2.9.3:</p> <p>Is it the Department's intent that the selected vendor facilitate a process to develop the Department's data sharing and data management approach, with respect to interagency legal contracting, data sharing and Data Usage Agreements, in addition to implementing a data governance structure?</p>	<p>It is the Department's intent to have the selected vendor facilitate, document, design and implement a data governance and management solution. This will include overall management of the availability, usability, integrity and security of data used in an enterprise and associated organization structure, procedures and plan to execute. DHHS has existing data sharing agreements and legal resources to support these agreements. The vendor would incorporate these agreements into the overall data governance solution.</p>
13.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.9, Sub-paragraph 1.2.9.4:</p> <p>Is it acceptable to have web-based and/or virtual training in combination with in-person training?</p>	<p>Yes</p>
14.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.9, Sub-paragraph 1.2.9.6:</p> <p>a) How frequently are the current data sources gathered?                      b) What would be the standards for "real time" information gathering?</p>	<p>a) The frequency of data updates depends on data source and type. Currently: vital records data (birth and death), it is updated daily to the existing data warehouse by the NH Vital Records Registry; AHEDD (Automated Hospital Emergency Department Data System), it is uploaded multiple times per day for syndrome classification, analysis, and reporting from all twenty-six (26) New Hampshire acute care hospital emergency departments; Medicaid and Commercial claims data updates are currently monthly; Drug and Alcohol system data updates are planned to be monthly; Child Welfare data updates are weekly; Population data estimates are updated</p>

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No.	Question	Answer
		<p>annually.</p> <p>b) The expectations will be that the data is refreshed daily unless the information being obtained for the effort is not available daily. In this case the expectation is data will be loaded into the EBI/data warehouse to be available to the data analytics platform within 24 hours of receipt. Through the project if it is identified that more frequent availability of a data system is valuable and feasible the vendor will be responsible for implementing the improvement in the EBI/data warehouse.</p>
15.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.11, Sub-paragraph 1.2.11.1:</p> <p>Will the available data on individuals only include Medicaid recipients?</p>	<p>The available data on individuals is not limited to Medicaid recipients, but covers all individuals recorded within each data set.</p>
16.	<p>Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.11, Sub-paragraph 1.2.11.7:</p> <p>a) Please provide a list of data sources currently available for the initial solution?</p> <p>b) Are Naloxone Services a current or future source system?</p> <p>c) What specific data source(s) are included within the category of Criminal Justice?</p>	<p>a) The list of data sources are included in the graphic in Appendix D, Section 1.1.25 and specifically they are:</p> <ol style="list-style-type: none"> <li>1. Medicaid and Commercial Member and Claims</li> <li>2. Child Welfare Cases</li> <li>3. Bureau of Drug and Alcohol Services and Naloxone Services</li> <li>4. Vital Records (birth and death) &amp; Medical Examiner</li> <li>5. Live Hospital Emergency Department Surveillance (AHEDD) – Automated Hospital Emergency Department Data system</li> <li>6. Emergency Medical Services (TEMSIS) Trauma Emergency Medical Services</li> <li>7. Population Health Data currently located on <a href="https://wisdom.dhhs.nh.gov/wisdom/">https://wisdom.dhhs.nh.gov/wisdom/</a></li> </ol>

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No.	Question	Answer
		8. The list of data sources are included in the graphic in Appendix D, Section 1.1.25 and specifically they are: b) Naloxone Services is a future source system. Naloxone services are a current source of data. However the Department expects to have new naloxone service data through a different data source in the future, which would need to be integrated into the future phase of the project c) NCJRS: <u>National Criminal Justice Reference Service</u> . Those Criminal Justice data sources are in scope for phase 2 and have not been defined.
17.	Section 1, Introduction, Sub-section 1.2 Project Overview, Paragraph 1.2.13 Non-Exclusive Contract:  Would the Department welcome partial bids?	No.  The Department will not preclude bids from primary vendors who sub-contract with other vendors to meet the requirements of the RFP.
18.	Section 1, Introduction, Sub-section 1.3 Contract Term, Paragraph 1.3.2:  What is the anticipated effective date for year one (1) of the contract resulting from this RFP?	The anticipated effective date will be upon NH Governor and Executive Council review and approval and all work associated with the deliverables outlined within the resulting contract must be completed and invoiced no later than August 31, 2019
19.	Section 2, Schedule of Events:  a) When will invitations be sent for vendor presentations? b) Can the timeline be extended so vendors can make travel arrangements for the presentation? c) What is the closing date of the RFP?	a) The Department expects to send invitations for vendor presentations during the week of: December 17-21, 2018. b) See Addendum #5 c) See Addendum #5

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Attachment 1 - Vendor Response  
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No.	Question	Answer
20.	<p>Section 4, Instructions, Sub-section 4.1 Proposal Submission Deadline and Location Instructions, Paragraph 4.1.6, Sub-paragraph 4.1.6.3:</p> <p>Would it be possible to receive the original editable MS Word format of the RFP documents "2019-043-rfp-2019-dphs-19-dataa", and "2019-043-rfp-2019-dphs-19-dataa-ed4"? We attempted to convert the PDF to the editable Word format but the integrity and formatting of the documents did not transfer over well (i.e. there were a significant amount of sections of the RFP that were incorrectly misaligned).</p>	<p>No.</p> <p>The C-2 Attachment .xls will be published to the Department RFP website.</p>
21.	<p>Section 4, Instructions, Sub-section 4.1 Proposal Submission Deadline and Location Instructions, Paragraph 4.1.6, Sub-paragraph 4.1.6.3 AND Section 4, Instructions, Sub-section 4.16 Proposal Format, Paragraph 4.16.1.3:</p> <p>Does the Department require both a USB and CD of the proposal?</p>	<p>The Department prefers one (1) electronic copy of the response to the RFP on a USB Flash Drive.</p> <p>See Addendum #6</p>
22.	<p>Section 4, Instructions, Sub-section 4.16 Proposal Format, Paragraph 4.16.1.4:</p> <p>a) May vendors use smaller fonts than 11-point for headers, footers and tables?                      b) May vendors use a font type other than</p>	<p>a) Yes, for headers and footers. No on tables                      b) Yes</p>

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No.	Question	Answer
	Times New Roman?	
	Section 4, Instructions, Sub-section 4.18 Proposal Format, Paragraph 4.18.1.5:	
23.	<ul style="list-style-type: none"> <li>a) May vendors number the pages by major section (Section I-1, Section II-1)?</li> <li>b) May vendors exclude the total number of pages in their numbering format?</li> <li>c) May vendors exclude forms, attachments, tabs and tables of contents from numbering?</li> </ul>	<ul style="list-style-type: none"> <li>a) Yes</li> <li>b) No</li> <li>c) Yes</li> </ul>
	Section 4, Instructions, Sub-section 4.18, Proposal Content, Paragraph 4.18.2:	
24.	<ul style="list-style-type: none"> <li>a) Is there any room for negotiation on any of the terms and conditions?</li> <li>b) If yes, does the Department require vendors to call out any objections or exceptions to the RFP terms and conditions, including to Appendix H: <i>State of New Hampshire Terms and Conditions</i> as part of the proposal submission package?</li> <li>c) Please clarify that the note in Section 4.18.12 means that all appendices that may be responsive to Appendix D should be included in the original version of the proposal, but not the copies.</li> </ul>	<ul style="list-style-type: none"> <li>a) Yes</li> <li>b) Yes, See Attachment #2</li> <li>c) The Note applies to Section 4, Instructions, Sub-section 18 Proposal Content, Paragraph 4.18.11</li> </ul>

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No.	Question	Answer
25.	<p>Section 5, Proposal Evaluation Process, Sub-section 5.4, Initial Screening, Paragraph 5.4.2, Oral Interviews and Product Demonstrations:</p> <p>Will the Department invite all vendors to participate in oral interviews and product demonstrations?</p>	No.
26.	<p>Section 5, Proposal Evaluation Process, Sub-section 5.5 Scoring Detail, Paragraph 5.5.1 Scoring of the Proposed Software Solution, Sub-paragraph 5.5.1.2:</p> <p>It seems this portion of the text is truncated, please provide clarification. The RFP reads "Factors include but are not limited to: "</p>	See Addendum #6
27.	<p>Section 5, Proposal Evaluation Process, Sub-section 5.5 Scoring Detail, Paragraph 5.5.1 Scoring of the Proposed Software Solution, Sub-paragraph 5.5.1.3.8:</p> <p>What is the current Department standard for browsers?</p>	Current standard for browsers is Internet Explorer 11, Edge, Firefox and Chrome
28.	<p>Section 5, Proposal Evaluation Process, Sub-section 5.5 Scoring Detail, Paragraph 5.5.1 Scoring of the</p>	Statistics and assumptions will evolve through discovery and implementations of solutions.

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No.	Question	Answer
	<p>Proposed Software Solution, Sub-paragraph 6.6.1.4.1:</p> <p>Does the Department intend to provide statistics and assumptions?</p>	
29.	<p>Section 6, Proposal Evaluation Process, Sub-section 6.6 Scoring Detail, Paragraph 6.6.2, Scoring of Vendor Technical, Service and Project Management Proposal, Sub-paragraph 6.6.2.4:</p> <p>What technologies, specifically, does the Department have in place?</p>	See Answer #3
30.	<p>Appendix A, Background Information, Section 1, A-1 Health and Human Services, Sub-section 1.1, Paragraph 1.1.25:</p> <p>a) Will interagency data usage agreements be final as of project kickoff?                      b) Is the ingestion of data to the target environment a deliverable of this scope of work?                      c) When will data be available for use by the project?</p>	<p>a) All of the data sources in phase one will have data usage agreements in place as of the project start date or shortly thereafter. Most of the data sets are Department data sets. See question 14                      b) Yes                      c) On or within 15 days of project start date based on the State's receipt of names of the users that will have access and associated paperwork is completed.</p>
31.	<p>Appendix A, Background Information, Section 1, A-1 Health and Human Services, Sub-section 1.1, Paragraph 1.1.26 AND Appendix A, Background</p>	<p>a) Department of Health and Human Services                      b) See Answer # 30A                      c) No</p>

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No.	Question	Answer
	<p>Information, Section 1, A-1 Health and Human Services, Sub-section 1.1, Paragraph 1.1.27:</p> <p>a) What governing body will oversee the work on the data?</p> <p>b) Will approvals on data be obtained from governing bodies prior to the project start date?</p> <p>c) Is AHEDD the only system for which data is available?</p>	
32.	<p>Appendix A, Background Information, Section 2, A-2 Department of Information Technology and Technology Status, Sub-section 2.2, A-2.2 Future Systems Environment:</p> <p>a) Does the Department require Design Thinking Workshops or User Journeys to define the user experience?</p> <p>b) What type of search functionality does the Department require?</p>	<p>a) Yes</p> <p>b) Search should be incorporated throughout the entire solution and allow for a global, site, or item specific functionality</p>
33.	<p>Appendix B, Minimum Standards for Proposal Consideration, Section 3, B-3 Current Use of Vendor Proposed Software - Current Implemented Sites of Vendor proposed Software of Solution &lt;NOTE: IF APPLICABLE&gt;:</p> <p>a) Will a fully implemented and operational pilot installation of the vendor's</p>	<p>a) No, the Department's intent is to have examples of working and fully operational systems.</p> <p>b) Yes.</p>

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No.	Question	Answer
	Software or Solution suite in government entities that are comparable in size and complexity to the State of New Hampshire meet the requirements of this section? b) Is this requirement mandatory?	
34.	Appendix B, Minimum Standards for Proposal Consideration, Section 4, B-4 Vendor Implementation Service Experience The:  Is this requirement mandatory?	Yes.  This requirement may be met through the provision of three (3) fully implemented and operational solutions that are similar in size and complexity that may not be government solutions, but relate to public or private health or human service programs.
35.	Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution AND Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Section 2, D-2 Technical, Services and Project Management Experience, Sub-section 2.1, D-2.1 Security and Protection of Data, Paragraph 2.1.6, Topic 11 – Project Management Methodology:	See Addendum #6

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No.	Question	Answer
	Is the page limit for responses to the Project Management Methodology section five (5) pages or ten (10) pages?	
36.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.1, Topic 1 – Description of Solution:</p> <p>a) Should narrative responses be broken out according to each topic identified in the RFP?                      b) Do vendors need to repeat text that is in this section?                      c) If a vendor repeats text, is the repeated text included in the ten (10) page limit?</p>	<p>a) Narrative responses may be broken out to each topic or may be proposed as a single response as long as responses address the requirements defined within the RFP.                      b) No.                      c) Yes, if the vendor chooses to repeat text it will count against the 10 page limit.</p>
37.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.1, Topic 1 – Description of Solution, Paragraph 1.1.19:</p> <p>Please provide a summary of the role of an inspector.</p>	See Addendum #6
38.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.1, Topic 1 – Description of Solution, Paragraph 1.1.20:</p> <p>Can you include software release and</p>	See Answer 2B

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No.	Question	Answer
	versions for receiving systems?	
39.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.1, Topic 1 – Description of Solution, Paragraph 1.1.25:</p> <p>a) Can the Department provide an enlarged graphic to vendors?                      b) What is the anticipated time period for Phase 2, long term enhancements by the Department?</p>	<p>a) See Attachment #3                      b) Phase 2 is anticipated to take 6-24 months depending upon data sharing agreement timelines.</p>
40.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.1, Topic 1 – Description of Solution, Paragraph 1.1.25:</p> <p>Please define "CORbi" and provide additional context; please differentiate "CORbi" and "DAP"</p>	<p>Comprehensive Opioid Response Business Intelligence (CORbi) is the project name that will deliver an Opioid Response dashboard system to help integrate data for use by program areas, providers, and the citizens to assist in the response to the Opioid crisis.</p> <p>Data Analytics Platform (DAP) is the platform that CORbi will reside on and will be delivered as part of the RFP response leveraging the existing EBI (Enterprise Business Intelligence) platform and addressing a streamlined approach for the integration of disparate data sources.</p>
41.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.3, Topic 3 – Data Governance and Management, Paragraph 1.3.3:</p> <p>What processes does the Department</p>	<p>This should be proposed by the bidder</p>

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Attachment 1A, Section 1A  
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No.	Question	Answer
	intend to use for the planning, development and operation of application systems?	
42.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.3, Topic 3 – Data Governance and Management, Paragraph 1.3.9:</p> <p>What tools and technologies does the Department use to enable data governance and management?</p>	This should be proposed by the bidder
43.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.4, Topic 4 – User Friendliness and Usability, Paragraph 1.4.5:</p> <p>How does the Department define function-driven capability?</p>	A function driven capability is based on a capability that can be related to specific functionality like exporting to excel, CSV, XML, PDF or utilizing responsive and adaptive web design to seamlessly transition users between a full screen computer view to a smart phone view of the data with associated user friendly menus and design features. Other capability like browser compliance, browser compatibility and 508 compliance will also be considered.
44.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-section 1.5, Topic 5 – IT Standards, Paragraph 1.5.1:</p> <p>Does the Department anticipate the use of mobile devices as a component of the Data Analytics Platform?</p>	<p>Yes.</p> <p>The department anticipates the use of tablets, laptops, desktops and smart phones to access the site. The system should include adaptive and responsive design elements.</p>
45.	Appendix D, Topics for Mandatory Narrative Responses, Section 1, D-1 Proposed Software Solution, Sub-	No.

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No.	Question	Answer								
	<p>section 1.8, Topic 6 – Data Import/Export Standards and Migration, Paragraph 1.8.11:</p> <p>Will the Department consider removing this requirement?</p>									
48.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 2, D-2 Technical, Services and Project Management Experience, Sub-section 2.1, D-2.1 Security and Protection of Data:</p> <p>Are there State standards which must be met? (If so, please provide those standards)</p>	<p>See Sample Contract, Exhibit K, DHHS Information Security Requirements section of the RFP.</p>								
47.	<p>Appendix D, Topics for Mandatory Narrative Responses, Section 2, D-2 Technical, Services and Project Management Experience, Sub-section 2.2, D-2.2 State Personnel and Training, Paragraph 2.2.1, Topic 12 – User Training Approach:</p> <p>How many users, by type, does the Department anticipate?</p>	<p>Developers &lt;= 25</p> <table border="1"> <tr> <td>Concurrent Developers</td> <td>&lt;= 15</td> </tr> <tr> <td>Number of public facing report users (Tableau)</td> <td>&lt;= 25,000</td> </tr> <tr> <td>Number of public facing concurrent users (Tableau)</td> <td>&lt;= 500</td> </tr> <tr> <td>Number of internal users for Tableau (explorers &amp; viewers)</td> <td>&lt;= 250</td> </tr> </table>	Concurrent Developers	<= 15	Number of public facing report users (Tableau)	<= 25,000	Number of public facing concurrent users (Tableau)	<= 500	Number of internal users for Tableau (explorers & viewers)	<= 250
Concurrent Developers	<= 15									
Number of public facing report users (Tableau)	<= 25,000									
Number of public facing concurrent users (Tableau)	<= 500									
Number of internal users for Tableau (explorers & viewers)	<= 250									

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No.	Question	Answer
		Number of concurrent internal users for <= 30 Tableau (explorers & viewers)
48.	Appendix E, Standards for Describing Vendor Qualifications, Section 2, E-2 Team Organization and Designation of key Vendor staff:  Is this list exhaustive and required?	Vendors should submit a list of key vendor staff appropriate to the solution proposed.
49.	Appendix G-1, Security, Section 1. Appendix G-1 Security, Sub-section 1.2, G-1.2 PCI DSS Payment Application Data Security Standard (PA DSS):  a) If vendors are not storing credit card data, is this section mandatory? b) Is there a State payment gateway that is preferred? (If so, what is it?)	a) No. b) PCI-DSS is not applicable to this RFP and thus payment gateway information is not necessary.
50.	Appendix G-2 Testing Requirement:  a) What types of data will be converted/migrated? b) How many years' worth of each data type will be converted/migrated?	a) Oracle, Microsoft SQL, CSV exports, MS Access, XML exports, and report based information will be migrated. b) The number of years of data will be different for each data source. The goal will be to migrate each data source in its entirety.
51.	Appendix H-25, General Contract Requirements APPENDIX H-25, Section 25.9, H-25.9 Licenses, Subsection 25.9.1, H-25.9.1 Software License Grant:	Any restrictions, terms or conditions on licenses to software proposed will need to be clearly defined. If the license is in conflict with the statement, the terms and conditions associated with the license will still be considered.

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No.	Question	Answer
	Please confirm the State does not require "a worldwide, perpetual, irrevocable..." license to the Software for any COTS or SaaS-based solution that may be bid.	
52.	Appendix H-25, General Contract Requirements, Section 25.13, H-25.12 Administrative Specifications, Sub-section 25.13.7, H-25.12.7 Intellectual Property.  Please confirm the State does not require ownership and intellectual property rights to the Software for any COTS or SaaS-based solution that may be bid.	Ownership of intellectual property rights to software associated with COTS or SaaS based solutions is not required by the State.  Any software, data, or SaaS based solution developed utilizing State funding will be considered State property.
53.	Appendix H-25, General Contract Requirements, Section 25.22, H-25.21 Escrow of Code:  a) Is escrow required if vendors present a COTS solution? b) What will duration will the Warranty Period be? c) Will the 10% withholding be released at the end of the Warranty Period?	a) No b) See Section 25.11, H-25.10 Warranty, Sub-section 25.11.1 H-25.10.1 Warranty Period c) Yes the 10% withholding will be released at the end of the warranty period.
54.	Sample Contract, Exhibit K, DHHS Information Security Requirements, Section IV, Procedures for Security:  a) Does the Department allow implementation and ongoing technical	a) Yes, however the data and services are still governed by the terms and conditions indicated in Sample Contract, Exhibit K, DHHS Information Security Requirements section of the RFP. b) FedRAMP/HITECH is a requirement if hosted outside of the State of New Hampshire Data Centers as the data will have

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Attachment 3) Vendor Proposal  
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No.	Question	Answer
	support to include both onshore and offshore resources if absolutely no PHI will be accessed or exposed to any offshore resources? b) Is Fed/RAMP/HITECH a requirement?	PHI, PII and other federally and state regulated information.
55.	Addendum #4, Attachment C-2 Requirements, Table C-2: Would the State provide this attachment in Excel format so it can be completed for submission?	Yes, upon request.
56.	Addendum #4, Attachment C-2, Requirements, Table C-2, Part 1, Business Requirements: a) Can the cells to the Excel Sheet be provided in an unlocked form to ensure cells can be expanded to read the text? b) Will the Department be completing the Criticality column for this section?	a) Attachment C-2, Requirements, Table C-2, Part 1, Business Requirements will be made available on the Department's RFP Website. b) Yes
57.	Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number B1.4: Is the State expecting the vendor to provide professional services and utilize State's technology components listed out in B2.5 and State's existing infrastructure for hosting?	The bidder is expected to provide a solution that will leverage/utilize the States technology components as explained in B2.5 of Attachment C-2, Requirements, Table C-2, Part 1, Business Requirements and if necessary the vendor may leverage a hosted solution proposed and provided by the vendor to accomplish the deliverables.

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No.	Question	Answer
58.	<p><b>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number B2.5:</b></p> <p>Will the State be procuring licenses for alternate solutions suggested by the vendor directly? Would the cost of those licenses be part of this RFP? Can the vendor recommend a strategy of tools that will extend beyond the first stage of the contract?</p>	<p>The vendor must be able to procure the licenses for the proposed solution on behalf of the State and the costs of those licenses and initial maintenance period of at least 1 year are part of the RFP. The vendor may recommend a strategy of tools that will extend beyond the first stage of the contract and the costs of any tool or solution that will not be completed by August 31, 2019 should be clearly described in the response.</p>
59.	<p><b>Addendum 4, Attachment C-2, Req. # B1.6, H3.11:</b></p> <p>Does the State have a cloud environment? If yes, is the question about expanding the capacity to meet the needs of this RFP? If it is about expanding State's cloud capacity, would the cost of expansion be part of this RFP?</p>	<p>No the State does not have a cloud environment. If a cloud solution is proposed the costs would be included in this RFP.</p>
60.	<p><b>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Numbers B1.6 AND H3.11:</b></p> <p>Can the vendor host the solution on a FedRAMP moderate compliant cloud environment?</p>	<p>No, the solution must be in a FedRAMP High Baseline (High Impact Level) cloud environment.</p>
61.	<p><b>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement</b></p>	<p>No.</p>

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No.	Question	Answer
	<b>Number B2.5:</b> Is the intention of the State to deploy the existing software i.e. (Oracle, Informatica, etc.) to the vendor solution hosted environment?	
62.	<b>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number B1.6:</b> Is there a base environment we are using to create DAP for Opioids?	Yes, the base environment will be implemented by December 31, 2018 and it is expected that this solution will layer into the environment.
63.	<b>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number B1.4:</b> Can the vendor use a multi-skilled and need-based resourcing model to efficiently and economically support the delivery of the program?	Vendors must propose their solution and explain how the solution meets the requirements.
64.	<b>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number B2.1:</b> Is the State expecting statistical models and predictive algorithms as part of this RFP?	Yes.
65.	<b>Addendum #4, Attachment C-2,</b>	The vendor should provide solutions to address lag time by

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Attachment 6) Vendor Responses  
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No.	Question	Answer
	<p>Requirements, Table C-2, Requirement Number B2.3:</p> <p>Can the State provide more clarification on this?</p>	<p>leveraging technologies and skills to streamline the access to the data. If the bidder is unable to meet the requirement then an explanation of what they are able to provide should be proposed.</p>
66.	<p>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number B4.17:</p> <p>Does the State have an existing Metadata solution to support this requirement?</p>	<p>The state is currently implementing Informatica PowerCenter AE which includes a Metadata Manager and Business Glossary</p> <p>(WISDOM currently has 5 report/system developers and 8 data scientist/analysts. Public health anticipates having 100-150 normal users, including 30 power users.)</p>
67.	<p>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number B4.1:</p> <p>How many users does the State anticipate per role type (e.g Data Scientist, Super User, Normal User)?</p>	<p>The platform should accommodate:</p> <ul style="list-style-type: none"> <li>• Data Scientists 15-25</li> <li>• Super Users 30-50</li> <li>• Normal Users 200-400</li> </ul>
68.	<p>Addendum #4, Attachment C-2, Requirements, Table C-2, Requirement Number A2.15:</p> <p>What is the text of this requirement?</p>	<p>See Addendum #6</p>

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No.	Question	Answer
69.	<p><b>Addendum #4, Attachment C-2, Requirements, Table C-2, Training Requirements:</b></p> <p>a) How many regional locations, where face-to-face training is needed, will be required?                      b) How many attendees will each regional location be required to accommodate?</p>	<p>a) All training will be held in Concord, NH                      b) We will need to have several training sessions, based on levels and roles, in which 20-30 people will attend.</p>
70.	<p><b>General:</b></p> <p>Does the State expect the vendor to provide, as part of its proposed solution, vendor staff who will use the Data Analytics Platform for Opioid Crisis along with, or instead of, State staff?</p>	<p>The expectation that the vendor will work along with existing State staff in all areas to ensure knowledge transfer.</p>
71.	<p><b>General:</b></p> <p>Is NH DHHS specifically looking for vendors having the past performance and expertise to customize the current technology stack implementation meeting the needs outlined in the RFP? For example customization of Tableau user interfaces and Informatica workflows.</p>	<p>The Department is looking for both the capacity for customization of Tableau user interfaces and Informatica workflows but also the ability to streamline data cleansing, predictive algorithms, integration techniques as well as all the other requirements listed in the RFP</p>
72.	<p><b>General:</b></p> <p>Is an offshore/onshore execution model acceptable to the Department?</p>	<p>As long as no data is stored offshore and all production and test solutions utilizing any department data is all onshore to include following all items in Exhibit K unless officially agreed to otherwise in final contract negotiations after notification of intent to award.</p>

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Attachment 1 - RFP Questions  
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No.	Question	Answer
73.	<p><b>General:</b></p> <p>Does the State have a preference for software solutions that are off-the-shelf, or integration of analytics &amp; BI tooling?</p>	No.
74.	<p><b>General:</b></p> <p>Did the State work with an external advisor to prepare the RFP?</p>	No
75.	<p><b>General:</b></p> <p>What is the structure of the data and where is it being stored today?</p>	<p>DHHS currently uses an Oracle environment for data warehousing. DHHS's new EBI platform is also Oracle based. Additional file interfaces are typically flat text files.</p> <p>Most of the data is stored in the Oracle database. For the datasets that are not in the state data warehouse, the structure depends on the data sources. Some data sets/sources will need to have a clear data dictionary developed.</p>
76.	<p><b>General:</b></p> <p>How much data cleansing will be required?</p>	<p>Minimal data cleansing will be required.</p> <p>Typically the data hosted by the State is clean and ready to use for the initial data sources. Future data sources may need extensive cleansing. Focus of cleansing will be around linking of data sets and harmonization of codes and reference tables</p>
77.	<p><b>General:</b></p> <p>Can we receive some sample data which will remain in place and be integrated to the new BI solution?</p>	No. Information Security will not authorize the release of real data prior to an executed contract. Sample data requirements will need to be addressed in the contract scope.

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No.	Question	Answer
78.	<p><b>General:</b></p> <p>a) Does the State require three (3) total references or nine (9) total references?                      b) For vendors submitting joint proposals, how many references are required?</p>	<p>a) 3 total references                      b) 3 total references</p>
79.	<p><b>General:</b></p> <p>a) Can the Department specify the number of users for each technology currently in use?                      b) How many Department users, in what roles will be required?                      c) What is the estimate of the total number of end users that will require personalized dashboards</p>	<p>a) For Cognos BI Tool, 3 administrators, 4 developers, 5-10 UAT users. DPHS has a vendor work on report development. Currently DHHS is scaling out to 18 Tableau Creator users. Currently the DHHS EDW has 400 users                      b) Yes, the Opioid Crisis Dashboard deliverable of this RFP will reside in the Data Analytics Platform and will be used by approximately 250 or less internal users, and external users will be based on the answer in question 52                      c) Estimate of total number of end users requiring personalized dashboards would be around 250 for this phase.</p>
80.	<p><b>General:</b></p> <p>When is the expected go live date?</p>	<p>Go live date should be on August 1, 2019 to allow for final acceptance prior to August 31, 2019.</p>
81.	<p><b>General:</b></p> <p>Can you run data processing and quality analytics internally using Informatica?</p>	<p>DHHS's current implementation of its EBI platform includes licensing for Informatica Data Quality SE.                       Yes, the selected vendor is expected to provide solutions or recommendations on data quality and analysis process. Informatica will perform ETL processes mostly. Data analysis will be performed using R Programming (in an R server if necessary) and connect to Tableau. Tableau will also handle simple data analysis for the visualization.</p>
82.	<p><b>General:</b></p>	<p>Yes</p>

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No.	Question	Answer
	Can vendors propose to build upon Informatics?	
83.	<p><b>General:</b></p> <p>a) Does NH have a Tableau enterprise today?                      b) Is Tableau deployed on-prem or online?                      c) Describe the current and/or anticipated role of Tableau within the Department.</p>	<p>a) Yes                      b) On premise                      c) Tableau will be the tool used by HHS for visualizations, dashboards, analytics, data explorer and integration, reporting, and statistics</p>
84.	<p><b>General:</b></p> <p>Does the Department use grouper software?</p>	Vendors may propose grouper software as part of its solution. The Department has limited access to groupers.
85.	<p><b>General:</b></p> <p>Has the State received any demos prior to this RFP being released?</p>	No.
86.	<p><b>General:</b></p> <p>Is there a State data policy published somewhere?</p>	The State has RSA to regulate data collection and release. Each dataset has its own administrative rules to define the details of data policy.
87.	<p><b>General:</b></p> <p>Are vendors allowed to provide a redacted copy of the proposal in order to exempt company financials and trade secret information from public disclosure?</p>	See Section 4, Instructions, Sub-section 4.10 Public Disclosure
88.	<p><b>General:</b></p> <p>Is the Department open to leveraging</p>	Yes

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No.	Question	Answer
	existing assets that are being used to process transactions at the State today?	
89.	<b>General:</b> Is the vendor required to register in New Hampshire before proposal submission?	Vendors will be required to be a registered company in New Hampshire in order to enter into a contract agreement.
90.	<b>General:</b> a) Does the Department have a preference between a Hosted or On-Premise solution? b) Which deployment model does the Department prefer or require? c) Does the Department require the vendor to host and operate and run on-going maintenance of the solution? d) Are there requirements on how the application is managed? e) How many environments and what types of environments are required? For example Development, Test, Staging, Disaster Recovery, Production, etc.? f) Are there specific security provisions/requirements that the product (including Hosting operations) need to comply with?	a) No b) Bidder should propose their recommendation c) The purpose of the training component of the RFP is to ensure that the State of New Hampshire is able to support and maintain the environment. d) The application should be available 24/7/365 with scheduled outages for maintenance following a change management process e) Four - Development, Test, Disaster Recovery and Production f) See Sample Contract, Exhibit K, DHHS Information Security Requirements section of the RFP
91.	<b>General:</b> a) Will vendors be expected to manage all of the account management activities?	a) Account Management training is the vendor's responsibility; account management is the responsibility of the State b) The vendor should propose the solution and provide training

RFP-2019-043/RFP-2019-DPHS-19-DATAA  
 Official Q&A  
 Page 32 of 33



Attachment 1 - RFP-2019-043  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

New Hampshire Department of Health and Human Services  
**Data Analytics Platform for Opioid Crisis**



No.	Question	Answer
	b) Will the Department utilize the requested administration utilities to manage this process?	for any utilities to manage the process to the State so that the State employees may manage the administration functions.
92.	<b>General:</b> Are SaaS subscription licenses acceptable?	Vendors proposing SaaS subscription licenses must include how the subscription license and overall solution integrates with the current environment.
93.	<b>General:</b> Does the Department require four (4) or five (5) environments?	Four (4)
94.	<b>General:</b> What should be considered for user access protocols for the system? (User/password, Active Directory/LDAP, Single Sign-on)	Internal should be Active Directory/LDAP or if other should be explained.  External should have an option for open access as default to the environment based on Department workflow for publishing. Additionally an option for web based authentication should be proposed for allowing data sharing and access to create or modify dashboards for publishing based upon business rules.
95.	<b>General:</b> Please set realistic expectations around the completion date of 12/31/18.	Completion date of the implementation is August 31, 2019 and thus RFP deadlines are set to allow for the most time to be spent on task. The new schedule for demonstrations and award notification are updated in question 19.

RFP-2019-043/RFP-2019-DPHS-19-DATAA  
 Official Q&A  
 Page 33 of 33





New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis

**Attachment #1**

This attachment is published to provide a list of vendors who attended the October 30, 2018 Vendor Conference for RFP-2019-043/RFP-2019-DPHS-19-DATAA.

- This list may not be comprehensive.
- This list was created based on organization names as they appeared on the vendor sign-in sheet on October 30, 2018

1. HealthEC
2. Deltek
3. IMAT Solutions
4. Dimensional Insight
5. IBM Watson Health
6. WRMA Inc.
7. Google
8. PCCTG
9. PCG Health
10. Conduent
11. FTI Consulting
12. American Institutes for Research
13. Cognizant
14. PulseLight
15. Optum
16. The Lewin Group
17. Orion Health
18. Accenture
19. LexisNexis Risk Solution
20. Qlarion
21. SAS Institute
22. Amick Brown
23. Cubic
24. Mythics Inc.
25. Deloitte
26. Information Builders
27. Edifecs Inc
28. SHI
29. Health Tech Solutions
30. Informatiic
31. Milliman
32. CGI
33. Qualidigm

2019-043/RFP-2019-DPHS-19-DATAA  
Attachment # 1



Attachment 1  
STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis  
DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA



**New Hampshire Department of Health and Human Services  
Data Analytics Platform for Opioid Crisis**

- 34. Mastech Infotrellis
- 35. SAP
- 36. UNICOM Government
- 37. Netsmart
- 38. Infor
- 39. FEI Systems
- 40. FYI Consulting
- 41. IRI
- 42. RTI

2019-043/RFP-2019-DPHS-19-DATAA  
Attachment # 1



Attachment #2  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

New Hampshire Department of Health and Human Services - Data Analytics Platform for Opioid Crisis - Attachment #2

**APPENDIX A**

**EXCEPTIONS TO TERMS AND CONDITIONS**

A Responder shall be presumed to be in agreement with the terms and conditions of the RFP unless the Responder takes specific exception to one or more of the conditions on this form.

**RESPONDERS ARE CAUTIONED THAT BY TAKING ANY EXCEPTION THEY MAY BE MATERIALLY DEVIATING FROM THE RFP SPECIFICATIONS. IF A RESPONDER MATERIALLY DEVIATES FROM A RFP SPECIFICATION, ITS PROPOSAL MAY BE REJECTED.**

A material deviation is an exception to a specification which 1) affords the Responder taking the exception a competitive advantage over other Responders, or 2) gives the State something significantly different than the State requested.

**INSTRUCTIONS:** Responders must explicitly list all exceptions to State of NH minimum terms and conditions. Reference the actual number of the State's term and condition and Exhibit number for which an exception(s) is being taken. If no exceptions exist, state "NONE" specifically on the form below. Whether or not exceptions are taken, the Responder must sign and date this form and submit it as part of their Proposal. *(Add additional pages if necessary.)*

<b>Responder Name:</b>	
<b><u>Term &amp; Condition Number/Provision</u></b>	<b><u>Explanation of Exception</u></b>

*By signing this form, I acknowledge that the above named Responder accepts, without qualification, all terms and conditions stated in this RFP Section 8- Mandatory Business Specifications, Contract Terms and Conditions except those clearly outlined as exceptions above.*

\_\_\_\_\_  
Signature

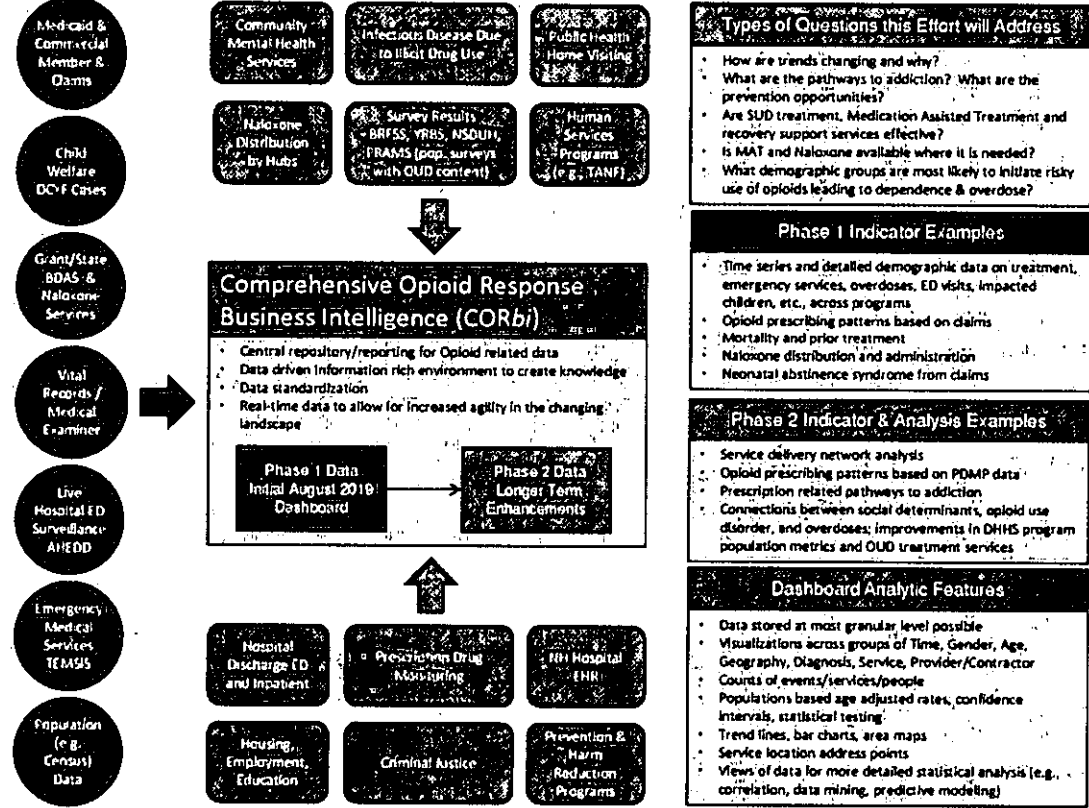
\_\_\_\_\_  
Title

\_\_\_\_\_  
Date



Attachment #3  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

New Hampshire Department of Health and Human Services - Data Analytics Platform for Opioid Crisis - Attachment #3



2019-043/RFP-2019-DPHS-19-DATAA

Attachment #3





Attachment #3 Vendor Proposal  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**

New Hampshire Department of Health and Human Services - Data Analytics Platform for Opioid Crisis - Attachment #3

<p>Medicaid &amp; Commercial Member &amp; Claims</p>	<p>Pharmacy, physical, behavioral health care claims for all NH Medicaid services and for most commercially insured population in New Hampshire. Medicaid member data will be integrated into the EBI data warehouse under a separate effort by Spring 2019. Commercial insurance data (which includes some Medicare Part D data) will need to be migrated to the EBI data warehouse as part of the Opioid Dashboard project.</p>	<p><b>General Data Considerations</b></p> <ul style="list-style-type: none"> <li>All data will be stored at the smallest level of granularity as possible given availability, technical &amp; legal considerations</li> <li>Over time granularity will increase where barriers are an issue to providing granular data</li> <li>Data is linked where possible (DHHS is currently standing up a master client index schema in its data warehouse)</li> <li>Data will be standardized where possible</li> <li>Phase 1 goal is analytically useful data, not individual person management data</li> <li>Data will have separate levels of granularity for Public or DHHS-only display/access</li> <li>Data that is already in the DHHS data warehouse will be used where at all possible, but new data will need to be added to the EDW.</li> <li>Non-record level data may be included in dashboards directly through non-EDW approaches</li> <li>Data will generally be grouped for display using multiple grouping schemes (e.g., geography grouped by county, service area, public health region)</li> <li>Where meaningful, data should support address level geocoding (e.g., to specifically indicate a provider location)</li> </ul>
<p>Child Welfare DCYF Cases</p>	<p>Child protection investigations and findings including whether opioid or other substance use is possible factor in the case. Data currently in DHHS data warehouse.</p>	
<p>Grant/State BDAS &amp; Narcotic Services</p>	<p>Treatment for substance use disorder through state funded facilities. An array of levels of care including outpatient, intensive outpatient, partial hospitalization, residential, withdrawal management, and peer and non-peer recovery support services. Data must be migrated by the vendor to the EBI data warehouse as part of the Opioid Dashboard project.</p>	
<p>Vital Records/ Medical Examiner</p>	<p>Drug overdose deaths data by Fentanyl (no other drugs), Fentanyl and Other Drugs (excluding heroin), Heroin (no other drugs), Heroin and Other Drugs (excluding fentanyl), Heroin and Fentanyl, Unknown Opioids, Other Opiates/Opioids determined by the Medical Examiner. Vital Records data based on ME findings is currently in DHHS data warehouse. Birth data will soon allow neonatal abstinence syndrome tracking.</p>	
<p>Live Hospital ED Surveillance AHEDD</p>	<p>State-wide surveillance system collects real-time data from all 26 New Hampshire acute care hospital emergency departments to detect clusters or monitor potential health threats in the population such as respiratory illness during influenza season, injuries during snow storms, and drug overdoses during the current opioid crisis.</p>	
<p>Emergency Medical Services TEMSIS</p>	<p>Emergency medical responses on Narcan administration incidents data. A data collection and analysis capability system that provides for the evaluation of the emergency medical and trauma services system (TEMSIS). Data (subject to approvals) must be migrated by the vendor to the EBI data warehouse as part of the Opioid Dashboard project.</p>	
<p>Population (e.g. Census) Data</p>	<p>Base data used for calculation of population based rates.</p>	

2019-043/RFP-2019-DPHS-19-DATAA

Attachment #3



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## Section IX: Appendix

### Section IX: Appendix

This section provided for extra materials as referenced in Appendix D: Topics for Mandatory Narrative Responses such as Product Literature, Ad Hoc/Federal Reporting, Interface Standards, Testing (For UAT Plan) and Status Meetings and Reports.

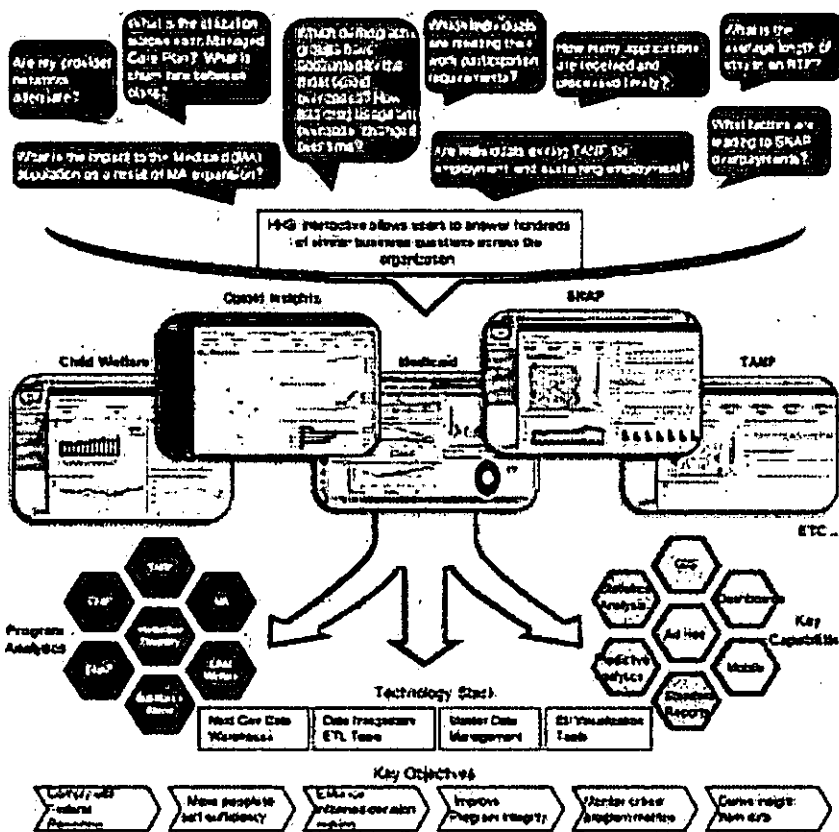
### Topic 1 – Product Literature



# HHS Interactive

HHS Interactive empowers stakeholders with the ability to answer an array of critical business questions to improve program operations and make strategic decisions. The solution provides a myriad of key performance indicators organized around typical HHS business areas. These areas include, but are not limited to Opioid Insights, Child Welfare, Medicaid, TANF, SNAP, Substance Abuse, Behavioral Health, Waivers, Long Term Care and CHIP.

The key performance indicators within each of these areas have been defined based on our experience and best practices working with numerous HHS organizations. At Deloitte, we realize that a 'one-size fits all' model does not work, which is why our clients have the flexibility to pick and choose which KPIs are applicable to their organization. If a given KPI is not available out of the box, just let us know, and it can be configured and implemented based on your individual needs.



- ### Key Objectives
- Help move consumers to self-sufficiency
  - Enhance and modernize program integrity
  - Improve customer service and support
  - Support federal compliance and reporting
  - Identify and address operational bottlenecks
  - Improve program monitoring and ongoing tracking
  - Increase access to care
  - Enhance service delivery quality and health outcomes
  - Support insight driven decisions making

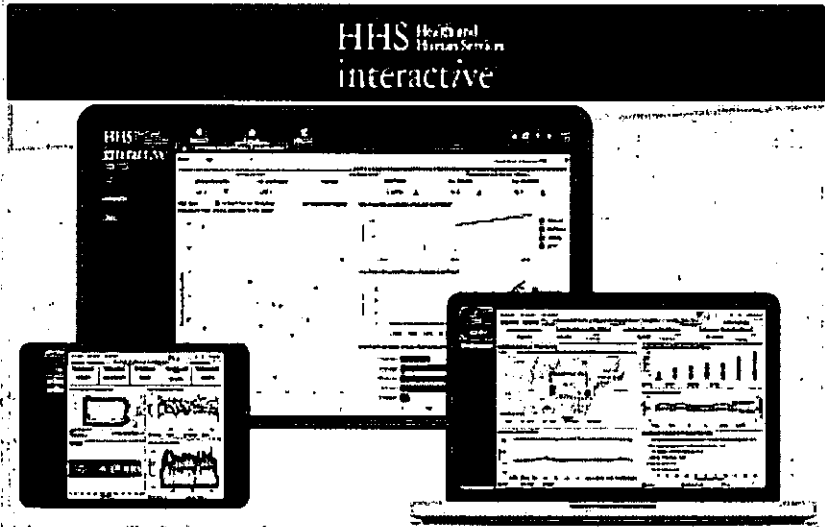
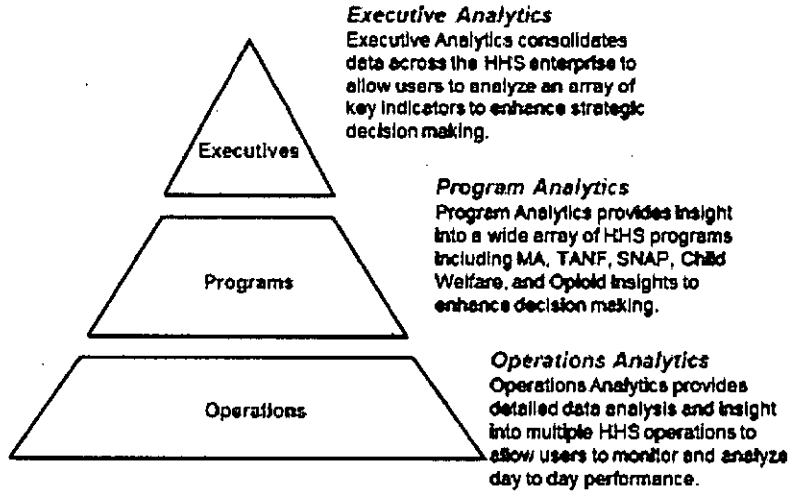
*HHS Interactive is built based on lessons learned and best practices from working with multiple Health and Human Service organizations.*



# HHS Interactive

*HHS Interactive positions stakeholders across the health and human services enterprise with the right data to make the right decisions to better serve your constituents.*

HHS Interactive enables executives, program managers, and operations staff with the ability to monitor and track key performance indicators (KPIs) across the Health and Human Services enterprise. The solution consolidates data into a standardized reporting repository and provides an intuitive user interface to allow stakeholders to quickly and easily derive analytical insights from their information.



3

**Deloitte.**



# Opioid Insights

Opioid Insights enables executives, program managers, and operations staff with the ability to monitor and track key performance indicators (KPIs) for opioids pulling together diverse datasets to provide a holistic view to inform, understand, and shape opioid policy and resources.



### Opioid Indicators

Opioid centric dashboards with drill down capabilities provide visibility and trending for populations, demographics, drug management, network coverage, overdose, death, infant dependency, naloxone, and other similar indicators from multiple perspectives.



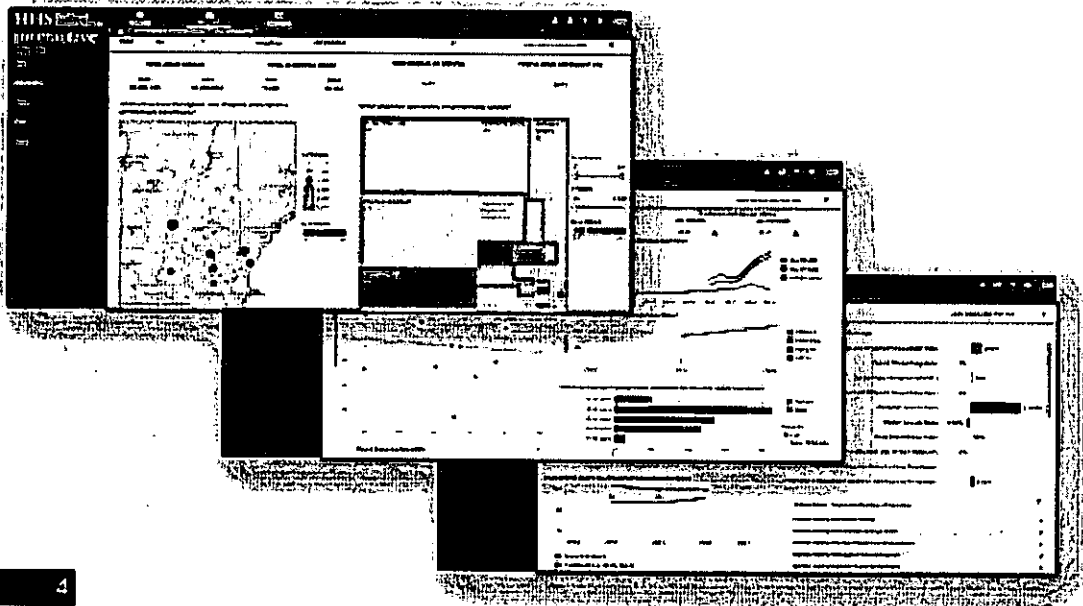
### Opioid Benchmarks

Interactive visualizations to understand opioid-related activity (diagnosis, procedures, prescription patterns, and mortality) with comparisons across states, counties, and nationally to more effectively target services. Our benchmarking consumes 30+ publicly accessible datasets from agencies such as the CDC and SAMSHA.



### Opioid At-Risk

Our health care data scientists' machine learning models identify at risk individuals. Results have been validated and refined by comparing historical outcomes against prospective models to tune for accuracy. Our models are informed by our experience with federal, state, and private sector healthcare clients who share common goals. Our models cover the spectrum from identification of risk, potential abuse, and recovery.



4



## Understanding Opioids through Digital Data

When New Hampshire was first established, a Gunter's chain (distance measure) and a circumferentor (horizontal angle measure) were used to draw (poor) maps. Over time, these instruments improved. The circumferentor became GPS and the Gunter chain was replaced by laser-based measurement tools.

### Expansion of Digital Data

As digital data expanded exponentially, the tools used to mine it have been much like the original surveying tools, namely clunky to use and difficult to ascertain truth from. **The average US adult checks their phone around 160x / day, and over 80% rely on online systems for most daily activity.** The increased consumer reliance on the digital ecosystem for services traditionally managed offline has created a paradigm-shifting event in the management of government programs: the availability of massive volumes of real-time information. The issue with digital information is the opposite of traditional information -- namely it's robustness. **The average County in the US (~100k pop.) produces ~1.1 terabytes per day of digital information.** It is neither prudent nor possible to work with 100% of that information. The key then becomes what data do you need to answer the question at hand, and what systems do we rely on to get that information?

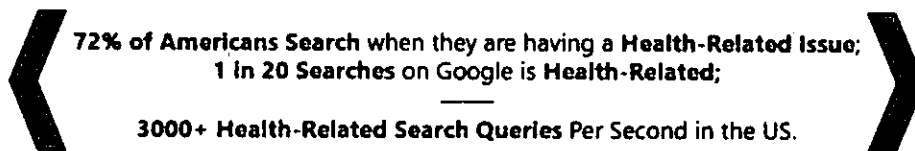


### Google's business is data.

Google ran headfirst into the problem of exploding data and invented a way out of it through what is now known as the Google Cloud Platform (GCP) to become the company they are today. Google approaches problem solving from a new and innovate point of view, beginning with the data. Google's toolset crawls through vast, unstructured datasets mainly via automated machine learning systems to try to get ahead of likely audience behaviors. For example, using digital data to build decision-journey maps to correlate raw information with outcomes from watching a video to purchasing a car. Health and human services corporations, and increasingly government, are learning how to benefit from this capability as well.

### How does this apply to the Opioid Epidemic?

The majority of Opioid analytics correlate death, emergency room admittance, MAT therapy usage, and other similar institutional events. This provides modest insight to a person's journey and little opportunity to nudge behavior as it evolves. Google's POV is that online activity is a leading indicator of intent &/or behavior, especially on Google.com.



Google's ability to analyze digital data running massive permutations and correlations, and the potential of real-time nudging offers an additional vantage point to understand and engage. For Opioids, Google used machine learning to develop a US-wide query cluster analysis of the top five Opioid-related search groupings (excluding branded drug terms) as illustrated in the graphic below:



### Top 5 Opioid-Related Search Groupings

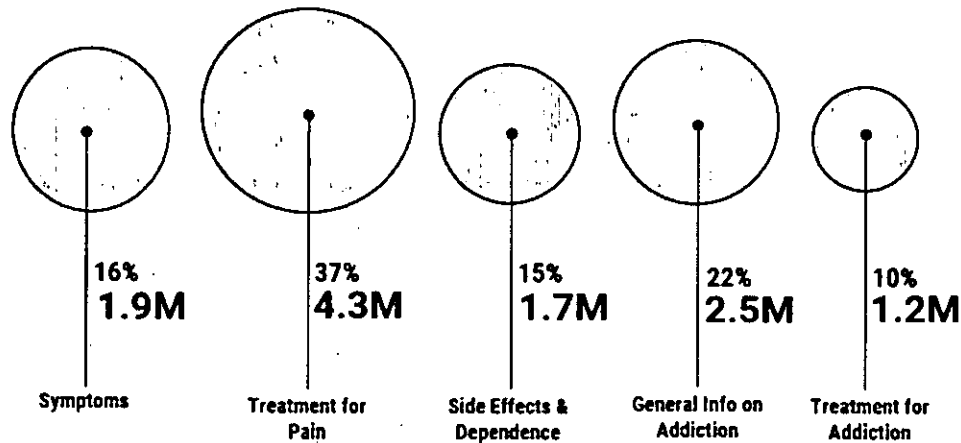


Figure 1: Top 5 Opioid Related Search Groupings; Source: Google Internal Data.

### Digital Data Vantage Points

New Hampshire’s RFP asked vendors to provide new and innovative opportunities to address Opioid use. We are proposing (4) vantage points that use digital data to understand and engage citizens impacted by Opioids: Geographic Trending, Audience Profiling, Journey Mapping, and Nudging.



#### Geographic Trending

Opioid search predicate statistics can be captured across the full spectrum of New Hampshire’s population. This data would provide an aggregate perspective and “big picture” trending information by zip code.



#### Audience Profiling

This extends geographic trending by associating individual data (de-identified) known to Google for individuals using the search predicates that would be defined for DHHS Opioid data collection. This includes data like demographics, location, device, etc. This is the same approach used by commercial entities to understand their audience (who is shopping for full sized SUV’s and what influences purchasing behavior). The results will provide DHHS insight into the nature of the audience groups and behaviors specific to the groups related to Opioids.

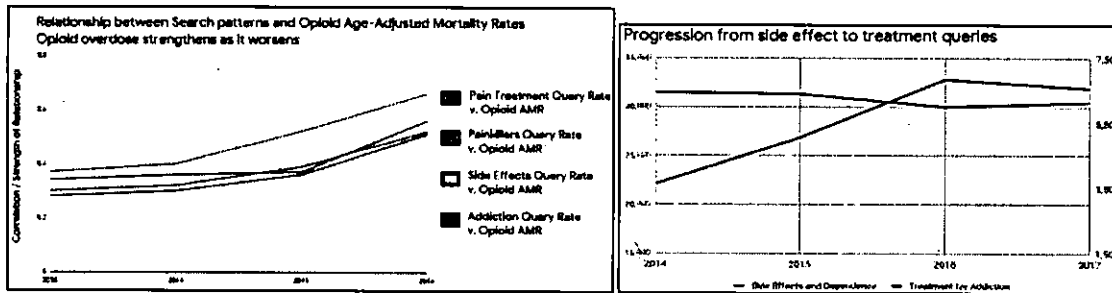


#### Journey Mapping

The audience profiling data would be ingested into a machine learning model on the GCP using de-identified data from the All Payers Claims Database (APCD) to correlate audience data and healthcare outcome data to improve the understanding and ability to influence behavior.





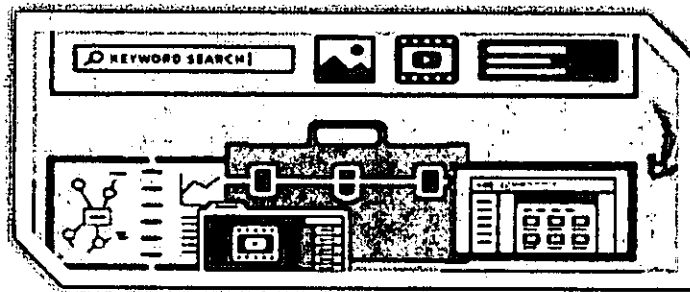


**Figure 2: Journey Mapping.**



**Nudging**

For the initial scope of work, DHHS will be provided approximately 200,000 advertisements on Google.com. Advertisement equates to the [AD] link DHHS elects to display in response to the search predicate. For example, a search for ‘Opioid Treatment’ in NH could result in the placement of a link in New Hampshire’s hub and spoke website landing page. The advertisement search data is also the key input to audience profiling. For instances where an “ad” is presented and the user clicks, those actions could also be tracked and associated with the journey map and audience profiling.



**Figure 3: Nudging.**

**With Data brings Improved Outcomes in the New Hampshire Community**

The capabilities as described above would be delivered using State-owned data, website data, and advertising data to develop a framework for how your key audience is deciding to request (or not request) services. As you understand that process, it is easier to craft more effective policies. For example, the CDC used Opioid search data from advertising to evaluate program goals backed by survey data, and Project Jigsaw was able to identify a decision journey framework for radicalization online, and help defang radicalization techniques and deter individuals from joining terrorist organizations.

Google and Deloitte will work together with DHHS to extract the most valuable insights of this information to help the DAS platform and the State of New Hampshire generally get a better, more accurate view of the constituents in the State and their needs. The output of this analysis will be imported into the DAP on-premise platform for display in Tableau and usage in combination with the other on-premise data and tools.



## Topic 15 – Testing

### Testing Plan Deliverable

DW/BI-R

VI.1

Security Designator: C

Prepared for [REDACTED]

Submitted by Deloitte

July 18, 2018



**Document Information**

<b>Document Identification</b>	DW/BI-R Testing Plan Deliverable
<b>Document Name</b>	DW_Deloitte_Testing Plan Deliverable_C_2018.07.18_v1.1.docx
<b>Project Name</b>	[REDACTED]
<b>Client</b>	[REDACTED]
<b>Document Author</b>	Deloitte
<b>Document Version</b>	V1.1
<b>Document Type</b>	Deliverable

**Revision History**

Date	Version	Description of Revisions	Document Author/Reviser
06/20/2018	1.0	Initial	[REDACTED]
06/20/2018	1.0	Quality Check	[REDACTED]
07/18/2018	1.1	Addressed DH comments	[REDACTED]
07/18/2018	1.1	Quality Check	[REDACTED]

**Deliverable Schedule**

Key Activity	Due Date	Days in Process	Organization
Submit Testing Plan deliverable	07/03/2018	-	Deloitte
Review and submit feedback for the Deliverable	07/13/2018	10	[REDACTED]
Revise and resubmit updates	07/18/2018	3	Deloitte
Approve Deliverable	07/20/2018	2	[REDACTED]

**Statement of Work (SOW) Requirements**

Section 4: Deliverables, Pricing and Timeline (Page 22)

Section 6.1: Requirements Matrix Table (Page 37)

Section 6.16: Testing (Page 202)

Section 9: Deliverables Document Standards and Acceptance Form (Page 250)



Requirement/ Contract ID	Description	Reference Section in Deliverable
58	<p>Testing Plan: The Testing plan shall include an explanation and cadence of all system, technical, functional and data-related testing that will be completed by the Contractor. The Testing plan shall also include a detailed approach to testing all interfaces sharing data with the Data warehouse and be aligned with the COTS Data Integration Plan. This testing shall include at a minimum: APIs, mapping, ETL processes, scheduling of updates, security controls relevant to data transmission and interfaces and performance. The Test Plan shall define the exit criteria which, when met and approved by the Agency, provide evidence of the completion of the test effort. The Testing Plan will also provide the methods that the Contractor will work proactively with the Testing Contractor.</p> <p>Deloitte Response: The EVD methodology provides comprehensive templates for each type of testing including conversion testing, system integration testing, UAT, performance testing, physical infrastructure testing, regression testing, security testing, smoke testing, business continuity testing, and disaster recovery testing. These templates will be used to develop a master Testing Plan for the DW/BI-R project in accordance with the requirements. Deloitte shall collaborate with the Agency to define the exit criteria for each testing phase. The criteria will be approved by the State. Deloitte will proactively work with the Testing Contractor during each testing phase.</p>	<p>This document is the Testing Plan deliverable mentioned in this requirement.</p>
98	<p>The Contractor will conduct a smoke test related to conversion. The Agency will be included in the smoke test to ascertain that conversion has been successfully done and is functioning as necessary in the Contractor's solution and will share all migration and testing results.</p> <p>Deloitte Response: Prior to production conversion, a smoke test shall be executed to confirm and validate the conversion data set. The Agency shall be involved in the planning and the validation and migration and test results are shared and reviewed with the State. Additionally, through the Hybrid Agile delivery model, Deloitte shall convert data in an incremental fashion by subject area and perform associated testing including unit testing, integration testing, and smoke testing for each subject area. As Deloitte progresses, these data shall be made available to the Agency for early access and validation. Once subject area conversion code is completed and tested, the code base will be integrated, validated, and tested via a full-scale mock conversion process. Once the entire conversion code based is fully validated in the lower environment, the final production checklist will be drafted and the post production conversion smoke test is the final point in the validation process.</p>	<p><u>section 3.1.1</u></p>



Requirement/ Contract ID	Description	Reference Section in Deliverable
102	<p>Contractor's approach and commitment to all testing phases required for the Data Warehouse, including at a minimum: System testing process, Integration testing, data conversion testing process, approach to supporting the Agency during UAT. The UAT process shall provide for authorized System users to exercise the entire System, including the use of converted data, in a separate, controlled environment hence an appropriately sized environment.</p> <p>Deloitte Response: As part of the standard SDLC process, Deloitte will engage in a full and comprehensive set of testing processes including unit testing, integration testing, conversion testing, UAT testing, performance testing, and security testing and smoke testing. Deloitte shall provide support and oversight during User Acceptance Testing phase and will work closely with the Agency to provide authorized user access to the UAT environment where users with appropriate security shall have full and unfettered access to the entire system functionality. Additionally, the UAT environment will be a separate and dedicated environment with the necessary data to allow users to exercise the full system functionality. Deloitte shall take care in setting up the appropriate security controls to govern the testing process.</p>	<u>section 3.3, section 3.6, section 3.9</u>
103	<p>The Contractor shall provide all tools necessary for primary testing completed them however the Agency and its Testing Contractor may employ additional tools.</p> <p>Deloitte Response: Deloitte's Test Workbench addresses both functional and technical testing and includes templates to accelerate the testing process. This includes automated testing tools and user-defined testing routines along with a library of initial test routines. These are the same tools leveraged to support Deloitte's System Integration testing. Deloitte will also work with the Agency and its Testing Contractor to confirm they have the proper access to the environment(s) to engage in testing with their own dedicated tools if necessary.</p>	<u>section 1.2</u>
104	<p>The Contractor shall manage the testing of all functionality of the data warehouse solution including documenting objectives, entrance criteria, scheduling, testing strategy, test procedures, resource identification, and exit criteria.</p> <p>Deloitte Response: Deloitte shall test the system functionalities as per the scope identified for the DW/BI-R solution and shall work with the Agency to identify entrance and exit criteria, scheduling, identification of resources, execution, and documentation of the process and the outcomes. Included with the Testing Workbench are templates to accelerate the testing process and confirm comprehensive documentation is maintained. Working closely with the Agency during each phase of testing will be planned and defined in Testing Strategy</p>	<u>section 1.2</u>



Requirement/ Contract ID	Description	Reference Section in Deliverable
	Documents and drafted to coordinate the approach and objectives. Test Plans and Test Scenarios will provide lower level activities and details.	
105	<p>The Contractor shall perform performance testing of all data warehouse functionality with the system integrator and the component contractors as well as the enterprise as a whole to ensure the appropriate and timely sharing of data with the data warehouse.</p> <p>Deloitte Response: Deloitte shall test all data warehouse functionality implemented and to work with each component contractor and the Agency testing contractor to address the enterprise as a whole. Deloitte shall leverage the Testing Workbench for all phases of testing.</p>	<u>section 3.5</u>
107	<p>The Contractor shall provide a testing environment for all test phases at a minimum to include: unit, regression, system, user acceptance testing, deployment testing, security testing and certification testing.</p> <p>Deloitte Response: Deloitte shall provide 5 environments, Development, System Integration, UAT, Disaster Recovery, and Production. The following details align testing phases to their respective environments in which they are performed:</p> <ol style="list-style-type: none"> <li>1. Unit Testing – Development Env.</li> <li>2. Regression Testing – System Testing Env.</li> <li>3. System Testing – System Testing Env.</li> <li>4. User Acceptance Testing – UAT Env.</li> <li>5. Deployment Testing – All Env.</li> <li>6. Security Testing – All Env.</li> <li>7. Certification Testing – UAT Env.</li> </ol> <p>See Section 6.16 of this SOW for additional testing environment details.</p>	<u>section 5.1.1</u>
109	<p>The Contractor shall work proactively with the Testing contractor to review all test results and provide the necessary system and functional information to create verification procedures and user acceptance test cases.</p> <p>Deloitte Response: Deloitte shall work with the Testing contractor to provide them with the information needed for User Acceptance Testing, including documentation around distinct system processes. Deloitte shall also work on identifying a schedule where outcomes of UAT will be regularly discussed and findings will be shared between Deloitte and the testing contractor.</p>	<u>section 3.9</u>
110	<p>The Contractor will work with the System Integrator Contractor to design appropriate test cases, testing approach and actively participate in the testing of the integration of data from all other components and will work with the Agency to manage the</p>	<u>section 1.2</u>



Requirement/ Contract ID	Description	Reference Section in Deliverable
	<p>execution of user acceptance testing including setup of shared resources, setup of instrumentation, conducting of the tests, and documentation of anomalies.</p> <p>Deloitte Response: Deloitte shall coordinate design-appropriate test cases, testing approaches, and actively participate in the testing of data across components of the solution. Deloitte shall coordinate with the Agency to manage the execution of component testing. Deloitte shall prepare for the testing by coordinating resources, set up testing instrumentation, conducting the tests, and documenting the testing results within Deloitte's Test Workbench to support focus on identified anomalies.</p>	
112	<p>The Contractor's solution shall provide the ability to execute performance tests of a simulated user load consistent with the actual load projected or used in production.</p> <p>Deloitte Response: Performance Center is a performance-testing tool that shall provide a Web-based platform to generate realistic and production-like loads, in order to test multiple application types and protocols across environments. It shall emulate real user behavior and scales loads as needed, to confirm that an application meets performance requirements. Deloitte's Performance Test solution shall include a comprehensive set of supporting materials to determine that an application responds quickly for intended users, handles the expected user load and beyond, and accommodates the number of transactions required by the business.</p>	<u>section 3.5</u>



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## 1. Introduction

The Testing Plan defines the objectives, methods and processes for conducting various testing activities to test the DW/BI-R solution. It outlines the scope of the overall testing effort including the details related to test types and phases, test strategy, test activities, test tools, test entrance and exit criteria and the testing team roles and responsibilities.

### 1.1 Purpose

The purpose of this document is to describe the testing activities conducted during the DW/BI-R Project Design, Development and Implementation (DDI) phases. It also serves as a tool to provide Deloitte project managers, developers, testers and other stakeholders of the project, including the state, details about the phases and activities associated with the various testing activities.

### 1.2 Scope

Deloitte tests the system functionalities as per the scope identified for the DW/BI-R solution in the Statement of Work (SOW) and works with the Agency to identify entrance and exit criteria, scheduling, identification of resources, execution, and documentation of the process and outcomes. Deloitte provides templates to accelerate the testing process and confirm comprehensive documentation is maintained. Test strategy documents outline the approach and objectives related to working closely with the Agency during each phase of testing. Test plans and test scenarios will provide lower level activities and details.

Deloitte works with the State to design appropriate test cases, testing approach, actively participate in the testing of the integration of data from all other components, and also works with the State to provide access to authorized DH and Qualis testers to User Acceptance Testing (UAT) environment, manage the execution of user acceptance testing including setup of shared resources and instrumentation, conducting of the tests, and documentation of anomalies.

Deloitte provides tools necessary for its primary testing. However, Deloitte will work with the Agency and its testing contractor to confirm they have the proper access to the environment(s) to engage in testing with their own dedicated tools.



## 2 DW/BI-R Test Approach

Testing is a planned series of checks and reviews conducted to verify that the system has been built in accordance with the requirements listed in the approved SOW. This is achieved by executing test cases and test scripts, that have been written to validate requirements from the approved SOW. Bugs and defects found in the system through the failed test cases/scripts are fixed and retested. The test cases and test scripts are also traced back to requirements and design documents via the approved Requirement Traceability Matrix – Technical and Functional (RTM) deliverable to ensure completeness and coverage of requirements, particularly with respect to testing. Various testing methods used to accomplish these efforts include Smoke Testing, Data Conversion Testing, Unit Testing, System Integration Testing (SIT), Regression Testing, Performance Testing, Physical Infrastructure Testing, Security Testing, Business Continuity and Disaster Recovery (BC/DR) Testing and User Acceptance Testing (UAT). Testing can be manually performed or automated via testing tools. The Testing Plan is intended to define and communicate the approach and activities required to meet the following test goals:

- Define the overall test process and approach including test phases, activities, and environments
- Develop test work products and deliverables that support traceability throughout the Project DDI phases.
- Explain the approach to planning and sequencing testing tasks and activities
- Focus testing effort on high volume data and critical functionality
- Define the role, training, and participation of the State within the testing process
- Confirm requirements are satisfied by system functionality
- Verify system components perform as defined by design documents
- Describe the mechanism for regression testing of existing functionality after new or modified functionality is implemented
- Define a collaborative approach to successfully test with and provide support to Quality Assurance/Quality Control (QA/QC) and Independent Verification and Validation (IV&V) vendors

### 2.1 Testing Philosophy

Our testing philosophy consists of the following guiding principles, based on industry best practices as well as numerous project engagements similar to DW/BI-R project:

- **Plan and execute test early.** Up-front planning in collaboration with the State facilitates starting testing on time and staying on schedule. This especially holds true for coordinated testing efforts between Deloitte and the DH for system integration and User Acceptance Test phases. It is less costly to fix errors early in the Systems Development Life Cycle (SDLC) rather than later.
- **Clearly define and measure testing entry and exit criteria.** For each test phase, clearly define the objectives of each test phase/cycle and measure against entry and exit criteria to address objectives successfully. By defining the scope and approaches for testing, testers can achieve a comprehensive test of the overall solution.
- **Define and/or update test cases during design activities.** Create test cases while executing design activities to validate that there is a direct correlation between business requirements and test cases.



Considerable coordination between the test, requirements, design, and state teams is necessary to determine complete functional and technical coverage.

- **Identify Test Data and Setup Test Environments.** For each test phase, clearly identify test data needs for the test scenarios identified. Discuss the data needs with design/build team and identify appropriate test environments to execute the test scenarios.
- **Arrange what is tested and in what order.** Determine the critical, significant, or highly integrated requirements, and address as early as possible to provide the time needed to resolve possible issues.
- **Automate testing where possible.** Use automated testing tools to increase testing execution speed and accuracy within the testing levels. Automation testing is especially used for smoke testing and regression efforts.
- **Exercise end-to-end business process lifecycles early and often.** Structure testing to support end-to-end business process testing, and schedule execution of test cases early and often to increase test exposure across the system. To determine the readiness for User Acceptance Testing, complete test cases that simulate how the application is used, are executed throughout the various testing phases.

## 2.2 Test Scope and Verification Approach

The test scope consists of the functional and technical requirements that are used to verify the DW/BI-R solution at various points throughout the DDI phases and validate the design documents used to describe how the system fulfills the requirement.

With the submission and approval of Requirement Traceability Matrix – Technical and Functional (RTM) deliverable, acceptance criteria for all SOW requirements defined by Deloitte has been approved by DH. Each requirement in the RTM has been categorized as testable vs non-testable.

A testable requirement is a requirement for which it is possible to write a test case that would validate whether the requirement has or has not been met. Testable requirements can be identified and traced through the DW Deloitte Requirements Traceability Matrix - Technical and Functional Deliverable C 2018.06.05 v1.1.xlsx deliverable.

A non-testable requirement is a requirement for which it is not possible to write a test case that would validate whether the requirement has or has not been met. Non-testable requirements can be identified and traced through the DW Deloitte Requirements Traceability Matrix - Technical and Functional Deliverable C 2018.06.05 v1.1.xlsx deliverable. A non-testable requirement is met with a submission of a deliverable or an artifact.

The Deloitte Test team coordinates with functional and technical project team members and testing stakeholders to plan, conduct, and document testing for each code delivery. The Deloitte test team prepares detailed test plans that define the test approach, schedule, resources, and details based on the test phase and specific content. Status and proactive reporting and communication to management is provided by the Deloitte test team throughout the test effort.

### 2.2.1 Testable Requirements

Testable requirements are validated using both functional and structural techniques. Functional testing is sometimes called black-box testing because the tester does not have working knowledge of the internal system logic. Structural testing is sometimes called white-box testing because the tester has knowledge of the internal system logic. The various test phases highlight these different testing techniques. For



example, unit testing and conversion testing are conducted by people with expert knowledge of the internal system logic, while system integration testing leverages a combination of black-box testing techniques and knowledge of internal system logic. An example of where System Integration testers need knowledge of internal system logic or code is end-to-end testing of Extract, Transform and Load (ETL) processes, where the objective is not only to make sure that the data correctly landed from the source table to target table, but also be able to troubleshoot the complex ETL code used if issues are found in the extraction, transformation and load process.

### 2.2.2 Non-testable Requirements

Non-testable requirements are verified through different mechanisms such as static testing, or approval of project specific deliverables.

Static testing is code review/walkthrough using the requirements and design documentation. The code is not executed during static testing. An example of static testing is review of code to test if batch job execution is in sequence or to verify partitions/index on databases.

For testing non-testable requirements like maintenance of software upgrades and patches, review and approval of project specific deliverables like Change Management Plan or Implementation and Release Plan documenting these details are used for testing and validating the requirement.

E.g. Requirement # 57 – [The Contractor shall provide, during the design/build/ configuration phase, a technical detailed list of all technical specifications related to hosting all system environments, third party agreements, hosting provider certifications, key personnel, disaster recovery processes and business continuity approach] is a non-testable requirement (for which a test case cannot be written) and is validated through the acceptance and approval of specific deliverable (in this case Hosting Plan Deliverable).

### 2.3 Hand-off from Development to Testing

Unit testing plays a vital role in confirming that high quality code is promoted to test environments for further system integration testing. As a part of quality assurance, the QA team performs few tasks such as periodic code reviews, unit test result reviews, and requirements traceability matrix reviews to confirm completeness, consistency, and traceability of the development artifacts.

Prior to deployment of a development build to a test environment, the Deloitte Test team is provided with the list of items included in the build and may schedule a walkthrough with the development team to discuss the release, deployment details, and any open defects or workarounds.

### 2.4 Communication

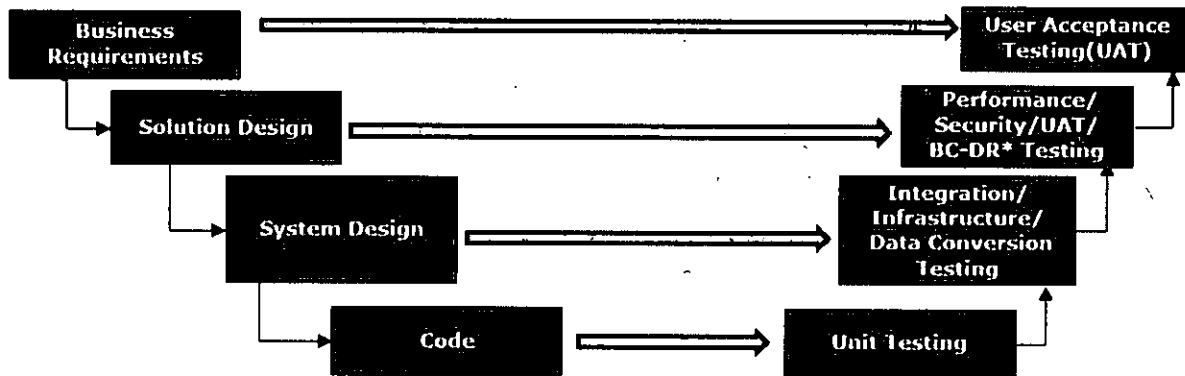
The Deloitte test team will provide periodic and ongoing communication regarding test activities and status. The Deloitte test team will use tools, primarily JIRA, JAMA, and Test Workbench by Deloitte™ and their reporting capabilities for creating status reports

The Deloitte test team will also coordinate testing walkthroughs, checkpoints, and test status meetings related to test planning, test execution, and test deliverables. These include in-person meetings or conference calls, as agreed upon by Deloitte and DH.



### 3 Testing Phases

#### 3.1 Test Phase Overview



#### BC-DR\* - Business Continuity/Disaster Recovery

Software testing (test planning, set-up, and execution) is conducted at multiple stages of the Project Development, Design and Implementation (DDI) cycle and is intended to validate that the DDI activities meet DW/BI-R project SOW requirements. Different types of testing including data conversion testing, system integration testing (SIT), User Acceptance Testing (UAT), performance testing, physical infrastructure testing, security testing, business continuity, and business continuity/disaster recovery testing are carried out in these stages to achieve this objective, as illustrated in the diagram above.

Individual test phases may be executed successively or concurrently with the goal of comprehensively testing the overall functional and technical behaviour, interfaces, performance, and data conversion of the application. The scope of initial software testing phases is focused within a single development object or unit. Unit test has a narrow scope and broad depth that seeks to exercise individual branches of logic within the object. Subsequent test phases like System Integration Testing widen scope incrementally to include interactions across modules, subsystems, and eventually application-wide interactions. The increase in scope has a corresponding decrease in depth of testing from evaluating multiple paths within a single object or related objects to major or critical paths across modules and subsystems. Solution design testing involves User Acceptance Testing (UAT) activities for validating technical requirements. Finally, business requirements are validated end to end through UAT activities exercising all possible business/end user test scenarios.

There are common elements and activities across each test phase including four major activities:

- Plan
- Develop - Prepare Test Scenarios and Test Cases/Scripts
- Prepare Data
- Execute

Each test phase targets specific types of errors with the goal of identifying as many defects as possible within the phase where they were introduced to minimize the effort and cost of defect correction.

Standard parameters used to define each DW/BI-R test phase include:



- Goal
- Scope/Coverage
- Entrance/Exit Criteria
- Specific Test Phase Activities
- Environment
- Tools
- Test Data
- Deloitte/State Test Roles

### 3.1.1 Smoke Testing

Smoke testing is the process of testing an environment after the software is built and deployed, but before it is handed over to users of the environment to validate that the environment is operational.

- Smoke testing is an informal test where single or multiple systems are assembled and quickly tested to confirm they communicate properly with each other and with a subset of connected interfaces. This activity prevents deployment issues from going undetected, thereby promoting test efficiency by preventing the need for unnecessary retesting. Once desired smoke test functionality is identified for a test phase, smoke testing is conducted, and all identified issues are resolved.

### 3.1.2 Regression Testing

Regression testing is the selective retesting of a software system that has been modified to validate that defects have been fixed, that no other previously working functions have failed because of the fixes, and that newly added features have not created problems with previous versions of the software.

Regression testing does not focus on testing the whole functionality of newly delivered software all over again; rather it tests the functionality of software that already exists and has been tested in the past to verify that changes made to the system do not break the functionality of earlier code.

Regression testing is performed within each test type/phase (after completing the planned test cases and before the exit criteria review).

Regression test scripts are identified during the test planning activities. The test team works with the State and Deloitte Application Team to determine the sequencing of test cases.

The test cases that serve as input to each test phase have individual pass or fail outcomes. Test cases that fail are retested until each associated defect has been successfully retested. Test cases that pass is eligible for inclusion in regression testing. The goal for regression testing is identify, execute, and maintain a growing subset of test cases that exercise core functionality appropriate for each test phase. Core coverage generally means that the primary critical success path through major components/processes has been addressed. The regression suite also expands over time to include test cases that focus on area of the system that may have caused prior major issues during earlier releases of software. Exception-based test cases are included in regression testing on a limited basis.

It is not feasible to re-execute or automate all test cases for each test phase; therefore, a defined set of regression test cases may be supplemented, as necessary, by selective re-execution of existing test cases





for specific concerns. The priority, criticality, and order of precedence for executing regression tests is as follows for each iterative release:

- Verify that new enhancements are functioning as expected.
- Conduct regression testing to determine that previously delivered functionality is not impacted.

Once desired regression functionality is identified for a test phase, regression testing is conducted, and all identified issues are resolved.

### 3.1.3 User Access and Role-Based Testing

Functional and non-functional user access and role-based testing is included in the System Integration test cases. The Deloitte test team leverages the security requirements from DW/BI-R SOW to write the test cases for user access and role-based testing. For more details, please refer to the System Security Plan deliverable.

## 3.2 Unit Testing

### 3.2.1 Unit Test Overview

The output of the Development phase is code-reviewed application components. Unit Test is the process of testing individual units of functionality of these application components. A unit can be defined as a task or the smallest testable part of an application. The primary goal of unit testing is to take the smallest piece of testable software in the application, isolate it from the remainder of the code, and determine whether it behaves exactly as expected. Unit tests verify that individual system components support the system functional and non-functional requirements as documented in the system design specifications. Unit Test is the very first test phase that occurs for the DW/BI-R solution. It is highly iterative and involves rapid code modifications.

Unit Test is planned, executed, and documented by the development team. Failures in unit test results are reviewed and fixed. After fixes are incorporated, the test cases are executed again to verify the fixes. Each unit is tested separately before being integrated into modules to test the interfaces between modules.

Complete and thorough unit testing is an essential aspect of defect management and saves a considerable amount of time and expense. Defects found earlier in the DDI phase are less costly and time-consuming to find and correct, in comparison to defects found in late phases of the DDI.

### 3.2.2 Unit Test Details

Deloitte's HealthInteractive Analytics solution used for DW/BI-R project is a product. The product will be unit tested by developers only when changes are made to the product. Developers will also use the sample code review checklist mentioned in the **DW Deloitte Quality Management Plan Deliverable C 2018.05.08 v1.1.docx** deliverable to review the code when making the changes.



### 3.3 System Integration Testing

#### 3.3.1 System Integration Test Overview

System Integration Test (SIT) is the process of testing functional/technical requirements to verify the application is performing to specification. In this type of testing, the Deloitte test team is verifying that the system under creation/modification is behaving as expected when it is connected or integrated with other existing or new systems. System integration testing follows a critical-first approach where all the critical functionality of different subsystems is tested, followed by full system testing. System integration testing starts after successful completion of unit testing of all components.

#### System Integration Test Summary

System Integration Test Summary	
<b>Goal</b>	<ul style="list-style-type: none"> <li>Functionally and technically exercise the entire application using end-to-end scenarios that span system capabilities, business processes/functions, and interfaces.</li> <li>Focus on complete requirements verification, and the integrity of functional components to validate that different system components talk to each other, pass data to each other as designed, and process return codes as designed.</li> <li>Prioritize testing of functionality based on criticality, complexity, and transaction volume using realistic and/or masked, converted data as available.</li> <li>Develop regression strategy and reusable regression capabilities/assets for ongoing use.</li> <li>Confirm the application is ready for User Acceptance Testing.</li> </ul>
<b>Scope/Coverage</b>	<ul style="list-style-type: none"> <li>Positive and negative testing of system-wide functionality.</li> <li>Core and exception business processes/transactions using end-to-end scenarios.</li> <li>Testing of Extract Transform Load (ETL) processes, Business Intelligence (BI) components and reports.</li> <li>System transactions occurring over simulated past and future timeframes.</li> <li>Security/access associated with role-based user security.</li> </ul>
<b>Entrance Criteria</b>	<ul style="list-style-type: none"> <li>Requirements and design artifacts are approved, traced, and baselined.</li> <li>Test strategy and schedule have been approved and communicated.</li> <li>Test tools are installed and configured, including access/permissions for all stakeholders.</li> <li>Test environment has been created, including all necessary applications, configuration, interfaces, and reports.</li> <li>System Integration test cases have been created and approved.</li> <li>System Integration test cases/scripts have been traced to requirements and design artifacts.</li> <li>System Integration data has been developed as necessary including interface files.</li> <li>Defects are addressed according to agreed upon thresholds for priority/severity; open defects/ workarounds are accepted by the test team; Thresholds will be defined by mutual agreement between the State and Deloitte.</li> <li>Successful smoke test of deployment.</li> </ul>
<b>SIT Activities</b>	<ul style="list-style-type: none"> <li>Test team executes integration test cases and documents results.</li> <li>Test team logs defects for test results that do not match expected results.</li> </ul>



System Integration Test Summary	
	<ul style="list-style-type: none"> <li>• Test lead coordinates defect triage and facilitates triage meetings.</li> <li>• Test team retests development corrections.</li> <li>• Test team conducts knowledge sharing sessions and walk-throughs to review Integration and regression test cases/results with the UAT team to facilitate UAT preparation.</li> <li>• Test team provides ongoing communication, status reporting and maintains test tool dashboard content.</li> <li>• Test team maintains a log of events associated with test execution.</li> <li>• Test team generates User Acceptance Testing Readiness Report.</li> </ul>
<b>Exit Criteria</b>	<ul style="list-style-type: none"> <li>• Planned test cases have been executed and documented in the test tool.</li> <li>• Defined integration pass rate has been achieved.</li> <li>• Defects are addressed according to agreed upon thresholds for priority/severity; open defects/ workarounds are accepted by business owners/test team; thresholds will be defined by mutual agreement between the State and Deloitte.</li> <li>• User Acceptance Testing Readiness Report is approved.</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• System Integration Test (SIT) environment</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>• JIRA, JAMA, Test Workbench by Deloitte™</li> </ul>
<b>Test Data</b>	<ul style="list-style-type: none"> <li>• System generated but manually created when necessary.</li> <li>• Unified obfuscated test dataset when multiple vendors are involved in the testing efforts.</li> <li>• Partner provided incoming/outgoing files if available, otherwise simulated files.</li> <li>• Converted data masked/cleansed of PII as available.</li> <li>• Periodic data backup and restore used to execute regression testing.</li> </ul>
<b>Deloitte Role</b>	<ul style="list-style-type: none"> <li>• Identify functionality being tested, based on the detail design and detail requirement sessions.</li> <li>• Identify tools to be used and reports to be created.</li> <li>• Document detailed steps required to conduct the integration test including expected results.</li> <li>• Define and update integration test plan and resources.</li> <li>• Documentation of the integration test plan.</li> <li>• Execute system integration testing.</li> </ul>
<b>State Testing Vendor (Qualis) Role</b>	<ul style="list-style-type: none"> <li>• Perform independent functional, technical and security testing</li> <li>• Review test plans, test cases and testing results from SIT</li> <li>• Create test cases and test plans for UAT</li> <li>• Execute UAT test cases</li> <li>• Create test data for UAT</li> </ul>
<b>State Role</b>	<ul style="list-style-type: none"> <li>• Provide direction and clarification to the vendor.</li> <li>• Review and accept or reject the integration test plan.</li> <li>• Review and accept or reject whether integration test expected results are met.</li> <li>• Conduct focused exploratory testing, pending test progress and State and Deloitte staff availability.</li> </ul>



### 3.3.2 System Integration Test Details

System integration testing focuses on verifying the interface of discrete modules with one another. In other words, the purpose of integration testing is to validate that different system components talk to each other, pass data to each other as designed, and process return codes as designed. These tests will check if the data is being correctly processed and transmitted across various tiers of the system. Sometimes these components may be outside the system boundary. An interface with a legacy system is one such example.

#### Plan

The objective of this task is to plan the testing activities that are necessary for System Integration Test. The following points are relevant to SIT planning:

- Update Project Plan Baseline
  - Integration tasks
  - Related training tasks
  - Test cycles
- Plan Integration Test cycles to include: planned integration test cases/scripts, defects resolved by the application team, previously failed scripts, and a subset of regression test scripts.
- Create and assign test work items as they relate to Integration tasks in the Work Plan and detailed test case and script creation and execution activities.

#### Script

The objective of this task is to write scripts for system integration testing. The following points are relevant to integration scripting:

#### Review the following:

- DW/BI-R requirements and detailed system design
- Open defects
- Items to include/exclude based on change requests, external dependencies, etc.

#### Focus on the end-to-end business functionality and document the following:

- Test maximum/minimum allowable data
- Test boundary conditions with maximum/minimum values
- Most commonly used functionality
- Highest volume related transactions

#### Scripted scenario tests are prioritized into four main categories, based on their coverage depth to validate the solution – critical, high, medium and low:

- Critical tests are directly associated with critical functioning of Data Warehouse, e.g., all conversion data has been tested extensively; system is able to run ETL process correctly without any failure; Business Intelligence (BI) reports are available to users in correct format.



- High impact tests are the tests that have impacts to quality of the final product, e.g., data quality, metadata, security.
- Medium impact tests are those tests that have indirect impact to quality of the final product, e.g., web portal usability, user documentation availability, help desk functioning.
- Low impact tests are those tests that have cosmetic effect on the final product delivery, e.g., style guide implementation, format of the reports etc.

**Some of the different types of System Integration Test scripts that can be written are as follows:**

- m. Manual test scripts are written to test multiple integration blocks. An integration block is a series of code modules that act as one and interface with other code modules. Some examples of manual test scripts are:
  - Tester runs a report or ad hoc data request through a Business Intelligence (BI) tool. The tester should receive a notification of successful completion of the data request. The tester should be able to retrieve the data and verify that the results are correct. This test validates that presentation code modules can talk to application layer code modules which in turn can “talk” to database code modules.
  - Tester invokes a batch job to create data for a provider. The batch monitor should correctly invoke the batch job and show batch status. After the batch job is done, the tester should be able to verify that the data created for the provider matches that in the database.
- n. Some Data Warehouse components will have interfaces with the existing MMIS and other legacy systems. The application code will have a built-in logging mechanism to capture processing summary information like count of records processed and number of records in error. The summary information will be used to test interfaces. Scripts can be written to automate these tests by putting the summary values in configuration files.
- o. Scripts for testing of ongoing ETL processes which include mapping validation, population of new and derived columns, common transformations, referential integrity refresh, update of dimensional tables (SCD1, SCD2 and SCD3), determination of claim versions, summary of claims with their adjustments and voids, and audit result comparison of source and target DW tables.
- p. Scripts for end to end testing of data flowing from the source systems to Business Intelligence Reporting Layer via the Data Warehouse. This data is seen by the end users on the various operational and federally and state mandated reports being produced by the DW/BI-R solution. The data needs to be accurate and of a very high quality.
- q. Scripts for testing the various reports that will be delivered in the project. Validate that the data on the report is accurate and layout of the report and fields displayed on the report are per report specifications.

**Prepare Data**

This section presents the test data needs to support System Integration Testing and includes test data needed for each external and internal interface and component.



Testers should avoid direct manipulation of the System Integration Test database except to set batch parameters or if necessary to support an exception based data scenario. The Deloitte Test team works with the Conversion and Technical teams to populate, copy, backup, refresh, and restore test data as necessary in the system integration test environment. Common tasks and schedule dependencies between the Deloitte Test team and the Conversion and/or Technical teams are documented and maintained in the project Plan Baseline. A unified obfuscated dataset is used when multiple vendors are involved in the testing efforts.

System Integration Test data is subject to review prior to SIT execution. Test data successfully utilized during integration and verified by test script expected results and backend database validation, as applicable, is eligible for inclusion in ongoing System Integration testing regression activities and use in subsequent tests. Regression test data is documented at the case and member level using data logs and Structured Query Language (SQL) statements/output, as applicable.

**Execute**

The Deloitte Test team begins each system integration test execution cycle with a smoke test to validate the application code has been deployed correctly.

The Deloitte Test team executes the System Integration test cases/scripts according to the plan. Defects identified during test execution are logged using JIRA. Summary of defects is included in the Weekly and Monthly status reports. The Deloitte test team facilitates defect review meetings to review the findings with the Application, Conversion, Technical/Infrastructure and Training/Implementation teams as and when needed. The Deloitte test lead will coordinate with interface partner test leads as necessary to triage defects.

**3.4 Physical Infrastructure Testing**

**3.4.1 Physical Infrastructure Test Overview**

Physical Infrastructure Testing involves testing of the physical infrastructure of the test environments referred to in section 5.1.1 and associated components like software, tools, equipment, etc. of the DW/BI-R solution. The environments are tested to evaluate that they are setup with appropriate test data, tools are configured with appropriate user security and test environment is ready with the proper hardware and software required for the specific testing to be conducted.

The table below contains more details on the Physical Infrastructure Testing activities:

<b>Physical Infrastructure Test Summary</b>	
<b>Goal</b>	<ul style="list-style-type: none"> <li>Evaluate that test environments are setup with appropriate test data, tools are configured with appropriate user security and test environment is ready with the proper hardware and software required for the specific testing to be conducted</li> </ul>
<b>Scope/Coverage</b>	<ul style="list-style-type: none"> <li>Evaluating hardware and software of the test environments</li> <li>Evaluating configuration and setup of tools</li> <li>Evaluation readiness of environments for validation</li> </ul>



<b>Physical Infrastructure Test Summary</b>	
<b>Entrance Criteria</b>	<ul style="list-style-type: none"> <li>• Test steps for Physical Infrastructure Testing are identified</li> <li>• Hardware and software components to be used have been baselined</li> <li>• All the hardware and software components have been interfaced with each other per the technical architecture</li> <li>• A defect management tool is set up and ready to use</li> </ul>
<b>Physical Infrastructure Test Activities</b>	<ul style="list-style-type: none"> <li>• Test team prepares test environment and executes Test cases (Deloitte plans to share the SIT Testing scenarios and cases for DH/State Testing vendor's reference. These can be leveraged by [REDACTED] and DH to create independent UAT Test cases)</li> <li>• Test team logs defects for test results that do not match expected results</li> <li>• Test lead coordinates defect triage and facilitates triage meetings</li> <li>• Test team retests development corrections</li> <li>• Test team maintains a log of events associated with test execution</li> <li>• Test team generates test results</li> </ul>
<b>Exit Criteria</b>	<ul style="list-style-type: none"> <li>• All infrastructure test steps have been executed</li> <li>• No Critical and Major defects are present, or an approved remediation plan is in place</li> <li>• All known remaining Important or Minor issues still requiring resolution for testing have been documented and communicated to the key stakeholders</li> <li>• The Infrastructure Testing Report has been submitted</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>• JIRA, JAMA, Test Workbench by Deloitte™</li> </ul>
<b>Test Data</b>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Deloitte Role</b>	<ul style="list-style-type: none"> <li>• Ensure test environments and associated infrastructure setup properly</li> <li>• Identify tools to be used if needed and reports to be created</li> <li>• Document detailed steps required to conduct the test including expected results</li> <li>• Define and update Test Plan and resources</li> <li>• Documentation of the Test Plan</li> <li>• Execute Physical Infrastructure Validation</li> </ul>
<b>State Testing Vendor (Qualis) Role</b>	<ul style="list-style-type: none"> <li>• Perform independent physical infrastructure testing</li> <li>• Review test plans, test cases and testing results from SIT</li> <li>• Create test cases and test plans for UAT</li> <li>• Execute UAT test cases</li> <li>• Create test data for UAT</li> </ul>

### 3.4.2 Physical Infrastructure Test Details

The testing involves following steps after the test environments have been set up by the infrastructure team.

1. Confirm the physical infrastructure test infrastructure
  - a. Review the Physical Infrastructure Test Approach to re-confirm the test environment, tools, and resources to setup for testing. This includes:



- i. Hardware – Configurations, Processor, Memory and other core specifications
  - ii. Network - Network architecture, Physical location, Load-balancing, Cluster and Domain Name System (DNS) configurations
  - iii. Software - Other software to be installed or running in shared or virtual environments, Software license constraints, Storage capacity and seed data volume and Logging levels
2. Confirm that the application environment has been refreshed to reflect the updated application configuration
  3. Confirm manual configurations (if needed)
  4. Confirm connectivity with all interfaces that are required with third-party applications
  5. Confirm that the Physical Infrastructure Test Environment users are setup with the appropriate security privileges
  6. Confirm that appropriate hardware and software is configured and operational
  7. Review environment exit criteria and get sign-off by stakeholders
  8. Record infrastructure validation results
  9. Verify and Validate Infrastructure validation – The test case owner, technical infrastructure team lead and validation owner will review the test results and resolve issues

### 3.5 Performance, Volume and Stress Testing

#### 3.5.1 Performance, Volume and Stress Testing Overview

Performance, Volume, and Stress test will measure the stability and performance of the solution and its underlying architecture to handle expected and unexpected load on the system.

#### Performance Test Summary

Performance, Volume, and Stress Test Summary	
<b>Goal</b>	The purpose of performance testing is to assess whether the system, as built and deployed, can maintain adequate throughput, satisfactory response, and timely completion of operation under different conditions of volume and stress over a designated period of time. Performance testing also determines whether, or at what point, extreme conditions are likely to cause a system failure.
<b>Scope/Coverage</b>	<ul style="list-style-type: none"> <li>• Scope is limited to performance requirements stated in Service Level Agreements (SLA) section of SOW</li> </ul>
<b>Entrance Criteria</b>	<ul style="list-style-type: none"> <li>• Access to the User Acceptance Test (UAT) environment where the testing tool resides must be available to the testers</li> <li>• Successful execution and completion of unit test scripts and smoke testing; this implies that the code/applications are stable enough to be loaded</li> <li>• DW/BI-R solution is deployed to the performance User Acceptance Test (UAT) test environment</li> <li>• Performance test data prepared; this includes data, environment, and the boundary system and databases supporting the DW/BI-R solution</li> </ul>





<b>Performance, Volume, and Stress Test Summary</b>	
	<ul style="list-style-type: none"> <li>• Hardware and infrastructure applications are operational and, in a production, ready state and all necessary connectivity to boundary systems are complete</li> <li>• Identification of stakeholders from Deloitte and State</li> </ul>
<b>Performance, Volume, and Stress Test Activities</b>	<ul style="list-style-type: none"> <li>• Perform System Analysis and Planning</li> <li>• Create Test Scripts</li> <li>• Define transaction mix</li> <li>• Identify benchmarks</li> <li>• Prepare data</li> <li>• Prepare environment</li> <li>• Execute test scripts</li> <li>• Monitor and record system performance during test script execution</li> <li>• Analyze results</li> </ul>
<b>Exit Criteria</b>	<ul style="list-style-type: none"> <li>• Planned test cases/scripts have been executed and documented in the test tool</li> <li>• Successful completion of the test scripts without any failures and within the expected / required time allocation</li> <li>• The necessary infrastructure, configuration and code changes have been made to meet the performance test requirements</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• User Acceptance Test (UAT) Environment</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>• JIRA, JAMA, HPE Performance Center, Test Workbench by Deloitte™</li> </ul>
<b>Test Data</b>	<ul style="list-style-type: none"> <li>• System generated</li> <li>• Converted data masked/cleansed of PII as available</li> </ul>
<b>Deloitte Role</b>	<ul style="list-style-type: none"> <li>• Coordinate with State on questions and problems relating to performance and stress testing</li> <li>• Validate performance expectations</li> <li>• Prepare test requirements and environments in which the tests will be performed</li> <li>• Document detailed steps required to conduct the performance and stress test including expected results</li> <li>• Define and update testing work plan and resources</li> <li>• Define system scalability capabilities if anticipated volumes are exceeded</li> <li>• Deliver Performance, Volume and Stress Test Plan</li> <li>• Execute Performance, Volume and Stress Testing</li> <li>• Set up access for the DH and [REDACTED] testers in UAT environment</li> </ul>
<b>State Testing Vendor (Qualis) Role</b>	<ul style="list-style-type: none"> <li>• Perform independent performance, volume and stress testing</li> <li>• Review test plans, test cases, and testing results from SIT</li> <li>• Create test cases and test plans for UAT</li> <li>• Execute UAT test cases</li> <li>• Create test data for UAT</li> </ul>
<b>State Role</b>	<ul style="list-style-type: none"> <li>• Attend deliverable walkthroughs to enhance understanding and facilitate the approval process</li> <li>• Review and accept or reject the Performance, Volume and Stress Test Plan</li> <li>• Review and accept or reject whether Performance, Volume and Stress Test expected results are met</li> </ul>



### 3.5.2 Performance, Volume and Stress Testing Details

As part of an ongoing performance test process, performance testing should be performed concurrent with System Integration Testing (SIT) and User Acceptance Testing(UAT) to allow time for tuning and retest of individual components should a bottleneck be identified.

Performance testing is conducted to measure and evaluate response times, transaction rates, and other time sensitive requirements to verify that performance requirements have been achieved. Performance testing is implemented and executed to profile and tune the application's performance behaviour as a function of parameters such as workload or hardware configurations.

The types of volume / performance testing that are conducted are as follows:

- Stress: To determine when the system ceases to function, and how it stops functioning.
- Volume: To verify that the system can handle large volumes of requests.
- Load: To determine the response times for various critical transactions.

Considerations for identifying potential performance bottlenecks include the following:

- Potential online performance bottlenecks in the architecture when a high volume of concurrent users is present.
- System reliability when usage exceeds target peak volumes.
- Time to complete business functions for simulated virtual users.
- Application configuration and technology infrastructure changes as necessary to achieve performance requirements with specific tuning recommendations.

Performance testing is executed after the system is stable, and/or after successful completion of unit and smoke testing to ensure that the functions that will be subjected to performance testing are stable.

Comprehensive performance testing includes having a "background" workload on the server. The following methods can be used to perform this:

- "Drive transactions" directly to the server, usually in the form of SQL calls.
- Create "virtual" user load to simulate large number of clients. Remote terminal emulation tools are used to accomplish this load. This technique can also be used to load the network with "traffic."
- Use multiple physical clients, each running test scripts to place a load on the system.

The databases used for performance testing should be either actual size or scaled equally. Other parts of the system like communication and related transactions should be running on the dedicated machine.

Performance testing is executed on equipment that will mirror, as closely as possible, the environment the application will be running in.

## 3.6 Data Conversion Testing

### 3.6.1 Data Conversion Test Overview

The data conversion testing will include unit, system integration testing and pre-production dry run tests to verify that the data conversion routines perform as designed and in a timely manner. The converted



data will be leveraged in UAT. Collectively, these tests progressively validate that the conversion process works properly over the course of the conversion development and testing lifecycle. Data translation rules are also tested to validate quality of data, the accuracy of the metadata, and confirm that the application is working as it was intended. Deloitte expects the initial conversion ETL loads and ongoing incremental ETL loads to have a common code base. Test scripts written for data conversion testing can be leveraged to test both ETL flows (initial and ongoing).

An overview of our overall testing approach and process is provided in the paragraphs that follow.

**Data Conversion Test Summary**

Data Conversion Test Summary	
<b>Goal</b>	<ul style="list-style-type: none"> <li>• Technically exercise the conversion software from end-to-end, including legacy data extraction, data load and data transformation into the DW/BI-R solution</li> <li>• Validate the completeness and accuracy of the converted data</li> <li>• Test the DW/BI-R solution</li> </ul>
<b>Scope/Coverage</b>	<ul style="list-style-type: none"> <li>• Execute the conversion process from end to end</li> <li>• Validate the converted data</li> <li>• Review the conversion validation reports and results reports</li> <li>• Confirm the timing of the conversion process end to end</li> </ul>
<b>Entrance Criteria</b>	<ul style="list-style-type: none"> <li>• Requirements and design artifacts are approved, traced, and baselined</li> <li>• Test strategy and schedule have been approved and communicated</li> <li>• Conversion test environments have been created and configured</li> <li>• If needed, data masking process has been defined and implemented</li> <li>• Test Cases/Scripts have been created and approved</li> <li>• Test Cases/Scripts have been traced to requirements/components</li> <li>• Defects are addressed according to the agreed upon thresholds for Priority/Severity; Open defects/ workarounds are accepted by the Test team; Thresholds will be defined by mutual agreement between the State and Deloitte</li> </ul>
<b>Activities</b>	<ul style="list-style-type: none"> <li>• The conversion team executes the data conversion process</li> <li>• The conversion team, the state, module vendors and the Deloitte test team will validate the converted data elements and log defects for test results that do not reconcile to the expected results</li> <li>• The conversion team, the state, and module vendors resolve the conversion defects</li> <li>• The conversion team, the state, and module vendors validate defect corrections</li> <li>• The conversion team, the state, and module vendors provide ongoing communication and status reporting</li> </ul>
<b>Exit Criteria</b>	<ul style="list-style-type: none"> <li>• Conversion process has been executed and validated end to end</li> <li>• Converted data is validated - planned Test Cases/Scripts have been executed and validated based upon the agreed scope between the State and Deloitte</li> <li>• Defects are addressed according to the agreed upon thresholds for Priority/Severity; Open defects/ workarounds are accepted by Business Owners/Test team; Thresholds will be defined by mutual agreement between the State and Deloitte.</li> </ul>
<b>Environments</b>	System Integration Test (SIT) Environment



<b>Data Conversion Test Summary</b>	
<b>Tools</b>	JIRA, JAMA, IBM Infosphere DataStage
<b>Deloitte Role</b>	<ul style="list-style-type: none"> <li>• Execute conversion modules</li> <li>• Validate conversion results</li> <li>• Provide data conversion reports/results</li> <li>• Conduct testing activities according to the project schedule</li> <li>• Address assigned issues and action items</li> <li>• Provide status to project management</li> </ul>
<b>State Testing Vendor (Qualis) Role</b>	<ul style="list-style-type: none"> <li>• Perform independent data conversion testing</li> <li>• Review test plans, test cases and testing results from SIT</li> <li>• Create test cases and test plans for UAT</li> <li>• Execute UAT test cases</li> <li>• Create test data for UAT</li> </ul>
<b>State Role</b>	<ul style="list-style-type: none"> <li>• Provide clarification and recommendation on data conversion defects</li> <li>• Validate converted data elements</li> <li>• Review and validate data conversion reports (perform manual data cleansing as necessary per the conversion results reports)</li> <li>• Organize data conversion meetings to resolve/address defects</li> <li>• Provide technical and business support during test phases</li> <li>• Review and approve conversion results</li> </ul>
<b>Module Vendor Role</b>	<ul style="list-style-type: none"> <li>• Execute and validate data extracts according to the defined conversion schedule</li> <li>• Validate vendor system modifications</li> <li>• Resolve and validate vendor system modifications defects and data extract defects</li> <li>• Provide technical and functional support during test phases</li> </ul>

### 3.6.2 Data Conversion Test Details

#### 3.6.2.1 Unit Test

During development, the conversion team unit tests each script that is built for the loading and transformation of the legacy data. These tests are isolated set of tests to validate that the script is correctly moving and transforming data from its respective source to target locations. Moreover, these tests are technical by nature as they are comprised of SQL queries to look at particular counts and validations within the data as opposed to being more functional oriented tests through the application. While the exact tests vary by script, the types of tests include:

- Verifying that the correct number of records are created in each table
- Verifying that there is no primary key constraint violation (e.g., the test will look for both cases when the value is missing and when two records have the same unique identifier)
- Verifying that direct-load fields are populated correctly
- Verifying that fields assigned default values are populated correctly



- Verifying that fields requiring transformation logic (reference values, derived values) are populated correctly
- Verifying that source data does not violate data type or data length constraints in the target database

### 3.6.2.2 System Integration Testing (SIT)

During the system integration test phase, validation will be performed in the conversion system test environment to confirm the accuracy of the converted data elements in the DW/BI-R solution.

SQL scripts will be executed to validate the data loaded in the database.

After the system integration test conversion execution, there will be a series of reports generated that provide a broad look into the results of the conversion.

### 3.6.2.3 Pre-Production Dry Run

Conversion dry runs will be performed prior to the production pilot or wave rollouts to validate the conversion software and processes that are used in the live data conversion run.

Dry runs are an essential part of the conversion testing process as these allow the conversion team to simulate what occurs during a live production conversion run. In doing this, the conversion team works to identify and correct issues in the conversion process before serious implications occur. These runs are also essential to benchmark the performance of the conversion software and tune the performance if necessary. This is also a way to prepare State staff involved with the production data conversion so that the various activities of the conversion process are familiar to State stakeholders.

## 3.7 Security Testing

### 3.7.1 Security Test Overview

The security testing is a set of activities performed to identify vulnerabilities in the data, application, and network layers of the DW/BI-R solution. It is also performed to measure the effectiveness of existing security controls present in the DW/BI-R Solution.

For a given set of IP addresses in the DW/BI-R environment, the first server vulnerability scan is conducted using Nessus. For a given URL and underlying apps, the scan is conducted using IBM AppScan. The Databases are scanned using Trustwave AppDetective.

The results are contained in the Nessus scan report, IBM AppScan report and Trustwave AppDetective report. These reports are summarized and supplied to the Deloitte DW/BI-R solution development and technical teams, which are responsible to take appropriate actions to mitigate or otherwise remove the security issues and vulnerabilities noted. After the issues have been addressed, the IP addresses, application URL and database will be re-scanned by the Nessus, IBM AppScan and Trustwave AppDetective tools, respectively, to verify that remediation is successful. Another report will be generated for the re-scan.

Raw scan reports as part of security testing are shared with DH along with the summarized findings and mitigation plan.

The scanning processes will be performed from a non-user and end-user perspective (potential external and internal attackers) in System Integration Test (SIT) and User Acceptance Test (UAT) environment.



<b>Security Test Summary</b>	
<b>Goal</b>	<ul style="list-style-type: none"> <li>Validate the solution's ability to provide protection from accidental or malicious access, use, modification, destruction, or data disclosure</li> </ul>
<b>Scope/Coverage</b>	<ul style="list-style-type: none"> <li>Vulnerability and Penetration testing of servers and databases</li> <li>Vulnerability and Penetration testing of URL and underlying apps</li> </ul>
<b>Entrance Criteria</b>	<ul style="list-style-type: none"> <li>User roles and access to functions have been appropriately defined</li> <li>System test cases are approved and have been set up in the test management tool and assigned to testing team</li> <li>Set up the appropriate security rights for users in the test environment</li> <li>The defect management tool is set up and ready to use</li> </ul>
<b>Security Test Activities</b>	<ul style="list-style-type: none"> <li>Test team develops Security Vulnerability and Penetration Test approach in collaboration with the Agency.</li> <li>Test team develops Security Vulnerability and Penetration Test Cases and Test Data</li> <li>Test lead confirms readiness of Security Vulnerability and Penetration Test Environment and populates it with Test data</li> <li>Test team executes Security Vulnerability and Penetration Test cases and documents issues and defects</li> <li>Test team maintains a log of events associated with test execution</li> <li>Test team generates test results</li> </ul>
<b>Exit Criteria</b>	<ul style="list-style-type: none"> <li>Executable test cases have been executed and results are recorded in the test management tool</li> <li>Critical and Major defects are remediated, or an approved remediation plan is in place</li> <li>Remaining Important or Minor issues still requiring resolution for testing have been documented and communicated to the key stakeholders</li> <li>Security Testing Report has been submitted</li> </ul>
<b>Tools</b>	Nessus, IBM AppScan, Trustwave AppDetective
<b>Test Data</b>	<ul style="list-style-type: none"> <li>User Credentials Data</li> </ul>
<b>Deloitte Role</b>	<ul style="list-style-type: none"> <li>Confirm that test environments and associated infrastructure are setup properly</li> <li>Identify tools to be used and reports to be created</li> <li>Document steps required to conduct the test including expected results</li> <li>Define and update Test Plan and resources</li> <li>Documentation of the Test Plan</li> <li>Execute System Security Testing</li> </ul>
<b>State Testing Vendor (Qualis) Role</b>	<ul style="list-style-type: none"> <li>Perform independent vulnerability scanning and penetration testing</li> <li>Review test plans, test cases and testing results from SIT</li> <li>Create test cases and test plans for UAT</li> <li>Execute UAT test cases</li> </ul>



### 3.7.2 Security Test Details

The vulnerability and penetration security testing involve following steps

#### **Prepare for Security Vulnerability and Penetration Testing**

##### 1. Develop Security Vulnerability and Penetration Test Approach

- Review the security vulnerability and penetration test objectives
- Identify and document security vulnerability and penetration test scope
- Define testing roles and methodologies
- Establish high-level roadmap for security vulnerability and penetration testing
- Document test tool usage and identify testing facility requirements
- Define progress-monitoring and reporting processes and document defect management procedures
- Establish entry and exit criteria
- Determine test data and environment requirements
- Identify test scenarios

##### 2. Develop Security Vulnerability and Penetration Test Cases

- Identify test cases and define test steps
- Map requirements to test cases
- Identify which security profile(s) will execute the step when in production

#### **Execute Security Vulnerability and Penetration Testing**

##### 1. Prepare Security Vulnerability and Penetration Test Environment

- Finalize environments and determine sequence of activities
- Set up user security and check system readiness, resource readiness, and entry criteria to perform testing
- Confirm Security Vulnerability and Penetration Test Environment readiness.

##### 2. Conduct Security Vulnerability and Penetration Test

- Execute test cases, review and report defects
- Document and publish results
- Mitigate critical or moderate test defects as jointly triaged with the agency



### 3.8 Business Continuity and Disaster Recovery Testing

#### 3.8.1 Business Continuity and Disaster Recovery Test Overview

Business Continuity and Disaster Recovery(BC/DR) Test is the process of testing the Business Continuity and Disaster Recovery approach of the DW/BI-R project as documented in the Business Continuity of Operations (COOP) Plan / Disaster Recovery Plan (DRP) deliverable. In this type of testing, the Deloitte test team is analyzing the timely restoration of data warehouse and reporting components that make up the DW/BI-R solution architecture and the data backup and recovery procedures, in the event of a disaster. The test team also verifies the readiness and effectiveness of communication protocols, business roles, business units, and functions that are critical during the recovery of the system in the event of a disaster.

#### BC/DR Test Summary

BC/DR Test Summary	
<b>Goal</b>	<ul style="list-style-type: none"> <li>Inspect timely restoration of data warehouse and reporting components in the event of a disaster</li> <li>Inspect data backup and recovery procedures in the event of a disaster</li> <li>Inspect the readiness and effectiveness of communication protocols, business roles, business units and functions that are critical during the recovery of the system in the event of a disaster</li> <li>Confirm the application is ready for disaster recovery testing</li> </ul>
<b>Scope/Coverage</b>	<ul style="list-style-type: none"> <li>Testing of data backup and recovery procedures in the Disaster Recovery Test environment</li> <li>Regression and system integration testing of restored data warehouse and reporting components in the disaster recovery test environment</li> <li>Verification of security/access associated with role-based user security for the restored data warehouse and reporting components</li> <li>Testing of the readiness and effectiveness of communication protocols, business roles, business units and functions that are critical during the recovery of the system in the event of a disaster</li> </ul>
<b>Entrance Criteria</b>	<ul style="list-style-type: none"> <li>Requirements and design artifacts are approved, traced, and baselined</li> <li>Test strategy and schedule have been approved and communicated</li> <li>Disaster recovery test environment has been created, including required necessary applications, configuration, interfaces, and reports</li> <li>Test tools are installed and configured including access/permissions for all stakeholders</li> <li>Disaster recovery test cases/scripts have been created and approved</li> <li>Disaster Recovery test cases/scripts have been traced to requirements/components</li> <li>Disaster recovery test data has been developed as required</li> </ul>
<b>Disaster Recovery Testing Activities</b>	<ul style="list-style-type: none"> <li>Test team executes disaster recovery test cases/scripts and documents results</li> <li>Test team logs defects for test results that do not match expected results</li> <li>Test team retests development corrections</li> <li>Test team tests data recovery and back up procedures for restoring documentation/files, database software, reports user libraries and program code in the disaster recovery test environment</li> </ul>





<b>BC/DR Test Summary</b>	<ul style="list-style-type: none"> <li>• Test team executes test scenarios to analyze the capability to switch operations from the production environment to the failover environment and also analyzing that the tracking time to failover is within the desired SLA in the event of a disaster</li> <li>• Test team executes test scenarios to analyze the effectiveness of major Data Warehouse (DW) functions like ETL procedures, power sources and network connectivity in the event of a disaster</li> <li>• Test team simulates Interruptions in business continuity scenarios to verify the readiness and effectiveness of communication protocols, business roles, business units and functions that are critical during the recovery of the system in the event of a disaster</li> <li>• Test team plans a post-test review session to identify and document lessons learned, root causes and overall opportunities for improvement</li> </ul>
<b>Exit Criteria</b>	<ul style="list-style-type: none"> <li>• Planned test cases/scripts have been executed and documented in the test tool</li> <li>• Gaps and weaknesses associated with the tests are resolved and test outcomes, results, and remediation actions shall be shared with specific stakeholders identified by State</li> <li>• Business Continuity of Operations Plan (COOP) / Disaster Recovery Plan (DRP) deliverable is updated to reflect the lessons learned from this exercise and is approved by the State</li> </ul>
<b>Environment</b>	Disaster Recovery test environment
<b>Tools</b>	JIRA, JAMA, Test Workbench by Deloitte™
<b>Test Data</b>	<ul style="list-style-type: none"> <li>• System generated</li> <li>• Periodic data backup and restore used to execute regression testing</li> </ul>
<b>Deloitte Role</b>	<ul style="list-style-type: none"> <li>• Identify functionality being tested, based on the detail design and detail requirement sessions</li> <li>• Identify tools to be used and reports to be created</li> <li>• Document steps required to conduct the disaster recovery test including expected results</li> <li>• Define and update business continuity and disaster recovery test plan and resources</li> <li>• Execution and verification of test cases and results</li> <li>• Update Business Continuity of Operations Plan (COOP) / Disaster Recovery Plan (DRP) deliverable to reflect the lessons learnt from this exercise and get deliverable approved by the State</li> </ul>
<b>State Testing Vendor (Qualis) Role</b>	<ul style="list-style-type: none"> <li>• Perform independent business continuity and disaster recovery testing</li> <li>• Review test plans, test cases and testing results from SIT</li> <li>• Create test cases and test plans for UAT</li> <li>• Execute UAT test cases</li> </ul>
<b>State Role</b>	<ul style="list-style-type: none"> <li>• Provide direction and clarification to the vendor</li> <li>• Review and accept or reject the Business Continuity of Operations Plan (COOP) / Disaster Recovery Plan (DRP) deliverable</li> <li>• Review and accept or reject whether business continuity and disaster recovery Test expected results/scenarios are met</li> </ul>



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**BC/DR Test Summary**

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- Approve updated Business Continuity of Operations Plan (COOP) / Disaster Recovery Plan (DRP) deliverable reflecting the lessons learnt from testing
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### 3.8.2 Business Continuity and Disaster Recovery Test Details

The testing involves following steps:

#### Populate Disaster Recovery Test Environment

1. Populate Environment

Populate the environment for disaster recovery testing, which includes:

- Installing or refreshing the application environment to reflect the updated application configuration
  - Perform manual configurations (if needed)
  - Confirm connectivity with interfaces required with third-party applications
2. Complete tools configuration and user security
- Set-up the appropriate security rights for users in the disaster recovery test environment
  - Configure and setup the application-monitoring tools required in the disaster recovery test environment
3. Load disaster recovery test data
4. Confirm disaster recovery test environment readiness
- Confirm readiness of the environment that includes the following comparison:
    - Appropriate hardware and software is configured and operational
    - Selected test tools configured and ready for testing in the target environment
    - Test cases are data loaded and inspected
    - Environment exit criteria reviewed and signed-off by stakeholders

#### Conduct Disaster Recovery Test

1. Identify test cases

- Identify test cases to be executed and test case execution dependencies

2. Verify test entry criteria are met

- Execute the scheduled test when entry criteria have been met
- Record test execution results

3. Verify and Validate test execution

- The test case owner, technical infrastructure team lead and validation owner will review the test execution results

4. Simulate interruptions in business continuity scenarios



- Test team simulates interruptions in business continuity scenarios to confirm the readiness and effectiveness of communication protocols, business roles, business units and functions that are critical during the recovery of the system in the event of a disaster

5. Post Test Review - Test team plans a post-test review session to identify and document lessons learned, root causes and overall opportunities for improvement. Test team updates Business Continuity of Operations Plan (COOP) / Disaster Recovery Plan (DRP) deliverable to reflect the lessons learned from the testing activity.

### 3.9 User Acceptance Testing Support

#### 3.9.1 User Acceptance Testing Support Overview

The State and the Testing Contractor is responsible for all User Acceptance Test (UAT) activities. Deloitte plays a support role in assisting the State with rules of testing, planning, data preparation and test environment.

#### UAT Support Summary

User Acceptance Test Summary	
<b>Goal</b>	Testing conducted by State and the testing contractor to confirm that the system meets business requirements and end-user expectations by validating end-to-end scenarios and critical business functions
<b>Scope/Coverage</b>	<p>Demonstrate that the system meets requirements and performs all system functions correctly including operational readiness and testing of the application and interfaces with converted data</p> <p>Validate the following:</p> <ul style="list-style-type: none"> <li>• Adherence to approved requirements and design documentation</li> <li>• Conversion of legacy data</li> <li>• Completeness and accuracy of system documentation</li> </ul>
<b>Entrance Criteria</b>	<ul style="list-style-type: none"> <li>• A release schedule has been established and documented. This schedule must include periodic planned builds for defect fixes while in test</li> <li>• Requirements and design artifacts are approved, traced, and baselined</li> <li>• The code migration process has been documented and approved</li> <li>• No open Critical defects. Remaining defects have been jointly triaged by the State and Deloitte and the State and Deloitte have agreed upon a plan to address</li> <li>• Test environment has been created, including all necessary applications, configuration, interfaces, and reports</li> <li>• The State/testing contractor has developed UAT data as necessary</li> <li>• Proper user ids and permissions required for testing have been created and verified</li> <li>• UAT Test cases/scripts have been created by DH/State Testing Vendor (SIT test scenarios and results can be leveraged – if needed)</li> <li>• Test cases have been traced to the requirements specification through the Requirements Traceability Matrix (RTM)</li> <li>• Successful Smoke Test of deployment</li> </ul>
<b>UAT Activities</b>	<ul style="list-style-type: none"> <li>• State/Testing Contractor executes UAT scripts and documents results in the test tool</li> </ul>



<b>User Acceptance Test Summary</b>	
	<ul style="list-style-type: none"> <li>State/Testing Contractor coordinates defect resolution and performs regression testing of defect corrections</li> <li>Updates to documentation have been completed or captured as defects</li> <li>UAT test cases have been executed according to the test plan and any deviations are documented and approved</li> </ul>
<b>Exit Criteria</b>	<ul style="list-style-type: none"> <li>All required User Acceptance Test (UAT) types have been completed</li> <li>No open Critical defects. Remaining defects have been jointly triaged by the State and Deloitte and the State and Deloitte have agreed upon a plan to address</li> <li>Any workarounds have been documented and approved</li> <li>UAT results have been provided and reviewed by Stakeholders, as defined in the State UAT Plan</li> <li>Joint discussions and decisions between the State and Deloitte have occurred to confirm any variance from the UAT Acceptance Criteria, as applicable</li> <li>Sign-off has been obtained from designated stakeholders indicating test completion. This includes Go/No Go checklist, meetings, and decision</li> </ul>
<b>Environment</b>	User Acceptance Test (UAT) environment
<b>Tools</b>	JIRA, JAMA, Test Workbench by Deloitte™
<b>Test Data</b>	<ul style="list-style-type: none"> <li>System generated</li> <li>Partner provided incoming/outgoing files if available, otherwise simulated files</li> <li>Converted data</li> <li>Periodic data backup and restore used to execute regression testing</li> </ul>

### 3.9.2 Roles and Responsibilities

The table below shows the Roles and Responsibilities of Deloitte and State/Testing Contractor during the UAT phase:

#### UAT Roles and Responsibilities

Role	Responsibilities
<b>Deloitte Role</b>	<ul style="list-style-type: none"> <li>Develop a plan to support the State's strategy</li> <li>Validate that all system test is complete and prepare UAT Readiness Report</li> <li>Co-facilitate presentation for approval to move to the UAT phase of the project</li> </ul> Support UAT by: <ul style="list-style-type: none"> <li>Providing trouble shooting help, answering questions and reviewing outputs with the State/Testing Contractor</li> <li>Helping DH with defining the type and # of testers required, and the expected time commitment for testing activities</li> <li>Assisting DH by sharing SIT Test scenarios and results which can be used as reference for creating independent UAT test cases</li> <li>Resolving defects identified in UAT and regression test the system after defects are corrected</li> <li>Coordinating the implementation of changes in the UAT test environment with the State/Testing Contractor</li> </ul>



Role	Responsibilities
	<ul style="list-style-type: none"> <li>Ensuring proper configuration management of multiple UAT test environments</li> </ul>
State/Testing Contractor Role	<ul style="list-style-type: none"> <li>Develop the User Acceptance Test strategy</li> <li>Review and accept or reject UAT Readiness Report in order to initiate UAT</li> <li>Co-facilitate presentation for approval to move to the UAT phase of the project</li> <li>Create UAT testing scenarios and scripts</li> <li>Perform UAT testing</li> <li>Report status and results of UAT testing (JIRA to be leveraged for UAT issue tracking)</li> </ul>

#### 4 Test Activities

The major testing activities conducted by the Deloitte test team for each test phase (except UAT) include the following:

- Plan
- Develop - Prepare Test Scenarios and Test Cases/Scripts
- Prepare Data
- Execute

Each activity includes development of common work products using standardized templates and includes tasks for work product review and status reporting. The following sections describe each test activity in further detail.

##### 4.1 Plan

The test planning effort requires high level planning to manage and coordinate the overall testing task and low-level planning to scope and define individual test cases.

##### 4.1.1 High Level Test Plan

The Deloitte test team collaborates with project team leads to plan each test phase and/or test cycle as described in the table below.

##### High Level Test Planning Steps

Step	Task
1. Schedule	Develop the overall test schedule using an inventory of items to be tested.
2. Participants	Identify Deloitte Test team and other/external testing participants.
3. Training	Assess need for test participant training on test processes/tools.
4. Work Items	Create and assign test work items.
5. Release	Obtain and confirm test/release content from Application team.
6. Publish	Publish test schedule and communicate with participants.



**4.1.2 Low Level Test Plan**

Most Deloitte Test team members are likely to participate in low level test planning activities. These activities are focused on test case development and include the following:

**Low Level Test Planning Steps**

Step	Task
Review	Review test input including requirements, designs, work flow, etc.
Test Case Matrix	Develop Test Case Matrix of input and output for business process/technical component.
Test Scenarios and Test Cases	Develop Test Scenarios and Test Cases to validate business process flow and module integration with Data Warehouse (DW), ETL components, Business Intelligence(BI) and Reporting artifacts.
Coverage	Review completed test cases and confirm requirements and/or application component test coverage.
Upload	Upload test cases in JAMA.

**4.1.3 Traceability Management**

Application teams develop and manage the traceability between requirements and designs during the Design phase. The Test team utilizes that traceability as input when identifying test cases. Deloitte testers create bi-directional traceability using JAMA to link test cases to the associated requirement and design artifacts.

Test case traceability is used to demonstrate that each requirement and design artifact has been tested in a minimum of one test phase. Depending on the nature of an artifact, it may be tested multiple times within a test phase or in multiple test phases. For example, a database component will undergo testing at the unit level and may be included in integrated testing for System Integration and User Acceptance Test (UAT).

**4.1.4 Test Sequence**

The Deloitte test team will evaluate and prioritize testing based on an assessment of the relative importance of application functionality. Deloitte testers seek to develop tests for core and critical functionality early on to achieve thorough testing and establish a foundation for regression testing.

In preparation for system integration test, the Deloitte test team will work with application teams to identify the major business activities within each functional area or business process. Each business activity is assessed to identify processes and transactions that fit one or more of the following criteria:

- High business complexity
- High system complexity
- Critical activity
- High volume activity

Testing emphasis and coverage is higher for functionality that meets all or most of these criteria as compared to functionality that does not.



**4.2 Develop**

This activity of the test deals with preparing test scenarios and test cases/scripts.

A test scenario is a business requirement to be tested. Test scenario contains a set of test cases to validate that the business process flows are tested from end to end. They may be independent tests or a series of tests that follow each other, each dependent on the output of the previous one. A test scenario can have more than one test case.

Test cases are derived for each test scenario. Each test scenario may have one or many test cases depending upon the functionality. Test cases cover all the aspects of testing the scenario that was based on business requirements. Test cases are derived based on design specifications. A test case includes purpose of the test, specific set up or configuration requirements, detailed test steps (also called test scripts) of how to perform the test and the expected results or success criteria for the test. Test cases should be written by a team member who understands the function or technology being tested, and each test case should be submitted for peer review.

Detailed test case steps, i.e. test scripts, are developed manually using Excel. A test script elaborates a defined test case by providing step by step instructions to execute the test.

Each numbered step within a test script is developed based on detailed information specified within a design, requirement or other input. The script author clearly identifies the desired testing action and expected result. Test script expected results should be specific and concise. In instances where input data is variable, the script author seeks to define expected results as explicitly as possible.

At a minimum, a script should include a separate step for each action where a result can be observed. Steps may describe manual or automated actions and the resulting system behavior to confirm.

Where feasible, test scripts follow the convention to preview relevant existing data, perform test action(s), and review the resulting condition of the data. This confirms the test was set up properly prior to executing the test and provides an opportunity to correct improper data setup and potentially avoid creation of unnecessary defects.

Testers trace test cases/scripts to requirements and design artifacts they are intended to validate. Each test script is evaluated by the script author and a reviewer using a test script checklist to assess script quality and adherence to standards. Successfully reviewed scripts are uploaded to JAMA for execution.

**4.2.1 Test Script Development**

Test scripts are developed using the following steps:

**Table Error! No text of specified style in document.-1 Test Script Development Steps**

Step	Task
Review	Review test scenario and test case.
Create	Create test script using Excel template or automated test tool.
Define Steps	Provide step by step instructions for executing test scenarios and test cases.
Coverage	Review completed test script and confirm requirements and/or application component test coverage.
Upload	Upload completed and reviewed test scripts to JAMA.



#### 4.3 Prepare Test Data

Required test data is documented in each test case. For preparing test data, Deloitte works with SI/ESB team and the State to leverage de-identified production data for testing in lower environments. Test Data is backed up prior to test phase/cycle execution and may be restored or refreshed as necessary for each execution cycle.

The Deloitte test team will work with SI/ESB team and the state to create a growing test data set to support ongoing regression testing. System Integration Test and User Acceptance Test (UAT) incorporate the use of converted data. Converted data used during System Integration testing and UAT will be cleansed with data masking techniques and de-identified to protect confidentiality of data in lower environments.

#### 4.4 Execute

Test execution includes smoke testing and regression testing as well as execution of test scripts, defect management activities and retesting of defect fixes.

##### 4.4.1 Test Execution

Test execution for each test phase is managed using a checklist to validate required tasks are completed and testing activities occur in the proper sequence. The checklist tracks activities specific to each test phase including the following:

- Test entrance/exit criteria
- Test timeline communication/kick-off/walkthrough
- Test data management
- Test environment preparation and management (scheduled updates, downtime (backup, refresh), and other factors)
- Online parameters (system date, security, user log in credentials/security profiles, etc.)
- Test tool access
- Script management activities
- Test results documentation
- Known defects/workarounds and defect management

The Deloitte test team begins each test execution with a smoke test to validate the application has been deployed correctly and major system capabilities are functioning properly.

System parameters such as system date and batch related parameters are set and confirmed prior to script execution. Deloitte testers execute each test script manually or automatically and document actual test results. Deviations from expected results are documented as defects in JIRA.

Defects may be linked to multiple test scripts as necessary. Defects corrected during the test execution cycle or test phase are subject to retest in lower environments prior to retest in the current environment.





#### 4.4.2 Defect Management

When an issue or defect is identified, Deloitte shall enter the issue or defect into JIRA. The defect is captured, prioritized, assigned, and tracked through remediation and retesting through to final resolution in JIRA. JIRA automatically tracks who is responsible, the status of an issue or defect and links it to the project requirement to which it is related. The tool includes a full list of features, including the ability to notify the stakeholder of the issue or defect when its status has changed. A listing is produced from JIRA of unresolved defects. When corrective action is taken, pertinent information about the action and/or resolution is entered into the JIRA tracking tool. For details on the Defect management process, refer to the [DW Deloitte Defect Resolution Plan Deliverable C 2018.05.04 v1.1.docx](#) deliverable.

Deloitte shall generate reports from JIRA that include the numbers of problems identified by type of problem, priorities, and number of problems corrected. Information about system defects is discussed during bi-weekly status meetings and reported in the weekly and monthly status reports.

Defect management and resolution includes the following key activities:

- A Deloitte tester logs a defect when the test result does not match the expected result.
- The Deloitte Test team lead reviews each defect to confirm it is properly documented and not associated with tester or script error.
- The Deloitte Test lead facilitates defect triage process/meetings.
- Functional and technical members of the Application team review and analyze assigned defects to identify requirement, design, code or other root causes of problems defined by Defect Resolution Plan deliverable. Other project stakeholders are consulted as necessary.
- When a defect resolution is identified and implemented, the Deloitte Test team retests the functionality based on the resolution (which may include updates to script/data, design, and/or code changes). Defect testing and associated regression tests are first conducted in lower test environments as necessary depending on the test phase where the defect was identified.
- The Deloitte Test team closes the defect if associated with a Deloitte test phase/environment or supports the State in retest of UAT defects.
- The Deloitte Test team communicates defect status information in the weekly and monthly status reports or as needed.

##### 4.4.2.1 Prioritizing Defects

Defects are prioritized based on the importance/urgency to fix a defect. Defect priority may be initially set by the Software Tester, but it will be changed later based on its effect on the overall solution, its impact on the schedule and as collaboratively agreed upon by Deloitte and the Agency.

Defects are prioritized based on the below classification:

- Critical - Blocks development and/or testing work, production could not run
- High - A major loss of function
- Medium - A minor loss of function, or other problem where a feasible workaround is present
- Low - Cosmetic problem like misspelt words or misaligned text



#### 4.4.2.2 Tracking Defects

Defect tracking is used to measure the quality of code in the DW/BI-R project. It helps you to validate that bugs found in the system are getting fixed.

Listed below are the major parameters based on which the defect tracking happens in the DW/BI-R solution:

- Defect ID
- Priority
- Severity
- Created by
- Created Date
- Assigned to
- Resolved Date
- Resolved By
- Status

#### 4.4.2.3 Retesting Defects

Defects are retested to check if the test cases that were unsuccessful in the final execution are getting a successful pass after the defects are repaired. For every defect found in the DW/BI-R solution, a plan will be created for retesting the defects with an aim to make sure that the original fault has been corrected. Retesting will be performed on a new build using the same data, and on the same environment (from where the defect is detected) but with different inputs.

Retesting of defects happens before the Regression testing.

Refer to the Defect Resolution Plan deliverable for additional information about the defect management process.

## 5 Test Environmental Needs

### 5.1 Test Environments

The test environments defined in this section allows to perform various tests listed in this deliverable. It also allows DH to monitor the accuracy of the implementation and technical coordination services. The test environment will allow for end-to-end testing of the DW/BI-R solution. The test environment will support mirroring the production system in its infrastructure, files, databases, and processing.

#### 5.1.1 Test Environment Details

The table below shows the system environments that are used for performing various testing activities listed in this deliverable that are related to the DW/BI-R solution.



**Test Environments**

Testing Types/Key Activities	Physical/Security Environment	Description
Development/Unit Testing	DEV	Development and unit testing of software
Regression Testing	SIT(INT)*	Testing of a previously tested function following modification to validate that defects have not been introduced or uncovered, because of the changes made. It is performed each time the software or its environment is changed, and typically involves automated testing scripts
System Testing	SIT(INT)	The process of demonstrating that a program, function, or integrated system components meets its requirements and objectives as stated in the requirements specification
User Acceptance Testing	UAT	Testing conducted by the user or customer to determine whether a system satisfies the defined user acceptance criteria in an isolated environment
Deployment Testing	DEV, SIT(INT), UAT and PROD	This will get incorporated when we deploy the code from one environment to another. For example, DEV to SIT, and SIT to UAT
Security Testing	DEV, SIT(INT), UAT and PROD	The program shall include the security testing and Deloitte will identify and mitigate known issues before implementation
Certification Testing	UAT	Validate the MECT checklist to meet the certification requirements
Production	PROD	Final live DOH environment for use by users in their day-to-day activities
Production Disaster Recovery (DR)	DR	Replicated version of Production Operations that maintains a small footprint unless a catastrophic disaster to Production Operations

\* *SIT (System Integration Test) environment is also known as INT (Integration Test) environment*

Listed below are the details of activities in each environment.

- DEV environment is used for Developmental activities
- TEST environment is used for Testing and Training activities
- PROD environment is used for end user testing of production data

**5.2 Productivity and Support Tools**

The Deloitte Test team primarily uses for specialized testing related to activities such as web service testing, and integration testing. The table below provides a listing of key test tools and a description of their intended usage.

The table below contains the tools that will be leveraged for testing.

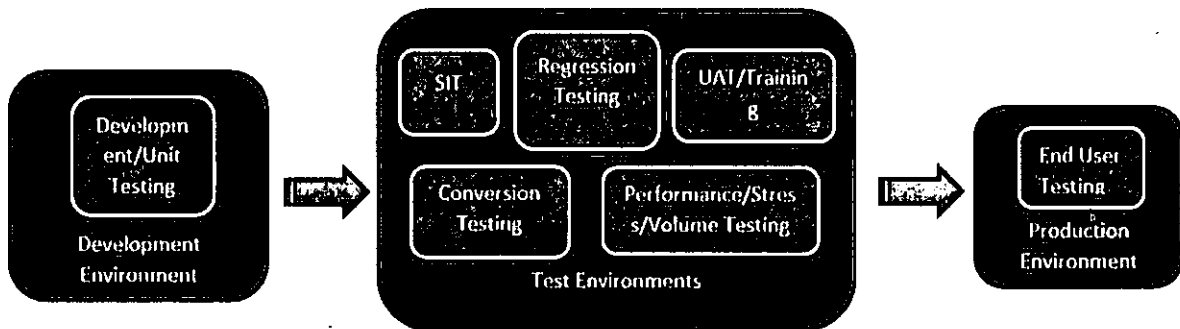


**Productivity and Support Tools**

Tool	Usage
<b>JIRA</b>	Atlassian’s JIRA tool will be used to record, manage, and monitor defects in the Project. Defects are entered in the JIRA tool and are tracked through completion. The JIRA tool /shall support authorized access by Agency-approved stakeholders who are able to enter newly identified action items and issues as well as maintain and monitor those already open in the tool. As new module vendors are selected and their onboarding is completed, a joint Agency and Deloitte team shall meet with the new module vendor to review new initial action item or issues to be added to the JIRA repository.
<b>JAMA</b>	It is a web-based test and requirement management tool will be used to map requirements to design documents and test cases/test scripts. This provides traceability from test results back to the finalized requirements and validates that testing is comprehensive.
<b>Test Workbench by Deloitte™</b>	Test Workbench by Deloitte™ is an integrated test orchestration platform designed to collaboratively improve planning, automation, execution, and reporting activities across the testing lifecycle. Test results are stored in JAMA and reported via Test Workbench by Deloitte™.
<b>HP Performance Center</b>	HP Performance Center is used to test, analyze, and validate DW/BI-R’s performance against performance SLAs listed in SOW.
<b>IBM InfoSphere DataStage</b>	IBM InfoSphere DataStage is a data integration tool for designing, developing, and running jobs that move and transform data. This is used during Data Conversion testing for running any jobs for processing of test files.

**5.3 Environment Diagrams**

The diagram below shows details of how DW/BI-R’s code is promoted to Test and Production environments from the Development environment.



*Environment Diagram*



## 6 Reports

Deloitte will develop reports from testing activities to keep DH up to date on the testing activities performed in the DW/BI-R solution. These reports include test results from each component in the DW/BI-R solution along with impact of each defect on the overall DW/BI-R solution.

### 6.1 Final Test Results

The Final Test Results deliverable will contain high level details about testing performed in the DW/BI-R project, along with details of any major defects, issues identified, and risks discovered during testing. Refer to the Project Plan Baseline for detailed timelines of the Final Test Results deliverable.

Listed below are the details that an Testing Results report contains:

- Summary of testing performed in the DW/BI-R solution
- Accomplishments & Next Steps
- Upcoming major activities/milestones
- Execution Summary
- Defects Summary
- Defect Spotlight -Notable Open Defects
- Planned vs Actual timeline
- Action Items
- Issues
- Risks

### 6.2 End of Phase Report

An End of Phase report is prepared at the end of a testing phase and is circulated through the weekly and monthly status reports or as needed.

## 7 Responsibilities, Staffing, and Training Needs

### 7.1 Test Team Resources

The Deloitte test team is supported by the Deloitte Application, Technical, and Conversion teams including track leads, analysts and developers. State counterparts to the Deloitte test team include the State test lead, State Testers, State business analysts, and Subject Matters Experts (SMEs).

Deloitte and State testing roles and major responsibilities are defined in the following table.

#### Test Team Roles and Responsibilities

Role	Key Responsibilities
Deloitte Test Lead	<ul style="list-style-type: none"> <li>• Submit a strategy for Unit, System Integration, Performance, Regression, Data Conversion, Security, Physical Infrastructure and Business Continuity/Disaster Recovery testing</li> </ul>



Role	Key Responsibilities
	<ul style="list-style-type: none"> <li>• Work with client team and project managers to establish entry and exit criteria, resources, checkpoints, and a timeline for each test phase to be documented in the Testing Plan</li> <li>• Deploy and manage the appropriate testing framework to meet the requirements including team members, testing tools, defect tracking and testing processes and scripts</li> <li>• Plan, deploy, and manage the testing effort</li> <li>• Review Testing Plan, System Integration test Cases/scripts, Testing Results Reporting, and User Acceptance Testing Readiness Report</li> <li>• Coordinate with Infrastructure and Technical teams for planning and allocating testing environments and tools</li> <li>• Identify test tools and report on the status of test execution and outstanding system problems identified</li> <li>• Implement and manage measurements and metrics to be applied against the system under test</li> </ul>
<b>Deloitte Data Integration (DI) Testers</b>	<ul style="list-style-type: none"> <li>• Design and develop high level and detailed test cases/scripts based on input from requirements, design, State stakeholders, and Deloitte test team leads</li> <li>• Assist with data preparation as needed to support functional and technical testing</li> <li>• Execute technical test cases including conversion, ETL and interfaces test cases to verify the functionality outlined in the requirements and design documents</li> <li>• Log defects for test cases that do not meet expected results</li> <li>• Perform smoke, and regression tests to validate that new code releases do not break existing functionality</li> <li>• Support the State testers during User Acceptance Testing</li> </ul>
<b>Deloitte Business Intelligence (BI) Testers</b>	<ul style="list-style-type: none"> <li>• Design and develop high level and detailed test cases/scripts to test reports and BI objects based on input from requirements, design, State stakeholders, Deloitte test team leads and BI/report specifications</li> <li>• Execute test cases to verify that the data on the reports and BI objects is per report specifications.</li> <li>• Log defects for test cases that do not meet expected results</li> <li>• Perform manual, smoke, and regression tests to validate that new code releases do not break existing functionality</li> <li>• Support the State testers during User Acceptance Testing</li> </ul>
<b>Deloitte Security Tester</b>	<ul style="list-style-type: none"> <li>• Design and develop high level and detailed test cases/scripts for vulnerability and penetration testing based on input from requirements, design, State stakeholders, and Deloitte Test team leads</li> <li>• Assist with data preparation as needed to support vulnerability and penetration testing</li> <li>• Execute vulnerability and penetration test cases to verify security requirements</li> <li>• Log defects for test cases that does not meet expected results</li> <li>• Support the State testers during User Acceptance Testing</li> </ul>



Role	Key Responsibilities
<b>Deloitte Performance Tester</b>	<ul style="list-style-type: none"> <li>• Create, maintain, and execute Performance, Volume, and Stress tests</li> <li>• Capture and communicate performance metrics findings to project management and the State</li> <li>• Log and report performance related defects</li> </ul>
<b>State Test Lead</b>	<ul style="list-style-type: none"> <li>• Review and approve System Test Plan and the subsequent Unit, System Integration, Interface, Performance, and Conversion Test Plans</li> <li>• Review and approve System Integration Test Scripts, Test Results, and User Acceptance Testing Readiness Report</li> <li>• Manage UAT activities</li> <li>• Participate in defect management and triage activities</li> <li>• Review and approve whether each phase of testing results is met</li> <li>• Provide input to Deloitte test lead on coordination and prioritization of test activities</li> <li>• Participate in Go/No Go decisions and evaluation of UAT entrance and exit criteria</li> </ul>
<b>State Tester</b>	<ul style="list-style-type: none"> <li>• Design and develop end-to-end business process scenarios that simulate how the application is used in the field</li> <li>• Develop UAT test cases/scripts</li> <li>• Execute UAT test cases and regression scripts to determine the system is deployment ready</li> </ul>
<b>State Technical Analysts/Personnel</b>	<ul style="list-style-type: none"> <li>• Review technical test plans, documentation and test work products including test plans, test cases, and scripts</li> <li>• Support defect triage and resolution for technical defects</li> </ul>
<b>State Business Analysts and Subject Matter Experts</b>	<ul style="list-style-type: none"> <li>• Provide direction and clarification on the planning, writing, and execution of system test scripts</li> <li>• Provide a point of view from an end user perspective</li> <li>• Support Deloitte testers when questions regarding functional gaps or policy clarifications arise</li> </ul>

## 7.2 Training Needs

Deloitte shall collaborate with the Agency to identify the specific types of training, including content and delivery methods that are required to be delivered to the Agency, contractor staff, and other stakeholders as appropriate.

During the training on testing, members of the Deloitte test team will train members of the state test team on the use of the Deloitte test process and below are high level topics that can be considered for training.

- DW/BI-R design/functional knowledge
  - SharePoint
- Test process/test tool proficiency
  - JAMA
  - Test Workbench



- User Acceptance Testing process knowledge
- Defect management process knowledge
  - JIRA

### Test Schedule

The major activities for each test phase include plan, design, develop, build, and execute test cases/scripts.

For more details on test scheduling, refer to DW\_Deloitte\_Project Plan Baseline Deliverable C 2018.06.22 v1.2.mpp deliverable for testing activities within DW/BI-R solution and integration with each module of the enterprise.

## 8 Risks, Dependencies, Assumptions, and Constraints

### 8.1 Risks

No risks are identified at this time.

### 8.2 Dependencies

No dependencies are identified at this time.

### 8.3 Assumptions

This section provides a list of assumptions made by the project team while creating the Testing Plan deliverable.

1. Test entrance and exit criteria are enforced across test phases.
2. Cross-team testing dependencies and milestones are documented and communicated in the project schedule.
3. DH/State Testing vendor (Qualis) performs UAT and independent functional, technical and security testing (including creation of test plans, test cases and test data for UAT testing, review of test plans, test cases and test results of SIT testing).
4. Deloitte test team members will provide State testers with training on the testing process and tools.
5. Adequate resources have been identified to test the release within the allotted time frame.
6. UAT entrance and exit criteria details will be agreed upon by the State and Deloitte.
7. For Performance Test: performance test can be run concurrently with other testing tracks. Even though application errors may impede performance testing, the goal of performance testing is not functional accuracy or data validation.

### 8.4 Constraints

This section provides a list of constraints that may cause a test limitation.

- Development activities determine the initial order in which items are tested.
- System integrated testing is conducted based upon the readiness and availability of the modules.



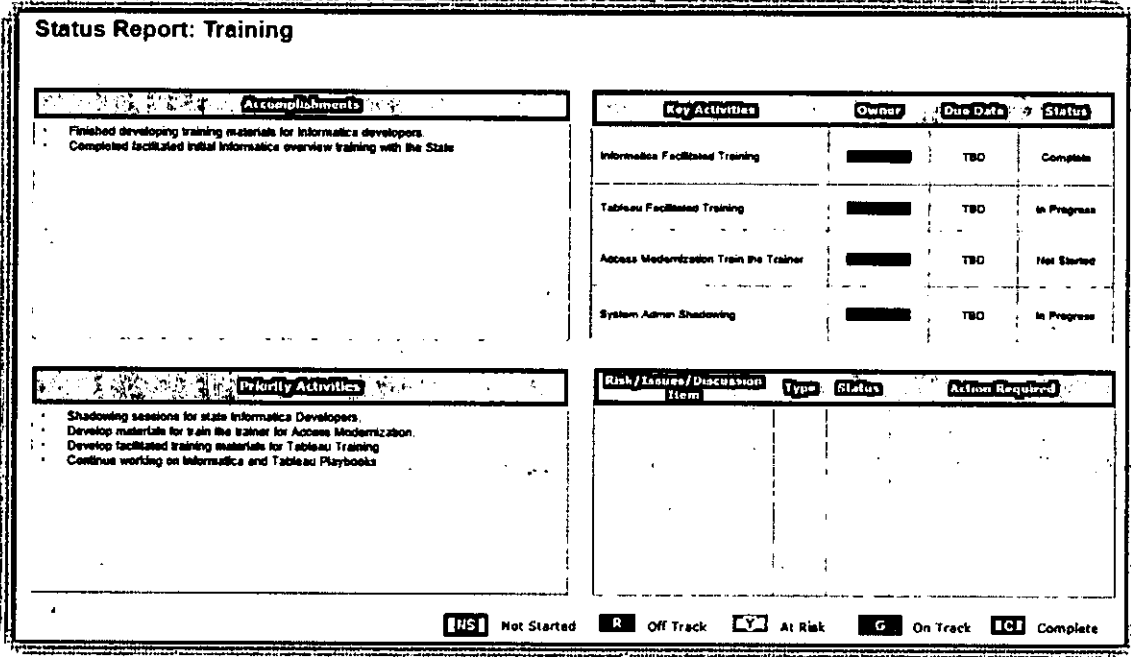
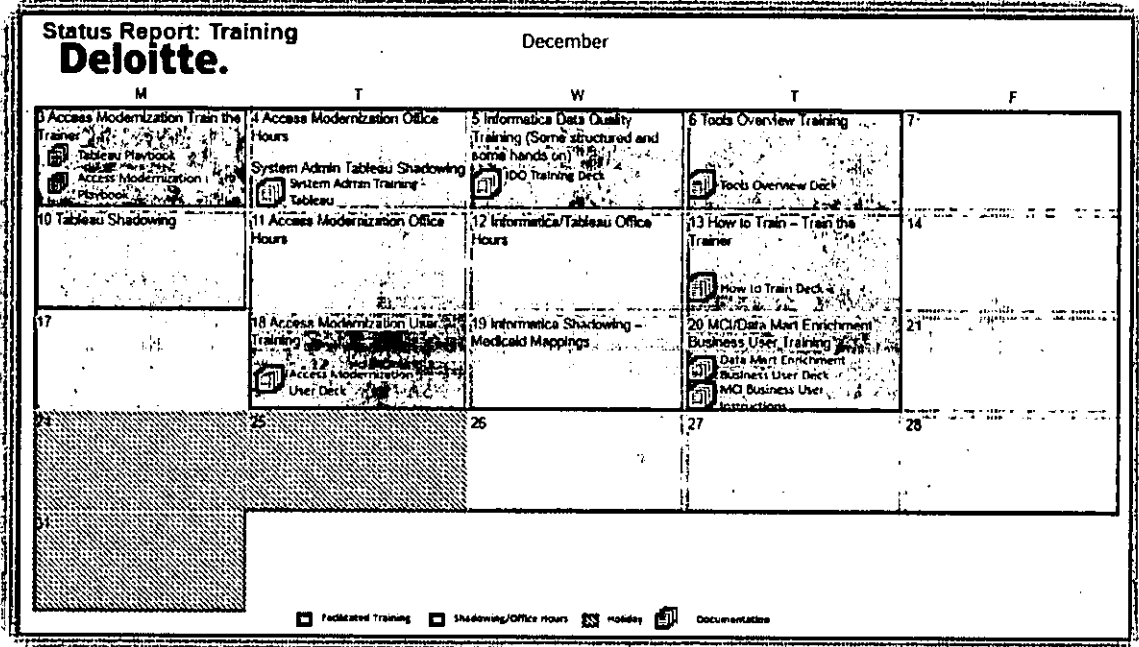


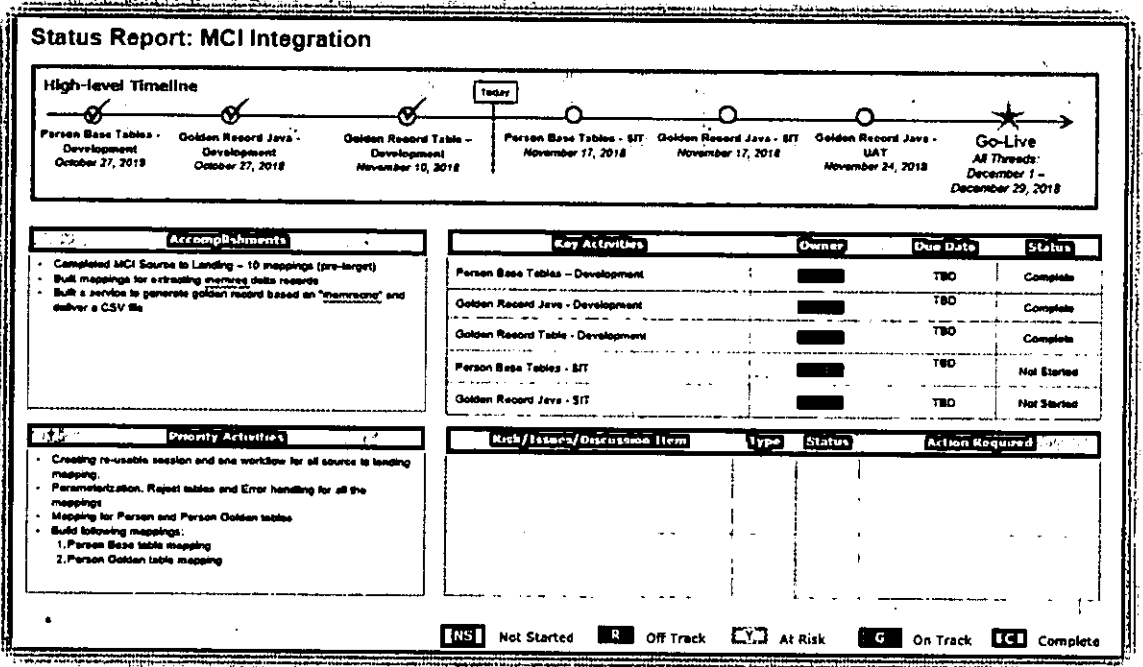
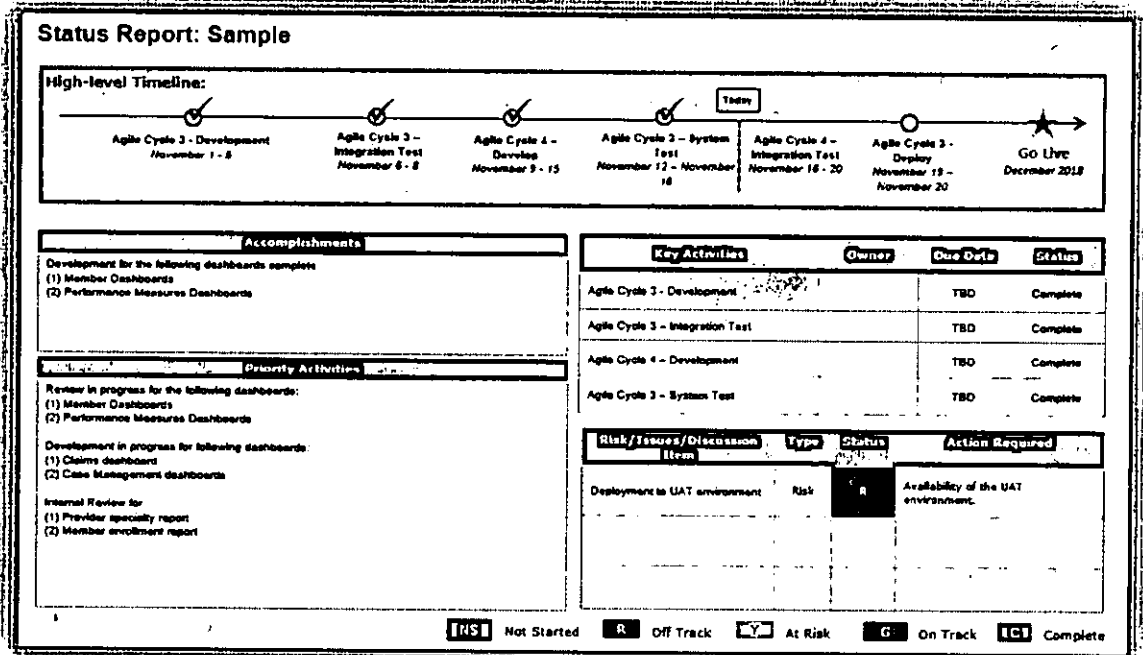
## **9 Authorization for Deliverable Acceptance**

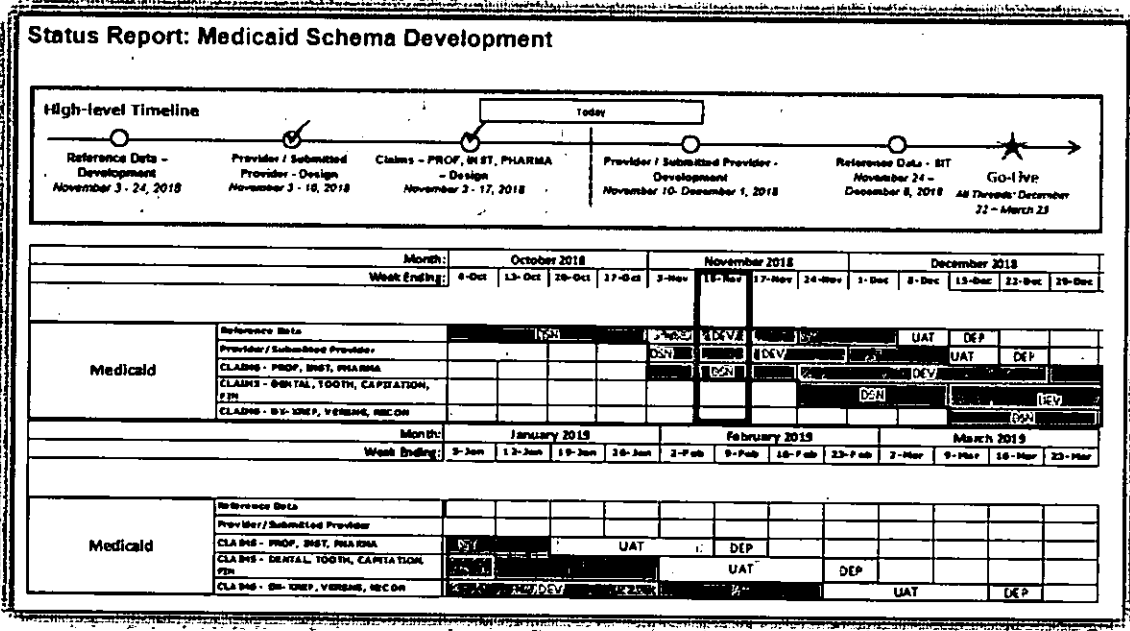
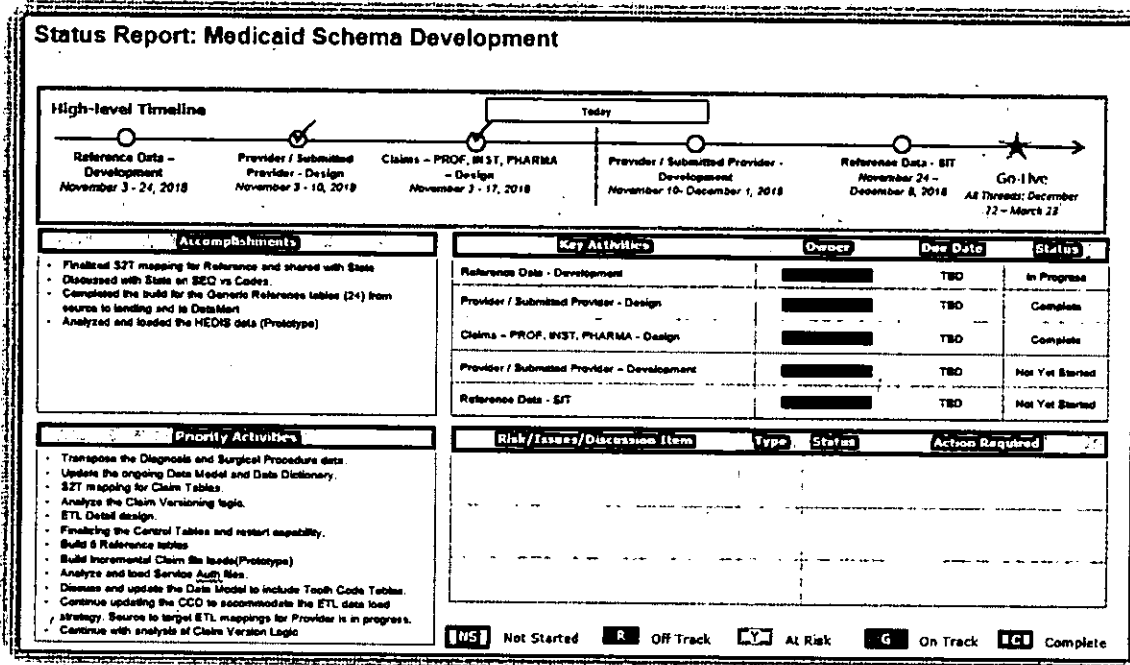
Please see attached Request for Acceptance of Deliverable Form.

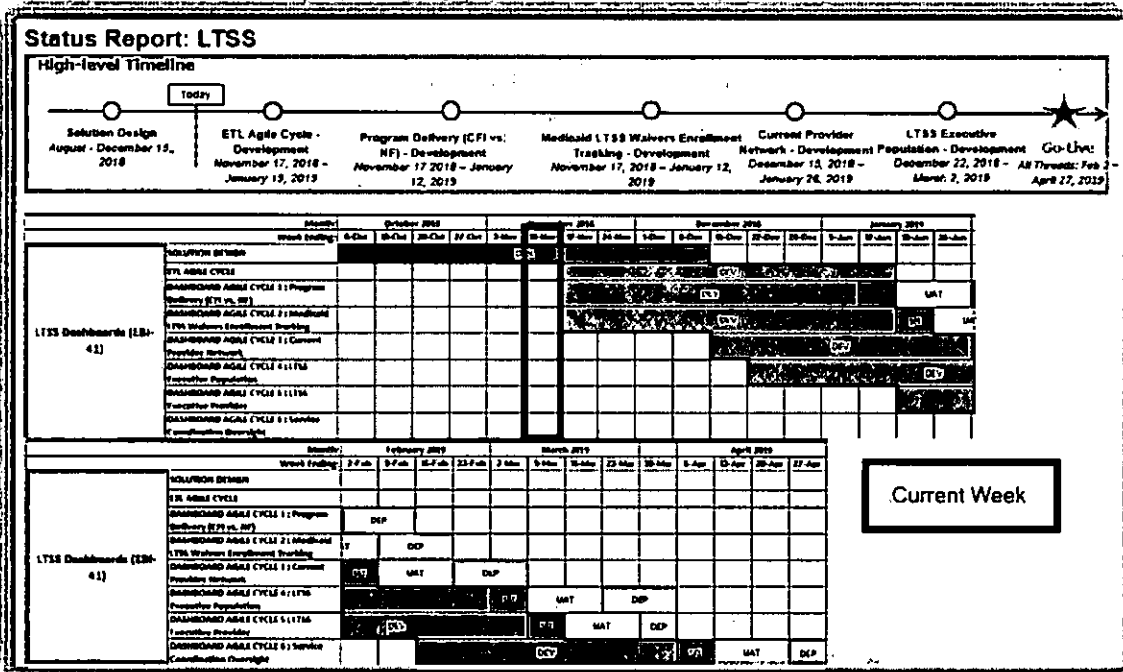
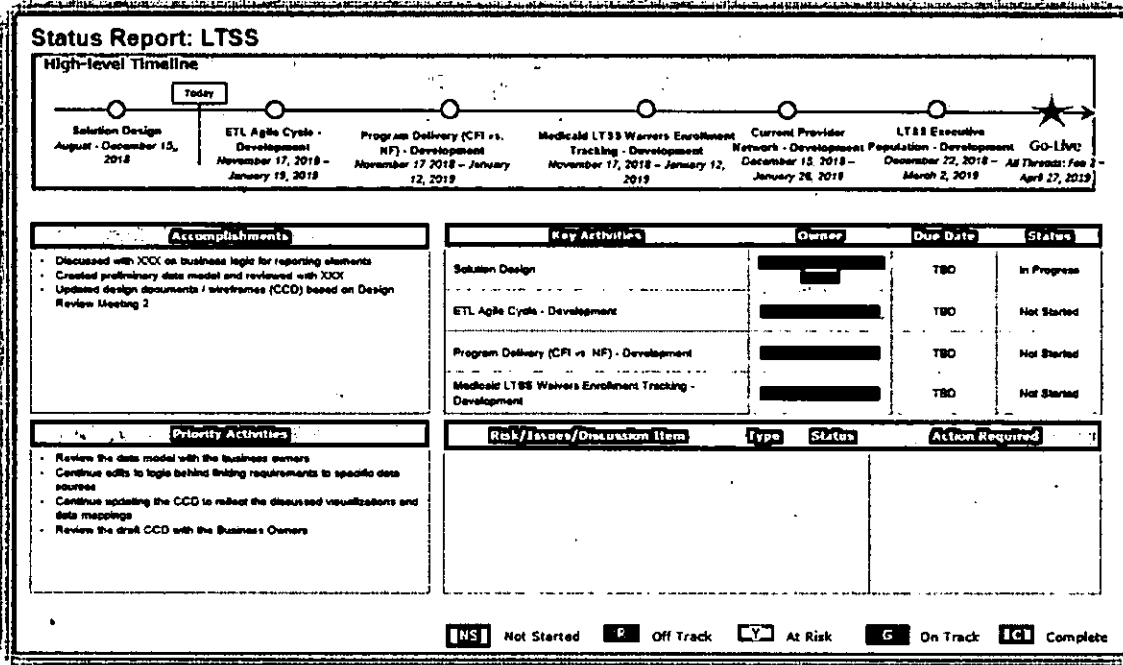


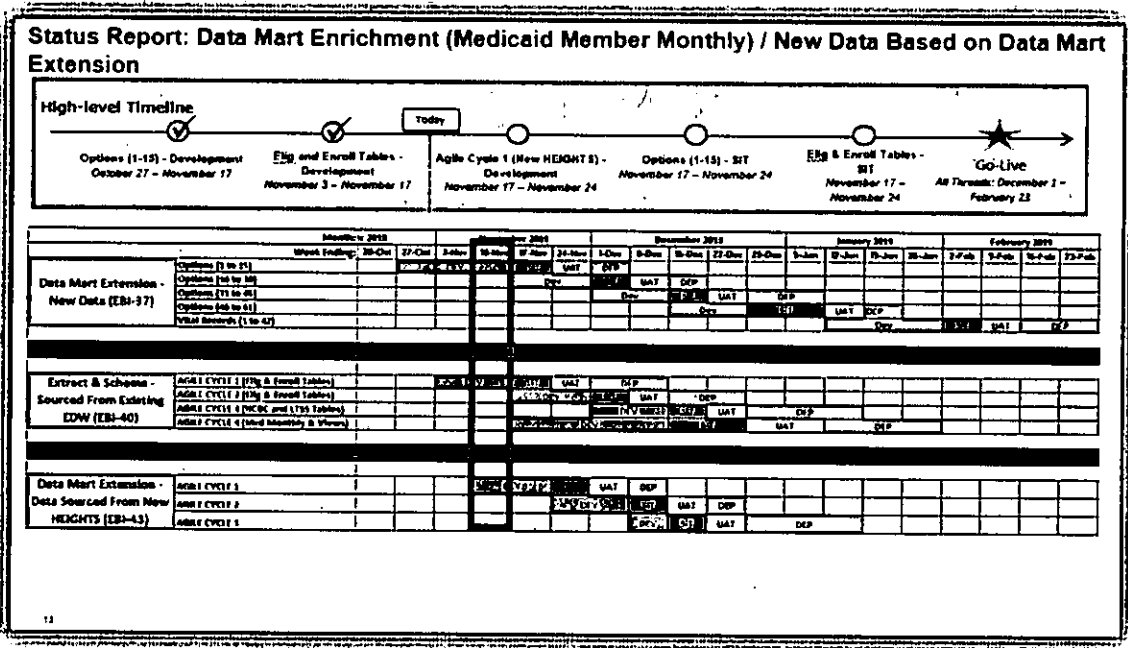
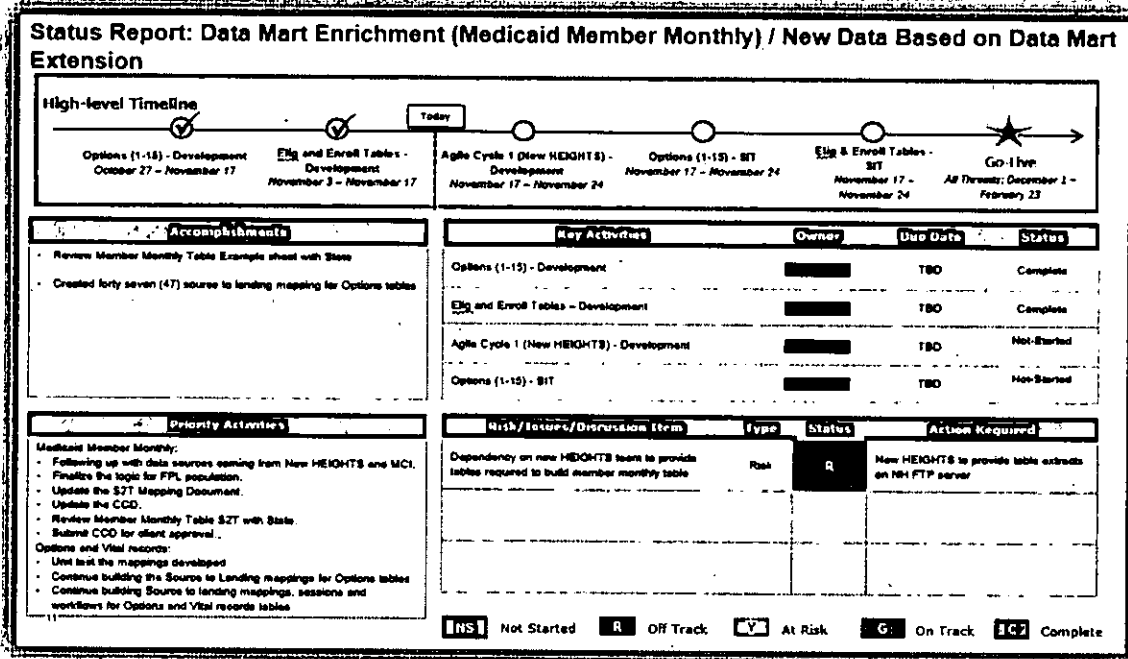




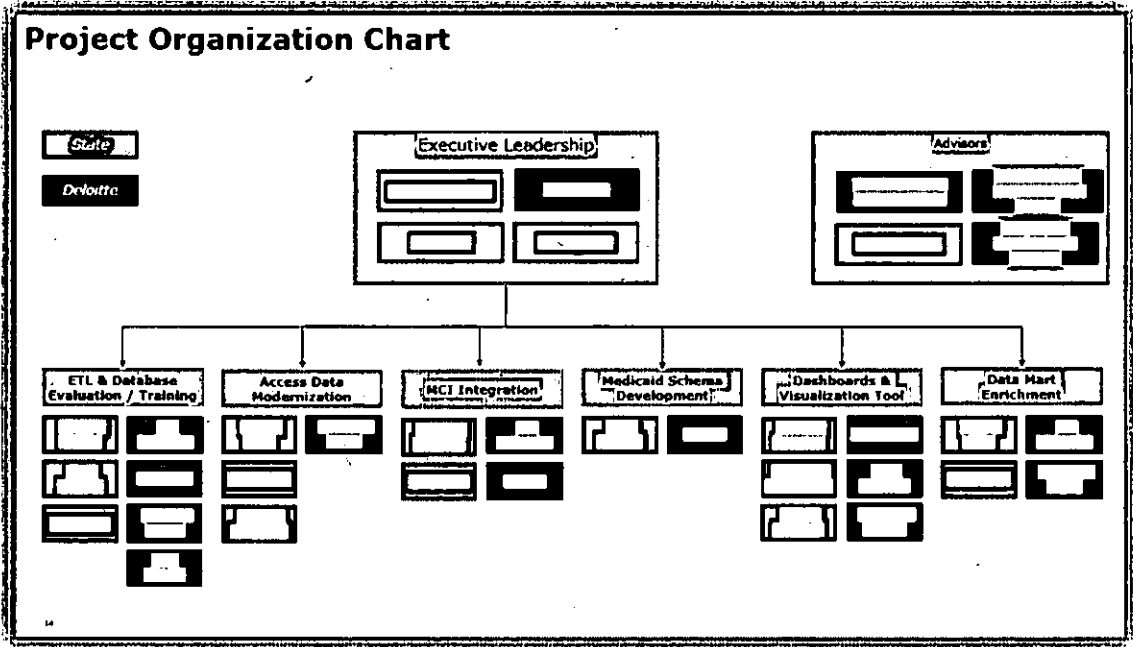








# Appendix Project Organization





### EBI Project Thread RACI

	HL & Database Evaluation	Access Data Modernization	HCI Integration	Medicaid Schema Development	Dashboards & Visualization Tool	Data Mart Enrichment
[Redacted]	A/R	I	I	A/R	A/R	A/R
[Redacted]	A/R	I	A/R	C	C	A/R
[Redacted]	I	A/R	C	I	A/R	C
[Redacted]	I	C	I	I	I	I
[Redacted]	C	I	I	I	I	I
[Redacted]	C	I	I	A/R	I	C
[Redacted]	C	C	I	I	C	I
[Redacted]	I	I	I	I	I	I
[Redacted]	A/R	A/R	A/R	A/R	A/R	A/R
[Redacted]	A/R	I	A/R	I	I	I
[Redacted]	I	A/R	I	I	I	I
[Redacted]	I	I	I	I	A/R	I
[Redacted]	I	I	A/R	A/R	I	I

<b>Responsible</b>	The person who actually carries out the task assignment
<b>Accountable</b>	The person who is ultimately accountable for the process/task being completed appropriately. Responsible resources are accountable to this person
<b>Consulted</b>	People who are not directly involved with carrying out the task, but are consulted. May be a stakeholder or subject matter resource
<b>Informed</b>	Those who receive output from the process/task or who have a need to stay informed

### Project Communication Cadence

Meeting	Attendees	Freq.	Duration	Purpose	Supporting Tools
Daily Project Touchpoints Deloitte	• Deloitte EBI Team	Daily	15 - 30 Min	<ul style="list-style-type: none"> <li>Discuss day's planned activities</li> <li>Review new issues and risks</li> <li>Review project progress, daily project calendar</li> </ul>	<ul style="list-style-type: none"> <li>JIRA Issues Log</li> <li>JIRA Risks Log</li> <li>JIRA Project Plan</li> </ul>
Weekly Status Meeting Deloitte and State	• [Redacted] • [Redacted] • [Redacted]	Weekly	1 Hour	<ul style="list-style-type: none"> <li>Discuss current-week program updates and next week's planned activities</li> <li>Review new and closed issues</li> <li>Review and update project status, issues log, risks log, project plan, project calendar</li> <li>Review, escalate, resolve issues and risks</li> </ul>	<ul style="list-style-type: none"> <li>Project Status Report</li> <li>JIRA Issues Log</li> <li>JIRA Risks Log</li> <li>JIRA Project Plan</li> </ul>
Work Stream Checkpoint Meetings Deloitte and State	• Stream Leads • Team Members (when applicable)	Weekly	1 Hour	<ul style="list-style-type: none"> <li>Review progress against established project plan</li> <li>Discuss team action items</li> <li>Identify work products to be reviewed</li> <li>Identify ad-hoc meetings and communications required</li> <li>Review, escalate, resolve issues and risks</li> <li>Review and update project plan and project calendar</li> </ul>	<ul style="list-style-type: none"> <li>JIRA Project Plan</li> <li>JIRA Issues Log</li> <li>JIRA Risks Log</li> <li>Draft Project Status Report</li> </ul>
Steering Committee Meeting Deloitte and State	• Executive Team ([Redacted]) • Project Team as well	Monthly	1 Hour	<ul style="list-style-type: none"> <li>Provide executive level program updates</li> <li>Review and resolve escalated program level issues</li> </ul>	<ul style="list-style-type: none"> <li>Project Status Report</li> <li>JIRA Issues Log</li> <li>Additional Materials as Required</li> </ul>



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## Appendix A

Exceptions to Terms and Conditions are in the following page, in the template provided by the state.



## APPENDIX A

## EXCEPTIONS TO TERMS AND CONDITIONS

Deloitte Consulting LLP ("Deloitte Consulting") is pleased to submit this proposal to State of New Hampshire, Department of Health and Human Services ("State" or "Department") in response to its Request for Proposal, dated October 16, 2018 (the "RFP"). Our working relationship with State has proven that State and Deloitte Consulting have expeditiously worked together through important engagement requirements and provisions (i.e., indemnification, limitation of liability, intellectual property, etc.). Thus, in the event that we are selected for award, please trust that Deloitte Consulting is ready to promptly negotiate mutually agreeable terms in a collaborative and expeditious manner.

We look forward to working with the State on this opportunity as our proposal is submitted subject to the condition that Deloitte Consulting and State reach and enter into a mutually agreeable definitive written agreement for the proposed services related to the RFP that covers, but not limited to, the items set forth below.

Responder Name: Deloitte Consulting LLP	
Term & Condition Number/Provision	Explanation of Exception
1. Software, Requirements and Deliverables (RFP, Section 3); Ongoing Software Maintenance and Support Levels (Section 25.12); Licenses (Appendix H-25, Section 25.9)	Deloitte Consulting understands that the State will purchase the software either directly or through the Deloitte Consulting as a payee agent. As such, because in either of these scenarios the State would enter into the license directly with the third party software vendor (the "License"), the State's use of any such software, any warranty regarding such software, and the software's compliance with State requirements (such as non-visual access requirements) shall be subject to the terms and conditions of the License.
2. Contract Term (RFP, Section 1.3)	We would like to clarify the applicability of time is of the essence as we expect that we will jointly develop a mutually agreeable project plan and both parties would be required to comply with their respective dates and obligations, or modify them via a mutually agreed project change contract process. We plan to use diligent efforts to meet dates for performance contained in the contract, and will notify the Department promptly in writing if it expects or encounters significant delays in completing its services.
3. Public Disclosure (RFP, Section 4.10)	Deloitte Consulting would like to clarify that its proposal response contains confidential information and the intellectual property of Deloitte Consulting. Deloitte Consulting considers any rate information (include if rates are not part of evaluation process), staff resumes and names, as well as any other identified confidential information to be proprietary and excluded from disclosure without our consent.
4. Security (RFP, Section 4.11; Appendix G-1); Data/Access/Confidentiality/Preservation (Appendix H, Section 9); DHHS Information Security Requirements (Exhibit K)	Deloitte Consulting also requests that the data security standards, requirements and related terms be subject to further discussion and clarification by the parties during contract negotiations in light of our understanding that no sensitive personal information is involved in the scope of work. We also require to make clarifying modification to the definition of Data in section 9.1.
5. Conditional Nature of Agreement (Appendix H, Section 4):	Deloitte Consulting can agree to provide the State a right to terminate in the event of the non-appropriation of funds for reasons outside the State's control, provided that the State provides reasonable advance notification to Deloitte Consulting about funding unavailability and is required to pay Deloitte Consulting for all services performed up to the date of termination due to lack of funding.
6. Conditional Nature of Agreement (Appendix H, Section 4 r/w Exhibit C-1, Section 1); Contract Price/Price Limitation/Payment	Relative to this Section and all other sections that make reference to withholding/suspension of payments, Deloitte Consulting would like to clarify that its failure to comply with the contract, and the

Attachment 3, Vendor Proposal

<p>(Appendix H, Section 5); Event of Default/Remedies (Appendix H, Section 8.2.2 and 8.2.3); Termination for Default (Appendix H-25, Section 25.15.1.2.3)</p>	<p>damages and method of payment for such damages, shall be determined by a court of competent jurisdiction. Set-Off amounts and conditions shall be subject to further review by the parties during negotiations.</p>
<p>7. Compliance by Contractor with Laws and Regulations (RFP, Section 1.2.6.5) (Appendix H, Section 6.1)</p>	<p>Deloitte Consulting agrees to comply with laws and regulations that are applicable to it in its performance of the services. We would like to mutually agree on which State and Federal laws are expected to apply to such a DAP solution.</p>
<p>8. Personnel (Appendix H, Section 7.1); Workers Compensation (Appendix H, Section 15.1); Warranty (Appendix H-25, Section 25.11)</p>	<p>Deloitte Consulting will warrant that the services under the contract will be performed in good faith and in a professional manner. However, we disclaim all other warranties, either express or implied, including warranties of merchantability and fitness for a particular purpose. We would also like to clarify the warranty period for the System Software as mentioned in section H-25-10.1, for instance the warranty should be based on correction of material defects that are identified during the warranty period. Additionally the concept of fault free should be discussed in terms of a defect tracking process that includes triage of responsibility along with classification of the defect. Additionally the support levels should be further clarified..</p>
<p>9. Event of Default/Remedies (Appendix H, Section 8)</p>	<p>Deloitte Consulting would like to further clarify the circumstances of, and process related to, Event of Default and the consequences associated with such default.</p>
<p>10. Termination (Appendix H, Section 10; Appendix H-25, Section 25.14); Vendor Staff (Appendix H-25, Section 25.5.5); Termination Procedure (Appendix H-25, Section 25.15.4)</p>	<p>Both parties' rights with regard to termination should be discussed during negotiations. We believe termination for cause should be based on a material breach of the contract and require adequate written notice with the breaching party being given an opportunity to cure such breach. Deloitte Consulting also requires the right to terminate if the services conflict with law or independence rules (due to its relationship with Deloitte &amp; Touche LLP, an affiliate of Deloitte Consulting). We would like to clarify that upon termination any Software and Written Deliverable will be transferred to State upon full payment for such deliverables. We would also like to clarify that any unfinished work will be the State's property once paid for, and is provided as-is, without any warranty.</p>
<p>11. Indemnification (Appendix H, Section 13)</p>	<p>We would propose that Deloitte Consulting's indemnification obligations under the Contract place reasonable, commercially standard parameters on Deloitte Consulting's indemnification obligations. Deloitte Consulting would agree to an indemnity for certain damages for third party claims for (a) bodily injury and physical damage to real or personal property to the extent directly and proximately caused by us, and (b) certain infringements by our deliverables of third party intellectual property rights. In addition, we would propose procedural terms to ensure the ability to effectively defend or settle, as appropriate, any indemnification claims.</p>
<p>12. Insurance Requirements (Appendix H, Section 14)</p>	<p>Although we can support the levels indicated we would propose certain changes to the insurance language to be more consistent with the insurance that we (as well as other large professional services firms) maintain.</p>
<p>13. Vendor Staff (Appendix H-25, Section 25.5)</p>	<p>Deloitte Consulting agrees that any changes to Key Personnel should be approved by State however, we would like to clarify that their dedicated timeframe be for the length of their assignment since certain skill requirements typically change as a project life cycle progresses. We request further discussion relative to the State's proposed ability to removal/reassignment of Key Project Staff from the services; as such rights may hinder our ability to meet our other contractual obligations. While Deloitte Consulting appreciates the importance of background check procedures, section 25.5.4 may need to be clarified during negotiations based</p>

Attachment 3, Vendor Proposal

	upon the specifics of the engagement.
<b>14. Change Orders (Appendix H-25, Section 25.7)</b>	We request clarification that all modifications to the contract scope of work and schedule will be with mutual agreement. We would like to discuss the process for deciding how to proceed with disputed change order work.
<b>15. Deliverables (Appendix H-25, Section 25.8); Testing and Acceptance (Appendix H-25, Section 25.10)</b>	Deloitte Consulting agrees in principle that all deliverables shall be subject to the review and approval of the State, and we look forward to the development of a mutually agreed upon review process, including the time allotted for any review or modification. For example, Deloitte Consulting would like to clarify that acceptance of a deliverable is deemed given if the State has not provided Deloitte Consulting with acceptance or a notice of deficiencies in writing for such deliverable within the agreed upon time period. In addition, the State's initial review of a deliverable shall identify all deficiencies requiring correction, and any subsequent review shall identify deficiencies in corrections to such identified deficiencies. To the extent that any deliverables are or have been accepted by the State pursuant to the terms hereof at any stage of Deloitte Consulting's performance, Deloitte Consulting shall be entitled to rely on such acceptance, for purposes of all subsequent stages of its performance hereunder.
<b>16. Licenses (Appendix H-25, Section 25.9); Intellectual Property (Appendix H-25, Section 25.13.7)</b>	Deloitte Consulting would like to clarify that while we would agree to assign ownership of work product specifically designed for and delivered to Department in connection with the engagement upon full and final payment and subject to the contract, we would retain rights in intellectual property developed prior to or outside of its work for Department, or as a tool in performing the services for Department, including modifications to such intellectual property. Terms applicable to third party software providers required for the system will be between the Department and the software provider and therefor sections such as H-25.9 and portions of H-25.12 would not be applicable to the implementation contract.
<b>17. Ongoing Software Maintenance and Support Levels (Appendix H-25, Section 25.12)</b>	Deloitte Consulting looks forward to additional discussion, during negotiations, upon award of the Contract.
<b>18. Pricing (Appendix H-25, Section 25.14)</b>	Properly submitted invoices upon which payment is not received within a mutually agreed upon time period would be considered past due. Deloitte Consulting shall have the right to suspend or terminate its services if payment is not received within such mutually agreed upon time period. Relative to this Section and all other sections that refer to withholding of payments, Deloitte Consulting would like to clarify that its failure to comply with the contract, and the damages and method of payment for such damages, shall be determined by a court of competent jurisdiction.
<b>19. IT Required Work Procedures (Appendix H-25, Section 25.13.8)</b>	We would like to clarify which standards and procedures established by the Department of Information Technology and the State would apply.
<b>20. Confidential Information (Appendix H-25, Section 25.13.14)</b>	Deloitte Consulting requests that the protection of each party's confidential information be made a mutual obligation and the details of each party's responsibilities to protect confidential information be clearly defined during negotiations and reflected in the contract.
<b>21. Limitation of Liability (Appendix H-25, Section 25.16.2)</b>	We would like to clarify the exclusions from the limitation of liability.
<b>22. Dispute Resolution (Appendix H-25, Section 25.19)</b>	Deloitte Consulting would propose having a mutually agreed upon dispute resolution clause in the resultant contract.
<b>23. Project Holdback (Appendix H-25, Section 25.21)</b>	Although we are in general agreement with the holdback amount we would like to discuss the release timeframe and criteria, such as the ability to release 5% of the holdback upon solution go live.
<b>24. Escrow of Code (Appendix H-25, Section</b>	Do to the transfer of ownership terms of the proposed agreement;

Attachment 3, Vendor Proposal

25.22)	we feel the Escrow agreement is not necessary and would not be applicable.
25. Terms and Definitions (p.132)	There are certain definitions, such as but not limited to, Breach or Breach of Security, Confidential Information, Data Breach that may require clarification based on the usage of such terms in the resulting contract.
26. Health Insurance Portability Act Business Associate Agreement (Exhibit I)	Deloitte Consulting would like to discuss certain aspects of the BAA such as notice time in case of a breach, etc. Deloitte Consulting proposes additional terms for incorporation into a resultant contract to include, but not be limited to, a commercially reasonable State's Responsibilities, Limitation of Warranties, etc.

By signing this form, I acknowledge that the above named Responder accepts, without qualification, all terms and conditions stated in this RFP Section 8- Mandatory Business Specifications, Contract Terms and Conditions except those clearly outlined as exceptions above.



\_\_\_\_\_  
Signature

Consulting Managing Director

\_\_\_\_\_  
Title

12/10/2018

\_\_\_\_\_  
Date

### B1-1.3 Escrow of Code

Our Escrow of the code statement is on the following page.





## **Escrow**

Our solution will include leveraging the State's COTS products as well as providing pre-existing and custom code to the State that will be on premise, available to the State, and checked into version control software. Additionally, all such code will be licensed to the State for usage for the life of the solution. For these reasons the Escrow agreement should not be required, however in the event an Escrow agreement is required after discussion with the State on the licensing of the code, then Deloitte will sign up for an escrow agreement with a State approved escrow agent in compliance with this section.



## Dun & Bradstreet Report

The current Dun & Bradstreet Report for Deloitte Consulting LLP is attached on the following pages.





<b>DELOITTE CONSULTING LLP</b>		<b>Comprehensive Report</b>	
D-U-N-S® 00-256-3455	Headquarters (Subsidiary) 30 Rockefeller Plz, New York, NY 10112	Phone 212-492-4000 Fax 212-492-4743	Purchase Date: 11/07/2018 Last Update Date: 05/18/2018 Attention: Jennifer Wasserman
<b>Executive Summary</b>			
<b>Company Info</b>			
Year Started	2000	Employees	6,535
Control Year	2000	Employees Here	UNDETERMINED at this location
CEO	JIM MOFFATT, CEO	Trade Styles	(SUBSIDIARY OF DELOITTE LLP, NEW YORK, NY); DELOITTE
<b>D&amp;B Rating</b>		<b>D&amp;B PAYDEX®</b>	
D&B Rating <span style="background-color: black; color: white; padding: 2px 10px; font-weight: bold;">1R4</span>		Up to 24 month D&B PAYDEX	
Composite Credit Appraisal 			
		Up to 3 month D&B PAYDEX	
<b>Predictive Analytics</b>			
Financial Stress Class 		Credit Score Class 	
The Financial Stress Class of 4 for this company shows that firms with this class had a failure rate of 0.84% (84 per 10,000).		The Credit Score class of 3 for this company shows that 5.80% of firms with this classification paid one or more bills severely delinquent.	
Financial Stress Class	4	Credit Score Class	3
Financial Stress Score	1,411	Credit Score	515
Highest Risk	1,001	Highest Risk	101
Lowest Risk	1,875	Lowest Risk	670
<b>Credit Limit Recommendation</b>		<b>D&amp;B Viability Rating</b>	





**Risk Category**

Risk Category

High      Moderate      Low

Conservative Credit Limit	\$400,000
Aggressive Credit Limit	\$900,000

**D&B Viability Rating** 3 3 B Z

---

**Viability Score**

3

0      5      10

High Risk      Low Risk

---

**Portfolio Comparison**

3

0      5      10

High Risk      Low Risk

---

**Data Depth Indicator**

B

G      A

Descriptive      Predictive

---

**Company Profile**

Subsidiary

Z

**Business Information**

<p><b>Business Summary</b></p> <p>Branch &amp; Division YES</p> <p>Financing SECURED</p> <p>SIC 8742 Management consulting services</p> <p>NAICS 541611 Administrative Management and General Management Consulting Services</p> <p>History Status CLEAR</p>	<p><b>Credit Capacity Summary</b></p> <p><b>D&amp;B Rating</b> <span style="font-size: 1.5em; font-weight: bold; border: 1px solid black; padding: 2px;">1R4</span></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p><b>Composite Credit Appraisal</b></p> <p style="font-size: 2em; font-weight: bold; margin-left: 10px;">4</p> <p style="text-align: center;">4      3      2      1</p> <p style="text-align: center;">Limited      Fair      Good      High</p> </div> <div style="width: 35%;"> <p>Prior D&amp;B Rating 1R4</p> <p>Rating Date 08/18/2014</p> </div> </div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Payment Activity (based on 95 experiences)</th> <th>USD</th> </tr> </thead> <tbody> <tr> <td>Average High Credit</td> <td style="text-align: right;">\$60,384</td> </tr> <tr> <td>Highest Credit</td> <td style="text-align: right;">800,000</td> </tr> <tr> <td>Total Highest Credit</td> <td style="text-align: right;">3,024,300</td> </tr> </tbody> </table>	Payment Activity (based on 95 experiences)	USD	Average High Credit	\$60,384	Highest Credit	800,000	Total Highest Credit	3,024,300
Payment Activity (based on 95 experiences)	USD								
Average High Credit	\$60,384								
Highest Credit	800,000								
Total Highest Credit	3,024,300								

**D&B Viability Rating**

The D&B Viability Rating uses D&B's proprietary analytics to compare the most predictive business risk indicators and deliver a highly reliable assessment of the probability that a company will no longer be in business within the next 12 months.





3

### Viability Score

Compared to All US Businesses within D&B Database:

- Level of risk: Low Risk
- Businesses ranked 3 have a probability of becoming no longer viable: 3%
- Percentage of businesses ranked 3: 15%
- Across all US businesses, the average probability of becoming no longer viable: 14%

3

### Portfolio Comparison

Compared to all Businesses within the same MODEL SEGMENT:  
 Model Segment: Established Trade Payments

- Level of risk: Low Risk
- Businesses ranked 3 within this model segment have a probability of becoming no longer viable: 3%
- Percentage of businesses ranked 3 within this model segment: 11%
- Within this model segment, the average probability of becoming no longer viable: 5%

B

### Data Depth Indicator

Data Depth Indicator Details:

- ✓ Rich Firmographics
- ✓ Extensive Commercial Trading Activity
- ✓ Basic Financial Attributes

Greater data depth can increase the precision of the D&B Viability Rating assessment.  
 You have the ability to influence the confidence of the viability assessment by asking the business to report more information to D&B at <https://update.dnb.com/Update/>

Z

### Company Profile

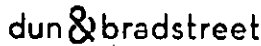
### Subsidiary





Business History	
Officers	JIM MOFFATT, CEO
Directors	THE OFFICER(S)
As of 09/18/2018	
The Delaware Secretary of State's business registrations file showed that Deloitte Consulting LLP was registered as a Limited Liability Partnership on February 29, 1996, under the file registration number 2598031.	
Business started 2000.	
<b>RECENT EVENTS:</b>	
On February 22, 2018, sources stated that Deloitte Consulting LLP, New York, NY, has acquired assets Atadata, LLC, Norcross, GA, on January 23, 2018. With the acquisition, Atadata, LLC has changed its name into Worldload Transformation, LLC and has remained as a legal entity. The acquired assets were integrated into Deloitte Consulting LLP. Employees and management were retained. Further details are unavailable.	
On June 28, 2018, an inside source stated that Deloitte Consulting LLP, New York, NY, has acquired Casey, Quirk & Associates LLC, Darien, CT, on June 20, 2016. With the acquisition, Casey, Quirk & Associates LLC has ceased to exist as a legal operating entity, and the location will now operate as a branch of Deloitte Consulting LLP. Terms of the deal were not disclosed. Further details are unavailable.	
On April 13, 2018, sources stated that Deloitte Consulting LLP, New York, NY, has acquired substantially all of the assets of HVSF Transition, LLC, San Francisco, CA, formerly known as Heat Ventures LLC, on February 29, 2016. With the acquisition, HVSF Transition, LLC will now operate as a subsidiary of Deloitte Consulting LLP. Terms of the deal were not disclosed. Employees and management were retained. Further details are unavailable.	
On November 7, 2013, sources stated that Deloitte Consulting LLP, New York, NY, has acquired substantially all of the assets of Banyan Branch Inc., Seattle, WA, on October 20, 2013. With the acquisition, Banyan Branch Inc. will no longer be a legal operating entity and operations were integrated into Deloitte Consulting LLP. Deloitte Digital group will completely absorb the Banyan brand, as well as its 50 employees. Terms of the transaction were not disclosed. Further details are unavailable.	
On January 21, 2013, sources stated that Deloitte Consulting LLP, New York, NY, has acquired substantially all of the business of Monitor Company Group GP LLC, Cambridge, MA, on January 14, 2013. Repeated attempts to contact the management to confirm the recent transaction were unsuccessful. Further details are unavailable.	
On January 9, 2013, sources stated that Deloitte Consulting LLP, New York, NY, has completed the acquisition of substantially all of the assets of Bersin & Associates LLC, Oakland, CA, on January 3, 2013. With the acquisition, Bersin & Associates LLC will cease operations and will now operate as a branch of Deloitte Consulting LLP under the name Bersin by Deloitte. Financial terms were not disclosed. Further details are unavailable.	
On October 25, 2012, sources stated that the US subsidiary of international business process outsourcing firm Hinduja Global Solutions, India, has acquired the Healthcare Revenue Cycle Outsourcing Business from Deloitte Consulting LLP, New York, NY, on September 17, 2012. Repeated attempts to contact the management to confirm the recent transaction were unsuccessful. Further details are unavailable.	
On April 17, 2009, sources stated that Deloitte LLP, New York, NY, completed the acquisition of substantially all of the assets of Solbourne Computer, Inc., Boulder, CO, on July 17, 2008. With this transaction, Solbourne Computer, Inc. discontinued its business and operations of Solbourne Computer, Inc. were integrated into Deloitte Consulting LLP, New York, NY, a subsidiary of Deloitte LLP. No operations will remain at the previous location of Solbourne Computer, Inc. Employees and management of Solbourne Computer, Inc. have joined Deloitte Consulting LLP. Further details unavailable.	
On December 13, 2007, an inside source at Deloitte Consulting L.L.P., New York, NY, stated that Deloitte Consulting acquired the assets of Kxelcor, Inc., Tampa, FL. The Tampa, FL office now operates as a branch of Deloitte Consulting L.L.P. All of the employees and management were retained.	
Although this company operates as a Limited Liability Partnership, the members have elected to use officer titles to denote areas of responsibility.	
JIM MOFFATT, Currently national managing director for the Deloitte Consulting clients and industries group as well as a member of the Deloitte Consulting Executive Committee; Deloitte Consulting Board of Directors; and Deloitte LLP Board of Directors.	
Business address has changed from 1633 Broadway, New York, NY, 10019 to 30 Rockefeller Plz, New York, NY, 10112.	
<b>AFFILIATES:</b>	
The following are related through common principals, management and/or ownership: Deloitte Consulting India Private Ltd. DUNS #918433889.	





**Business Registration**

CORPORATE AND BUSINESS REGISTRATIONS REPORTED BY THE SECRETARY OF STATE OR OTHER OFFICIAL SOURCE AS OF May 19 2012:

Registered Name	DELOITTE CONSULTING LLP	Registration ID	2598031	Filing Date	02/29/1996
Business Type	GENERAL PARTNERSHIP (GP)	Status	STATUS NOT AVAILABLE	Registered Agent	CORPORATION SERVICE COMPANY 2711 CENTERVILLE ROAD SUITE 400, WILMINGTON, DE 198080000
State of Incorporation	DELAWARE	Where Filed	SECRETARY OF STATE/CORPORATIONS DIVISION, DOVER, DE		

**Government Activity Summary**

Activity Summary		Possible candidate for socioeconomic program consideration	
Borrower	No	Labor Surplus Area	N/A
Administrative Debt	No	Small Business	N/A
Grantee	No	Women Owned	N/A
Party Excluded from Federal Programs	No	Minority Owned	N/A
Public Company	N/A		
Contractor	No		
Importer/Exporter	N/A		

The details provided in the Government Activity section are as reported to Dun & Bradstreet by the federal government and other sources.

**Operations Data**

As of 05/18/2018

**Description:** Subsidiary of Deloitte LLP, New York, NY which operates as a provider of management consulting services and accounting, auditing and bookkeeping services.

As noted, this company is a subsidiary of Deloitte LLP, DUNS #01-412-7109, and reference is made to that report for background information on the parent company and its management.

Provides management consulting services, specializing in finance (100%).

Terms are undetermined. Sells to commercial concerns. Territory : International.

Nonseasonal.

**Employees:** 6,535 which includes officer(s). UNDETERMINED employed here.

**Facilities:** Occupies premises in a building.

**Global Activity:** The following section is a global summary and is intended to assist D&Bs non-U.S. customers when evaluating D&B reports on U.S. companies.

**Import/Export:** No major countries of export reported.

**Special Events**

As of 01/24/2018  
**ANNOUNCED PURCHASE OF ASSET:** According to published reports, Deloitte, DUNS 002563455, (New York, NY) announced that it is acquiring the assets of ATADATA.





Industry Data				
<b>SIC</b>		<b>NAICS</b>		
Code	Description	Code	Description	
87429908	Financial consultant	541611	Administrative Management and General Management Consulting Services	
Family Tree				
<b>Parent</b>				
DELOITTE LLP (D-U-N-S# 01-412-7109) 30 ROCKEFELLER PLZ, NEW YORK, NY 10112-0015				
Branches Domestic				
DELOITTE CONSULTING LLP (D-U-N-S# 01-912-1586) AKA: DELOITTE 1919 N LYNN ST, ARLINGTON, VA 22209-1742	DELOITTE CONSULTING LLP (D-U-N-S# 01-988-3300) 711 E MONUMENT AVE STE 201, DAYTON, OH 45402-1486	DELOITTE CONSULTING LLP (D-U-N-S# 01-987-7799) 2908 THOMAS DR, PANAMA CITY, FL 32408-6233	DELOITTE CONSULTING LLP (D-U-N-S# 01-987-8284) 2114 AIRPORT BLVD STE 1500, PENSACOLA, FL 32504-5910	DELOITTE CONSULTING LLP (D-U-N-S# 02-621-0091) 1 PPG PL STE 2600, PITTSBURGH, PA 15222-5419
DELOITTE CONSULTING LLP (D-U-N-S# 03-564-4769) 695 TOWN CENTER DR STE 1200, COSTA MESA, CA 92626-7188	DELOITTE CONSULTING LLP (D-U-N-S# 03-805-2994) 200 BERKELEY ST STE 7, BOSTON, MA 02116-5085	DELOITTE CONSULTING LLP (D-U-N-S# 11-872-8943) NEW YORK, NY 10019	DELOITTE CONSULTING LLP (D-U-N-S# 12-258-5263) 2 BRAXTON WAY, GLEN MILLS, PA 19342-2379	DELOITTE CONSULTING LLP (D-U-N-S# 13-319-4774) 400 W 15TH ST, STE-1700, AUSTIN, TX 78701-1678
DELOITTE CONSULTING LLP (D-U-N-S# 13-620-4760) 14100 SAN PEDRO AVE STE 700, SAN ANTONIO, TX 78232-4378	DELOITTE CONSULTING LLP (D-U-N-S# 13-676-5869) 111 S WACKER DR STE 1200, CHICAGO, IL 60606-4303	DELOITTE CONSULTING LLP (D-U-N-S# 14-874-8879) HOUSTON, TX 77002	DELOITTE CONSULTING LLP (D-U-N-S# 60-339-8574) 925 4TH AVE STE 3300, SEATTLE, WA 98104-1126	DELOITTE CONSULTING LLP (D-U-N-S# 78-798-1237) 500 COLLEGE RD E STE 300, PRINCETON, NJ 08540-6635
DELOITTE CONSULTING LLP (D-U-N-S# 00-865-5620) 350 S GRAND AVE STE 200, LOS ANGELES, CA 90071-3469	DELOITTE CONSULTING LLP (D-U-N-S# 82-968-7883) 695 TOWN CENTER DR STE 1200, COSTA MESA, CA 92626-7188	DELOITTE CONSULTING LLP (D-U-N-S# 82-888-1594) 1750 TYSONS BLVD STE 800, MC LEAN, VA 22102-4220	DELOITTE CONSULTING LLP (D-U-N-S# 79-565-6763) 1203 GOVERNORS SQUARE BLVD, TALLAHASSEE, FL 32301-2994	DELOITTE CONSULTING LLP (D-U-N-S# 80-881-2500) 1 BRAXTON WAY, GLEN MILLS, PA 19342-2293
DELOITTE CONSULTING LLP (D-U-N-S# 01-918-9004) 1750 TYSONS BLVD STE 800, MC LEAN, VA 22102-4220	DELOITTE CONSULTING LLP (D-U-N-S# 83-276-3663) 22454 THREE NOTCH RD STE 202, LEXINGTON PARK, MD 20653-2054	DELOITTE CONSULTING LLP (D-U-N-S# 83-262-2653) 4301 FAIRFAX DR STE 210, ARLINGTON, VA 22203-1633	DELOITTE CONSULTING LLP (D-U-N-S# 96-243-9068) AKA: DELOITTE & TOUCHE 1919 N LYNN ST, ARLINGTON, VA 22209-1742	DELOITTE CONSULTING LLP (D-U-N-S# 83-375-9207) 1609 CENTRE CREEK DR STE 200, AUSTIN, TX 78754-5179
Subsidiaries Domestic				





Attachment 1 STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA



MONITOR COMPANY GROUP GP LLC; (D-U-N- S#:10-878-8153) AKA: MONITOR GROUP 140 BRADFORD DR STE A, WEST BERLIN, NJ 08091-9216	DELOITTE CONSULTING PRODUCT SERVICES LLC; (D-U-N- S#:62-512-1897) 4022 SELLS DR, HERMITAGE, TN 37076-2903	HVSF TRANSITION, LLC (D-U-N- S#:94-284-7849) AKA: HEAT 1100 SANSOME ST, SAN FRANCISCO, CA 94111-1205	DELOITTE CONSULTING EXTENDED BUSINESS SERVICES LLC; (D-U-N- S#:20-792-9919) 4301 FAIRFAX DR STE 210, ARLINGTON, VA 22203-1633	DELOITTE CONSULTING OVERSEAS PROJECTS LLC; (D-U-N- S#:07-974-8236) AKA: DCOOP 1919 N LYNN ST, ARLINGTON, VA 22209-1742
<b>Subsidiaries Global</b>				
DELOITTE CONSULTING LIMITED; (D-U-N- S#:33-398-7002) DELOITTE PLACE, MIEHEL BYPASS, MIEHEL, BIRGOKARA, BKR3000, MT				
<b>Affiliates Domestic</b>				
DELOITTE & TOUCHE LLP (D-U-N- S#:00-166-4820) 30 ROCKEFELLER PLZ, NEW YORK, NY 10112-4399	DELOITTE TAX LLP (D-U-N- S#:16-816-5327) 30 ROCKEFELLER PLZ, NEW YORK, NY 10112-0015	ALTOS MANAGEMENT PARTNERS, INC.; (D-U-N- S#:17-681-8672) 334 STATE ST STE 204, LOS ALTOS, CA 94022-2802	DELOITTE FINANCIAL ADVISORY SERVICES LLP; (D-U-N- S#:60-379-5159) AKA: DELOITTE 30 ROCKEFELLER PLZ, NEW YORK, NY 10112-0015	DELOITTE CONSULTING (HOLDING SUB) LLC; (D-U-N- S#:11-896-8036) 600 RENAISSANCE CTR STE 800, DETROIT, MI 48243-1807
DELOITTE CONSULTING (GLOBAL) LLC; (D-U-N- S#:82-998-1914) 1633 BROADWAY, NEW YORK, NY 10019-6708	DELOITTE CONSULTING LLC - (D-U-N- S#:05-552-6624) 22 HOLLYMEAD DR, THE WOODLANDS, TX 77381-5112	UBERMIND, INC. (D-U-N- S#:01-570-9293) AKA: UBERMIND FUELED BY DELOITTE 837 N 34TH ST STE 100, SEATTLE, WA 98103-8965	DELOITTE SERVICES LP (D-U-N- S#:82-546-0145) 30 ROCKEFELLER PLZ, NEW YORK, NY 10112-0015	
<b>Affiliates Global</b>				
DC Outsourcing Netherlands B.V.; (D-U-N- S#:40-575-1475) Herikerbergweg 238, Amsterdam, 1101 CM, NL	DELOITTE (D-U-N- S#:55-991-8520) Raffles Tower, 19 Cybercity, Ebene, 72201, MU	DELOITTE YOUSUF ADIL (D-U-N- S#:64-572-6865) 1st Floor, Block 7 & 8, A-35 Caviah Court, KARACHI, 75350, PK	DELOITTE TOUCHE BUSINESS & TAX CONSULTANT; (D-U-N- S#:72-646-6261) Wisma Antara, Jl. Medan Merdeka Slt 17, --, 10110, ID	Deloitte Inc. (D-U-N- S#:85-374-8528) Costa del Este, Edificio Capital Plaza, Piso 7, PANAMA CITY, PA





DELOITTE & TOUCHE LLP (D-U-N- S#:85-502-4428) 361 SOUTH MARINE CORPS DRIVE, TAMLUNING 96913-3911, 969133911, GU	Deloitte Ltd (D-U-N- S#:87-565-0277) AKA: DTTL Corner House 20, 20 Parliament Street, HAMILTON, HM 12, BM	DELOITTE CORPORATE FINANCE S.A.C.; (D-U-N- S#:93-432-3378) AKA: DELOITTE CORPORATE FINANCE SAC CAL. LAS BEGONIAS NO. 441, LIMA, 27, PE	FUNDACION DELOITTE (D-U-N- S#:93-510-0439) CAL. LAS BEGONIAS NO. 441, LIMA, 27, PE	Deloitte & Touche Ecuador Cia. Ltda.; (D-U-N- S#:93-510-4653) AKA: Deloitte Av Amazonas N 3517, Y calle Juan Pablo Sanz, QUITO, EC
Deloitte Consulting Inc. (D-U-N- S#:69-017-1442) Yeouido-dong, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, SEOUL, 07326, KR				

This list is limited to the first 25 branches, subsidiaries, divisions and affiliates, both domestic and international. Please use the Global Family Linkage Link above to view the full listing.

**Financial Statements**

**Key Business Ratios (Based on 24 establishments)**

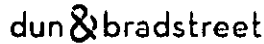
D&B has been unable to obtain sufficient financial information from this company to calculate business ratios. Our check of additional outside sources also found no information available on its financial performance. To help you in this instance, ratios for other firms in the same industry are provided below to support your analysis of this business.

	This Business	Industry Median	Industry Quartile
<b>Profitability</b>			
Return on Sales	UN	4.4	UN
Return on Net Worth	UN	8.6	UN
<b>Short Term Solvency</b>			
Current Ratio	UN	1.5	UN
Quick Ratio	UN	1.1	UN
<b>Efficiency</b>			
Assets Sales	UN	104.6	UN
Sales / Net Working Capital	UN	6.7	UN
<b>Utilization</b>			
Total Liabls / Net Worth	UN	89.7	UN

**Most Recent Financial Statement**

As of 11/03/2018  
 D&B has updated this report using available sources.





Indicators			
<b>Public Filings Summary</b>			<b>Public Filings</b>
The following data includes both open and closed filings found in D&B's database on this company			
Record Type	No. of Records	Most Recent Filing Date	
Judgment	0		
Lien	11	03/23/2017	
Suit	1	04/30/2018	
UCC	7	07/11/2017	
			<p>■ Bankruptcy ■ Judgment ■ Lien ■ Suit ■ UCC</p>
The following Public Filing data is for information purposes only and is not the official record. Certified copies can only be obtained from the official source.			
Full Filings			
<b>Suits</b>			
Status	Pending	Latest Info Received	05/18/2018
Where Filed	PRINCE GEORGES COUNTY CIRCUIT COURT, UPPER MARLBORO, MD	DOCKET NO.	201800014156CAL
Plaintiff	KENNETH HOLMES, LANDOVER, MD	Status Attained	04/30/2018
Defendant	DELOITTE LLP, ARLINGTON, VA AND OTHERS	Date Filed	04/30/2018
If it is indicated that there are defendants other than the report subject, the lawsuit may be an action to clear title to property and does not necessarily imply a claim for money against the subject.			
<b>Liens</b>			
Amount	\$8,390	Latest Info Received	01/31/2018
Status	Released	Type	State Tax
Where Filed	ORANGE COUNTY RECORDER OF DEEDS, SANTA ANA, CA	Status Attained	12/29/2017
Filed By	CA EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	03/23/2017
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	CASE NO.	2017000118244
Amount	\$8,398	Latest Info Received	12/24/2017
Status	Terminated	Type	State Tax
Where Filed	SECRETARY OF STATE UCC DIVISION, SACRAMENTO, CA	Status Attained	12/21/2017
Filed By	EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	03/23/2017
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	FILING NO.	17-7576851623
Amount	\$8,568	Latest Info Received	01/31/2018
Status	Released	Type	State Tax
Where Filed	ORANGE COUNTY RECORDER OF DEEDS, SANTA ANA, CA	Status Attained	12/22/2017
Filed By	CA EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	12/15/2016
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	CASE NO.	2016000636575
Amount	\$6,572	Latest Info Received	12/16/2017
Status	Terminated	Type	State Tax
Where Filed	SECRETARY OF STATE UCC DIVISION, SACRAMENTO, CA	Status Attained	12/13/2017
Filed By	EMPLOYMENT DEVELOPMENT DEPARTMENT		





against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	FILING NO.	16-7561822260
Amount	\$8,435	Latest Info Received	12/16/2017
Status	Terminated	Type	State Tax
Where Filed	SECRETARY OF STATE/UCC DIVISION, SACRAMENTO, CA	Status Attained	12/13/2017
Filed By	EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	09/27/2016
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	FILING NO.	16-7548255952
Amount	\$6,425	Latest Info Received	01/31/2018
Status	Released	Type	State Tax
Where Filed	ORANGE COUNTY RECORDER OF DEEDS, SANTA ANA, CA	Status Attained	12/22/2017
Filed By	CA EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	09/13/2016
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	CASE NO.	2016000440453
Amount	\$6,691	Latest Info Received	12/16/2017
Status	Terminated	Type	State Tax
Where Filed	SECRETARY OF STATE/UCC DIVISION, SACRAMENTO, CA	Status Attained	12/13/2017
Filed By	EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	07/01/2016
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	FILING NO.	16-7534027762
Amount	\$6,676	Latest Info Received	01/31/2018
Status	Released	Type	State Tax
Where Filed	ORANGE COUNTY RECORDER OF DEEDS, SANTA ANA, CA	Status Attained	12/22/2017
Filed By	CA EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	06/14/2016
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	CASE NO.	2016000268986
Amount	\$3,047	Latest Info Received	02/23/2018
Status	Released	Type	State Tax
Where Filed	ORANGE COUNTY RECORDER OF DEEDS, SANTA ANA, CA	Status Attained	01/23/2018
Filed By	CA EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	05/20/2016
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	CASE NO.	2016000228163
Amount	\$3,049	Latest Info Received	01/14/2018
Status	Terminated	Type	State Tax
Where Filed	SECRETARY OF STATE/UCC DIVISION, SACRAMENTO, CA	Status Attained	01/11/2018
Filed By	EMPLOYMENT DEVELOPMENT DEPARTMENT	Date Filed	05/06/2016
against	DELOITTE CONSULTING LLP, COSTA MESA, CA AND OTHERS	FILING NO.	16-7524151769
A lienholder can file the same lien in more than one filing location. The appearance of multiple liens filed by the same lienholder against a debtor may be indicative of such an occurrence.			
<b>UCC Filings</b>			
Collateral	Assets including proceeds and products	Latest Info Received	08/18/2017
Filing No.	2017 4547383	Type	Original
Where Filed	SECRETARY OF STATE/UCC DIVISION, DOVER, DE	Date Filed	07/11/2017
Secured Party	VENDOR CAPITAL FINANCE LLC, NEW YORK, NY		
Debtor	DELOITTE CONSULTING LLP, CHICAGO, IL		





Collateral	Assets including proceeds and products	Latest Info Received	03/03/2017
Filing No.	2017 0054384	Type	Original
Where Filed	SECRETARY OF STATE/UCC DIVISION, DOVER, DE	Date Filed	01/03/2017
Secured Party	VENDOR CAPITAL FINANCE LLC, NEW YORK, NY		
Debtor	DELOITTE CONSULTING LLP, CHICAGO, IL		
Collateral	Leased Equipment including proceeds and products	Latest Info Received	06/28/2007
Filing No.	0706215606621	Type	Original
Where Filed	SECRETARY OF STATE/UCC DIVISION, ALBANY, NY	Date Filed	06/21/2007
Secured Party	IOS CAPITAL, MACON, GA		
Debtor	DELOITTE & TOUCHE LLP, PITTSBURGH, PA		
Collateral	Leased Business machinery/equipment including proceeds and products	Latest Info Received	02/09/2007
Filing No.	0612206228667	Type	Original
Where Filed	SECRETARY OF STATE/UCC DIVISION, ALBANY, NY	Date Filed	12/20/2006
Secured Party	IOS CAPITAL, MACON, GA		
Debtor	DELOITTE & TOUCHE LLP, PITTSBURGH, PA		
Collateral	Leased Computer equipment and proceeds	Latest Info Received	03/24/2006
Filing No.	6064180 3	Type	Original
Where Filed	SECRETARY OF STATE/UCC DIVISION, DOVER, DE	Date Filed	02/23/2006
Secured Party	IBM CREDIT LLC, ARMONK, NY		
Debtor	DELOITTE CONSULTING OUTSOURCING LLC		
Filing No.	0003102944	Latest Info Received	02/29/2016
Original UCC Filed Date	03/18/2011	Type	Amendment
Where Filed	UCC COMMERCIAL RECORDING DIVISION, HARTFORD, CT	Date Filed	02/17/2016
Secured Party	PNC EQUIPMENT FINANCE, LLC, CINCINNATI, OH	Original Filing No.	0002805203
Debtor	CASEY, QUIRK & ASSOCIATES, LLC, DARIEN, CT		
Filing No.	1500386806	Latest Info Received	12/09/2015
Original UCC Filed Date	12/15/2010	Type	Continuation
Where Filed	SECRETARY OF STATE/UCC DIVISION, AUSTIN, TX	Date Filed	12/08/2015
Secured Party	BANC OF AMERICA LEASING & CAPITAL, LLC, HUNT VALLEY, MD	Original Filing No.	100035788799
Debtor	PLAINS MARKETING, L P., HOUSTON, TX		

The public record items contained in this report may have been paid, terminated, vacated or released prior to the date this report was printed. Additional UCC and SLJ filings for this company can be found by conducting a more detailed search in our Public Records Database.





### Commercial Credit Score

<p><b>Summary</b></p> <p>Credit Score Class</p> <div style="text-align: center;"> <p>Credit Score Class <b>3</b></p> <p>High      Average      Low  <small>(Indicate risk of adverse payment delinquency over next 12 months.)</small></p> </div>	<p><b>Incidence of Delinquent Payment</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Among Companies with This Class</td> <td style="text-align: right;">5.80%</td> </tr> <tr> <td>Average Compared to All Businesses</td> <td style="text-align: right;">10.20%</td> </tr> <tr> <td>Credit Score Percentile</td> <td style="text-align: right;">62</td> </tr> <tr> <td>Credit Score</td> <td style="text-align: right;">515</td> </tr> <tr> <td>Number of Payment Experiences</td> <td style="text-align: right;">95</td> </tr> </table>	Among Companies with This Class	5.80%	Average Compared to All Businesses	10.20%	Credit Score Percentile	62	Credit Score	515	Number of Payment Experiences	95
Among Companies with This Class	5.80%										
Average Compared to All Businesses	10.20%										
Credit Score Percentile	62										
Credit Score	515										
Number of Payment Experiences	95										

**Key Factors**

- Increase in proportion of delinquent payments in recent payment experiences
- Higher risk industry based on delinquency rates for this industry
- Proportion of past due balances to total amount owing
- Evidence of open suits and liens
- Proportion of slow payments in recent months

**Notes:**

- The Credit Score Class indicates that this firm shares some of the same business and payment characteristics of other companies with this classification. It does not mean the firm will necessarily experience delinquency.
- The Incidence of Delinquent Payment is the percentage of companies with this classification that were reported 91 days past due or more by creditors. The calculation of this value is based on D&B's trade payment database.
- The Credit Score Percentile reflects the relative ranking of a firm among all scorable companies in D&B's file.
- The Credit Score offers a more precise measure of the level of risk than the Class and Percentile. It is especially helpful to customers using a scorecard approach to determining overall business performance.

**Credit Score Percentile Norms Comparison**

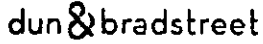
<p>DELOITTE CONSULTING LLP 62</p> <p>Region (MIDDLE ATLANTIC) 51</p> <p>Industry (BUSINESS, LEGAL AND ENGINEERING SERVICES) 43</p> <p>Employee Range (500-38627) 84</p> <p>Years in Business (11-25) 66</p>	<ul style="list-style-type: none"> <li>• Lower risk than other companies in the same region.</li> <li>• Lower risk than other companies in the same industry.</li> <li>• Higher risk than other companies in the same employee size range.</li> <li>• Higher risk than other companies with a comparable number of years in business.</li> </ul>
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Financial Stress Score															
<p><b>Summary</b></p> <p>Financial Stress Class</p>	<p><b>Financial Stress Score Percentile</b></p> <table border="1"> <tr> <td>Financial Stress National Percentile</td> <td>18</td> </tr> <tr> <td>Financial Stress Score</td> <td>1411</td> </tr> <tr> <td>Probability of Failure with This Score</td> <td>0.84%</td> </tr> <tr> <td>Failure per 10K</td> <td>84/10,000</td> </tr> <tr> <td>Average Failure Rate within D&amp;B database</td> <td>0.48%</td> </tr> <tr> <td>Failure per 10K</td> <td>48/10,000</td> </tr> <tr> <td>Number of Payment Experiences</td> <td>95</td> </tr> </table>	Financial Stress National Percentile	18	Financial Stress Score	1411	Probability of Failure with This Score	0.84%	Failure per 10K	84/10,000	Average Failure Rate within D&B database	0.48%	Failure per 10K	48/10,000	Number of Payment Experiences	95
Financial Stress National Percentile	18														
Financial Stress Score	1411														
Probability of Failure with This Score	0.84%														
Failure per 10K	84/10,000														
Average Failure Rate within D&B database	0.48%														
Failure per 10K	48/10,000														
Number of Payment Experiences	95														
<p><b>Key Factors</b></p> <ul style="list-style-type: none"> <li>• Low proportion of satisfactory payment experiences to total payment experiences.</li> <li>• Composite credit appraisal is rated limited.</li> <li>• UCC Filings reported.</li> <li>• High number of inquiries to D&amp;B over last 12 months.</li> <li>• Evidence of open liens</li> <li>• Unstable Paydex over last 12 months.</li> </ul>															
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• The Financial Stress Class indicates that this firm shares some of the same business and financial characteristics of other companies with this classification. It does not mean the firm will necessarily experience financial stress.</li> <li>• The probability of failure shows the percentage of firms in a given percentile that discontinue operations with loss to creditors. The average probability of failure is based on businesses in D&amp;B's database and is provided for comparative purposes.</li> <li>• The Financial Stress National Percentile reflects the relative ranking of a company among all scorable companies in D&amp;B's file.</li> <li>• The Financial Stress Score offers a more precise measure of the level of risk than the Class and Percentile. It is especially helpful to customers using a scorecard approach to determining overall business performance.</li> </ul>															
<p><b>Financial Stress Percentile Comparison</b></p> <ul style="list-style-type: none"> <li>• Higher risk than other companies in the same region.</li> <li>• Higher risk than other companies in the same industry.</li> <li>• Higher risk than other companies in the same employee size range.</li> <li>• Higher risk than other companies with a comparable number of years in business.</li> </ul>															
<p><b>Advanced Paydex + CLR</b></p>															
<p><b>D&amp;B PAYDEX®</b></p>															





Shows the D&B PAYDEX scores as calculated up to 3 months and up to 24 months of payment experiences.

**Up to 3 month D&B PAYDEX**

Up to 3 month D&B PAYDEX **74**

When weighted by dollar amount, payments to suppliers average 9 Days Beyond Terms. Based on payments collected over last 3 months.

**Up to 24 month D&B PAYDEX**

Industry Median **76**

Up to 24 month D&B PAYDEX **72**

When weighted by dollar amount, payments to suppliers average 12 days beyond terms. Based on payments collected up to 24 months.

When weighted by dollar amount, the industry average is 0 DAYS BEYOND terms.

- High risk of late payment (average 30 to 120 days beyond terms)
- Medium risk of late payment (average 30 days or less beyond terms)
- Low risk of late payment (average prompt to 30+ days sooner)

Payment Trend	unchanged	Total Payment Experiences for the HQ	95	Highest Now Owing	\$700,000
Payments Within Terms	69%	Total Placed for Collection	2	Highest Past Due	\$100,000
Average High Credit	\$60,384	Largest High Credit	\$800,000		

\* compared to payments three months ago

**Credit Limit Recommendation**

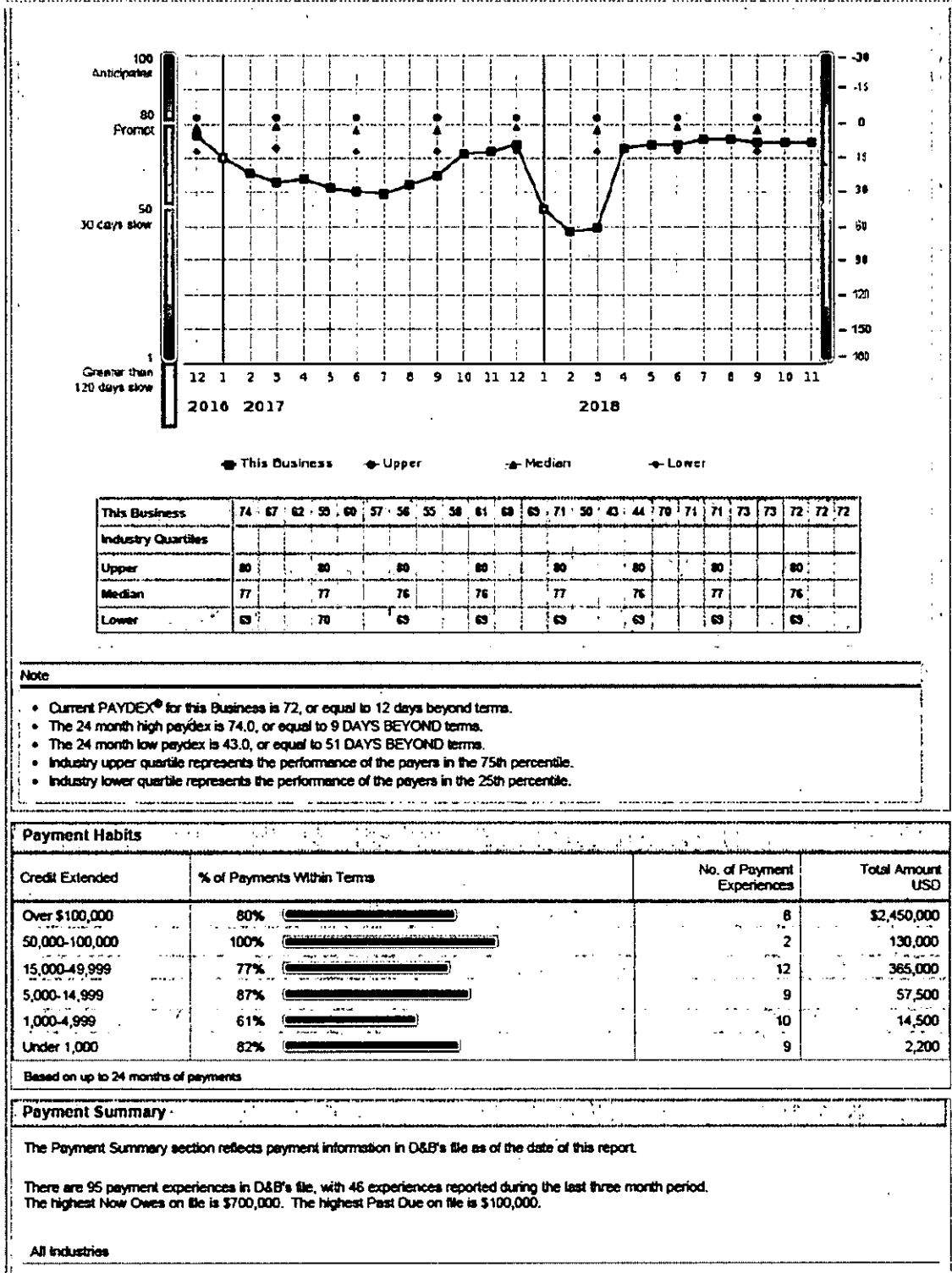
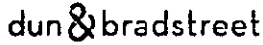
<p>Risk Category</p> <p>Risk Category</p> <p>High Moderate Low</p>	<p>Recommendation Date: 11/07/2018</p> <p>Conservative Credit Limit: \$400,000</p> <p>Aggressive Credit Limit: \$900,000</p> <p>Key Factor: Risk is assessed using D&amp;B's scoring methodology and is one factor used to create the recommended limits</p>
--	--

**PAYDEX Yearly Trend**

Shows PAYDEX scores of this Business compared to the Primary Industry from each of the last four quarters. The Primary Industry is Management consulting services, based on SIC code 8742.









Industries	Total Received	Total Amounts	Largest High Credit	Within Terms (%)	Days Slow (%)			
					0-30	31-60	61-90	90+
Telephone communica	10	\$325,050	\$200,000	54	0	0	15	31
Nonclassified	6	112,550	45,000	99	0	1	0	0
Short-term busin credit	5	575,000	400,000	48	43	9	0	0
Public finance	5	33,500	15,000	100	0	0	0	0
Prepackaged software	4	96,000	40,000	81	18	1	0	0
Whol computers/softwr	3	30,000	20,000	25	75	0	0	0
Mfg computers	3	12,000	10,000	54	48	0	0	0
Radiotelephone commun	3	2,800	2,500	0	2	49	49	0
Business consulting	2	1,000,000	800,000	100	0	0	0	0
Custom programming	1	300,000	300,000	100	0	0	0	0
Help supply service	1	250,000	250,000	100	0	0	0	0
Computer system design	1	200,000	200,000	50	0	0	50	0
Nonphysical research	1	70,000	70,000	100	0	0	0	0
Whol office equipment	1	10,000	10,000	100	0	0	0	0
Mfg retriqheat equip	1	1,000	1,000	0	0	50	0	50
Employment agency	1	750	750	100	0	0	0	0
Whol service paper	1	250	250	100	0	0	0	0
Whol misc profsn eqpt	1	250	250	100	0	0	0	0
Truck rental/leasing	1	50	50	0	100	0	0	0

Other Payment Categories

Category	Total Received	Total Dollar Amounts	Largest High Credit
Cash experiences	41	\$4,850	\$1,000
Payment record unknown	0	0	0
Unfavorable comments	1	250	250
Placed for Collection	2	0	0

Detailed Payment History

Date Reported	Paying Record	High Credit	Now Owes	Past Due	Settling Terms	Last Sale within (months)
October 2018	Ppt	\$5,000	\$0	\$0	N/A	4-5
	Ppt-Slow 30	400,000	200,000	15,000	N/A	1
	Ppt-Slow 60	2,500	1,000	0	N/A	1
	(004)	1,000	0	0	Cash account	4-5
	(005)Bad debt	250	250	250	N/A	1
	(006)	250	0	0	Cash account	1
	(007)	250	0	0	Cash account	1
	(008)	100	0	0	Cash account	4-5
September 2018	Ppt	800,000	700,000	10,000	N/A	1
	Ppt	200,000	40,000	0	N60	1
	Ppt	70,000	0	0	N/A	2-3
	Ppt	60,000	20,000	0	N/A	1
	Ppt	45,000	35,000	0	N/A	1



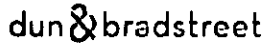
Attachment 16 of 16  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**



	Ppt	45,000	20,000	0	N/A	1
	Ppt	20,000	0	0	N/A	2-3
	Ppt	15,000	0	0	N/A	6-12
	Ppt	10,000	5,000	0	N/A	1
	Ppt	5,000	0	0	N/A	4-5
	Ppt	5,000	0	0	N/A	1
	Ppt	2,500	2,500	0	N/A	1
	Ppt	1,000	0	0	N/A	1
	Ppt	1,000	1,000	0	N/A	1
	Ppt	250	0	0	N30	2-3
	Ppt	250	250	0	N/A	1
	Ppt-Slow 15	10,000	10,000	1,000	N/A	1
	Ppt-Slow 30	35,000	35,000	35,000	N/A	2-3
	Ppt-Slow 30	5,000	5,000	5,000	N/A	1
	Ppt-Slow 60	1,000	1,000	1,000	N/A	2-3
	Ppt-Slow 90	200,000	200,000	100,000	N/A	1
	Slow 15	50	50	50	N/A	
	Slow 45-80	2,500	2,500	2,500	N/A	
	Slow 45-80	250	250	250	N/A	
	(034) Placed for collection	5,000	5,000	5,000	N/A	
	(035) Placed for collection	1,000	1,000	1,000	N/A	
	(036)	250	0	0	Cash account	1
	(037)	50	0	0	Cash account	1
	(038)	50	0	0	Cash account	6-12
	(039)	0	0	0	Cash account	1
	(040)	0	0	0	Cash account	1
August 2018	(041)	100	0	0	Cash account	6-12
	(042)	50	0	0	Cash account	6-12
July 2018	Ppt	250,000	0	0	N/A	1
	(044)	100	0	0	Cash account	1
	(045)	100	0	0	Cash account	1
	(046)	50	0	0	Cash account	6-12
June 2018	Ppt	300,000	250,000	30,000	N/A	1
	(048)	50	0	0	Cash account	1
May 2018	(049)	50	0	0	Cash account	1
	(050)	50	0	0	Cash account	1
	(051)	50	0	0	Cash account	2-3
	(052)	50	0	0	Cash account	2-3
	(053)	50	0	0	Cash account	1
	(054)	50	0	0	Cash account	1
	(055)	50	0	0	Cash account	1
April 2018	Ppt	7,500	0	0	N/A	1
	Ppt	5,000	0	0	N/A	1
	(058)	100	0	0	Cash account	1
	(059)	100	0	0	Cash account	1
	(060)	100	0	0	Cash account	1
	(061)	100	0	0	Cash account	1



Attachment 11  
**STATE OF NEW HAMPSHIRE - Department of Health and Human Services**  
**Data Analytics Platform for Opioid Crisis**  
**DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA**



	(063)	50	0	0	Cash account	1
	(064)	50	0	0	Cash account	4-5
	(065)	50	0	0	Cash account	4-5
	(066)	50	0	0	Cash account	1
	(067)	50	0	0	Cash account	1
March 2018	Ppt	15,000	0	0	N/A	1
	Ppt	1,000	0	0	N/A	1
	Slow 30	20,000	0	0	N/A	6-12
February 2018	(071)	50	0	0	Cash account	1
January 2018	Slow 30-60	100,000	0	0	N/A	6-12
	(073)	750	0	0	Cash account	1
May 2017	Ppt-Slow 90	45,000	10,000	0	N/A	1
	Slow 90	25,000	0	0	N/A	1
April 2017	Ppt	0	0	0	N/A	1
December 2016	Ppt	500	0	0	N/A	6-12
	Ppt	50	0	0	N/A	6-12
November 2016	Ppt	750	0	0	N30	6-12
September 2016	Ppt-Slow 90	50	50	50	N/A	6-12

Lines shown in red are 30 or more days beyond terms

Payment experiences reflect how bills are met in relation to the terms granted. In some instances payment beyond terms can be the result of disputes over merchandise, skipped invoices etc.

Each experience shown is from a separate supplier. Updated trade experiences replace those previously reported.



## Deloitte's Publications and Thought Leadership

The following is a list of recent publications and thought leadership highlighting Deloitte's perspectives and insights on the use of data analytics and technology among States, health plans, pharmacies, and other stakeholders to improve prevention and treatment among those struggling with opioid addiction and in their communities.

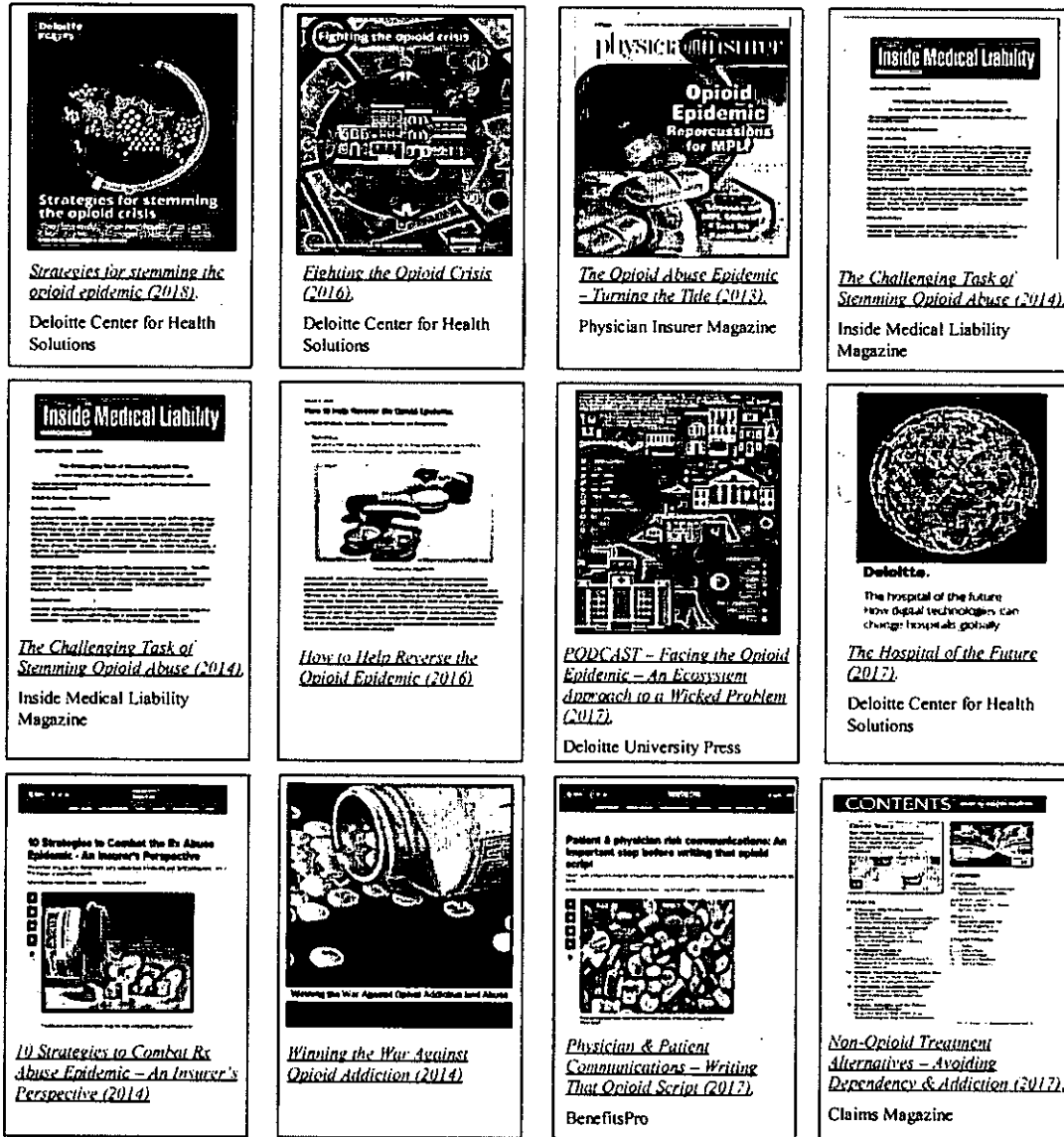


Figure IX-115. Deloitte's Publications and Thought Leadership.



## Additional Project Implementations Similar in Size and Scope to X Project

The following is a table of current and prior implementations similar in size and scope of X project:

Project Date	Client	Project Description	Solution Type
X	State of Wyoming	Data analytics platform (AFES) to help prevent, predict, detect, and monitor Fraud, Waste, and Abuse in the State's Medicaid entitlement program	Fraud, Waste, and Abuse Analytics
X	Centers for Disease Control	Providing software programming and engineering support and expertise to modify the Data Collation and Integration for Public Health Event Response (DCIPHER) platform to incorporate additional functionality to assist with surveillance and prevention efforts within the National Center for Injury Prevention and Control (NCIPC)	Advanced Predictive Analytics
X	Food and Drug Administration	Supporting the FDA's International Mail Facilities (IMF) program by enabling inspection of international mail shipments for illegal opioids and fentanyl	Advanced Predictive Analytics
X	Drug Enforcement Administration	Leveraging predictive analytics, commercial and federal data analysis, and social media exploitation capabilities to provide tactical support to DEA's Division of Diversion Investigative Diversion Taskforce	Advanced Predictive Analytics
X	Military Health System	Providing clinical policy development, pharmacovigilance analytics, performance management, and resource allocation	Strategic Planning
X	Centers for Disease Control	Providing project management, governance, communications, grants management, performance measurement, and financial management support to help CDC organize and manage an influx of \$350M for the opioid crisis	Strategic Planning
	State of Ohio	Creating strategic stakeholder engagement strategy to improve service delivery	Opioid Ecosystem Stakeholder Engagement
	Drug Enforcement Administration	Providing dedicated BIS practitioners and tools, as well as a network targeting and data analytics capability to support ongoing criminal investigations of TDS teams	Advanced Predictive Analytics
	Department of Justice / Federal Bureau of Investigation	Providing a blended team of forensic accounting, data analytics, and discovery support practitioners to support for DOJ/FBI HCFSF case development and	Fraud, Waste, and Abuse Analytics



Project Date	Client	Project Description	Solution Type
		prosecution (many of which are involves opioid fraud in Medicare Part D)	
	Commonwealth of Kentucky	Identified ways to meet expanding service needs, advance leading practices, and identify opportunities to improve the quality of services through stakeholder input, current state analysis, and strategic planning for way forward	Strategic Planning
	State of Wisconsin	Supported the State of Wisconsin to address regulatory challenges to improve cost and quality of delivering publicly-funded behavioral health services in a large county	Self-Service Access to Resources
	Eli Lilly/Pfizer	Evaluated implications for prevention and treatment of substance use disorders and HIV among people who use drugs (focus in Ukraine, HIV project researching at-risk populations)	Advanced Predictive Analytics
	CVS	Applied data science techniques and developed analytic solution to enable faster, more reliable detection of drug losses	Fraud, Waste, and Abuse Analytics
	Centene	Used predictive analytics to enable plans to facilitate faster detection of patients exhibiting pill-seeking behavior	Advanced Predictive Analytics
	Centers for Disease Control	Developed a dashboard prototype using data from the Prescription Behavior Surveillance System (PBSS) to enable CDC data scientists to analyze trends associated with prescription drug overdoses	Advanced Predictive Analytics
	Commonwealth of Massachusetts	Developed pilot model in the Commonwealth of Massachusetts to identify and manage high risk individuals across health payers and providers to address addiction before it happens	Advanced Predictive Analytics
	Commonwealth of Pennsylvania	Created a solution in Qlik Sense that tracked the prescription patterns of patients, pharmacies, and providers at both an aggregated and individual level. The solution incorporated the use of GIS analytics as well as a national data model that could be used in any state in the US that currently has a PDMP system in place (48 of the 50 states have one)	Advanced Predictive Analytics
	Alkermes	Supported the development of an engagement strategy for usage in criminal justice setting to address opioid addiction	Opioid Ecosystem Stakeholder Engagement
	State of Oklahoma	Helped the state of Oklahoma to develop a Medicaid demonstration waiver focused on serving individuals with Substance Use Disorder	Medicaid Waiver Support

Figure IX-116. Implementations Similar in Size & Scope.



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# State of New Hampshire

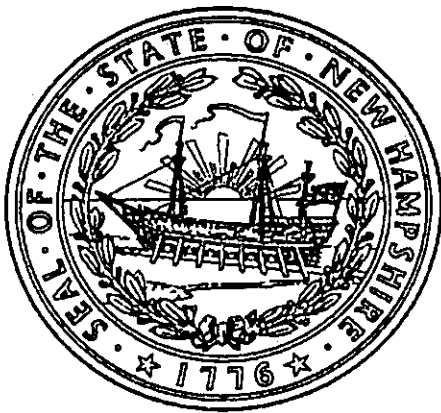
## Department of State

### CERTIFICATE

I, William M. Gardner, Secretary of State of the State of New Hampshire, do hereby certify that DELOITTE CONSULTING LLP is a Delaware Limited Liability Partnership registered to transact business in New Hampshire on March 10, 2004. I further certify that all fees and documents required by the Secretary of State's office have been received and is in good standing as far as this office is concerned.

Business ID: 467399

Certificate Number: 0004487780



IN TESTIMONY WHEREOF,

I hereto set my hand and cause to be affixed  
the Seal of the State of New Hampshire,  
this 3rd day of April A.D. 2019.

A handwritten signature in cursive script, appearing to read "Wm Gardner".

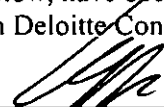
William M. Gardner  
Secretary of State

## CERTIFICATE


I, Gregory Spino, Director of Deloitte Consulting LLP, do hereby certify that:

1. I am a Director of Deloitte Consulting LLP, a Delaware limited partnership ("Deloitte Consulting");
2. I maintain and have custody of a copy of the Memorandum of Agreement of Deloitte Consulting and a list of the Principals/Directors of Deloitte Consulting assigned to the Boston, Massachusetts Office;
3. I am duly authorized to issue certificates with respect to Deloitte Consulting and such Principals/Directors;
4. I have attached hereto as Certificate Exhibit A, a certificate of authority setting forth the authority of a Principal/Director of Deloitte Consulting to enter into and sign agreements in the name of and on behalf of Deloitte Consulting;
5. Gregory Spino, is on the date hereof, a Director of Deloitte Consulting as referred to in Certificate Exhibit A attached hereto;
6. As a Principal/Director of Deloitte Consulting, he is fully authorized on behalf of and in the name of Deloitte Consulting to enter into and take any and all actions to execute, acknowledge, and deliver the contract with the State of New Hampshire, acting through the Office of the Governor, providing for the performance by Deloitte Consulting of certain management consulting services, and any and all documents, agreements, and other instruments (and any and all amendments, revisions, and modifications thereto) as he may deem necessary, desirable, or appropriate to accomplish the same;
7. The signatures of Gregory Spino, as Director of Deloitte Consulting, affixed to any instruments or documents described in or contemplated by the preceding paragraph shall be exclusive evidence of the authority of said Principal/Director to bind Deloitte Consulting thereby;
8. The certificate of authority of Deloitte Consulting attached as Exhibit A has not been revoked, annulled, or amended in any manner whatsoever and remains in full force and effect as of the date thereof;

9. The following persons, whose signatures appear below, have been duly appointed or assigned to and now occupy the positions indicated below in Deloitte Consulting:

  
\_\_\_\_\_  
Gregory Spino, Director  
Deloitte Consulting LLP  
Pittsburgh Office

10. IN WITNESS WHEREOF, I have hereunto set my hand as Director of the Partnership this 5<sup>th</sup> day of April, 2019.

  
\_\_\_\_\_  
Gregory Spino

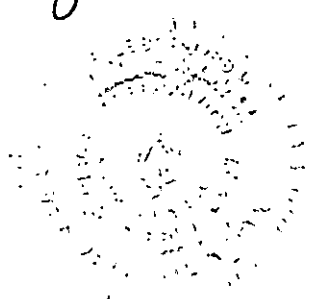
**Massachusetts**

**COUNTY OF Suffolk**

On this 5<sup>th</sup> day of April, 2019, before me, Gregory Spino, the undersigned officer, personally appeared Gregory Spino who acknowledged himself to be a Director of Deloitte Consulting LLP, a Delaware limited partnership, and that he, as such Principal/Director, being authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing his name thereto as Principal/Director.

IN WITNESS WHEREOF, I hereunto set my hand and official seal

My Commission Expires: 4/12/2024 \_\_\_\_\_ Victoria Meyer  
Notary Republic




CERTIFICATE EXHIBIT A

**I, GREGORY SPINO, DO HEREBY CERTIFY THAT:**

1. I am a Director of Deloitte Consulting LLP, a Delaware limited partnership ("Deloitte Consulting").
2. I have custody of a copy of the Memorandum of Agreement of Deloitte Consulting and a list of Principal/Directors of Deloitte Consulting assigned to its Boston, Massachusetts office.
3. Principal/Directors of Deloitte Consulting are fully authorized by the Memorandum of Agreement of Deloitte Consulting to enter into and to take any and all actions on behalf of and in the name of Deloitte Consulting to execute, acknowledge, and deliver contracts providing for the performance by Deloitte Consulting of management consulting services, and any and all documents, agreements, and other instruments (and any and all amendments, revisions, and modifications thereto) as may be necessary, desirable, or appropriate to accomplish the same.
4. Deloitte Consulting LLP has no company seal.
5. I am duly authorized to issue this Certificate.

**IN WITNESS WHEREOF**, I have hereunto set my hand as a Principal/Director of Deloitte Consulting LLP this 5<sup>th</sup> day of April, 2019.

  
\_\_\_\_\_  
Gregory Spino


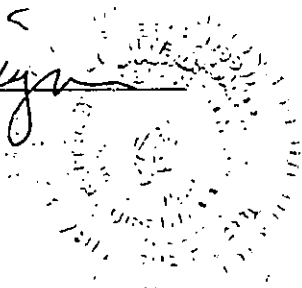
**Massachusetts**

**COUNTY OF Suffolk**

On this 5<sup>th</sup> day of April, 2019, before me, Gregory Spino, the undersigned officer, personally appeared Gregory Spino who acknowledged himself to be a Director of Deloitte Consulting LLP, a Delaware limited partnership, and that he, as such Principal/Director, being authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing his name thereto as Principal/Director.

**IN WITNESS WHEREOF**, I hereunto set my hand and official seal.

My Commission Expires: 4/2/2024

  
\_\_\_\_\_  
Notary Republic  




# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
04/04/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Marsh USA, Inc. 1166 Avenue of the Americas New York, NY 10036 Attn: realestate.certrequest@marsh.com	<b>CONTACT NAME:</b> _____	
	<b>PHONE (A/C, No, Ext):</b> _____	<b>FAX (A/C, No):</b> _____
<b>E-MAIL ADDRESS:</b> _____		
<b>INSURER(S) AFFORDING COVERAGE</b>		<b>NAIC #</b>
<b>INSURER A :</b> Continental Casualty Company	20443	
<b>INSURER B :</b> N/A	N/A	
<b>INSURER C :</b> American Casualty Company of Reading, PA	20427	
<b>INSURER D :</b> Valley Forge Insurance Company	20508	
<b>INSURER E :</b> _____		
<b>INSURER F :</b> _____		

**COVERAGES**      **CERTIFICATE NUMBER:** NYC-010633984-01      **REVISION NUMBER:** 1

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL(SUBR INSD) WVO	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER: _____		GL 6024588868	06/01/2018	06/01/2019	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMPOP AGG \$ 2,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY		BUA 6024588871	06/01/2018	06/01/2019	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ <input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED    RETENTION \$ \$
C	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	WC 6024588837 (AOS) WC 6024588840 (CA) WC 6024588854 (AZ, OR, WI)	06/01/2018	06/01/2019	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D	Stop Gap (OH, ND, WA)		GAP 6042880616 (OH, ND, WA)	06/01/2018	06/01/2019	\$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

<b>CERTIFICATE HOLDER</b> NH Department of Health and Human Services Att: Nathan D. White, Director, Bureau of Contracts and Procurement 129 Pleasant Street Concord, NH 03301-3857	<b>CANCELLATION</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  <b>AUTHORIZED REPRESENTATIVE</b> of Marsh USA Inc. Robert A. Mazzaro <i>Robert A. Mazzaro</i>
---	--

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# EVIDENCE OF PROPERTY INSURANCE

DATE (MM/DD/YYYY)  
04/04/2019

THIS EVIDENCE OF PROPERTY INSURANCE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE ADDITIONAL INTEREST NAMED BELOW. THIS EVIDENCE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS EVIDENCE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE ADDITIONAL INTEREST.

AGENCY Marsh USA Inc. 1166 Avenue of the Americas New York, NY 10036-2774 Attn: realestate.csrrequest@marsh.com	PHONE (A/C, No, Ext):	COMPANY SEE ATTACHED*
CN102871568-STND-PROP-18-19		
FAX (A/C, No):	E-MAIL ADDRESS:	
CODE:	SUB CODE:	
AGENCY CUSTOMER ID #:		
INSURED Deloitte LLP; Deloitte & Touche LLP; Deloitte Consulting LLP; Deloitte Tax LLP; Deloitte Services LP; Deloitte Financial Advisory Services LLP; Deloitte Transactions and Business Analytics LLP 695 East Main Street Stamford, CT 06901	LOAN NUMBER	POLICY NUMBER See Attached
	EFFECTIVE DATE 06/01/2018	EXPIRATION DATE 06/01/2019
	<input type="checkbox"/> CONTINUED UNTIL TERMINATED IF CHECKED	
THIS REPLACES PRIOR EVIDENCE DATED:		

## PROPERTY INFORMATION

### LOCATION/DESCRIPTION

Re: Property in the Care, Custody and Control of the Named Insured(s).

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS EVIDENCE OF PROPERTY INSURANCE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

COVERAGE INFORMATION	PERILS INSURED	BASIC	BROAD	SPECIAL	AMOUNT OF INSURANCE	DEDUCTIBLE
*All Risk* to Real and Personal Property. Valuation for Real & Personal Property: Replacement Cost Subject to Policy Terms, Conditions and Exclusions.  Other deductibles may apply per policy terms and conditions.					\$1,000,000	250,000

## REMARKS (Including Special Conditions)

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## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

## ADDITIONAL INTEREST

 NYC-010634000-01

NAME AND ADDRESS  NH Department of Health and Human Services Attn: Nathan D. White, Director, Bureau of Contracts and Procurement 129 Pleasant Street Concord, NH 03301-3857	<input type="checkbox"/> ADDITIONAL INSURED	<input type="checkbox"/> LENDER'S LOSS PAYABLE	<input type="checkbox"/> LOSS PAYEE
	<input type="checkbox"/> MORTGAGEE	LOAN #	
AUTHORIZED REPRESENTATIVE of Marsh USA Inc. Manashi Mukherjee <i>Manashi Mukherjee</i>			



**ADDITIONAL REMARKS SCHEDULE**

<b>AGENCY</b> Marsh USA Inc.		<b>NAMED INSURED</b> Deloitte LLP; Deloitte & Touche LLP; Deloitte Consulting LLP; Deloitte Tax LLP; Deloitte Services LP; Deloitte Financial Advisory Services LLP; Deloitte Transactions and Business Analytics LLP 695 East Main Street Stamford, CT 06901	
<b>POLICY NUMBER</b>		<b>EFFECTIVE DATE:</b>	
<b>CARRIER</b>	<b>NAIC CODE</b>		

**ADDITIONAL REMARKS**

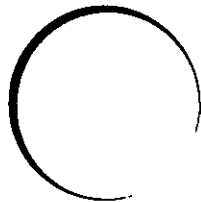
THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,  
 FORM NUMBER: 27 FORM TITLE: Evidence of Property Insurance

Carriers:

- Lexington Insurance Company / Policy No. 25031628: (35%)
- Liberty Mutual Fire Insurance Company / Policy No. YS2-L9L-445835-028: (7.5%)
- National Fire & Marine Insurance Company / Policy No. 42-PRP-000337-05: (7.5%)
- Zurich American Insurance Company / Policy No. PPR 0196216-02: (5%)
- Continental Casualty Company / Policy No. RMP 6014849085: (5%)
- Ace American Insurance Co. / Policy No. GPA D36110284 012: (10%)
- Allianz Global Risks US Insurance Company / Policy No. USP00027618 : (10%)
- XL Insurance America Inc / Policy No. US00006768PR18A: (11%)
- Westport Insurance Corporation / Policy No. NAP 2002593-00 (9%)

## Key Personnel Resumes

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[REDACTED]  
*Enterprise Architecture Lead*

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### Overview of Work History

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[REDACTED] has extensive Public-Sector experience designing and delivering complex solutions that focus on creating business value. He has focused on designing, building and deploying large-scale human services solutions, including Data Warehouses and Analytic platforms, Business Intelligence tools as well as common client and master data solution. [REDACTED] has deep experience and understanding of how to architect and design a flexible and extensible Enterprise Medicaid Data Warehouse that can evolve to meet the dynamics needs of a Medicaid environment. Greg understands the role of master data management and need to create a single-source-of-truth that the business can trust. Additionally, [REDACTED] has worked with several states on their All Payers Claims Database implementation and planning which required integration from dozens of payers and of disparate data sources.

His career has been focused on leveraging data to drive organizational change and support new business initiatives. He has experience with cross agency performance management helping clients track key performance metrics and monitor those metrics against outcomes. He has overseen and directed several Medicaid focused initiatives; building Medical Homes Platforms to support providers, creating bundled payment methodologies to support payment reform, implementing automated Medicaid forecast methodology to support the Medicaid budget process, implementing an approach to intake all required data and manage the DUALs population. All of these efforts have been focused on leveraging data and technology to support the business vision.

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- 20+ years of extensive Public Sector practice experience delivering complex solutions that focus on creating business value
  - Focus on creating large scale Data Warehouse and Analytic platform solutions
  - Understands the role of master data management and need to create a single-source-of-truth that the business can trust

### Educational Background

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Boston University

Bachelor of Arts in Economics

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**Relevant Project Experience**

Project Name & Type	Duration & Role
<p>Wyoming Department of Health</p> <p><b>Type:</b> Enterprise data warehouse implementation</p>	<p><b>Duration:</b> 9 months</p> <p><b>Role:</b>                      Oversaw the contract management activities and work with the client to align the project goals and objectives. Worked with the client to define the vision for the enterprise data warehouse. Managed the team of analyst and developers to design, build and test the solution.</p>
<p>Rhode Island Healthcare Exchange (HSRI)</p> <p><b>Type:</b> Enterprise analytics strategy</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>                      Worked with the client to design the enterprise analytics strategy and create a roadmap that would extend beyond the current project. Led the design of the data marts and aligned them with specific business needs as prioritized by the client. Managed the process to evaluate and select the appropriate business intelligence tool suite. Oversaw the requirements process for the data marts, dashboards and reporting functionality. Engaged the cross-agency business owners, Medicaid, Department of Public Health and the Rhode Island Quality Institute to ensure alignment and support for their needs.</p>
<p>Metropolitan Consulting Corporation</p> <p><b>Type:</b> Enterprise data warehouse implementation</p>	<p><b>Duration:</b> 12 years</p> <p><b>Role:</b>                      Built and maintained a 20+ Terabyte data warehouse that includes claims history and eligibility information for about 1.8 million members, covering over 12 years of claims history. Led the effort to achieve federal certification for the Decision Support System (DSS) components during overall Medicaid Management Information System (MMIS) deployment. Collaborated with business users, analytic teams and EOHHS IT to develop the single business intelligence platform serving over 1,500 users across 30 business units and agencies. Managed the multi-year, \$35+ million project budget, Drafted Bond Briefs and Advance Planning Document (APD) for each project to secure Federal Government/ CMS funding. Worked closely with business users in all major EOHHS projects from project inception to ensure that their reporting and analytic requirements are met. Provided EOHHS with an Enterprise Reporting platform to manage reporting needs for all EOHHS-developed applications. Drafted RFPs, managed vendor relationships, and managed contract deliverables. Developed several analytic applications including EHSResults, which was a Governor's initiative for performance management and transparency in government</p>
<p>Rhode Island Executive Office of Health and Human Services</p> <p><b>Type:</b> Technical analytical architecture design</p>	<p><b>Duration:</b> 41 months</p> <p><b>Role:</b>                      Led the effort to engage several State Agencies in the Business Requirements process to ensure the APCD supported their current and future analytic needs. Developed a proposed future state architecture to support the overall project vision and business needs. Assisted the State in the drafting of the RFPs for vendor selection and supported the entire vendor selection process. Provided technical oversight and guidance to ensure the project delivered a solid technical foundation while meeting the delivery timeline. Engaged with the Analytic vendor to ensure the delivery of all analytic products aligned with business user needs.</p>



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### *Relevant Project Experience*

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<p><b>Rhode Island Healthcare Exchange (HSRI)</b></p> <p><u>Type:</u> Reporting and analytic solution strategy</p>	<p><u>Duration:</u> 15 months</p> <p><u>Role:</u> Led the engagement team to gather an understand of the current state capabilities of the organization. Led JAD session to define business and technical requirements. Evaluated alternate approaches to deliver analytics, both database and business intelligence solutions. Oversaw the delivery of reporting and analytic environment to support current needs while positioning the client to migrate to a more robust platform. Discussed transition plan and strategy with executive leadership on how to move forward with the next phase of the reporting and analytic solution.</p>
<p><b>Maryland Healthcare Quality Commission</b></p> <p><u>Type:</u> Data model designing</p>	<p><u>Duration:</u> 15 months</p> <p><u>Role:</u> Worked closely with the technical leads to ensure the solution aligned with the business needs. Oversaw the data model design to ensure the model supported its primary function which was rapid query response to support analytics and reporting. Provided guidance and direction for the implementation of the new business intelligence environment and evaluated various tools to ensure alignment with business needs. Led the effort to implement a data quality and reconciliation program by working with the client and the State's Division of Insurance to create a formal process.</p>

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### *Certifications Held or Honors Awarded*

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- Chartered Financial Analyst (CFA)

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### *References*

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[Redacted]	[Redacted]	[Redacted]
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[Redacted]

*Opioid Analytics Lead*

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### *Overview of Work History*

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█ has significant experience managing and executing a wide array of advanced analytic projects. Sean's most recent advanced analytics projects include implementing a Mission Graph solution for the Department of Homeland Security (DHS) which enables DHS to identify, predict, and prevent potential illicit crime and/or terrorist attacks and supporting TSA build system-of-system models that have driven more than 150 critical security-related operational decisions. In addition, █ has helped implement a number of advanced analytics solutions for federal clients including the Center for Medicare and Medicaid Services (CMS), the State of Texas, Immigration and Customs Enforcement, the Center for Disease Control (CDC) and the Transportation and Security Administration (TSA). █ brings experience delivering all phases of advanced analytics life cycle from initial planning and strategy development through solution implementation. █ is viewed a trusted advisor to his clients in analytics and has helped numerous organizations grow and expand their analytics footprint



- 20+ years of experience in leading mission-focused cognitive and analytics transformation projects
- Viewed as a trusted advisor to his client on helping improve strategic decision making through advanced innovative analytical capabilities
- Deloitte's national leader in Cognitive Analytics and Machine Learning

***Educational Background***

University of Michigan	Bachelor of Science in Computer Engineering
University of Michigan	Bachelor of Science in Mechanical Engineering
Northwestern University – McCormick College of Engineering	Master of Science in Manufacturing Engineering
Northwestern University – Kellogg School of Management	Master of Business Administration

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**Relevant Project Experience**

Project Name & Type	Duration & Role
<p>Department of State</p> <p><b>Type:</b> Data Transformation Project)</p>	<p><b>Duration:</b> 18 months</p> <p><b>Role:</b>                      Served as the project manager for the Trafficking-In-Persons (J/TIP) office. The J/TIP office publishes the definitive annual report for country level assessments of performance on addressing human trafficking. The project focused on the development of a python-based LDA model with a java script front end that was used to read an unlimited amount of text and automatically organize it into 20 Minimum Standard "buckets" with relevance scoring applied to every document. This resulted in a significant increase in the volume of information an analyst could take into consideration, dramatically improving efficiency and the quality of the J/TIP report.</p>
<p>Transportation Security Administration</p> <p><b>Type:</b> Predictive analytics and data visualizations</p>	<p><b>Duration:</b> 3 years</p> <p>Served as the project manager for our TSA initiative. Similar to the needs of DHS, Sean's focus at TSA was conducting a series of data analysis, data visualization, and predictive analytics capabilities to better understanding their TSA Pre✓® Program. Some of the key facts TSA was interested in analyzing focused on enrollment demographics, forecasting volume, client complaints, expanding their target audience, and driving increased enrollment. As part of this initiative a series of dashboards were implemented to visualize key model outcomes and empower TSA employees to analyze data on a near real time basis.</p>
<p>Transportation Security Administration</p> <p><b>Type:</b> Risk-based modelling</p>	<p><b>Duration:</b> 3 years</p> <p>Directly managed and led Deloitte's OSO (Office of Security Operations) Cargo Inspection initiative, which focused on developing the first ever risk-based model and algorithm designed to flag suspicious cargo or packages for review and inspection. During the initial month after the risk algorithm was implemented OSO increased seizure of illicit cargo by nearly 20% nationally while at the same time reducing overall searches by nearly 7%.</p>

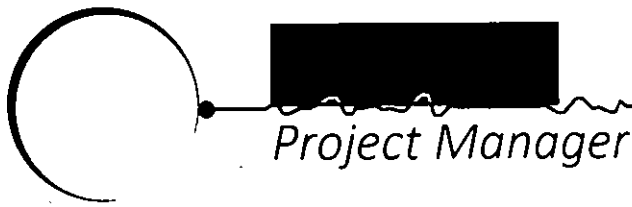
**Certifications Held or Honors Awarded**

N/A

**References**

[Redacted Reference 1] [Redacted Reference 2] [Redacted Reference 3]





**Overview of Work History**

█, our proposed Project Manager, has over 14 years of experience in designing and delivering data related solutions within the Public-Sector industry. Currently, █ is the project manager for the Enterprise Business Intelligence (EBI) project team with The State of New Hampshire DHHS and leads his team in Concord to build out the existing EBI platform to include installation of analytics tools, training, and designing and delivering data marts and analytics dashboards. He plans to extend his experience from the EBI project and direct the team to successfully deliver the project.

- 14+ years of experience with delivering data related solutions
- Brings experiences from current PM role in New Hampshire
- Hands-on experience across the data analytics spectrum

█ has focused across the data analytics spectrum to include building analytics strategies, data governance, and design and delivery of full Data Warehouse and Analytics platforms.

**Educational Background**

Prarie View A&M University Bachelor of Business Administration in Management Information Systems

**Relevant Project Experience**

Project Name & Type	Duration & Role
New Hampshire Department of Health and Human Services  <b>Type:</b> HHS Analytics Platform	<b>Duration:</b> 7 months  <b>Role:</b> Leading the effort to collaborate with the DHHS business users and the DoIT team to perform platform and tool selection and installation of the EBI platform. Working with the DHHS business users to incorporate multiple data sources into the EBI platform and design and develop dashboards to allow for performance monitoring across multiple programs. Managing the team responsible for training of the Informatica Powercenter and Informatica Data Quality tools as well as Tableau Desktop, Tableau Prep, and Tableau Server for the DHHS organization.
Ohio Department of	<b>Duration:</b> 3 months



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<p><b>Administration Services</b></p> <p><b>Type: Enterprise Data Governance and Master Data Management</b></p>	<p><b>Role:</b>          Oversaw a team responsible for gathering Master Data Management (MDM) requirements to master individuals across the Medicaid agency and Ohio Benefits Management system to create a single identifier and master demographics across the State. Led the Data Governance thread responsible for creating a data governance strategy across the multiple agencies to create an Enterprise governance structure for mastering individuals and providers.</p>
<p><b>Rhode Island Department of Health and Human Services</b></p> <p><b>Type: HHS Analytics Data Mart and Dashboards</b></p>	<p><b>Duration:</b> 66 months</p> <p><b>Role:</b>          Managed a Data Analytics effort to design data marts, combine all reconciliation data sources, and build Tableau Dashboards to support both executives and data analyst for the Health Insurance Exchange (HIX). Led a team responsible for data conversion activities (to include capturing control points, detailed validation, and exception reporting). Led the design and development of 1095 reporting to both CMS and the IRS. Managed the delivery of an enterprise reconciliation to facilitate reconciliation efforts between multiple data targets to include a Financial Management System, and 4 major Insurance Carriers. Architected data extracts to be provided out of the Integrated Eligibility platform into the States Medicaid data warehouse</p>

- Certifications Held or Honors Awarded**
- Oracle Endeca Server 2.3
  - Informatica Data Quality 8.6
  - Teradata DecisionCast End User Training
  - Informatica Powercenter 8.0

**References**

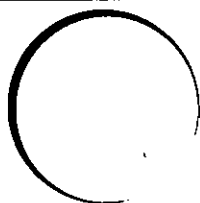
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]





*ETL & Data Wrangling Lead*

**Overview of Work History**

██████████ has over 16 years of Information Technology experience. As a BI and Analytics practitioner, he has led engagements with the focus on system integration, data strategy, business and IT alignment, business value roadmaps, data integration, big data and analytics strategy, and enterprise implementations.

By using his global and cross-industry experience with a strong business acumen and planning and execution skills, ██████████ has led and successfully delivered many data analytics implementations across healthcare (state Medicaid and commercial plans/payers), banking and financial, and travel and hospitality industries.

He has hands-on experience with data integration, business intelligence, configuration management, quality assurance, and project management tools. He is experienced in providing technical leadership and coordination of software delivery activities including overall requirements analysis, systems analysis, design, integration, quality assurance, implementation and production support.



*Why*

16+ years of Information Technology experience across multiple BI and Analytics activities

Hands-on experience delivering large scale Enterprise Medicaid Systems and Decision Support Systems

**Educational Background**

Georgia Institute of Technology      Master of Business Administration

Government Engineering College (Bhopal, India)      Bachelor of Engineering in Computer Science

**Relevant Project Experience**

Project Name & Type	Duration & Role
Louisiana State Medicaid System Integration  Type: Data Repository and Reporting Delivery	Duration: 7 months  Role: Led the design and development of data repository and reporting work for the State of Louisiana to integrate the identified Provider Management module with the state's enterprise architecture (EA). Led the delivery of a centralized data repository that enables the State to consolidate provider and future modules' operational data over time to decrease reliance on individual module vendor's data storage. Designed the wireframes and built Splunk dashboards to monitor the services and database operations performance during the integration and data exchange. Led the



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	<p>requirement and entire SDLC process to build data repository, dashboards and analytical reporting.</p>
<p><b>Health Plan</b></p> <p><b>Type:</b> Data Repository Implementation</p>	<p><b>Duration:</b> 8 months</p> <p><b>Role:</b>          Led the strategic data lake implementation program within the finance organization. Assumed end-to-end program accountability to provide cost-effective and high value solutions to build a single unified data repository in Hadoop to support all the financial data reporting and analytics needs to support strategic and compliance reporting and data analysis. Led 30 person team, which included architect (Data/Integration), project managers, developers, business analyst, and BI testers to support end to end implementation including planning, requirement, development, quality assurance, scope management, risk assessment, budget management and resource utilization. Worked with the business and IT teams to develop the Agile delivery plan for the key functionality and data. He led the requirement sessions, design and development of data ingestion, integration, conformance and enrichment layers by leveraging big data technologies and frameworks within the Hadoop ecosystem (Pig, Hive, Sqoop) and IBM Big Integrate. Liaised &amp; coordinated with different technology and service vendors to support the implementation. Worked with different business teams and functional SMEs to define the common entities, attributes and their inter-relation. Responsible for developing and implementing recovery plans for off-schedule and unanticipated occurrences. Also responsible for preparing periodic management and customer reports and presentations. Tracked project against its schedule, budget and scope and periodic reporting status to IT and business leadership team.</p>
<p><b>State MMIS and PBM system</b></p> <p><b>Type:</b> Data Management and BI Strategy</p>	<p><b>Duration:</b> 7+ years</p> <p><b>Role:</b>          Led the data management and business intelligence teams that provided data and analytics solutions and technical/architectural direction for several multi-million-dollar data enabled projects including MMIS, and Pharmacy Benefit Management (PBM) implementations and O&amp;M support. Led the data management strategy (Data Conversion and Interfaces) and implementation plans by working with the State, functional SMEs and application &amp; reporting teams. Designed and delivered large and complex Enterprise Medicaid Systems and Decision Support System for 3 States – NH, ND and AK in less than 18 months by leading the entire SDLC. Engaged with other project stakeholders through the entire SDLC to ensure that solution delivery is on-time, on-budget, on-scope and on-quality. Developed the reference architecture and reusable solution frameworks which reduced the data ingestion and transformation effort by 30% for a state’s implementation. Helped in streamlining the release management process which resulted in 80% reduction in deployment/environment related defects and release issues by improving the overall quality of the deliverables.</p>

***Certifications Held or Honors Awarded***

- Project Management Professional (PMP)
- Informatica





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*References*

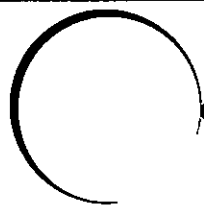
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*Data Scientist Lead*

**Overview of Work History**

█ has extensive experience in healthcare analytics having recently worked at IBM Watson Healthcare building population healthcare analytic models. █ has a Ph.D. in molecular physics from the University of Wisconsin and an MBA from the University of Chicago Booth Business School. He has spent the last five and a half years working on various projects requiring insights into complicated healthcare datasets. He has worked in population health analytics and developed methodology for identifying vulnerable patients and segmenting them into groups for different interventions, recently working to build and refine substance abuse predictive models. At a leading payer, he worked in payment integrity, using predictive analytics to identify fraud, waste and abuse to identify and rank provider risk. Recently █ has worked with clients on projects projecting budget impacts, related to program changes, driving medical and pharmacy costs and identifying a range of possible alternatives to contain costs. In addition to having expertise with advanced statistical methodology (factor analysis, cluster analysis, dimension reduction, machine learning, etc.) and statistical/data manipulation tools (R, SAS, SQL, Hadoop, Python, Excel, etc.) █ is experienced in presenting results to internal and external clients. He has a strong knowledge of the major issues facing healthcare today and is excited to take on roles that use both strategic and technical skills, in line with his education which includes both a highly quantitative doctorate and a strategic and management-oriented MBA.

- Extensive experience in healthcare analytics
- Hands-on experience building predictive analytics to identify fraud, waste and abuse, and rank provider risk
- Worked on IBM Watson Healthcare building population healthcare analytics models.

**Educational Background**

University of Chicago Booth School of Business	Master of Business Administration in Strategic Management and Analytic Management
University of Wisconsin	Doctor of Philosophy in Molecular Physics
Brown University	Master of Science in Physics
University of Illinois	Bachelor of Science in Mathematics and Engineering Physics

**Relevant Project Experience**

Project Name & Type	Duration & Role



<p><b>Population Health Analytics Program Development</b></p> <p><b>Type: Health plan analytics implementation</b></p>	<p><b>Duration:</b> 20 months</p> <p><b>Role:</b>                  Technical team lead in developing programs for health plans needing sophisticated methodology for identifying patients likely to be “vulnerable” (high-spend) in the next calendar year. Designed and implemented methodology based on discussions with subject matter experts (SMEs) who helped identify latent factors contributing to high member spend (i.e. non-adherence to medication, safety issues, susceptibility/demographics). The end result was a program that could be sold to client health plans that would a) identify a list of likely vulnerable patients from their population and b) recommend a relevant intervention to prevent the potential high-spend from materializing.</p>
<p><b>Payment Integrity</b></p> <p><b>Type: Advanced statistical analytics implementation</b></p>	<p><b>Duration:</b> 18 months</p> <p><b>Role:</b>                  Technical team lead in developing advanced methodologies for identifying overpaid healthcare (medical and pharmaceutical) claims before they were paid out (i.e. in “pre-pay”). Used advanced statistical techniques such as machine learning (random forest, GBM, GLM, etc.) to model likelihood of overpayment. Interacted heavily with SMEs in various subject areas to better understand the root causes of claim overpayment and use this knowledge to create model variables to improve predictive capability. Focused on enhancing usage of member data as complexity of member claim history correlates with probability of claim overpayment.</p>
<p><b>Payer Analytics</b></p> <p><b>Type: Predictive analytics implementation</b></p>	<p><b>Duration:</b> 15 months</p> <p><b>Role:</b>                  Team lead for developing predictive analytics capabilities for a subdivision of a large professional services firm using structured claims data (commercial, Medicare, Medicaid). Led projects for external clients throughout the project life cycle, from writing project proposals, to implementing the modelling, to building presentation decks for the final deliverable. Projects included cost estimation for employer health plans and estimation of cost savings due to baby boomer retirement from the employer’s workforce and possible replacement by younger workers. Led internal development of analysts/consultants in the usage of advanced analytics software.</p>

***Certifications Held or Honors Awarded***

- Professional, Academy for Healthcare Management (PAHM) certification by America’s Health Insurance Plans (AHIP)
- Fellow, Academy for Healthcare Management (FAHM) certification by America’s Health Insurance Plans (AHIP)



*References*

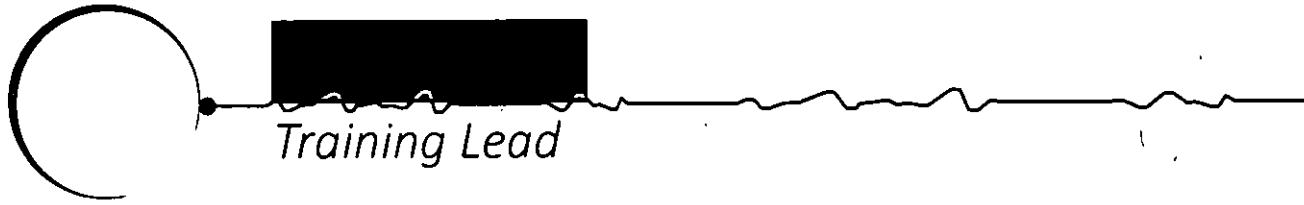
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**Overview of Work History**

██████ is a Senior Solution Manager specializing in Human Capital - Organization Transformation (OT), Technology Adoption. She has 19 years of change management, business process reengineering (BPR), system testing, training, implementation and operational experience with Government and Commercial clients. She has led large teams through complex transformations where she was responsible for organization transition planning, As-Is/To-Be and gap analyses, system requirements gathering/validation, test planning and execution, training development and delivery, knowledge transfer, implementation planning and support, and communications management.

- 19+ years of change management, business process reengineering (BPR) and training experience
- Hands-on experience leading large teams through complex training implementations

**Educational Background**

Pennsylvania State University Bachelor of Science in Management and Human Resources

**Relevant Project Experience**

Project Name & Type	Duration & Role
<p>Public Sector Project</p> <p><u>Type:</u> Process and training delivery</p>	<p><u>Duration:</u> 13 months</p> <p><u>Role:</u>                      Responsible for hiring and onboarding three waves of subcontractors for a total of 60 resources. Developed and delivered process and policy training followed by hands-on computer-based system training for three weeks for each wave of subcontractors. Developed and delivered three proficiency assessments to gauge knowledge, retention, and overall readiness prior to deployment to a production environment. Established operational procedures to reduce application backlog through daily assignment tracking, daily/weekly throughput targets, individual/team performance metrics, and overall Q&amp;A support. Reduced the application backlog by 80% from 14,000 to 3,000 within 5 months. Developed and distributed daily and weekly executive status reports to communicate progress.</p>
<p>Organization Transformation – Communications Center of</p>	<p><u>Duration:</u> 38 months</p> <p><u>Role:</u>                      Responsible for establishing and delivering USDC-based projects for the Human Capital OT practice (110 staff) in Mechanicsburg, PA and Orlando, FL. Worked closely with</p>



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<p><b>Excellence (Deloitte)</b></p> <p><u>Type:</u>  <b>Organizational Transformation</b></p>	<p>Deloitte onsite team leadership to manage approximately 60 concurrent projects for Government and Commercial sectors; project teams include various levels and range in size from one to ten staff. Focus areas included change management, training design/development/delivery, end user support, communications, and multimedia services. Additional responsibilities included oversight of the OT Communications Center of Excellence (Comms CoE) with 12 resources (48 projects completed, 12 projects currently) and the Actuarial &amp; Insurance Solutions practice with 8 resources.</p>
<p><b>State Government Client</b></p> <p><u>Type:</u> <b>Business Process Reengineering</b></p>	<p><u>Duration:</u> 60 months</p> <p><u>Role:</u>          Assisted state government client with business process reengineering (BPR), application design, development, testing, training, knowledge transfer, communications, and implementation of a custom application, which is used to track integrated case management and service delivery for injured workers. Led the business process reengineering effort consisting of 13 staff through the identification and documentation of As-Is and To-Be business processes, gap analysis, recommendations, and requirements validation. Activities included: development and facilitation of executive visioning session and project vision statement, planning, coordination, and communication of nearly 100 client agency sessions and focus group sessions within four months, development of 226 As-Is and 121 To-Be process flows using IndustryPrint, identification of 240 gaps and recommendations, analysis and documentation of 1600 business and functional requirements, and creation and submission of four deliverables, which provide the foundation for system design and development activities.</p>
<p><b>State Government Client</b></p> <p><u>Type:</u> <b>Business Process Reengineering</b></p>	<p><u>Duration:</u> 53 months</p> <p><u>Role:</u>          Assisted state government client with business process reengineering (BRP), application design, development, testing, training, knowledge transfer, communications, and implementation of a custom application to track integrated case management and service delivery to more than 1.4 million citizens. Coordinated the evaluation and selection of the team's learning management system (LMS) and authoring tool. With a team of 30 staff and trainers, managed the following activities: training logistics for more than 30 facilities across the state, selection, management, and coordination of 26 trainers, training material development for 21 courses, statewide training delivery to 5,000 end users through 300 course offerings, and post-implementation support with more than 200 site visits.</p>
<p><b>State Government Client - Major Medicaid System Enhancement</b></p> <p><u>Type:</u> <b>Training Liaison</b></p>	<p><u>Duration:</u> 7 months</p> <p><u>Role:</u>          Assisted state government client with application design, development, testing, training, and implementation of a major Medicaid eligibility system enhancement. Managed and coordinated implementation related activities such as workflow process analysis, system acceptance testing (SAT), end user training, and implementation planning and support. Responsible for assisting the client training organization with: evaluation and recommendation of pilot and statewide training approach and plans, development and modification of client training materials for 7,000 end users, and coordination and communication of updates regarding the training environment.</p>

***Certifications Held or Honors Awarded***

N/A



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*References*

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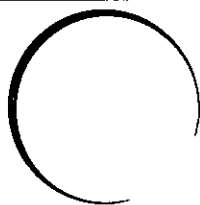
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**Non-Key Personnel Resumes**



*Senior Database (ETL)*

**Overview of Work History**

██████ has over 10 years of focused experience in Data Warehousing across diversified industry domains like Insurance, Retail and Finance. ETL as her core skillset, she is expert in Informatica Power Center mapping development, installation, platform upgrade and configuration. Worked on all phases of data warehouse development lifecycle, from gathering requirements to testing, mentoring team, implementation, handling production cut overs at customer end, maintenance and support. She has lead team (size 4-5) and has worked as an onsite coordinator on Onsite-Offshore Model. Actively involved in the function design discussion for Medicaid.

**Educational Background**

Kallinga Institute of Industrial Technology      Master of Computer Application

Birla Institute of Technology      Bachelor of Science in Computer Application

**Relevant Project Experience**

Project Name & Type	Duration & Role
<p><b>Private Sector</b></p> <p><u>Type:</u> ETL Analyst/Onsite Coordinator</p>	<p><u>Duration:</u> 2.5 years</p> <p><u>Role:</u> Interacting with Users to understand the Requirements. Prepare the High Level and Low level Documents and get the client sign off. On Client sign off, translate the Business Requirements into code and Informatica mappings and work with the Control M scheduling team. Deploying the code from UAT to PROD following the change management processes. Investigation of UAT &amp; Production Issues. Involved in Performance tuning at source, target, mappings, sessions, and system levels.</p>
<p><b>Private Sector</b></p> <p><u>Type:</u> ETL Developer</p>	<p><u>Duration:</u> 2 years</p> <p><u>Role:</u> Involved in Dimensional modelling (Star Schema) of the Data warehouse discussion. Prepare the low level designs and develop the Data Warehouse code using Informatica. Standardized parameter files to define session parameters such as database connection for sources targets, last updated dates for Incremental loads and many default values of fact tables. Involved in Performance tuning at source, target, mappings, sessions, and system levels. Used Control M to schedule the Informatica jobs to execute as required.</p>





<b>Private Sector</b>	<b>Duration:</b> 1.5 year
<b>Type</b> ETL Developer	<b>Role:</b> Involved in analyzing the existing application and preparing the design document for the Informatica mappings. Developed Informatica mappings and workflow based on the design documents. Extracted the data from the Database table, flat files, excel and loaded into Data warehouse. Provide support and assist to team members and also provided training on the Informatica topics. Actively involved in the Informatica upgrade from Informatica Power Center version 7.1.2 to Informatica Power Center version 8.5. 7.

***Certifications Held or Honors Awarded***

- Oracle Certified Associate (OCA)
- AINS 21 Property and Liability Insurance Principle Certification
- LOMA Life Insurance Principle Certification
- AWS Architect Certification (Year -2018)

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**Overview of Work History**

A seasoned cybersecurity professional with over 13 years of professional services and consulting experience, [REDACTED] brings strong subject matter experience in application, infrastructure & cloud security.

[REDACTED] has extensive experience focused on design, architecture, implementation and management of enterprise solutions with a focus on Cybersecurity, has a deep understanding of security and privacy controls across a wide spectrum of regulations and guidelines, including but not limited to NIST 800-53, HIPAA, IRS 1075, MARS-E 2.0.

He brings experience in Identity, Credentials and Access Management (ICAM) and has worked on building several ICAM & cybersecurity programs across industries, using an array of industry leading products from vendors like IBM, Oracle, Sailpoint, HPE and CA.

[REDACTED] has served state government clients for the past seven years and brings a strong understanding of the Health and Human services within the State government. Additionally, he has served several clients within the financial services and consumer and industrial products industries. Dipak also brings strong database modeling, data warehousing and business intelligence skills from his prior professional experiences.

**Educational Background**

University of Maryland College Park Bachelor of Science in Computer Science

**Relevant Project Experience**

Project Name & Type	Duration & Role
<p>Department of Medicaid Assistance Services (DMAS), Virginia</p> <p><b>Type:</b> Integration Services Solution</p>	<p><b>Duration:</b> 7 months</p> <p><b>Role:</b> Security architect for the Integration Services Solution (ISS) module of the MMIS Modernization project. Designed the Identity, Credential, Access Management (ICAM) solution using IBM Security Suite of products for the platform. Responsible for the overall security of the solution delivered as a software as a service (SaaS) solution, built in an IBM Cloud infrastructure. Responsible for the regulatory compliance of the solution with NIST 800-53, MARS-E 2.0 and Commonwealth specific security and privacy regulations. Designed the Security monitoring and reporting use cases for Splunk for Enterprise Security. Designed the solution for securing real-time web-services using the IBM Datapower appliance. Led meetings with the department CIO and</p>



STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA

	<p>the project managers across the program to discuss and elaborate on the security solution as envisioned by the CISO. Managed the day to day operations of the security team and responsible for managing the budget.</p>
<p><b>Department of Health and Human Services (DHHS), State of New Hampshire</b></p> <p><b>Type: Identity Management Solution</b></p>	<p><b>Duration:</b> 38 months</p> <p><b>Role:</b>          Security program manager for one of the crown jewel applications for the agency. Solution architect for the Identity management (IdM) solution for the IE application, responsible for the account life cycle management for both DHHS employees/contractors and citizens using the application. Wrote the detailed design specifications document for the IdM solution. Managed several security work threads aimed at improving the overall security posture of the department, including security and privacy risk assessments, security testing, and vulnerability management activities, unstructured data management, third party risk management, security training development, disaster recovery/contingency plan creation, testing and updates. Led the development of the security and privacy compliance artifacts based on NIST 800:53 and MARS-E 2.0. Served as the security point-of-contact for the ISO and the Integrated Eligibility Program Manager. Managed the day to day operations of the security team and responsible for managing the budget.</p>
<p><b>Department of Human Resources (DHR), State of Maryland</b></p> <p><b>Type: AWS Security Infrastructure</b></p>	<p><b>Duration:</b> 10 months</p> <p><b>Role:</b>          Security program manager for the MD-THINK program, responsible for the overall security of the infrastructure built on the Amazon Web-Services (AWS) platform. Led the development of the security compliance artifacts based on NIST 800:53 set of security and privacy controls. Led the security program that included designing, implementing and managing services across identity and access management (IAM), security event and information management (SEIM), application security (vulnerability) testing, network security and regulatory compliance. Solution architect for the IAM solution for the MD THINK infrastructure platform built upon Sailpoint IdentityIQ, ForgeRock Directory Services (Open DJ) and ForgeRock Access Management (Open AM). Led the solution design for the SIEM solution for the platform built upon SPLUNK Enterprise Security. Led meetings with the department CTO, the Deputy CTO and the application team to draft a formal set of technical and functional requirements for the project.</p>
<p><b>Pennsylvania Liquor Control Board (PLCB), Pennsylvania</b></p> <p><b>Type: Identity Management Solution</b></p>	<p><b>Duration:</b> 8 months</p> <p><b>Role:</b>          Solution architect for the provisioning automation project. Led a team of security professionals responsible for the automation of the provisioning for Oracle e-Business Suite and Oracle Store Inventory Management ERP applications through IBM's Security Identity Manager. Led client meetings to draft the technical and functional requirements. Wrote the detailed design specifications document for the solution. Worked with the Department of Public Welfare</p>



(DPW), along with PLCB to implement the project with cross agency infrastructure. Managed the day to day operations of the implementation team and reported on their progress along with communicating risks and issues to the client. Responsible for managing the budget by preparing the project's financial status every period & outlining the causes for deviations.

**Department of Health and Social Services (DHSS), State of Delaware**

**Type:**  
**Authentication and Authorization implementation**

**Duration:** 18 months

**Role:**

Worked as the Lead Security Architect for the Integrated Eligibility (IE) Modernization project built on the Microsoft .Net platform. Architected the authentication/authorization along with the security for the application's web-service communications. Designed and documented the security solution comprising of Oracle Identity Manager, Oracle Access Manager, Oracle Adaptive Access Manager, Oracle Enterprise Gateway and HP Arcsight. Facilitated numerous conversations with the client educating them on the CMS and IRS requirements around multi-factor authentication, password policy, session timeouts, audit logging, reporting and PII data usage. Assisted the Information resource management team in the preparation of the System Security Plan and the Information Security Risk Assessment. Managed the IT risk and compliance work streams overseeing the compliance documentation, SIEM implementation and vulnerability assessment efforts. Managed the day to day operations of the implementation team and reported on their progress along with communicating risks and issues to the client. Responsible for managing the budget by preparing the project's financial status every period & outlining the causes for deviations.

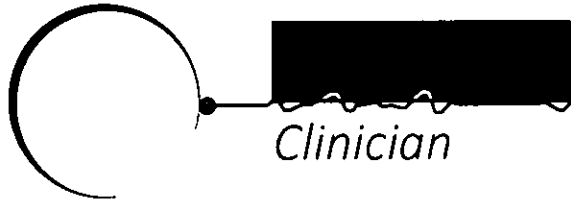
**Certifications Held or Honors Awarded**

- Certified Information System Security Professional

**References**

[Redacted Reference Content]





**Overview of Work History**

Experienced healthcare professional with a unique ability to bridge the gap between healthcare policy and clinical reality. Eleven years of experience across management consulting, nursing, and nonprofit leadership.

**Educational Background**

Loyola University New Orleans	Master of Science in Nursing
Northern Virginia Community College	Associates of Science in Nursing
University of Maryland	Bachelor of Arts in Health Policy and Communication

**Relevant Project Experience**

Project Name & Type	Duration & Role
Centers for Medicare & Medicaid Services  <u>Type:</u> Data extraction algorithm implementation	<u>Duration:</u> 5 months  <u>Role:</u> Served as clinical subject matter expert (SME) for Centers for Medicare & Medicaid Services Civil Money Penalties Reimbursement Program (CMS CMPRP). Supported CMPRP technical assistance and toolkit teams in delivering impactful targeted interventions and resources to nursing homes. Within data analytics team, developed clinically sound algorithms and technical specs for data extraction from CMS data sources.
Patient: First  <u>Type:</u> Deliver patient care	<u>Duration:</u> 29 months  <u>Role:</u> Ensured medical protocols are appropriately implemented and documented for all patient visits and follow-up care at high-volume care center. Delivered preventive and emergency care, clinical assessments, therapeutic interventions, and patient education. Supported controlled substance and prescription medication distribution.
Centers for Medicare & Medicaid Services  <u>Type:</u> Clinical SME	<u>Duration:</u> 120 months  <u>Role:</u> Provided clinical SME and management support for CMS contracts including Home Health Value-Based Purchasing (HHVBP), Health Care Innovation Awards (HCIA) Hospital Quality Performance Measurement (MIDS HMDM), and Medicare Care Choices Model (MCCM). Served as SME for technical assistant teams, demonstration models, national roundtables,



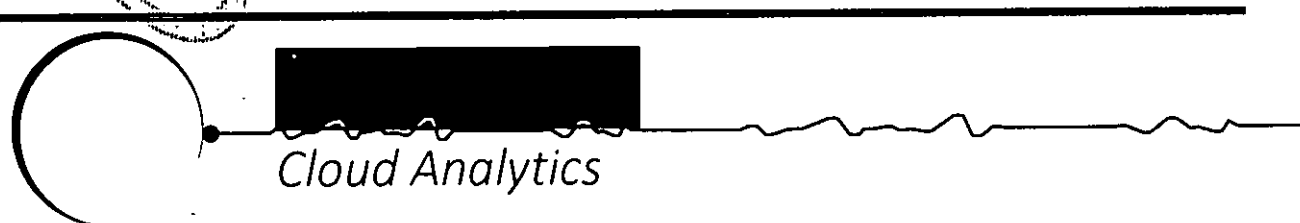
	and quality measure development projects. Directly advised federal clients for federal, state, and commercial healthcare projects.
<p><b>Mission Life Center</b></p> <p><b>Type:</b> Medical clinic operations oversight</p>	<p><b>Duration:</b> 24 months</p> <p><b>Role:</b>                  Engaged in strategic planning and oversight of all medical clinic operations for a primarily homeless population with chronic comorbidities and addiction. Directed quality assurance for a database of approximately 1,400 patients. Secured funding for provisions of medical care to underserved populations. Recruited and developed teams to support clinic sustainability, expand medical offerings, and launch community teaching initiatives.</p>
<p><b>The National Council</b></p> <p><b>Type:</b> Medical clinic operations oversight</p>	<p><b>Duration:</b> 18 months</p> <p><b>Role:</b>                  Engaged in strategic planning and oversight of all medical clinic operations. Directed quality assurance for a database of approximately 1,400 patients. Developed a report on medication-assisted therapy (MAT) for treatment of individuals with narcotic addictions including the medical process, success and failure rates, and controversies surrounding MAT. Conducted literature reviews and focus groups with primary care physicians on Screening, Brief Intervention, and Referral to Treatment (SBIRT) tool efficacy for identifying patients who are at risk for illicit drug or alcohol dependence.</p>

**Certifications Held or Honors Awarded**

- Nightingale Award for Community Service
- Registered Nurse – Commonwealth of Virginia – Multistage Privilege
- Advanced Cardiovascular Life Support and Pediatric Advanced Life Support

**References**

[Redacted Reference 1] [Redacted Reference 2] [Redacted Reference 3]



**Overview of Work History**



██████████ is currently the Head of Customer Analytics with Google Cloud Platform implementations for the U.S. Public Sector. He runs all work that sits at the intersection of Cloud, Marketing Analytics, and Google Data for the US. He led 400+ unique initiatives across the US Government, leading marketing analytics efforts for the team for 4+ years, implementing improved efforts for 100+ public health campaigns within CMS, CDPH, NY, DOH, CDC, FDA, SAMHSA, and others. ██████████ was one of the four Search product experts for 2+ years on attribution between Search and Web site analytics via Google Analytics. He consulted on marketing analytics for over 600 SMBs to improve tracking systems for customer experience on site and feeding that back into media outreach. He trained 50+ marketing analytics specialists in small groups across two languages, three countries, four business units, and five sectors. He is fluent in Google Media stack for consumer and user data: AdWords, DoubleClick, Google Analytics, Tag Manager, Search Console, etc.

**Educational Background**

Claremont McKenna College Bachelor of Arts in Government & Legal Studies  
 Dual Major

**Relevant Project Experience**

Project Name & Type	Duration & Role
Google Cloud Platform Implementation  Type: Relationship Management	Duration: 7 months  Role: Responsible for all work that sits at the intersection of Cloud, Marketing Analytics, and Google Data for the US Public Sector. Big Data integration projects include military gaming platforms, opioid analysis, marijuana tourism, suicide prevention, healthcare exchange planning, etc. that require deep insights from both Google and the Customer.
Paid Media  Type: Relationship Management	Duration: 4 years  Role: Senior Account Manager for the US Government team, working with the US Department of Health and Human Services, as well as all related State Government entities (e.g. California Dept of Health), military clients (Army, Marines, Coast Guard, etc), and Civilian Revenue Agencies (USPS, Amtrak, etc). Led Google's media relationship with all US Healthcare Exchanges including operationalizing Covered California's Search media and their attribution work leading to CalHEERS, as well as Healthcare.gov, NY State of Health and a dozen others on improving attribution and simplifying customer journey by improved attribution processes. Managed a support team in Delhi that assisted with the technical implementation of paid-media-to-UX design decisions, providing ongoing client recommendations. Led integration efforts of Google Ad-backed data into clients Web site and media attribution models.

**Certifications Held or Honors Awarded**

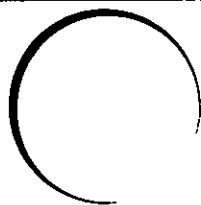
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*Cloud Engineer*

**Overview of Work History**

█████ has over 10 years of experience at Google developing and implementing innovative, cost saving, products and solutions for commercial and Public Sector customers. Most recently, █████ designed Google's Maps Imagery program on Google Cloud Platform which has delivered tens of millions of dollars in cost savings for imagery to state and local geospatial agencies over the last 4 years. Simultaneously, Sean helped NBC Universal use Google Cloud and Maps Platforms to launch the 2018 Jurassic World Alive mobile location based game at scale for millions of daily users. In a previous role at Google, █████ developed and implemented solutions for federal Defense and Intelligence customers to operate Google Earth on premises and in austere environments. Since 2010, █████ has also spent a significant portion of his time each year volunteering on Google's Crisis Response team, where he coordinates data sharing between state, local, and federal agencies and the public during major crisis events.

**Educational Background**

Virginia Polytechnic and State University      Master of Science in Geographic Information Systems

Virginia Polytechnic and State University      Bachelor of Arts in Geography

**Relevant Project Experience**

Project Name & Type	Duration & Role
Launching "Jurassic World Alive" mobile game  Type: Google Cloud Platform implementation	Duration: 11 months  Role: Technical Account Manager for real-world gaming partners Ludia, Inc. and NBC Universal for launch of "Jurassic World Alive" mobile game. Handled all technical requirements for launch and developed several GCP based workflows for updating billions of real-world playable locations. Geo CE for Canada, Central and Eastern US, and select top accounts.
Google Earth Enterprise Open Source Launch	Duration: 12 months  Role: Developed vision and go to market for GEE OS on Google Cloud Platform. Coordinated GEE Partner activities and customer engagements to drive GCP adoption, shared dataset ecosystem, and new pipeline for Google Maps Imagery Sales.



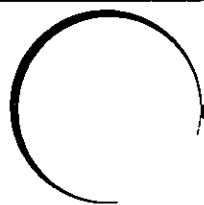
STATE OF NEW HAMPSHIRE - Department of Health and Human Services  
 Data Analytics Platform for Opioid Crisis  
 DHHS - RFP 2019-043/RFP-2019-DPHS-19-DATAA

<p><b>Type:</b> Market strategy cloud platform</p>	
<p>Google Maps Imagery Sales</p> <p><b>Type:</b> Training development</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>          Technical sales lead for relaunch of Google Maps Imagery Sales. Refined new imagery offering and led partner enablement and training on the Imagery sales process. Defined and delivered Go to Market training and tools for partners. Helped imagery partners double their sales forces and their respective pipelines for 2017. Began Google Earth Engine trusted tester trials for State and Local agencies.</p>
<p>Migrating Google Imagery customers from Google Maps Engine to Google Cloud Platform</p> <p><b>Type:</b> Cloud Migration</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>          Technical sales lead for migrating Google Imagery customers from Google Maps Engine to Google Cloud Platform. Trained partners, coordinated internal teams, and moved all active customers from 2014 imagery business from GME to GCP in Q1. Provided cross product pre-sales support for Geospatial Technology provider, CartoDB.com, introduced them to Google Cloud Platform, helped them migrate to GCP and become a GCP customer.</p>
<p>Google Maps Engine Migration</p> <p><b>Type:</b> Cloud Migration</p>	<p><b>Duration:</b> 12 months</p> <p><b>Role:</b>          Contributed significantly to Google Maps Engine Migration efforts, focused largely on using Google Cloud Platform offerings as an alternative. Lead author for Serving Raster Data on Google Cloud Platform which served as technical foundation for Google Imagery sales program in 2015.</p>

**Certifications Held or Honors Awarded**

- Google Cloud Certified – Professional Cloud Architect





*Cloud Data Scientist*

**Overview of Work History**

██████ has over 4+ years of experience managing and executing a wide array of data engineering projects. ██████'s most recent projects include architecting and implementing a Google Cloud Platform serverless data pipeline, ETL, and data warehouse. In addition, ██████ has helped implement a number of data engineering solutions for federal clients including the design of linear regression models, optimization of high performance model serving, and data migration to Google Cloud. ██████ brings experience designing all phases of data engineering life cycle from initial planning, strategy, development through solution implementation. ██████ is viewed a trusted advisor to his clients in data engineering and has helped numerous organizations grow and expand their big data and analytics footprint.

**Educational Background**

Temple University Bachelor of Arts in Management Information Systems

**Relevant Project Experience**

Project Name & Type	Duration & Role
<p>Cloud migrations to Google Cloud Platform</p> <p><b>Type:</b> Cloud migration</p>	<p><b>Duration:</b> 11 months</p> <p><b>Role:</b>                      Architected customer cloud migrations to Google Cloud Platform. Advised federal, state and local, and commercial customers on data engineering practices for data migration, model creation, model serving, and Google Cloud pre-built model consumption. Removed technical blockers from customer engagements, while providing industry best practices and solutions. Created of cloud-based data pipeline POC environment with partner to quickly connect multiple data sources to Google Cloud Platform serverless data lake and data warehouse solutions. Assisted customers with implementing data analytics solutions using social media, custom data sources, and public datasets.</p>
<p>Technical Solution Plan Enablement</p> <p><b>Type:</b> GDPR assessment</p>	<p><b>Duration:</b> 3 months</p> <p><b>Role:</b>                      Responsible for west coast GDPR data assessment structure and partnership with 3rd party vendor. Worked with 3rd party vendors to create analytics driven sales pipelines for new and existing technologies. Supported commercial and Public Sector client teams in pre-sales and RFP responses. Lead new sales pursuits and solution architecture at a worldwide media company. Managed project teams to</p>



	meet client deliverables, while creating value adds and additional sales opportunities.
<p><b>Ecosystem Solution Architect</b></p> <p><b>Type:</b> Cloud migration</p>	<p><b>Duration:</b> 16 months</p> <p><b>Role:</b>                  Architected approaches and cost models for delivery and technology to position engagement teams for new and existing clients. Focused on supporting client teams engaged in devops, data engineering, cloud, and emerging technologies for delivery, new pursuits, workshops, trainings, and client presentations. Delivered data, cloud and container migration assessments, roadmaps, and implementation. Drove resale and services for projects through our operating groups and partners. Drove the creation of production beta offerings internally to create accelerators and go to market solutions for our clients. Advisor to clients and client teams on technology needs based on requirements, business strategy, goals, and expectations. Client Account Lead (CAL) for a worldwide media company delivering business growth strategy work, addressing operational and administrative needs, while aligning IT with business goals.</p>

***Certifications Held or Honors Awarded***

- AWS Solution Architect Associate
- Nutanix Platform Professional
- Nutanix Platform Sales Engineer
- CCNA
- CCNA Security
- Google Cloud Professional Cloud Architect
- Google Cloud Professional Data Engineer
- Certified Kubernetes Administrator (In Progress)

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