



THE STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION



Victoria F. Sheehan  
Commissioner

William Cass, P.E.  
Assistant Commissioner

Bureau of Highway Design  
June 15, 2020

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

**REQUESTED ACTION**

Authorize the Department of Transportation to enter into an agreement with HDR Engineering, Inc., Manchester, NH, Vendor #169983, for an amount not to exceed \$1,151,349.56, for preliminary design of improvements to NH Route 120 in the City of Lebanon, effective upon Governor and Council approval through August 31, 2022.  
100% Federal Funds.

Funds to support this request are available in the following account in State FY 2021, and funding is contingent upon the availability and continued appropriation of funds in FY 2022, with the ability to adjust encumbrances between State Fiscal Years through the Budget Office if needed and justified:

	<u>FY 2021</u>	<u>FY 2022</u>
04-096-96-963515-3054 Consolidated Federal Aid		
046-500464 Gen Consultants Non-Benefit	\$660,000.00	\$491,349.56

**EXPLANATION**

The Department requires consulting engineering and environmental services to study improvements to NH Route 120 from its intersection with Hanover Street through the I-89 exit 18 interchange to the intersection with Etna Road in the City of Lebanon. The objective of the project is to develop an alternative that will improve the safety and mobility of the interchange and NH 120 corridor for all users. As the development of improvement alternatives proceeds, it will be crucial to work closely with the Upper Valley Transportation Management Association to gain consensus on design decisions. The preliminary design engineering efforts will study, develop and evaluate design alternatives that are supported by the community, technically feasible, environmentally permissible, and economical; prepare preliminary engineering plans suitable for a Public Information Meeting(s) and Design Public Hearing (if needed), and develop an approved NEPA document. This project will require both Part "A" (Preliminary Design) and Part "B" (Final Design) services. This agreement is for Part "A" only. Upon completion of Part "A" services, and assuming a successful Public Hearing, the Department reserves the right to either negotiate a scope and fee for Part "B", or terminate the contract. This project is included in the State's Ten-Year Transportation Improvement Plan (Lebanon 29612).

The consultant selection process employed by the Department for this qualifications-based contract is in accordance with RSAs 21-I:22, 21-I:22-c, 21-I:22-d, 228:4 and 228:5-a, and all applicable Federal laws and the Department's "Policies and Procedures for Consultant Contract Procurement, Management, and Administration" dated August 25, 2017. The Department's Consultant Selection Committee is a standing committee that meets regularly to administer the process and make determinations. The Committee is comprised of the Assistant Director of Project Development (Chair), the Chief Project Manager, the Administrators of the Bureaus of Highway Design, Bridge Design, Environment, and Materials and Research, and the Municipal Highways Engineer.

The consultant selection process for this qualifications-based contract was initiated by a solicitation for consultant services for Lebanon 29612, improvements to NH Route 120. The assignment was listed as a "Project Soliciting for Interest" on the Department's website on March 23, 2017 asking for letters of interest from qualified firms. From

the list of firms that submitted letters of interest, the Committee prepared a long and then short list of Consultants on May 11, 2017 for consideration and approval by the Assistant Commissioner. Upon receipt of that approval, three shortlisted firms were notified on June 20, 2017 through a technical "Request for Proposal" (RFP). Committee members individually rated the firms on August 10, 2017 using a written ballot to score each firm on the basis of comprehension of the assignment, clarity of the proposal, capacity to perform in a timely manner, quality and experience of the project manager and the team, previous performance, and overall suitability for the assignment. (A compilation of the completed individual rating ballots and the ranking summary form is attached.) The individual rankings were then totaled to provide an overall ranking of the three firms, and the Committee's ranking was submitted to the Assistant Commissioner for consideration and approval. Upon receipt of that approval, the short listed firms were notified of the results and the highest-ranking firm was asked to submit a fee proposal for negotiations.

The long list of eight (8) consultant firms that were considered for this assignment, with the three (3) short-listed firms shown in bold, is as follows:

**Consultant Firm**

**HDR Engineering, Inc.**  
Holden Engineering & Surveying, Inc.  
Jacobs Engineering Group, Inc.  
McFarland Johnson  
**Stantec Consulting Services, Inc.**  
TEC, Inc.  
**Vanasse Hangen Brustlin, Inc.**  
WSP Parsons Brinckerhoff, Inc.

**Office Location**

**Manchester, NH**  
Concord, NH  
Bedford, NH  
Concord, NH  
**Bedford, NH**  
Hampton, NH  
**Bedford, NH**  
Manchester, NH

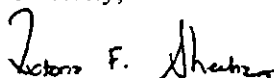
The firm of HDR Engineering, Inc. was recommended for this contract. This firm has an excellent reputation and has demonstrated their capability to perform the required services. Background information on this firm is attached.

HDR Engineering, Inc. has agreed to furnish the professional engineering services for an amount not to exceed \$1,151,349.56. This is a reasonable fee and is commensurate with the complexity of the project and the scope of the engineering and technical services to be furnished. This project funding is 80% Federal funds with 20% State match. Turnpike toll credit is being utilized for New Hampshire's match requirement, effectively using 100% federal funds.

This Agreement has been approved by the Attorney General as to form and execution. The Department has verified that the necessary funds are available. Copies of the fully-executed Agreement are on file at the Secretary of State's Office and the Department of Administrative Services, and subsequent to Governor and Council approval will be on file at the Department of Transportation.

It is respectfully requested that authority be given to enter into an Agreement for consulting services as outlined above.

Sincerely,



Victoria F. Sheehan  
Commissioner

Attachments

**DESCRIPTION:** Preliminary engineering, environmental, and public involvement services are needed for improvements to NH 120 from its intersection with Hanover Street, through the I-89 exit 18 interchange, and to the intersection with Etna Road to improve traffic operations and safety, and improve mobility and access for all modes of travel, including pedestrians, bicyclists, and transit. The project design will involve: Traffic data collection and analysis. Preliminary design to evaluate alternatives for the exit 18 interchange and the NH 120 corridor, to include study of a diverging diamond design for the interchange. Evaluation of other potential TDM and/or TSM measures for reducing the travel demand within the project limits including, but not limited to, the reconstruction of the Hanover Street pedestrian bridge for motor vehicular traffic. Traffic modeling may be needed to gauge the effectiveness of alternatives. ROW layout and plan development, including any necessary survey work, for reestablishing and documenting the existing highway right of way in a manner suitable for recording at the Registry of Deeds. Environmental investigations to prepare and complete all appropriate environmental documentation and identify permitting requirements. It is expected this documentation will be in the form of a Categorical Exclusion taking into account, at a minimum, the requirements of the National Environmental Policy Act, the Clean Water Act, the National Historic Preservation Act and Section 4(f) of the US Department of Transportation Act. Execution of a creative and robust public involvement process applying the principles of context sensitive solutions to reach consensus on a proposed action. The process shall include close coordination with the Route 120 Corridor Workgroup and other appropriate public and private stakeholders, and will culminate with a formal public hearing. This work will require Professional Engineer and Land Surveyor licensure in the State of New Hampshire. This project requires Part "A" (Preliminary Design) and Part "B" (Final Design) services. This solicitation is for Part "A" only. At the conclusion of Part "A", the Department reserves the right to either negotiate a scope and fee for Part "B", or terminate the contract. The compensation format for this agreement will be cost-plus-fixed-fee.

**Services Required:** RDWY, BRDG, ENV, HYD, AIR, NOIS, PINV, TRAF, ROW, HAZ, HIST, LLS, LAND, ITS

#### SUMMARY

HDR, Inc.						1	1	1	1	4
Stantec Consulting Services, Inc.						3	3	3	3	12
Vanasse Hangen Brustlin, Inc.						2	2	2	2	8

#### EVALUATION OF TECHNICAL PROPOSALS

Rating Considerations	Scoring of Firms			
	W E I G H T	HDR	Stantec	VHB
Comprehension of the Assignment	20%	20	19	20
Clarity of the Proposal	20%	19	20	19
Capacity to Perform in a Timely Manner	20%	19	19	18
Quality & Experience of Project Manager/Team	20%	20	19	20
Previous Performance	10%	20	9	9
Overall Suitability for the Assignment	10%	8	8	9
<b>Total</b>	<b>100%</b>	<b>96</b>	<b>94</b>	<b>95</b>

Ranking of Firms:

1. HDR
2. VHB
3. STANTEC

Rating Considerations	Scoring of Firms			
	W E I G H T	HDR	Stantec	VHB
Comprehension of the Assignment	20%	19	19	19
Clarity of the Proposal	20%	19	18	19
Capacity to Perform in a Timely Manner	20%	19	19	19
Quality & Experience of Project Manager/Team	20%	18	18	18
Previous Performance	10%	9	8	8
Overall Suitability for the Assignment	10%	9	8	9
<b>Total</b>	<b>100%</b>	<b>93</b>	<b>90</b>	<b>92</b>

Ranking of Firms:

1. HDR
2. VHB
3. Stantec

## EVALUATION OF TECHNICAL PROPOSALS (continued)

Rating Considerations	Scoring of Firms			
	W E I G H T	HDR	Stantec	VHB
Comprehension of the Assignment	20%	19	17	18
Clarity of the Proposal	20%	19	15	18
Capacity to Perform in a Timely Manner	20%	19	18	19
Quality & Experience of Project Manager/Team	20%	20	17	19
Previous Performance	10%	10	7	9
Overall Suitability for the Assignment	10%	10	7	9
Total	100%	97	81	92

Ranking of Firms:

1. HDR
2. VHB
3. Stantec

Rating Considerations	Scoring of Firms			
	W E I G H T	HDR	Stantec	VHB
Comprehension of the Assignment	20%	20	20	20
Clarity of the Proposal	20%	19	18	19
Capacity to Perform in a Timely Manner	20%	19	18	19
Quality & Experience of Project Manager/Team	20%	20	18	18
Previous Performance	10%	9	9	9
Overall Suitability for the Assignment	10%	10	10	10
Total	100%	97	93	95

Ranking of Firms:

1. HDR
2. VHB
3. Stantec

<b>ARCHITECT/ENGINEER QUALIFICATIONS</b>				1. SOLICITATION NUMBER (if any)		
<b>PART II - GENERAL QUALIFICATIONS</b>						
<small>(If a firm has branch offices, complete for each specific branch office seeking work.)</small>						
2a. FIRM (or branch office) NAME				3. YEAR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER	
HDR				1917	06-866-8805 (HDR, Inc.)	
2b. STREET				5. OWNERSHIP		
8404 Indian Hills Drive				a. TYPE		
2c. CITY				Private Corporation		
Omaha		2d. STATE	2e. ZIP CODE	b. SMALL BUSINESS STATUS		
		NE	68114-4098	Large Business		
6a. POINT OF CONTACT NAME AND TITLE				7. NAME OF FIRM (If block 2a is a branch office) The branch office identified in Block 2 (a-e) includes personnel from one or more of our operating companies which are wholly owned subsidiaries of HDR, Inc. Collectively we bring resources of more than 8,000 multi-disciplinary professionals together as one seamless entity.		
Craig R. Olson, Central Region Director - Federal Program						
6b. TELEPHONE NUMBER		6c. E-MAIL ADDRESS				
402.399.1000		Craig.R.Olson@hdrinc.com				
6a. FORMER FIRM NAME(S) (if any)				8b. YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER	
Henningson, Durham & Richardson, Inc.				1951		
Henningson Engineering Company, Inc.				1930		
Henningson Engineering Company				1917	06 866 8805	
<b>9. EMPLOYEES BY DISCIPLINE</b>						
<b>10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS</b>						
a. Function code	b. Discipline	c. No. of employees		d. Profile Code	e. Experience	f. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
01	Acoustical Engineer	38		A04	Air Pollution Control	3
02	Administrative	867		A06	Airports; Terminals & Hangars; Freight Handling	7
04	Aeronautical Engineer	2		B02	Bridges	10
05	Archeologist	21		C15	Construction Management	10
06	Architect	775		D01	Dams; (Concrete; Arch)	6
07	Biologist	70		D02	Dams; (Earth; Rock); Dikes; Levees	8
08	CADD Technician	657		E09	Enviro. Impact Studies, Assessments, or Statements	9
10	Chemical Engineer	21		E12	Environmental Remediation	10
11	Chemist	1		H07	Highways; Streets; Airfield Paving; Parking Lots	10
12	Civil Engineer	528		I01	Industrial Buildings; Manufacturing Plants	4
15	Construction Inspector	337		P06	Planning (Site, Installation, and Project)	9
16	Construction Manager	168		P12	Power Generation, Transmission, Distribution	10
17	Corrosion Engineer	1		R03	Railroad; Rapid Transit	10
18	Cost Engineer/Estimator	24		R11	Rivers; Canals; Waterways; Flood Control	6
19	Ecologist	5		S04	Sewage Collection; Treatment and Disposal	10
20	Economist	40		S07	Solid Wastes; Incineration; Landfill	8
21	Electrical Engineer	285		S10	Surveying; Platting; Mapping; Flood Plain Studies	6
22	Electronics Engineer	4		S13	Storm Water Handling & Facilities	8
23	Environmental Engineer	82		T02	Testing & Inspection Services	6
24	Environmental Scientist	264		T03	Traffic & Transportation Engineering	10
25	Fire Protection Engineer	10		W02	Water Supply; Treatment and Distribution	9
27	Foundation/Geotechnical Engineer	74		W03	Water Resources; Hydrology; Ground Water	10
29	GIS Specialist	96				
30	Geologist	35				
32	Hydraulic Engineer	10				
34	Hydrologist	18				
35	Industrial Engineer	2				

36	Industrial Hygienist	1			
37	Interior Designer	79			
38	Land Surveyor	23			
39	Landscape Architect	40			
42	Mechanical Engineer	181			
47	Planner, Urban/Regional	223			
48	Project Manager	792			
51	Safety/Occupational Health Engineer	18			
52	Sanitary Engineer	199			
54	Security Specialist	15			
55	Soils Engineer	2			
56	Specifications Writer	10			
57	Structural Engineer	227			
58	Technician/Analyst	1,432			
60	Transportation Engineer	911			
61	Value Engineer	1			
62	Water Resources Engineer	241			
990	Reproduction Experts (Other)	2			
991	Railroad Experts (Other)	66			
992	Public Relations (Other)	482			
995	Realty Specialists (Other)	116			
996	Management Scientists (Other)	79			
997	Heating, Ventilation, Air Conditioning Experts (Other)	4			
998	Intern Architects (Other)	126			
999	Quality Manager (Other)	27			
	Other Employees	0			
Total		9,732			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER	
a. Federal Work	10	1. Less than \$100,000	6. \$2 million to less than \$5 million
b. Non-Federal Work	10	2. \$100,000 to less than \$250,000	7. \$5 million to less than \$10 million
c. Total Work	10	3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million
		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million
		5. \$1 million to less than \$2 million	10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE (The foregoing is a statement of facts.)

a. SIGNATURE



b. DATE

6/6/2018

c. NAME AND TITLE

Eric Keen, PE, CEO

AUTHORIZED FOR LOCAL REPRODUCTION  
MANDATORY USE DATE OF FORM 5/1/2004

STANDARD FORM 330 (REV. 8/2016)  
PAGE 6

**EDUCATION**

Master of Science, Civil Engineering, North Carolina State University, 2012

Bachelor of Science, Civil Engineering, University of New Hampshire, 1999

**REGISTRATIONS**

Professional Engineer, New Hampshire, No. 10130

Professional Engineer, Maine, No. 9471

Professional Engineer, Massachusetts, No. 47453

Professional Engineer, Vermont, No. 018.0007678

**PROFESSIONAL MEMBERSHIPS**

Society of Professional Engineers, NH, 1999-2020

Chair, Joint Engineering Societies, NH, 2007-2011

Order of the Engineer, Chair, National Board of Governors, 2008-2020

American Society of Civil Engineers (ASCE), NH, 2012-2020

Institute of Transportation Engineers (ITE), NH, 2012-Present

Boston Society of Civil Engineers, MA, TD&I, Bertram Berger Conference Committee, 2015-2016

**INDUSTRY TENURE**

30 years

**HDR TENURE**

7 years

**AWARDS**

Fellow, National Society of Professional Engineers (NSPE) (2015)

**Roch Larochelle, PE**

Northern New England Civil Section Manager / Project Manager

Mr. Larochelle is the Northern New England Section Manager for Civil Engineering in HDR's NE Practice and has 30 years of diverse technical and professional experience in all aspects of management and development of highway and roadway assignments including roadway design, utility coordination, permitting, right-of-way coordination, subconsultant management, direct abutter negotiations and preparation of bidding documents/specifications and construction administration. He has managed numerous projects for the New Hampshire Department of Transportation, the Maine Department of Transportation, Massachusetts Department of Transportation, as well as individual municipal and private projects involving traffic, highway, roadway and utility components for small to large urban and rural highway reconstruction projects.

**RELEVANT EXPERIENCE**

**New Hampshire Dept. of Transportation, Statewide Bridge On-Call Design Services 41867, I-93 Exit 4A Design-Build (DB) Project, Derry-Londonderry, NH**

This project involves acting as Owners Representative in the development of the Request for Qualifications (RFQ) and Request for Proposals (RFP) for a Design Build Project that will construct a new Interchange (Exit 4A) on I-93 including 3.2 miles of new and improved connector road/urban infrastructure improvements in the Towns of Derry and Londonderry, NH. The completed project will reduce congestion and improve safety along NH Route 102 while promoting economic growth by providing access to underdeveloped lands. This effort involves coordination with Department and Town Staff as well as with the Preliminary Designer. The HDR Team is comprised of an interdisciplinary group of subject-matter experts on highway and bridge design, permitting, right of way acquisitions and relocation and utility coordination elements. The Team was assembled to develop and refine a set of Technical Provisions, Procurement Documents, Contract and Selection Criteria for this \$80 Million Dollar project that is being funded in part by the two Towns and Federal Dollars.

**Role:** Project Manager

**Date:** 2019 – Present

**New Hampshire Dept. of Transportation, 15904 NH 1A over Hampton River, Seabrook-Hampton, NH**

HDR is leading the Preliminary Design (Part A) for the Hampton Harbor Bridge project in Hampton, NH. Roch is serving as the Highway Lead in the design of the replacement of the 1500-foot bridge replacement over the Hampton River. The project design includes enhanced multi-modal facilities along with an extensive traffic and bridge analysis to evaluate multiple bridge and lane configurations.

**Role:** Highway Lead

**Date:** 2019 – Present

**Massachusetts Dept. of Transportation, Commonwealth Ave. Design-Build (DB) Superstructure Replacement, Boston, MA**

Design Manager for MassDOT's \$110M Commonwealth Avenue D-B Superstructure Replacement, which was substantially completed during the summer of 2018 and involved the design and construction of a superstructure replacement of Bridge B-16-055 carrying Commonwealth Avenue and the MBTA Green Line over I-90 EBWB and the MBTA Commuter Rail in Boston, MA. Associated work consists of a replacement superstructure constructed primarily of precast deck panels and steel plate girders to

remedy the structural deficiencies of the existing bridge superstructure and incorporate functional & safety improvements into the roadway. The project involved ABC methods resulting in the actual completion of the bridge construction work over a combined period of 30-calendar days and two complete closures of Commonwealth Avenue and Green Line and Commuter rail service during the summers of 2017 and 2018. Mr. Larochelle's role for this project was Design Manager responsible for the design team, management of project deliverables, Contractor coordination and project delivery.

**Role:** Design Manager

**Date:** 2015-2018

**Massachusetts Dept. of Transportation, MassDOT #64311, On-Call Assignment for Springfield Pedestrian Underpass, Springfield, MA**

This project will provide a new protected pedestrian / bicycle crossing and paved multi-use path beneath the PanAm Connecticut River Line Railroad and connecting access to Birnie Avenue and Plainfield Street. The proposed project will provide a new fully-accessible, ADA-compliant, grade-separated crossing that will encourage pedestrian and bicycle access to area resources while also offering significant safety improvements to the current informal and dangerous at-grade east-west crossing between Birnie Avenue and Plainfield Street. The new underpass structure will consist of a fifty-two (52') foot long concrete underpass with concrete retaining walls that open outward to accommodate bi-directional pedestrian and bicycle traffic through the underpass. The project also includes the construction of a new five hundred thirty (530') foot long paved multi-use path with connections to the existing sidewalks along Birnie Avenue and Plainfield Street. Associated efforts includes drainage pump station design, the design and coordination of 2,500 feet of rail (PanAm) together with necessary temporary track relocation to facilitate phased construction of the underpass, coordination with the City and area utilities, as well as a significant bilingual public outreach component. The intended project also includes security provisions such as active and passive lighting, railing and bollards, as well as landscaping.

**Role:** Project Manager

**Date:** 2015 - Present

**Massachusetts Port Authority, Massport, Conley Terminal Dedicated Freight Corridor and Buffer Open Space, MA**

This award-winning project (ACEC '17) was critical to facilitating the expansion of New England's largest full service container port while mitigating impacts of the terminal operations on the adjacent neighborhoods of South Boston. Associated project elements include a new 500-foot multi-span bridge over the reserved channel to a new signalized intersection with Summer Street, a new 3500 lf dedicated freight corridor that facilitated the removal of all terminal-trucking from East First Street and the residential neighborhood which it serves, a new secure entrance gate and guardhouse, and the creation of a new 1400 lf linear buffer park along East First Street. The project involved extensive permitting, utility coordination, remediation and management of hazardous materials and an extensive public participation process as well as the management of multiple construction phase contracts. The \$35M project was completed in 2017 under three separate contracts.

**Role:** Project Manager

**Date:** 2011 - 2017

**City of Cambridge, MA, On-Call House Doctor Assignment - Willard Street Drainage Improvement Project, Cambridge, MA**

HDR is the Prime Consultant for the Preliminary & Final Design of storm drain, utility infrastructure, and complete streets surface improvements on the Willard Street corridor. The project involves 1000 lf of repurposing and reconstruction of the existing facility with a primary purpose of correcting long-term drainage and flooding issues due



to the current combined system. This project offers the opportunity to make access and circulation improvements for pedestrians, cyclists, and vehicles alike. Associated improvements will include a new outfall to the Charles River, green infrastructure/BMP's to reduce phosphorus loading, new water lines, streetscape improvements, and coordination with other private utilities such as gas, power, and communications. The new project must fit within the context of the surrounding community while providing positive pedestrian connections between neighborhoods. Available right of way is confined creating challenges for proposed street programming. Associated efforts include coordination with resource agencies and associated permitting and an extensive community involvement program.

**Role:** Project Manager

**Date:** 2016 – Present

#### **NON-HDR EXPERIENCE**

##### **NHDOT, I-293 (Exit 5 Reconstruction), Manchester, NH**

Final design of an urban interchange (SPDI) including 1.1 miles of I-293 approach work. Special design controls include a tight urban corridor on one side and the Merrimack River on the other. This project involved a major coordination component including an advanced utility relocation contract worth \$8 million, geotechnical and environmental coordination, as well as careful coordination with the City's Granite Street project in order to ensure compatibility of the design and construction schedules. Three major contracts, including an advanced utility relocation, were completed by the end of 2008 at an approximate cost of \$50 million including all right-of-way purchases.

**Role:** Project Manager

##### **NHDOT, I-93 Widening, Salem to Manchester, NH**

Final design of a portion of the northern segment of the 20-mile corridor reconstruction project (Massachusetts border northerly to the I-293 interchange in Manchester). The project involved the widening of the interstate facility from two to four lanes in each direction, rehabilitation or replacement of 43 bridges and 5 major interchanges totaling approximately \$760 million in combined project costs (in 2007). Relative responsibilities as part of a consultant team for the northern 10-mile portion included design of a three-mile segment (NB and SB barrels) of the corridor beginning just north of the Exit 5/Route 28 interchange and extending northerly through the I-293 directional interchange. Associated work on this three-mile section included the widening of three bridges and new sound-abatement walls. The project was developed on the Department's typical design-bid-build development process beginning with the refinement of the preferred alternative identified in the FEIS and moving up through contract plans. Other elements included intricate traffic control plan development, considerations for future ITS components and critical environmental controls relative to stormwater treatment, wildlife corridors and wetland impacts. The project included extensive coordination with the NH Department of Environmental Services (NHDES) and the NHDOT Bureau of the Environment on new stormwater treatment controls/measures being considered in order to meet the conditions and commitments set forth in the environmental document and water quality certificate. One unique aspect of this project was utility coordination responsibility for the entire northern segment. This effort involved coordination and verification of all utilities throughout the project, the development of a database of utility data and distribution to the other consultant teams for their information. Efforts also involved scheduling and staffing utility meetings/workshops to establish priority for major relocation needs associated with a project of this magnitude, review of utility impact assessments, distribution of verification plans and development of relocation force accounts.

**Role:** Project Manager

**Granite Street Reconstruction, Manchester, NH**

For preliminary and final design of a major gateway project for the City of Manchester. This project was closely coordinated with NHDOT's Exit 5 Interchange project (#10622) and involved the widening of a 0.654 mile of a major connector between the east and west sides of the city including the widening of the existing 440-foot long bridge over the Merrimack River. This project was unique since it was the State's largest Municipally-Managed federally-funded project and as such involved all aspects of design and development and construction administration including all environmental permitting, utility coordination, complete right-of-way services and public participation, as well as coordination on the development of streetscape alternatives and ornamental treatments associated with the strong need for an aesthetically pleasing product. One other significant aspect of the project involved the design for the reconstruction of three at-grade crossings of the B&M Railroad which required significant coordination with Guilford Transportation (now Pan Am) as well as the NHDOT Bureau of Rail and Transit. This project was ultimately broken into three separate contracts, all of which were completed by 2009 at an estimated cost of \$25 million including design, right-of-way and construction.

**Role:** Project Manager

**TABLE OF CONTENTS**

**PREAMBLE**

<b>ARTICLE I - DESCRIPTION OF PROFESSIONAL SERVICES TO BE RENDERED .....</b>	<b>2</b>
A. LOCATION AND DESCRIPTION OF PROJECT .....	2
B. SCOPE OF WORK (GENERAL) .....	3
C. SCOPE OF WORK (SPECIFIC) .....	3
D. MATERIAL FURNISHED BY THE DEPARTMENT OF TRANSPORTATION .....	13
E. WORK SCHEDULE AND PROGRESS REPORTS .....	15
F. SUBMISSION OF REPORTS, PLANS AND DOCUMENTS .....	15
G. DATE OF COMPLETION .....	17
<b>ARTICLE II - COST PLUS FIXED FEE COMPENSATION OF CONSULTANT .....</b>	<b>18</b>
A. GENERAL FEE .....	18
B. LIMITATION OF COSTS .....	20
C. PAYMENTS .....	20
D. ANNUAL INDIRECT COST RATE SUBMISSIONS .....	20
E. RECORDS, REPORTS, AND FINAL AUDIT .....	21
<b>ARTICLE III - GENERAL PROVISIONS .....</b>	<b>23</b>
A. HEARINGS, ETC. ....	23
B. CONTRACT PROPOSALS .....	23
<b>ARTICLE IV - STANDARD PROVISIONS .....</b>	<b>24</b>
A. STANDARD SPECIFICATIONS .....	24
B. REVIEW BY STATE AND FEDERAL HIGHWAY ADMINISTRATION - CONFERENCES - INSPECTIONS .....	24
C. EXTENT OF CONTRACT .....	24
1. Contingent Nature of Agreement .....	24
2. Termination .....	24
D. REVISIONS TO REPORTS, PLANS OR DOCUMENTS .....	25
E. ADDITIONAL SERVICES .....	26
F. OWNERSHIP OF PLANS .....	26
G. SUBLETTING .....	27
H. GENERAL COMPLIANCE WITH LAWS, ETC. ....	27
I. BROKERAGE .....	27
J. CONTRACTUAL RELATIONS .....	28
1. Independent Contractor .....	28
2. Claims and Indemnification .....	28
3. Insurance .....	28
4. No Third-Party Rights .....	29
5. Construction of Agreement .....	29
K. AGREEMENT MODIFICATION .....	29
L. EXTENSION OF COMPLETION DATE(S) .....	30

M.	TITLE VI (NONDISCRIMINATION OF FEDERALLY-ASSISTED PROGRAMS)	
	COMPLIANCE .....	30
N.	DISADVANTAGED BUSINESS ENTERPRISE POLICY AGREEMENT	
	REQUIREMENTS .....	32
	1. Policy .....	32
	2. Disadvantaged Business Enterprise (DBE) Obligation.....	32
	3. Sanctions for Non-Compliance.....	32
O.	DOCUMENTATION .....	32
P.	CLEAN AIR AND WATER ACTS .....	32

## **ATTACHMENTS**

- A. SPECIAL CONTRACT PROVISIONS FOR COVID-19
- B. **SCOPE OF SERVICES FOR PART A PRELIMINARY DESIGN** Prepared by HDR Engineering, Inc. dated November 23, 2019
  - 1. CERTIFICATION WITH REGARD TO THE PERFORMANCE OF PREVIOUS CONTRACTS OR SUBCONTRACTS, ETC.
  - 2. CONSULTANT DISCLOSURE STATEMENT FOR PREPARATION OF ENVIRONMENTAL EVALUATIONS
  - 3. CERTIFICATION OF CONSULTANT/SUBCONSULTANT
  - 4. CERTIFICATION OF STATE DEPARTMENT OF TRANSPORTATION
  - 5. CERTIFICATION FOR FEDERAL-AID CONTRACTS EXCEEDING \$100,000 IN FEDERAL FUNDS
  - 6. CERTIFICATION OF GOOD STANDING
  - 7. CERTIFICATION OF INSURANCE
  - 8. CERTIFICATION OF AUTHORITY / VOTE
  - 9. SIGNATURE PAGE

**AGREEMENT  
FOR PROFESSIONAL SERVICES**

**PREAMBLE**

THIS AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_ in the year 2020 by and between the STATE OF NEW HAMPSHIRE, hereinafter referred to as the STATE, acting by and through its COMMISSIONER OF THE DEPARTMENT OF TRANSPORTATION, hereinafter referred to as the COMMISSIONER, acting under Chapter 228 of the Revised Statutes Annotated, and HDR Engineering, Inc., with principal place of business at 8404 Indian Hills Drive, in the City of Omaha, State of Nebraska, and a local branch office at 250 Commercial Street, Suite 3007, in the City of Manchester, State of New Hampshire, hereinafter referred to as the CONSULTANT, witnesses that:

The Department of Transportation, State of New Hampshire, hereinafter referred to as the DEPARTMENT, proposes to improve NH Route 120 from its intersection with Hanover Street through the I-89 exit 18 interchange to the intersection with Etna Road in the City of Lebanon, NH.

The DEPARTMENT requires professional engineering and environmental consulting services to select an appropriate proposed action that is supported by the community, technically feasible, environmentally permissible, and economical; develop an approvable Environmental Document; and bring the proposed action to a Public Hearing for layout approval if the proposed action requires acquisition of property. These services are outlined in the CONSULTANT'S Scope of Services (included in this AGREEMENT as Attachment A), and Fee Assumptions dated November 23, 2019 which is hereby adopted by reference and considered to be part of this AGREEMENT.

This AGREEMENT becomes effective upon approval by the Governor and Council.

## ARTICLE I

### **ARTICLE I - DESCRIPTION OF PROFESSIONAL SERVICES TO BE RENDERED**

NOW THEREFORE, in consideration of the undertakings of the parties hereinafter set forth, the DEPARTMENT hereby engages the CONSULTANT, who agrees to render services to the DEPARTMENT which shall include, but not be restricted to, the following items, in accordance with conditions and terms hereinafter set forth:

#### **A. LOCATION AND DESCRIPTION OF PROJECT**

This project involves the study of improvements to the Interstate 89 Exit 18 interchange and to the segment of NH 120 from Hanover Street to Etna Road, a distance of approximately 1.1 miles. Some of the existing highway features and conditions to be aware of include the following:

- I-89 Exit 18 was originally constructed in 1967, and substantially improved in 1999 in conjunction with the construction of the Dartmouth Hitchcock Medical Center.
- The segment of NH 120 to be improved consists of multiple lanes with signalized intersections at the interchange ramps, Heater Road, and Etna Road.
- Several incremental roadway improvements have been made in recent years within the study area to mitigate traffic impacts from private developments. The improvements have included the addition of through and turn lanes, the modification of medians, and the implementation of adaptive signal control.
- The study area is subject to very high peak period traffic, which leads to long queues on the interchange ramps in the AM peak hour and along NH 120 in the PM peak hour.

The objective of the project is to develop an alternative that will improve the safety and mobility of the interchange and NH 120 corridor for all users. The City of Lebanon, in cooperation with the Upper Valley Lake Sunapee Regional Planning Commission and other regional stakeholders, has joined together to create the Upper Valley Transportation Management Association (UVTMA) which is organized by Vital Communities. As the development of improvement alternatives proceeds, it will be vital to work closely with this group as well as all other appropriate public or private stakeholders to gain consensus on design decisions.

The development of the preliminary engineering for this project is expected to be performed in two parts (Part A – Preliminary Design and Part B – Final Design). This scope of services is for Part A only. The purpose of Part A is to develop and evaluate design alternatives for improving I-89 Exit 18 and NH 120. The alternative development process will: 1.) develop and evaluate improvement alternatives in coordination with appropriate stakeholders; 2.) identify all impacted natural and cultural resources potentially affected by the alternatives, and investigate means of minimizing or mitigating the impacts; 3.) prepare an Environmental Document for the proposed alternative; and 4.) prepare a public hearing plan (if needed) for the proposed alternative.

## ARTICLE I

### **B. SCOPE OF WORK (GENERAL)**

The goals of Part A of this project are to select, in coordination with the stakeholders, a proposed alternative that is technically feasible, environmentally permissible, and economical; develop an approved Draft Environmental Study; and bring the proposed alternative to a public hearing for layout approval (if needed). Part A is being split into two phases:

1. Phase 1: Contract inception through Level 2 Screening, which is the identification of up to two (2) Build Alternatives.
2. Phase 2: Further development of up to two (2) Build Alternatives through the Public Hearing and post-hearing design stage.

At the conclusion of Phase 1, the DEPARTMENT and the CONSULTANT will re-evaluate the scope and fee for Phase 2 based on the complexity of the Build Alternative(s) coming out of Phase 1. Article II of this AGREEMENT separates the fee into Phase I and Phase 2. The CONSULTANT'S Part A Fee Assumptions dated November 23, 2019 separates the Tasks according to the Phases.

Assuming a successful Public Hearing, and upon completion of Part A, the DEPARTMENT reserves the right to either negotiate a scope and fee for Part B, to prepare final design plans, specifications and estimates for the project limits, or terminate the contract.

The public outreach for the project will include a dynamic public participation program that will involve public and private stakeholders (e.g., Upper Valley Transportation Management Association (UVTMA) which is organized by Vital Communities) and the general public in the decision-making process.

### **C. SCOPE OF WORK (SPECIFIC)**

The tasks for Part A have been divided into three categories: Preliminary Engineering, Public Participation, and NEPA Documentation. The Preliminary Engineering tasks cover the work required to develop and evaluate improvement alternatives and develop a proposed alternative. The Public Participation tasks cover public outreach for all aspects of the project. The NEPA Documentation tasks cover the work required to document impacts of the alternatives to all relevant natural and cultural resources. The tasks shown below are further described in Attachment A, the CONSULTANT'S Part A Scope of Services dated November 23, 2019.

#### **1. Preliminary Engineering**

##### **a. Data Collection**

The CONSULTANT shall collect any pertinent information available within the Project Limits including traffic volumes, utility locations, or other available materials. The CONSULTANT shall conduct a field review of the project area to identify key engineering

## ARTICLE I

controls, topographic features, natural and cultural resource constraints, and land uses that could have a bearing on the design.

b. Topographic Survey and Base Plan Preparation

Using electronic topographic survey data provided by the DEPARTMENT, the CONSULTANT shall develop a digital surface model and topographic base plan. The most recent ortho-rectified digital aerial photographs will be provided by the DEPARTMENT if needed.

c. Right-of-Way Boundary Preparation

The CONSULTANT shall complete a boundary survey of I-89 exit 18 and NH Route 120 (including intersecting municipal or State roads) to a minimum distance of 300 feet beyond the anticipated limits of the proposed improvements, which shall be undertaken in accordance with the minimum standards for an Urban Boundary Survey as detailed in the New Hampshire Code of Administrative Rules (Part Lan 503, Technical Standards), including but not limited to complete field survey locating all appropriate monumentation and development of Right of Way (ROW) alignments. The CONSULTANT, in conjunction with a certified NH Licensed Land Surveyor, shall prepare a right of way plan showing ROW alignments where existent, and metes and bounds with station and offset information for the existing roadway corridors. The CONSULTANT will develop the existing Boundary and controls through the following process:

- i. ROW Facilitation Meeting: An initial meeting with the DEPARTMENT for project overview, review of historic ROW information and turnover of DEPARTMENT project data and ROW;
- ii. Records Research: The CONSULTANT shall research the town and city roads and property records, State highway and relevant archive records, court, registry and probate records, abutters' deeds and property plans within the project limits, and other research as needed to define the existing ROW limits;
- iii. Boundary Survey: The Consultant shall complete the boundary survey as outlined:
  1. Field recovery of Right-of-Way and abutting boundary monuments.
  2. Establish geodetic control network on NH State Plane Coordinate System.
  3. Perform boundary survey of existing Right-of-Way.
  4. Process survey control data using least squares adjustment at 95% confidence level.
    - a. Process side shot data on adjusted controls and verify.



## ARTICLE I

5. Develop Right-of-Way alignments and establish Right-of-Way limits based on survey and boundary control standards of practice and the current NHLSA Ethics and Standards.
- iv. Existing ROW Plan Review: The CONSULTANT shall submit a preliminary ROW plan for DEPARTMENT review and attend a ROW facilitation meeting to discuss ROW Plan review comments;
- v. Development of Final Existing ROW Plan; The CONSULTANT shall address the comments from DEPARTMENT Preliminary Plan review through a written explanation on how review items were addressed prior to recording existing ROW plan with the County Registry. The CONSULTANT shall provide the DEPARTMENT with the Existing ROW Plans in DWG/DGN file format and PDF plan file. The CONSULTANT shall provide the DEPARTMENT with a plan showing the existing boundary monumentation and survey traverse in DWG/DGN file format and the geodetic control data in ASCII file format.
- d. Traffic Data Collection & Analysis  
The CONSULTANT shall gather traffic volume data as needed to analyze existing and future traffic operations under both no-build and build conditions within the project area. Macroscopic and microscopic evaluations will be undertaken for the various alternatives as needed.
- e. Transportation System Management / Traffic Demand Management Evaluation  
The CONSULTANT shall evaluate TSM and TDM measures to determine the merit of interim low-cost improvements to the existing infrastructure (e.g., modifications to lane use, signal timing, etc.) or of actions that could reduce the traffic demand within the project study area (e.g., constructing a highway bridge on Hanover Street as an alternative connection between Downtown and DHMC). The CONSULTANT shall perform an appropriate level of traffic modeling as needed to estimate the traffic impacts of such measures.
- f. Crash Data Collection & Analysis  
The CONSULTANT shall evaluate crash data provided by the Department to understand the safety performance within the project area and to consider how the alternatives would impact safety.
- g. Alternative Development & Evaluation  
The CONSULTANT will develop and evaluate alternatives and investigate their consequences to allow the Department to select a preferred alternative.

## ARTICLE I

- i. Reasonable Alternatives: Each alternative will be developed to an equal level of detail and presented in a plan package. Lanes, shoulders, slope impact limits, right of way requirements, and potential water quality protection measures will be determined for each alternative.
    - ii. Cost Estimates: Conceptual cost estimates will be developed for the alternatives. The cost estimates will quantify items such as pavement, roadway select materials, earthwork, structures, significant drainage facilities, and other design elements as appropriate and apply the Department's current weighted average unit prices. Other items will be estimated on a percentage basis. Right of way acquisition costs will be determined from the assessed value of impacted property. Engineering and environmental mitigation costs will be estimated on a percentage basis.
  - h. Engineering Report  
The CONSULTANT shall prepare an Engineering Report to document the existing conditions within the corridor, and to summarize the design decisions and engineering details of the proposed alternative. Any rejected alternatives should also be documented to explain the justification for their rejection.
  - i. Interstate Access Justification Report  
The CONSULTANT shall prepare an Interstate Access Justification Report to document the technical feasibility (safety, operational, and engineering acceptability) of any proposed reconfiguration of the interstate interchange, in accordance with the 2017 FHWA Policy on Access to the Interstate System.
  - j. Project Team Meetings  
Project team meetings will be held periodically over the course of Part A. These informal meetings will take place when needed to discuss project issues that may include resource constraints, impacts of alternatives, and cost issues. These meetings will involve CONSULTANT and DEPARTMENT staff, but may also include representatives of the Upper Valley Transportation Management Association (UVTMA) which is organized by Vital Communities, state or federal agencies, or others as appropriate.
2. Environmental Documentation
- a. Data Collection  
The CONSULTANT shall review relevant data sources to identify all resources present within the Project Area. Resources to be identified include:
    - i. Water-Based Resources
      - a) Groundwater: Data regarding aquifers and public water supplies within the study area will be gathered from appropriate sources such as the GRANIT GIS database,

## ARTICLE I

NHDES mapping, or municipal mapping. The CONSULTANT will describe these resources and display them on project mapping.

- b) Surface Waters: Data regarding existing surface waters and water quality will be gathered and documented. The CONSULTANT will investigate appropriate water quality treatment measures necessary to minimize nutrient impacts on surface waters. This shall include a pavement runoff analysis for Total Nitrogen, Total Phosphate and Total Suspended Solids and volume for the existing condition and the proposed alternative to determine appropriate size and placement of structural Best Management Practices to be shown at the Public Hearing. Assessments of chloride (salt) loadings based on the number of travel lanes for the pre and anticipated proposed alternative shall be conducted and include an analysis of the effects to receiving waters.
  - c) Floodplains: FEMA floodplain and floodway information will be gathered from appropriate sources and displayed on project mapping.
  - d) Wetlands: The CONSULTANT will delineate wetlands and determine their functions and values within the study area limits based on state and federal criteria, and will collect field data sufficient to document the delineation. If access to private property is required, landowners will be notified by the DEPARTMENT. The CONSULTANT will survey wetland flagging using a GPS unit with sub-meter accuracy. The CONSULTANT will note any unusual features such as invasive species, disturbed areas, or uncommon wetland types such as bogs or vernal pools. If required, the CONSULTANT will identify potential wetland mitigation opportunities either within the project corridor or the surrounding area. This effort will need to be coordinated with municipalities.
  - e) Stream Crossings: The CONSULTANT will identify all intermittent and perennial stream crossings within the project study limits. The CONSULTANT will determine the watershed size for each crossing using the USGS Stream Stats tool. The CONSULTANT will also determine the corresponding Tier classification in accordance with the NHDES Stream Crossing Rules Env-Wt 900 series to aid in determination of a design that meets the NHDES Stream Crossing Guidelines and/or alternative design.
- ii. Land-Based Resources
- a) Soils: Soil series within the study area will be mapped based on existing databases, including the distribution of prime, statewide, local, or unique farmland soils.

## ARTICLE I

- b) Active Farmlands: Active farmlands will be identified and described.
- c) Public and Conserved Lands: Publicly owned lands, bicycle and pedestrian trails, and privately conserved lands will be identified.
- d) Section 4(f) Resources: Parks, historic sites, or other areas subject to Section 4(f) will be identified.
- e) Section 6(f) Resources: Lands receiving Section 6(f) funds will be identified based on coordination with the NH Department of Resources and Economic Development.

### iii. Wildlife

- a) Wildlife and Habitat: Wildlife resources will be identified with information from the NH Wildlife Action Plan and supplemented as needed by field reconnaissance.
- b) Fisheries: The fisheries resource information will be updated based on coordination with NH Fish and Game and the US National Marine Fisheries Service.
- c) Threatened and Endangered Species: Threatened and endangered species information will be gathered through coordination with the NH Department of Resources and Economic Development, NH Fish and Game Department, and the US Fish and Wildlife Service, as well as field investigations.

### iv. Cultural Resources (Historic):

The CONSULTANT will prepare and submit, through the DEPARTMENT, a NH Division of Historical Resources (NHDHR) Request for Project Review (RPR) that identifies cultural resources in accordance with NHDHR Survey Manuals. Further assessment of the determination of eligibility for the National Register of historic resources will be undertaken in consultation with the NH State Historic Preservation Officer (SHPO) and the lead Federal agency. The CONSULTANT will conduct all necessary phases of Section 106 public outreach.

### v. Cultural Resources (Archaeology):

The CONSULTANT will undertake a Phase 1A investigation to identify areas of archeological sensitivity within the study area. Any sensitive areas that may be impacted by project alternatives may be further investigated with a Phase 1B investigation to determine if resources are present. If archeological resources are identified, further assessment of the determination of eligibility for the National Register and the need for additional archaeological investigations will be evaluated in consultation with the NH State Historic Preservation Officer and the lead Federal agency.

## ARTICLE I

vi. Social and Economic Resources:

The CONSULTANT will conduct a socio-economic analysis of the regional social and economic resources. The CONSULTANT will identify the socio-economic relationship between the study area transportation/circulation pattern, regional and local municipalities' Master Plans, and the businesses and residents within its immediate influence.

vii. Noise:

The CONSULTANT shall perform, as necessary, tasks required to assess the potential effects on noise levels at receptors adjacent to the project to determine and/or achieve compliance with the FHWA Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR 772) and the DEPARTMENT'S *Policy and Procedural Guidelines for the Assessment and Abatement of Highway Traffic Noise for Type I Highway Projects* (the Noise Policy).

viii. Air Quality:

The CONSULTANT shall perform, as necessary, tasks required to assess the potential air quality impacts of the project to determine and/or achieve compliance with the State of New Hampshire Air Quality Implementation Plan, and the provisions set forth in the Clean Air Act Amendments (CAAA) and the National Environmental Policy Act (NEPA).

ix. Invasive Species:

The CONSULTANT will determine the presence of invasive species in conjunction with other project field investigations. General locations and types will be identified within the project limits, but no detailed mapping will be provided.

x. Contaminated Properties:

A database search will be undertaken to identify areas with records of hazardous materials. The CONSULTANT will populate the DEPARTMENT'S RASCAL database, will coordinate with the DEPARTMENT'S hazardous materials specialists to confirm findings, and will assess measures required to conduct geotechnical investigations within areas of potential contamination. The CONSULTANT will coordinate with the DEPARTMENT on evaluating the presence of asbestos or lead paint on existing bridges and in determining future investigation requirements of the project.

## ARTICLE I

xi. Construction Impacts:

The CONSULTANT shall perform, as necessary, tasks required to assess the potential construction impacts on the natural, cultural, and socio-economic resources present within the project area.

b. Agency Coordination

The CONSULTANT will attend several of the DEPARTMENT's monthly Natural Resource Agency meetings and coordinate a field meeting, if needed, with the agencies to review resource impacts. The CONSULTANT will also attend several of the DEPARTMENT'S monthly Cultural Resource meetings with the NH Division of Historical Resources to discuss scope and findings.

c. Project Purpose and Need

The CONSULTANT will develop a formal Purpose and Need Statement for the project consistent with NEPA and other Federal guidelines.

d. Alternatives Development and Evaluation

The CONSULTANT will develop a Summary Matrix of the impacts and effects of the reasonable design alternatives for use by the DEPARTMENT and stakeholders to determine the proposed alternative. The alternatives screening and selection process will be summarized in the Environmental Study. This will include initial alternatives concepts, screening criteria and results, and the basis for eliminating alternatives or options.

e. Description of Proposed Action

The CONSULTANT will describe the Proposed Action in detail, including location, dimensions, traffic patterns, amenities or facilities such as pedestrian crossings, construction issues, and estimated costs. Conceptual plan, profile, and cross-section views will be included.

f. Environmental Impacts of Reasonable Range of Proposed Alternatives

The CONSULTANT will identify resource impacts, potential measures to minimize or mitigate impacts, and possible resource enhancements that could be achieved by the proposed alternatives.

The CONSULTANT will perform tasks as outlined in the November 23, 2019 Scope of Work and Task Descriptions for the following resources/impacts:

- Land Use
- Social and Economic Resources
- Farmlands
- Air Quality

## ARTICLE I

- Noise
- Groundwater Resources
- Surface Water Resources
- Chloride Loading
- Pollutant Loading (TN, TP & TSS)
- Floodplains
- Wetlands
- Wetland Mitigation
- Wildlife/Vegetation/Fisheries
- Threatened or Endangered Species
- Parks/Recreation/Conservation Lands
- Cultural Resources
- Hazardous Materials
- Visual Resources
- Environmental Justice (provided by the DEPARTMENT)
- Construction Impacts
- Summary of Impacts
- Environmental Commitments

g. Section 4(f)

If necessary, the CONSULTANT will prepare a Section 4(f) evaluation that complies with applicable federal laws and regulations, including Section 4(f) of the Department of Transportation Act, 23 CFR 774, FHWA's *Section 4(f) Policy Paper*, and other resources as appropriate. The evaluation will include: a description of Section 4(f) resources; a description of any project "use" of the resources; an alternatives analysis, including a least overall harm analysis; measures to minimize harm; coordination activities with NH SHPO, the lead Federal agency; and conclusions.

h. Section 6(f)

Section 6(f) properties will be identified, and potential impacts to 6(f) properties will be quantified. Coordination for use of 6(f) properties will include one field meeting with the Department of Resources and Economic Development and additional coordination activities.

## ARTICLE I

### i. Draft Environmental Study/Section 4(f) Evaluation

The Draft Environmental Study (ES) will document the resource impacts outlined in Section C.2.f above. The ES will incorporate, either directly or by reference, the alternatives analysis and conclusions reached in Part A and in the subsequent selection of the proposed alternative. The document will also identify which environmental permits are required, but the actual permit applications will not be undertaken until final design. The Section 4(f) evaluation, resource reports, agency correspondence, and public meeting summaries will be appended. An administrative Draft will be prepared for review by the DEPARTMENT and the lead Federal agency. After comments are addressed by the CONSULTANT, the Draft ES will be submitted to the DEPARTMENT, the lead Federal agency, and all other parties as directed, for review. Twenty printed copies and ten CDs of the Draft EA/4(f) Evaluation will be provided by the CONSULTANT.

### j. Final Environmental Study/Section 4(f) Evaluation

Following review of the Draft ES and comments received at the Public Hearing, the CONSULTANT will meet with the DEPARTMENT and the lead Federal agency to review and address comments as needed. The CONSULTANT will then revise and resubmit the document. It is anticipated one review will be necessary. Ten printed copies of the Final ES/4(f) Evaluation will be provided to the DEPARTMENT as well as 5 CDs of the document.

## 3. Public Participation

The CONSULTANT shall support a dynamic public participation process that enhances the DEPARTMENT'S "Public Involvement Process for New Hampshire Transportation Improvement Projects". The CONSULTANT shall prepare presentation graphics, handouts and support displays for public participation and posting to the DEPARTMENT's project webpage, and be available to make presentations and draft meeting minutes. Specific tasks include:

### a. Prepare a Public Involvement Plan

The CONSULTANT will prepare a Public Involvement Plan outlining all elements of the tasks listed below. The plan will include a detailed schedule of all activities.

### b. Working Group Meetings

Five working group meetings will be held with project stakeholders to review and discuss alternatives and to facilitate local input into important design decisions. The CONSULTANT will prepare any needed informational handouts and presentation materials, will assist with presentations as needed, and prepare written meeting summaries for posting to the Project webpage.



## ARTICLE I

### c. Public Officials/ Public Informational Meetings

Public Officials / Public Informational Meetings will be held to involve the public and other interested parties (including any Section 106 Consulting Parties) in the project development process. The first Public Meeting will take place at the start of Part A to discuss the reasonable range of design alternatives, while the subsequent Public Informational Meeting(s) will focus on reaching consensus on a preferred alternative. The CONSULTANT will prepare any needed informational handouts and presentation materials, will assist with presentations as needed, and will prepare written documentation of the proceedings for posting to the Project's webpage.

It is anticipated the CONSULTANT will also assist the DEPARTMENT with Local Meetings as needed to brief elected officials. The CONSULTANT will assist the DEPARTMENT in the preparation of project material for presentation, and will attend these meetings to assist with the presentation and to document the proceedings for posting to the Project's webpage.

### d. Public Hearing (if needed)

If property impacts are unavoidable, a formal Public Hearing will be held at the end of Part A for layout of the proposed alternative and environmental document to include the existing metes and bounds property boundary information. The CONSULTANT will prepare any needed informational handouts and presentation materials, and will assist with presentations as needed. The CONSULTANT will also assist the DEPARTMENT in formally addressing comments received through the public hearing process.

## **D. MATERIAL FURNISHED BY THE DEPARTMENT OF TRANSPORTATION**

The DEPARTMENT will furnish the following data to the CONSULTANT:

1. Electronic files in US Customary units of the following information in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements for incorporation into the plans by the CONSULTANT:
  - a. Topographical mapping within the project area shall be provided along with any pertinent electronic supporting information (survey field notes, ASCII point file, SDR data files, etc.) in a mutually acceptable digital format.
  - b. Any additional topographic surveys of adjacent parcels, mitigation sites, wetland boundaries, or other pertinent items deemed necessary and processed by the DEPARTMENT. Incorporation of this information into the topographical mapping shall be the responsibility of the CONSULTANT.

## ARTICLE I

- c. Electronic drawings in MicroStation format of roadway typical cross-sections and other detail sheets shall be provided, when available from the DEPARTMENT'S CAD/D library, upon request by the CONSULTANT, in accordance with the current DEPARTMENT CAD/D Procedures and Requirements.
  - d. Electronic drawings in MicroStation format of the existing underground utilities, if provided to the DEPARTMENT by the utility. The CONSULTANT shall be prepared to provide an electronic copy of the preliminary base plans to the DEPARTMENT for submission to and use by the utilities. The CONSULTANT shall be responsible for the incorporation of this utility information (either in paper or electronic format) into the plans, in accordance with the current DEPARTMENT CAD/D Procedures and Requirements.
  - e. Crash data extracted from the Department of Safety's crash database.
2. Prints of the following information:
- a. Any information outlined in Article I.D.1.a thru d. above (electronic information) both existing and proposed, when available, for verification by the CONSULTANT.
  - b. Any additional information not available electronically (e.g., utilities) for the CONSULTANT to incorporate into the plans in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements.
3. Right-of-Way data: The DEPARTMENT will provide digitized Right of Way Plan of record and corridor Title Abstracting, as well as, any additional information collected or prepared by the DEPARTMENT that could supplement the CONSULTANT's Right-of-Way Boundary (Section C.1.c.) (e.g., property lines to a tax map level, parcel owners, etc.)
4. Plans of prior highway and bridge construction projects within the project limits, as available.
5. The location of all existing and proposed utilities through direct contact with the various utility companies.
6. Geotechnical investigations and recommendations, if available: Electronic files of the Environmental resource data collected in previous studies.
7. Crash data within the study area, as needed.
8. Ground survey, as needed, within the study area to supplement the digital surface model. The CONSULTANT will process the raw survey data and incorporate into the digital surface model.
9. The DEPARTMENT's latest high-resolution color aerial photography (which is geo-referenced and ortho-rectified).

## ARTICLE I

### **E. WORK SCHEDULE AND PROGRESS REPORTS**

The CONSULTANT shall begin performance of the services designated in the Contract promptly upon receipt from the DEPARTMENT of a Notice to Proceed and the material to be furnished as herein described. The CONSULTANT shall complete these services without delay unless unable to do so for causes not under the CONSULTANT'S control.

The CONSULTANT'S sequence of operation and performance of the work under the terms of this AGREEMENT shall be varied at the direction of the DEPARTMENT to give priority in critical areas so that schedules and other STATE commitments, either present or future, can be met.

The CONSULTANT shall report progress to the DEPARTMENT in conjunction with DEPARTMENT'S Standardized Invoicing process. Invoices shall be submitted for each month that there has been more than \$10,000 in cumulative billable work since the last invoice, and at least quarterly. For months with no progress or less than \$10,000 cumulative work since the last invoice, a status report briefly describing the reasons for little or no progress shall be submitted.

### **F. SUBMISSION OF REPORTS, PLANS AND DOCUMENTS**

The submissions shall be as necessary in accordance with the study process and environmental analysis as outlined above. Each submission shall be supplemented with such electronic copies of MicroStation drawings, illustrations, and descriptive matter as are necessary to facilitate a comprehensive understanding and review of proposed concepts.

The CONSULTANT will be expected to support their design proposals and any issues resulting from review by the DEPARTMENT or in the public participation phase (including agency coordination), with alternative studies and reasonably itemized cost comparisons for alternate concepts.

**Electronic Transfer of Data:** The DEPARTMENT requires the following to ensure compatibility with software used by the DEPARTMENT and to ensure the efficient and timely exchange of computer files between the DEPARTMENT and the CONSULTANT.

All files submitted must be fully compatible with the formats listed in this document without any conversion or editing by the DEPARTMENT. Any files requiring conversion and/or editing by the DEPARTMENT will not be accepted. All files shall be virus free. All files shall use the DEPARTMENT'S file naming convention.

**Computer Aided Design/Drafting (CAD/D) files:** All CAD/D files shall be in accordance with the Deliverable Requirements described in the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time this AGREEMENT was executed, or any later version. All files submitted must be fully compatible with the current version of MicroStation being used by the DEPARTMENT. (The DEPARTMENT'S CAD/D Procedures and Requirements document can be found on the CAD/D website by following the "Downloads" link at [www.nh.gov/dot/cadd/](http://www.nh.gov/dot/cadd/).)

## ARTICLE I

**Word Processing, Spreadsheet, and Database Files:** For each Phase, all relevant files shall be provided in a format fully compatible, as appropriate, with the following:

Word Processing: Microsoft Word 2010 or NHDOT compatible version  
Spreadsheets: Microsoft Excel 2010 or NHDOT compatible version  
Databases: Microsoft Access 2003 or NHDOT compatible version

These specifications will be updated as necessary to reflect changes in DEPARTMENT software such as adding new software or updating to new versions of existing software. In such instances, the CONSULTANT will be promptly notified.

**Computer File Exchange Media:** Electronic files shall be exchanged between the DEPARTMENT and the CONSULTANT using the following media as appropriate for Windows Operating Systems:

FTP: Files posted to the DEPARTMENT'S FTP site can be actual size or compressed. Contact the Project Manager for instructions for accessing the FTP site.

Compact Disc (CD): Files on CD(s) should be actual size, not compressed.

DVD: Files on DVD(s) should be actual size, not compressed.

Email: Files 10 MB or smaller may be transferred via Email. If compressed, the files should be self-extracting and encrypted based on content.

**Copies:** The CONSULTANT shall provide hard (paper) and electronic copies of the deliverables for each Phase of Work. For all deliverables, provide electronic copies in two electronic versions; an electronic version in the original electronic file format (i.e., MicroStation (\*.dgn), Microsoft Word (\*.docx), Microsoft Excel (\*.xlsx), etc.) and an electronic version in Adobe Acrobat (\*.pdf) file format.

**Website Information:**

- a. Website Content: All external DEPARTMENT websites created for this project shall meet the ADA Section 508 requirements as stated in the NH DoIT Website Standards. Those standards are outlined in <https://www.nh.gov/doit/vendor/documents/nh-website-standards.pdf>.
- b. Website Documents: All documents posted to a website created for this project, or that are submitted to be posted to a DEPARTMENT website, shall meet ADA Section 508 accessibility requirements. A checklist for document compliance is provided in <https://www.section508.gov/content/build/create-accessible-documents> (go to second link down under "Checklists").

Upon completion of the AGREEMENT, the CONSULTANT shall turn over all documentation.

## ARTICLE I

### G. DATE OF COMPLETION

In accordance with the Governor and Council Resolution authorizing this AGREEMENT, the date of completion for the Part A professional services rendered under this AGREEMENT is August 31, 2022.

## ARTICLE II

### ARTICLE II - COST PLUS FIXED FEE COMPENSATION OF CONSULTANT

#### A. GENERAL FEE

In consideration of the terms and obligations of this AGREEMENT, the STATE, through the DEPARTMENT, hereby agrees to pay and the CONSULTANT agrees to accept as full compensation for all services rendered to the satisfaction of the DEPARTMENT under this AGREEMENT, an amount equal to the sum of the following costs:

- 1) Actual salaries\* approved by the DEPARTMENT paid to technical and other employees by the CONSULTANT, including salaries to principals, for the time such employees are directly utilized on work necessary to fulfill the terms of this AGREEMENT.

\* In accordance with DEPARTMENT policy, the maximum direct-labor rate allowed for all positions under this AGREEMENT, including subconsultants, shall be \$60.00 per hour unless a waiver to the salary cap has been specifically approved for specialty services. A waived rate shall remain fixed at that rate for the life of the AGREEMENT unless a subsequent waiver is requested and approved.

An overtime premium of one and one half times the direct labor rate for non-exempt employees working beyond the standard 40 hours per workweek may be allowed for special circumstances when approved by the DEPARTMENT in writing in advance. The overhead portion of non-exempt employees' salary rates shall not be adjusted. Engineers are not eligible for overtime premium rates.

Phase 1 direct salary costs are estimated at: \$91,443.01

Phase 2 direct salary costs are estimated at: \$163,162.32

- 2) Overhead costs applicable to the direct salary costs. The audited indirect cost rate, as submitted to and approved by the DEPARTMENT, will be applied to the direct salary costs. The CONSULTANT'S audited indirect cost rate for fiscal year ended December 29, 2018, which expires June 30, 2020, 155.44%, shall be used for invoicing for the life of the AGREEMENT.

Phase 1 overhead costs are estimated at: \$142,139.01

Phase 2 overhead costs are estimated at: \$253,619.51

- 3) A fixed fee for profit and non-reimbursed costs (10% of 1+2).

Phase 1 fixed fee is: \$23,358.20

Phase 2 fixed fee is: \$41,678.18

## ARTICLE II

- 4) Reimbursement for direct expenses, including, but not limited to, subconsultants with a subcontract value of less than \$200,000, printing, reproductions and travel not included in normal overhead expenses. The reimbursable costs for mileage and for per diem (lodging and meals) shall be that allowed by the CONSULTANT'S established policy but shall not exceed that allowed in the Federal Acquisition Regulations (Subpart 31.205-46) and in the Federal Travel Regulation. Mileage and per diem costs shall be subject to approval by the DEPARTMENT. Subconsultants with a subcontract value of less than \$200,000 shall be invoiced as direct expenses and do not require individual invoices, unless the subcontract is more than 25% of the contract total.

Phase 1 direct expenses are estimated at: \$25,000.00

Phase 2 direct expenses are estimated at: \$20,745.00

- 5) Reimbursement for actual cost of subconsultants is estimated as follows:

Doucet Survey Inc. (Phase 1) \$43,915.02

Doucet Survey Inc. (Phase 2) \$0.00

Fitzgerald & Halliday, Inc. (Phase 1) \$187,146.56\*

Fitzgerald & Halliday, Inc. (Phase 2) \$138,500.34\*

(\*Audited Indirect Cost Rate: 157.71%)

Waterstone Engineering, LLC (Phase 1) \$3,233.52

Waterstone Engineering, LLC (Phase 2) \$17,408.89

Phase 1 total \$536,980.32

Phase 2 total \$614,369.24

**AGREEMENT NOT-TO-EXCEED TOTAL \$1,151,349.56**

The amount payable under categories 1), 2), 4), and 5) may be reallocated within the not-to-exceed total upon mutual agreement of the DEPARTMENT and the CONSULTANT. Reallocations shall be properly documented for Final Audit purposes, but do not require a formal amendment.

The total amount to be paid under this AGREEMENT shall not exceed \$1,151,349.56, the sum of the amounts shown in Article II, Section A (which amount is based on the CONSULTANT'S fee and manhour estimates of November 23, 2019), except by agreement of all parties made after supplemental negotiations and documented by a formal amendment to the AGREEMENT. Should circumstances beyond the control of the CONSULTANT require extension of the time of completion more than one (1) year, the general fee may be renegotiated and documented by a formal amendment to the AGREEMENT; however, the fixed fee (b) shall not change for reasons of work duration alone. The

## ARTICLE II

fixed fee (b) shall only change when there has been a significant increase or decrease in the scope of work outlined in this AGREEMENT.

### **B. LIMITATION OF COSTS**

1. Costs incurred against this AGREEMENT shall not exceed the total amount specified in Article II, Section A unless otherwise authorized. The CONSULTANT shall give the DEPARTMENT a ninety (90)-day written notice when it appears that this limit will be exceeded.
2. It is expected that the total cost to the STATE shall be the not-to-exceed amount specified in Article II, Section A, and the CONSULTANT agrees to use best efforts to perform the work specified in the AGREEMENT and all obligations under this contract within this not-to-exceed amount.
3. The STATE shall not be obligated to reimburse the CONSULTANT for costs incurred in excess of the not-to-exceed amount specified in Article II, Section A.
4. Changes to the scope of work shall not be considered an authorization to the CONSULTANT to exceed the not-to-exceed amount specified in Article II, Section A.

### **C. PAYMENTS**

Monthly payments on account of services rendered under this AGREEMENT may be made upon submission of invoices by the CONSULTANT to the DEPARTMENT. The CONSULTANT shall follow the DEPARTMENT'S Standardized Invoicing format. The fixed fee shall be invoiced during the billing period based upon the overall percent complete calculated within the approved progress report found in the DEPARTMENT'S Standardized Invoicing.

Actual salaries paid and the indirect cost rate shown in Article II, Section A, shall be used until such time as true costs of salary burden and overhead are fixed by Final Audit. At that time, payments shall be adjusted to agree with the indirect cost rates as determined by Final Audit for the period in which the work was performed, as approved by the DEPARTMENT.

### **D. ANNUAL INDIRECT COST RATE SUBMISSIONS**

The CONSULTANT and all subconsultants with a subcontract value of \$200,000 or greater shall submit their audited indirect cost rate and related documents annually for the life of this AGREEMENT as follows:

To comply with the Federal Acquisition Requisitions (FAR), the CONSULTANT'S Indirect Cost Rate Audit must meet the following requirements:

- Be conducted by an independent Certified Public Accountant (CPA), a Federal government agency, or another state transportation agency.



## ARTICLE II

- Be conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS) issued by the U.S. Government Accountability Office (GAO) and with the cost principles and procedures set forth in Part 31 of the FAR.
- Follow the guidance of the most recent American Association of State Highway Transportation Officials Uniform Audit and Accounting Guide for Audits of Architectural and Engineering Consulting Firms (AASHTO Audit Guide).

In addition to the Indirect Cost Rate Audit, CONSULTANTS shall submit the following documentation:

- AASHTO Internal Control Questionnaire (ICQ) for Consulting Engineers form with the required attachments.
- Certification of Final Indirect Costs as required pursuant to 23 CFR 172.11 and FHWA Order 4470.1A.
- Complete copy of the CONSULTANT'S annual audited financial statements.
- Analysis of reasonableness of executive compensation as outlined in the AASHTO Audit Guide.
- Cognizant letter, if available.
- A listing of all contracts, with dollar amounts, the CONSULTANT has currently with the DEPARTMENT as a prime consultant or subconsultant.

Annual indirect cost rate submissions are due within 6 months of the CONSULTANT'S fiscal year end and shall be submitted to the DEPARTMENT'S Internal Audit Office electronically to [DOT-InternalAudit@dot.nh.gov](mailto:DOT-InternalAudit@dot.nh.gov) or in writing.

### **E. RECORDS, REPORTS, AND FINAL AUDIT**

The CONSULTANT shall maintain adequate cost records for all work performed under this AGREEMENT. All records and other evidence pertaining to cost incurred shall be made available at all reasonable times during the AGREEMENT period and for three (3) years from the date of final expenditure report for examination by the STATE, Federal Highway Administration, or other authorized representatives of the Federal Government, and copies thereof shall be furnished if requested. Applicable cost principles are contained in the Federal Acquisition Regulations (FAR) in Title 48 of the Code of Federal Regulations (Subpart 31.2 and Subpart 31.105).

The DEPARTMENT shall have the right, at the time of Final Audit, to review all items charged on this project. If, in the opinion of the DEPARTMENT, such payment is unreasonable, the CONSULTANT shall be required to justify such payment or payments before they will be approved as direct or indirect costs.

## ARTICLE II

All costs as described in Article II Section A.1 through A.5 are to be determined by actual records kept during the term of the AGREEMENT, which are subject to Final Audit by the STATE and Federal Governments. The final payment, and all partial payments made, may be adjusted to conform to this Final Audit. In no case will any adjustments exceed the not-to-exceed amount specified in Article II, Section A. All Subconsultant costs may also be subject to Final Audit by the STATE and Federal Governments.

## ARTICLE III

### ARTICLE III - GENERAL PROVISIONS

#### A. HEARINGS, ETC.

The DEPARTMENT will make all arrangements for and hold all necessary hearings in connection with the project, including recording and filing of surveys and plats, enter into all necessary agreements with railroads, public utilities, municipalities, agencies of the Federal Government or others, and make orders of takings and financial settlements with owners of properties affected.

#### B. CONTRACT PROPOSALS

(Not applicable to this AGREEMENT.)

## ARTICLE IV

### **ARTICLE IV - STANDARD PROVISIONS**

#### **A. STANDARD SPECIFICATIONS**

The CONSULTANT agrees to follow the provisions of the Design Manuals, Standard Specifications for Road and Bridge Construction, and Standard Plans for Road and Bridge Construction of the DEPARTMENT; A Policy on Geometric Design of Highways and Streets and LRFD Bridge Design Specifications of the American Association of State Highway and Transportation Officials (AASHTO), and amendments thereto, and/or other professional codes or standards applicable to the services to be performed under this AGREEMENT. When a publication (including interim publications) is specified, it refers to the most recent date of issue in effect at the time of execution of this AGREEMENT.

#### **B. REVIEW BY STATE AND FHWA - CONFERENCES - INSPECTIONS**

It is mutually agreed that all portions of the work covered by this AGREEMENT shall be subject to the inspection by duly-authorized representatives of the STATE and Federal Highway Administration, United States Department of Transportation, at such time or times as the STATE or Federal Highway Administration deems appropriate.

The location of the office where the work will be available for inspection by STATE and Federal Highway Administration representatives is 250 Commercial Street, Suite 3007, Manchester, NH.

It is further mutually agreed that any party, including the duly-authorized representatives of the Federal Highway Administration, may request and obtain conferences, visits to the site, and inspection of the work at any reasonable time.

#### **C. EXTENT OF CONTRACT**

##### **1. Contingent Nature of AGREEMENT**

Notwithstanding anything in this AGREEMENT to the contrary, all obligations of the STATE, including, without limitation, the continuance of payments, are contingent upon the availability and continued appropriation of funds, and in no event shall the STATE be liable for any payments in excess of such available appropriated funds. In the event of a reduction or termination of those funds, the STATE shall have the right to terminate this AGREEMENT.

##### **2. Termination**

The DEPARTMENT shall have the right at any time, and for any cause, to terminate the work required of the CONSULTANT by this AGREEMENT by written notice of such termination provided to the CONSULTANT by the DEPARTMENT, and, in the event of such a termination of this AGREEMENT without fault on the part of the CONSULTANT, the CONSULTANT shall be entitled to compensation for all work theretofore satisfactorily performed, pursuant to this AGREEMENT, such compensation to be fixed, insofar as possible, based upon the work

## ARTICLE IV

performed prior to termination. If no contract or contracts for construction of the project contemplated by this AGREEMENT is (are) entered into within two (2) years after satisfactory completion of the services outlined in Article I, all of the services contemplated by this AGREEMENT shall be deemed to have been completed.

It shall be a breach of this AGREEMENT if the CONSULTANT shall fail to render timely the services required under this AGREEMENT, in accordance with sound professional principles and practices, to the reasonable satisfaction of the DEPARTMENT, or shall be in such financial condition as to be unable to pay its just debts as they accrue, or shall make an assignment for the benefit of creditors; or shall be involved in any proceeding, voluntary or involuntary, resulting in the appointment of a receiver or trustee over its affairs, or shall become dissolved for any cause. In the event of the happening of any one or more of the foregoing contingencies, or upon the substantial breach of any other provisions of this AGREEMENT by the CONSULTANT, its officers, agents, employees, and subconsultants, the DEPARTMENT shall have the absolute right and option to terminate this AGREEMENT forthwith, and, in addition, may have and maintain any legal or equitable remedy against the CONSULTANT for its loss and damages resulting from such breach or breaches of this AGREEMENT; provided, however, that as to all plans, drawings, tracings, estimates, specifications, reports, proposals, sketches, diagrams, and calculations, together with all material and data theretofore furnished to the DEPARTMENT by the CONSULTANT, of a satisfactory nature in accordance with this AGREEMENT, which plans, drawings, tracings, etc., are of use to the DEPARTMENT, the CONSULTANT shall be entitled to a credit, based on the contract rate for the work so performed in a satisfactory manner and of use and benefit to the DEPARTMENT.

### **D. REVISIONS TO REPORTS, PLANS OR DOCUMENTS**

The CONSULTANT shall perform such additional work as may be necessary to correct errors in the work required under the AGREEMENT caused by errors and omissions by the CONSULTANT without undue delays and without additional cost to the DEPARTMENT.

Furthermore, prior to final approval of plans, specifications, estimates, reports, or documents by the DEPARTMENT, the CONSULTANT shall make such revisions of them as directed by the DEPARTMENT, without additional compensation therefor, except as hereinafter provided:

1. If, after its written approval thereof, the DEPARTMENT shall require changes to the plans or documents that revise engineering or other factors specifically approved, thereby necessitating revisions of the contract plans or documents, or,
2. When applicable, if during the term of this AGREEMENT, a revision of the alignment is ordered by the DEPARTMENT to the extent that the revised alignment will lie completely or

## ARTICLE IV

partially outside the limit of the survey data plotted by the CONSULTANT (this does not apply to those adjustments and refinements to the alignments anticipated under the scope of work), or,

3. If, after approval by the DEPARTMENT of the final contract plans or documents, the CONSULTANT shall be ordered in writing by the DEPARTMENT to make revisions, or to perform services other than those necessary to adapt said plans, reports, or documents to conditions observed during field inspections and encountered during construction; the CONSULTANT shall be entitled to compensation therefor in accordance with Article II, Section A, such compensation to be in addition to the fee specified in Article II, Section A, for its original work on the plans, reports or documents.

### **E. ADDITIONAL SERVICES**

If, during the term of this AGREEMENT, additional professional services are required due to a revision in the limits of the project, or it becomes necessary to perform services not anticipated during negotiation, the DEPARTMENT may, in writing, order the CONSULTANT to perform such services, and the CONSULTANT shall be paid a fee in accordance with the provisions of Article II, Section A.

If, during the term of this AGREEMENT, additional professional services are performed by the CONSULTANT due to the fact that data furnished by the DEPARTMENT are not usable or applicable, the STATE will, upon written approval by the DEPARTMENT, reimburse the CONSULTANT for such additional design services in accordance with the provisions of Article II, Section A.

If additional services are performed by the CONSULTANT through its own acts, which are not usable or applicable to this project, the cost of such additional services shall not be reimbursable.

### **F. OWNERSHIP OF PLANS**

All data, plans, drawings, tracings, estimates, specifications, proposals, sketches, diagrams, calculations, reports, or other documents collected, prepared, or undertaken either manually or electronically by the CONSULTANT under the provisions of this AGREEMENT, immediately shall become the property of the DEPARTMENT, and, when completed, shall bear the CONSULTANT'S endorsement. The CONSULTANT shall surrender to the DEPARTMENT, upon demand at any time, or submit to its inspection, any data, plan, drawing, tracing, estimate, specification, proposal, sketch, diagram, calculation, report, or document which shall have been collected, prepared, or undertaken by the CONSULTANT pursuant to this AGREEMENT, or shall have been hitherto furnished to the CONSULTANT by the DEPARTMENT. The CONSULTANT shall have the right, with the written approval of the DEPARTMENT, to use any of the data prepared by it and hitherto delivered to the DEPARTMENT at any later stage of the project contemplated by this AGREEMENT.

## ARTICLE IV

### **G. SUBLETTING**

The CONSULTANT shall not sublet, assign or transfer any part of the CONSULTANT'S services or obligations under this AGREEMENT without the prior approval and written consent of the DEPARTMENT.

All subcontracts shall be in writing and those exceeding \$10,000 shall contain all provisions of this AGREEMENT, including "Certification of CONSULTANT/Subconsultant". For subconsultants working on design, hazardous materials, geotechnical services, etc., the minimum limits of their professional liability (errors and omissions) insurance coverage shall be not less than \$2,000,000 in the aggregate, with a deductible of not more than \$75,000. For subconsultant contracts with less risk, e.g., wetland evaluations, materials inspection and testing, structural steel fabrication inspection, underwater bridge inspection, research, bridge deck condition surveys, land surveying, mapping, noise studies, air-quality studies, etc., the minimum limits of their professional liability (errors and omissions) insurance coverage shall be not less than \$1,500,000 in the aggregate, with a deductible of not more than \$50,000. For subconsultant contracts with no risk, e.g., archaeology, cultural resources, data gathering, traffic counting etc., professional liability insurance shall not be required. Subconsultants completing field exploration for geotechnical, hazardous materials/environmental, and subsurface exploration shall also have pollution liability insurance coverage not less than \$2,000,000 in the aggregate, with a deductible of not more than \$75,000. If coverage is claims made, the period to report claims shall extend for not less than three years from the date of substantial completion of the construction contract. A copy of each subcontract shall be submitted for the DEPARTMENT'S files.

### **H. GENERAL COMPLIANCE WITH LAWS, ETC.**

The CONSULTANT shall comply with all Federal, STATE, and local laws and ordinances applicable to any of the work involved in this AGREEMENT and shall conform to the requirements and standards of STATE, municipal, railroad, and utility agencies whose facilities and services may be affected by the construction of this project. The services shall be performed so as to cause minimum interruption to said facilities and services.

### **I. BROKERAGE**

The CONSULTANT warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT, to solicit or secure this Contract, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this Contract. For breach or violation of this warranty, the STATE shall have the right to annul this Contract without liability, or,

## ARTICLE IV

at its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

### J. CONTRACTUAL RELATIONS

#### 1. Independent Contractor

The CONSULTANT agrees that its relation to the STATE is as an independent contractor and not as an agent or employee of the STATE.

#### 2. Claims and Indemnification

##### a. Non-Professional Liability Indemnification

The CONSULTANT agrees to defend, indemnify and hold harmless the STATE and all of its officers, agents, and employees from and against any and all claims, liabilities, or suits arising from (or which may be claimed to arise from) any (i) acts or omissions of the CONSULTANT or its subconsultants in the performance of this AGREEMENT allegedly resulting in property damage or bodily injury, and/or, (ii) misconduct or wrongdoing of the CONSULTANT or its subconsultants in the performance of this AGREEMENT.

##### b. Professional Liability Indemnification

The CONSULTANT agrees to indemnify and hold harmless the STATE and all of its officers, agents, and employees from and against any and all claims, liabilities, or suits arising from (or which may be claimed to arise from) any negligent acts or omissions of the CONSULTANT or its subconsultants in the performance of professional services covered by this AGREEMENT.

- c. These covenants shall survive the termination of the AGREEMENT. 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 by the STATE.

#### 3. Insurance

##### a. Required Coverage

The CONSULTANT shall, at its sole expense, obtain and maintain in force the following insurance:

1. Commercial or comprehensive general liability insurance, including contractual coverage, for all claims of bodily injury, death, or property damage, in policy amounts of not less than \$250,000 per occurrence and \$2,000,000 in the aggregate (STATE to be named as an additional insured); and
2. comprehensive automobile liability insurance covering all motor vehicles, including owned, hired, borrowed, and non-owned vehicles, for all claims of bodily injury, death,



## ARTICLE IV

or property damage, in policy amounts of not less than \$500,000 combined single limit; and

3. professional liability (errors and omissions) insurance coverage of not less than \$2,000,000 in the aggregate. If coverage is claims made, the period to report claims shall extend for not less than three years from the date of substantial completion of the construction contract. No retention (deductible) shall be more than \$75,000; and
4. workers' compensation and employer's liability insurance as required by law.

b. Proof of Insurance

The policies described in paragraph (a) of this section and Section G shall be in the standard form employed in the STATE, issued by underwriters licensed or approved by the Department of Insurance of the STATE. Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than 30 days, or 10 days in cases of non-payment of premium, after written notice thereof has been received by the STATE. The CONSULTANT shall provide to the STATE a certificate of insurance evidencing the required coverages, retention (deductible), and cancellation clause prior to submittal of the AGREEMENT to Governor and Council for approval and shall have a continuing duty to provide new certificates of insurance as the policies are amended or renewed.

4. No Third-Party Rights

It is not intended by any of the provisions of the AGREEMENT to make the public, or any member thereof, a third-party beneficiary of the AGREEMENT, or to authorize anyone not a party to this AGREEMENT to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Contract. The duties, obligations, and responsibilities of the parties to this AGREEMENT with respect to third parties shall remain as imposed by law. No portion of this AGREEMENT shall be understood to be a waiver of the STATE'S sovereign immunity.

5. Construction of AGREEMENT

This AGREEMENT is executed in a number of counterparts, each of which is an original and constitutes the entire AGREEMENT between the parties. This AGREEMENT shall be construed according to the laws of the STATE.

### K. AGREEMENT MODIFICATION

The assignment of the CONSULTANT, generally established by the scope of work in this AGREEMENT, shall not be modified in any way without prior approval of the Governor and Council.

## ARTICLE IV

### **L. EXTENSION OF COMPLETION DATE(S)**

If, during the course of the work, the CONSULTANT anticipates that one or more of the completion dates specified in this AGREEMENT cannot be met, it shall be the CONSULTANT'S responsibility to notify the DEPARTMENT in writing at least ninety (90) days prior to the completion date(s) in question. The CONSULTANT shall state the reasons that a completion date(s) cannot be met and request a revised date(s) for consideration by the DEPARTMENT.

### **M. TITLE VI (NONDISCRIMINATION OF FEDERALLY-ASSISTED PROGRAMS) COMPLIANCE**

During the performance of this AGREEMENT, the CONSULTANT, for itself, its assignees and successors in interest agrees as follows:

- (1) **Compliance with Regulations:** The CONSULTANT shall comply with Title VI of the Civil Rights Act of 1964 regulations relative to nondiscrimination in federally-assisted programs of the DEPARTMENT, such regulations entitled Title 49 Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the REGULATIONS), and which are herein incorporated by reference and made a part of this AGREEMENT.
- (2) **Nondiscrimination:** The CONSULTANT, with regard to the work performed by it during the AGREEMENT, shall not discriminate on the grounds of race, color, religion, age, sex, handicap, sexual orientation, or national origin in the selection and retention of subconsultants, including procurements of materials and leases of equipment specific to this project. The CONSULTANT shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the REGULATIONS, including employment practices when the AGREEMENT covers a program set forth in Appendix B of the REGULATIONS.
- (3) **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the CONSULTANT for work to be performed under a subcontract, including procurements of materials or leases of equipment specific to the project, each potential subconsultant or supplier shall be notified by the CONSULTANT of the CONSULTANT'S obligations under this AGREEMENT and the REGULATIONS relative to nondiscrimination on the grounds of race, color, religion, age, sex, handicap, sexual orientation, or national origin.
- (4) **Information and Reports:** The CONSULTANT shall provide all information and reports required by the REGULATIONS or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the DEPARTMENT or the Federal Highway Administration to be pertinent to ascertain compliance with such REGULATIONS, orders and instructions. Where any

#### ARTICLE IV

information required of a CONSULTANT is in the exclusive possession of another who fails or refuses to furnish this information, the CONSULTANT shall so certify to the DEPARTMENT or the Federal Highway Administration, as appropriate, and shall set forth what efforts it has made to obtain the information.

- (5) Sanctions for Noncompliance: In the event of the CONSULTANT'S noncompliance with nondiscrimination provisions of this AGREEMENT, the DEPARTMENT shall impose sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
  - (a) withholding of payments to the CONSULTANT under the AGREEMENT until the CONSULTANT complies; and/or
  - (b) cancellation, termination, or suspension of the AGREEMENT, in whole or in part.
- (6) The CONSULTANT shall take such action with respect to any subcontract or procurement as the DEPARTMENT or the Federal Highway Administration may direct as a means of enforcing such provisions, including sanctions for noncompliance, provided, however, that in the event a CONSULTANT becomes involved in, or is threatened with, litigation with a subconsultant or supplier as a result of such direction, the CONSULTANT may request the DEPARTMENT to enter into such litigation to protect the interests of the STATE, and, in addition, the CONSULTANT may request the United States to enter into such litigation to protect the interests of the United States.
- (7) 23 CFR 710.405(b) and Executive Order 11246 entitled "Equal Employment Opportunity," as amended by Executive Order 11375 and as supplemented in Department of Labor REGULATIONS (41 CFR Part 60), shall be applicable to this AGREEMENT and any subagreements hereunder.
- (8) Incorporation of Provisions: The CONSULTANT shall include the provisions of paragraphs (1) through (7) in every subcontract, including procurements of materials and leases of equipment specific to the project, unless exempt by the REGULATIONS, or directives issued pursuant thereto.

In accordance with EXECUTIVE ORDER 11246, the DEPARTMENT has the authority and responsibility to notify the Office of Federal Contract Compliance Programs of the United States Department of Labor if they become aware of any possible violations of Executive Order 11246 and 41 CFR Part 60. The Office of Federal Contract Compliance Programs is solely responsible for determining compliance with Executive Order 11246 and 41 CFR Part 60 and the CONSULTANT should contact them regarding related compliance issues.

## ARTICLE IV

### **N. DISADVANTAGED BUSINESS ENTERPRISE POLICY REQUIREMENTS**

1. **Policy.** It is the policy of the United States Department of Transportation (USDOT) to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBE's), as defined in 49 Code of Federal Regulations (CFR) Part 26, to participate in the performance of agreements and any subagreements financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 apply to this AGREEMENT.
2. **Disadvantaged Business Enterprise (DBE) Obligation.** The STATE and its CONSULTANTS agree to ensure nondiscriminatory opportunity for disadvantaged business enterprises, as defined in 49 CFR Part 26, to participate in the performance of agreements and any subagreements financed in whole or in part with Federal funds. In this regard, the STATE and its CONSULTANTS shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure that disadvantaged business enterprises have the opportunity to compete for and perform work specified in the agreements. The STATE and its CONSULTANTS shall not discriminate on the basis of race, color, religion, age, sex, handicap, sexual orientation, or national origin in the award and performance of agreements financed in whole or in part with Federal funds.
3. **Sanctions for Non-Compliance.** The CONSULTANT is hereby advised that failure of the CONSULTANT, or any Subconsultant performing work under this AGREEMENT, to carry out the requirements set forth in paragraphs 1 and 2 above, shall constitute a breach of agreement and, after the notification of the United States Department of Transportation, may result in termination of this AGREEMENT by the STATE or such remedy as the STATE deems appropriate.

### **O. DOCUMENTATION**

The CONSULTANT shall document the results of the work to the satisfaction of the DEPARTMENT and the Federal Highway Administration. This shall include preparation of progress reports, plans, specifications, and estimates and similar evidences of attainment of objectives called for in this AGREEMENT.

### **P. CLEAN AIR AND WATER ACTS**

If the amount of the AGREEMENT or subcontract thereunder exceeds \$100,000, the CONSULTANT or subconsultant shall comply with applicable standards, orders, or requirements issued under Section 306 of the Federal Clean Air Act (43 U.S.C. 1857(h)), Section 508 of the Federal Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15), which prohibit the use under non-exempt Federal contracts, grants, or loans of facilities included on the EPA List of Violating Facilities. The CONSULTANT or

#### ARTICLE IV

subconsultant shall report violations to the FHWA and to the U. S. Environmental Protection Agency Assistant Administrator for Enforcement (EN-329).

## ATTACHMENT A

### Special Contract Provisions for COVID-19

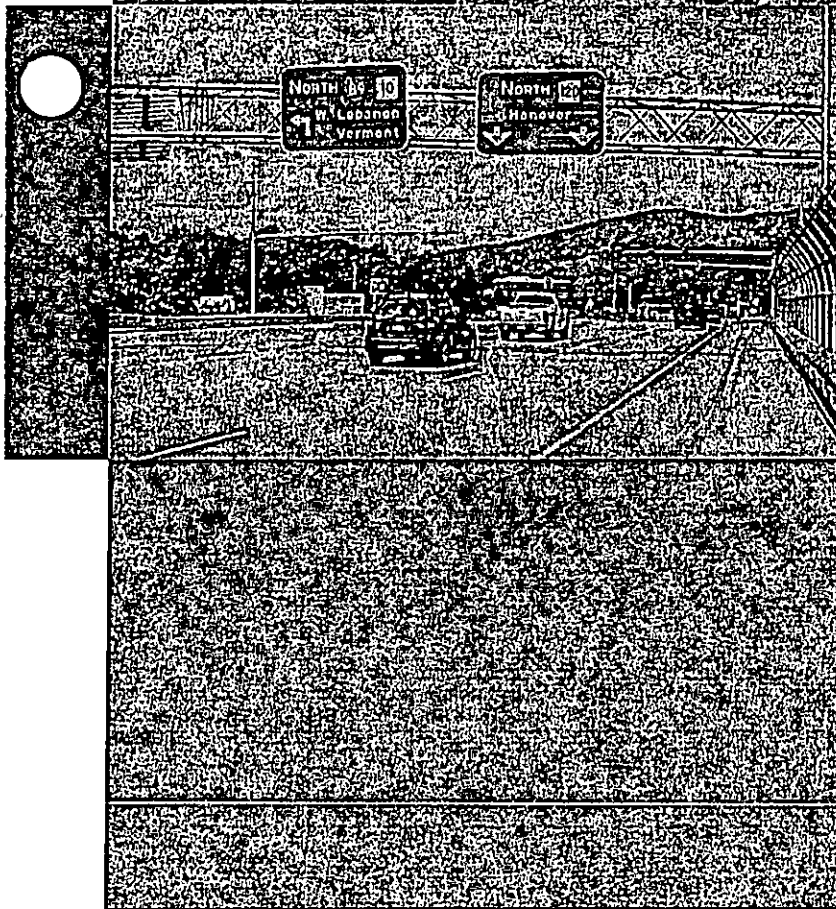
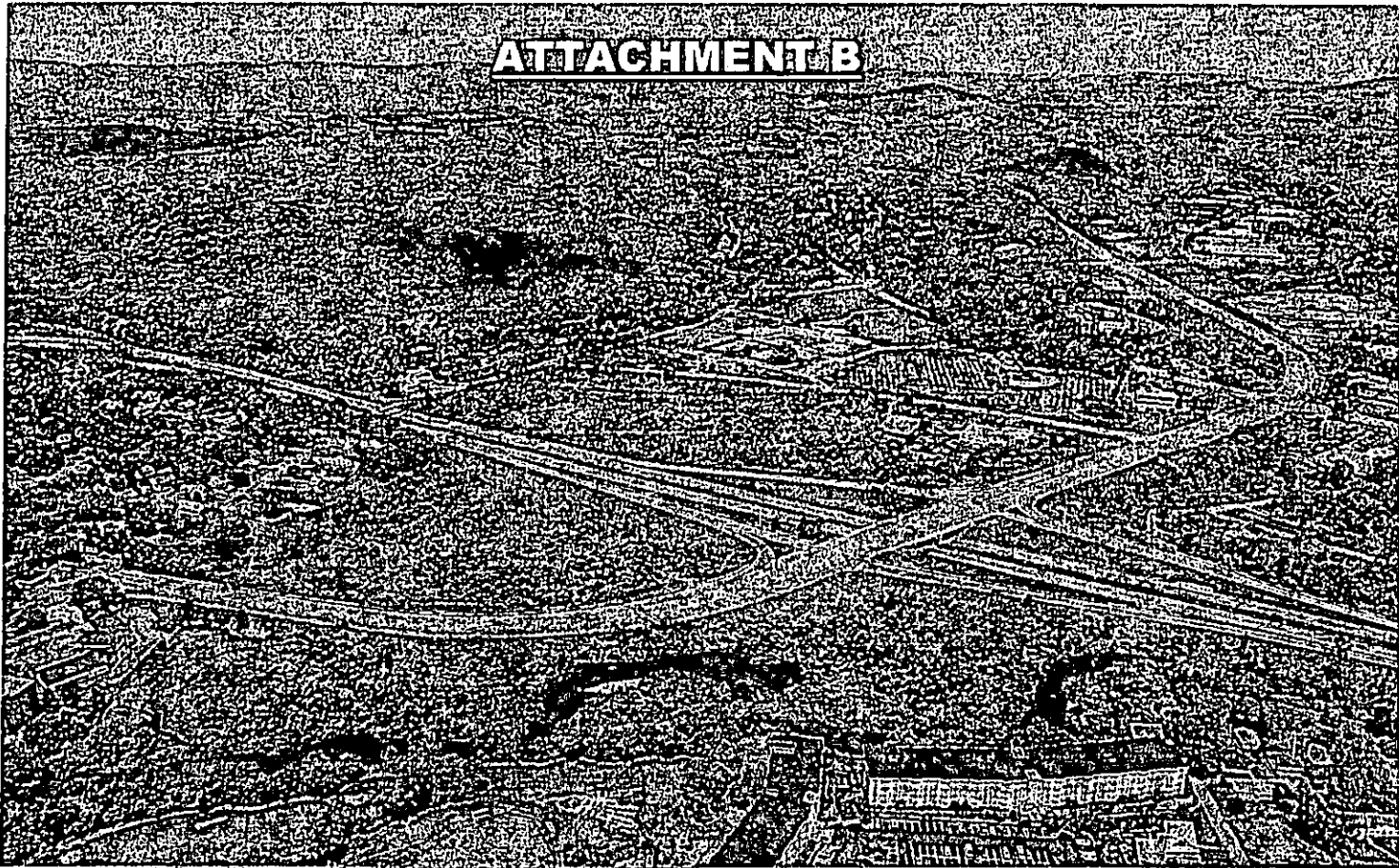
The CONSULTANT acknowledges and agrees that this AGREEMENT was entered into following the coronavirus disease 2019 (COVID-19) outbreak. The CONSULTANT agrees that to the extent the COVID-19 outbreak, or any federal, state or local orders, regulations, rules, restrictions, or emergency declarations relating to COVID-19, disrupt, delay, or otherwise impact the Scope of Services to be performed by the CONSULTANT as set forth in Article I of this AGREEMENT, any such disruption, delay, or other impact was foreseeable at the time this AGREEMENT was entered into by the Parties and does not excuse the Contractor's performance under this AGREEMENT. The CONSULTANT agrees that any such impact, including any disruption to supply chains, workforce reductions, delays or interruptions in performance, or other effects on businesses, are not the fault of the STATE and the CONSULTANT may not seek damages against the STATE for any such impacts.

If the CONSULTANT experiences or anticipates any such COVID-19-related impacts to this AGREEMENT, the CONSULTANT shall immediately notify the DEPARTMENT'S Contract Manager. In the event of any COVID-19-related impact or anticipated impact to this AGREEMENT, the Contract Manager shall have the right to temporarily modify, substitute, or decrease the services, without the approval of the Governor and Executive Council, upon giving written notice to the CONSULTANT. The STATE'S right to modify includes, but is not limited to the right to modify service priorities, including how and when services are delivered, and expenditure requirements under this AGREEMENT so as to achieve compliance therewith, provided such modifications are within the Scope of Services and cost limitations of this AGREEMENT. By exercising any of the rights described within this subsection, the STATE does not waive any of its right under this AGREEMENT.

In the event that a modification by the STATE under this subsection would result in a permanent reduction of services that cannot be supplemented during the remaining term of this AGREEMENT with either replacement or substituted services of substantially similar value, the Parties shall submit a formal amendment to this AGREEMENT with a commensurate reduction in the price. This amendment will require the approval of the Governor and Executive Council. In order to facilitate reconciliation of services performed under this AGREEMENT, the CONSULTANT shall submit weekly reports detailing the following for any service not fully performed pursuant to the terms of the AGREEMENT:

- 1) The services required to be performed under the terms of this AGREEMENT as written;
- 2) The services actually performed;
- 3) Any replacement or substituted services performed with reference to the associated unperformed contracted services.

# ATTACHMENT B



## Scope and Fee Proposal

### Lebanon 29612 Part A

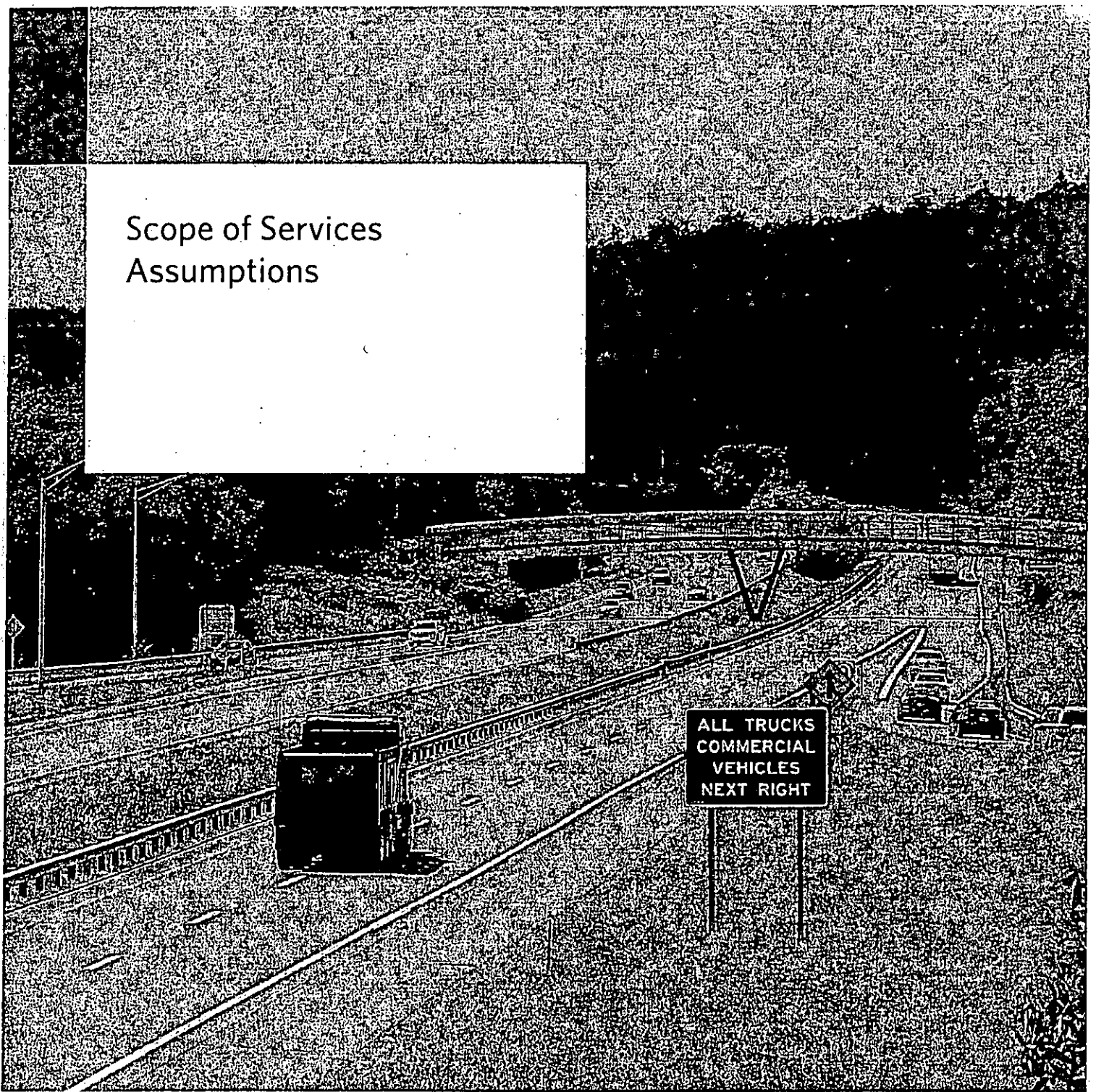
NH 120 from I-89 Exit 18 Through Etna Rd.

New Hampshire Department of Transportation

November 23, 2019



## Scope of Services Assumptions





## Contents

Project Description.....	4
Purpose & Objective .....	4
Client.....	5
HDR Team .....	5
INTRODUCTION .....	6
1.0 PROJECT MANAGEMENT .....	6
1.1 Part A Initiation and Coordination with NHDOT .....	6
1.2 Coordination with Subconsultants .....	6
1.3 Project Schedule Management .....	6
1.4 Develop and Prepare Monthly Progress Reports and Invoices .....	6
1.5 Task Closeouts.....	7
1.6 Project Management Plan and Quality Assurance Plan .....	7
Deliverables:.....	7
Assumptions:.....	7
2.0 SURVEY AND RIGHT-OF-WAY (Phase 1).....	7
2.1 ROW Facilitation & Review Meetings.....	7
2.2 Base Plan Preparation.....	8
2.3 Records Research & Data Collection.....	8
2.4 Boundary Survey .....	8
2.5 Develop Preliminary Right-of-Way Plan .....	9
2.6 Existing ROW Plan Review Meeting .....	9
2.7 Develop Final Existing Right-of-Way Plan.....	9
Deliverables:.....	9
Assumptions:.....	10
3.0 ALTERNATIVES SCREENING & TRAFFIC ANALYSIS (Phase 1).....	10
3.1 Roadway & Traffic Data Collection.....	10
3.2 Base Network Model .....	12
3.3 Alternatives Development & Analyses .....	13
3.4 Safety Analysis, Crash Data Request and Review .....	16
3.5 Project Team Coordination & Technical Support .....	16
3.6 QA/QC .....	16
Deliverables:.....	16
Assumptions:.....	16
4.0 TSM & TDM Study (Phase 2).....	18



4.1	Development of Interim Improvement Options.....	18
4.2	ITS/TDM Strategies Evaluation.....	18
4.3	Alternative Sketches & Concept Plans.....	18
4.4	Alternative Conceptual Estimates .....	18
4.5	Documentation & NHDOT Review (1 Meeting Assumed).....	18
	Deliverables:.....	18
	Assumptions:.....	19
5.0	Alternative Development & Evaluation (Phase 2) .....	19
5.1	Roadway & Traffic Design.....	19
5.2	Bridge Evaluation & Estimating .....	21
5.3	Reporting and Documentation.....	22
5.4	Project Team Coordination.....	23
5.5	QA/QC .....	23
5.6	Over-the-Shoulder (OTS) & NHDOT Coordination Meetings (5 Assumed) .....	23
	Deliverables:.....	24
	Assumptions:.....	24
6.0	NHDOT DESIGN FACILITATION & COORDINATION.....	24
6.1	Utility Design Coordination (Phase 1) .....	24
6.2	Geotechnical Design Coordination (Phase 2) .....	24
6.3	Additional Survey Request & Coordination for Part B (Phase 2) .....	25
	Deliverables:.....	25
	Assumptions:.....	25
7.0	POST-HEARING/FINAL SUBMISSION (Phase 2) .....	25
7.1	Traffic Design .....	25
7.2	Roadway Design .....	25
7.3	Bridge Design .....	26
7.4	Project Team Coordination & Prepare Submission.....	27
7.5	QA/QC .....	27
7.6	OTS & NHDOT Coordination Meetings (1 Assumed) .....	27
	Deliverables:.....	27
	Assumptions:.....	28
8.0	ENVIRONMENTAL COORDINATION .....	28
8.1	Data Collection & Bridge Bat Survey.....	28
8.2	Purpose and Need Development & Agency Coordination .....	29
8.3	Wetland Delineation and Invasive Species Review (Phase 2) .....	30
8.4	Stream Crossing Assessment (Phase 1) .....	31



8.5	Surface and Groundwater Analysis.....	32
8.6	Cultural Resources (Historic) .....	33
8.7	Cultural Resources (Archaeology) (Phase 1).....	34
8.8	Noise Analysis (Phase 2) .....	35
8.9	Air Quality Assessment (Phase 2).....	36
8.10	Contaminated Properties Review (Phase 1) .....	36
8.11	Section 4(f) Evaluation (Phase 2).....	36
8.12	Section 6(f) Consultation (Phase 1) .....	37
8.13	Environmental Study Document (Individual CE) (Phase 2) .....	37
8.14	Meetings and Coordination.....	42
8.15	Project Team Coordination.....	42
	Deliverables:.....	42
	Assumptions:.....	43
9.0	PUBLIC ENGAGEMENT AND COMMUNICATION.....	43
9.1	Prepare Public Involvement Plan (Phase 1).....	43
9.2	Project Advisory Committee (Working Group) Meetings.....	44
9.3	Public Officials & Public Informational Meetings .....	45
9.4	Preparation and Documentation of Meetings.....	46
9.5	Communications Materials and Activities.....	46
9.6	NHDOT Coordination Meetings.....	49
9.7	Team Coordination Meetings .....	49
9.8	Public Hearing (Phase 2).....	49
	Deliverables:.....	50
	Assumptions:.....	50

**Lebanon 29612 – NH Route 120  
Part A – Preliminary Design  
Scope of Services and Fee Assumptions  
New Hampshire Department of Transportation (NHDOT)**

## **Project Description**

The Lebanon 29612 – NH Route 120 from Interstate 89 to Etna Road Project encompasses the study of approximately 1.1 miles of NH Route 120, including the I-89 Exit 18 interchange and short segments of the adjacent local road network, to resolve traffic deficiencies during the peak hour. Some of the existing highway features and conditions to be aware of include the following:

- I-89 Exit 18 was originally constructed in 1967, and substantially improved in 1999 in conjunction with the construction of the Dartmouth Hitchcock Medical Center.
- The segment of NH Route 120 to be improved consists of multiple lanes with signalized intersections at the interchange ramps, Heater Road, and Etna Road.
- The study area is subject to very high peak period traffic, which leads to long queues on the interchange ramps in the AM peak hour and along NH Route 120 in the PM peak hour. Morning and afternoon peak hour traffic is highly directional, with over 12,000 vehicles per day utilizing NH Route 120 during the commute, creating substantial user delays and safety issues.
- Several incremental roadway improvements have been made in recent years within the study area to mitigate traffic impacts from private developments. Most recently the Department has implemented adaptive signal control, addition of the auxiliary lane, and the City, through development mitigation, has improved pedestrian and bicycle accommodations within the corridor.

This "Part A" contract includes Preliminary Engineering, Public Participation and National Environmental Policy Act (NEPA) Documentation services to evaluate and determine a selected alternative that meets funding constraints and approval by the public and environmental agencies. "Part B" services beyond the Pre-Preliminary Design Phase are not included in the contract. "Part A" of this project will focus on close coordination with the stakeholders; development a proposed alternative that is technically feasible, environmentally permissible, and economical; develop an approved Draft Environmental Study; and bring the proposed alternative to a public hearing for layout approval, as needed.

## **Purpose & Objective**

The objective of the project is to develop an alternative that will improve the safety and mobility of the I-89 Exit 18 interchange and NH Route 120 corridor for all users. The purpose of this first phase of the project is to deliver an alternative development process that will:

- 1) Research, collect and gather, and analyze the existing traffic and geometric conditions
- 2) Identify impacted natural and cultural resources potentially affected by the alternatives, and investigate means of minimizing or mitigating the impacts;
- 3) Develop and assess improvement alternatives to address traffic operations and safety for all modes of transportation within the NH Route 120 corridor and through the I-89 Exit 18 interchange. Evaluation of the alternatives includes preliminary engineering, impact analysis, conceptual cost estimating, and preparation of exhibits to assist in the decision-making process.
- 4) Prepare a Public Outreach Plan and program to engage public and private stakeholders in the selected alternative decision-making process
- 5) Prepare an Environmental Document for the proposed alternative;
- 6) Assist and prepare a public hearing plan for the proposed alternative.



The City of Lebanon, in cooperation with the Upper Valley Lake Sunapee Regional Planning Commission and other regional stakeholders, regularly convene a Route 120 Corridor Workgroup to discuss issues concerning multi-modal mobility and safety along the NH Route 120 corridor within both Lebanon and Hanover. As the development of improvement alternatives proceeds, it will be vital to work closely with this group as well as all other appropriate public or private stakeholders to gain consensus on design decisions.

This Part A Scope and Fee Assumptions document is defined HDR's interpretation of the "LEBANON 29612, X-A004(200), I89 EXIT 18 /NH 120 IMPROVEMENTS, PART 'A' SCOPE OF WORK" defined by the NHDOT in Article 1 of the Contract.

## **Client**

New Hampshire Department of Transportation  
John O. Morton Building  
P.O. Box 483, 7 Hazen Drive  
Concord, NH 03302-0483

## **HDR Team**

Prime Consultant: HDR Engineering, Inc. (HDR)

Subconsultants:

Doucet Survey Inc. (DSI) - Boundary Survey & ROW Lead  
Fitzgerald & Halliday, Inc. (FHI) – Environmental and Public Outreach Lead  
Hartgen Archeological Associates, Inc. – Archeological Subconsultant to FHI  
Waterstone Engineering, LLC – Water Quality

## INTRODUCTION

The Lebanon 29612 – NH Route 120 Corridor Part A Design Contract is split into two Phases:

1. Phase 1: Contract inception through Level 2 Screening (as defined in Section 3.0), which is the identification of up to two (2) Build alternatives.
2. Phase 2: Further development of up to two (2) Build alternatives through the public hearing and post-hearing design stage.

At the conclusion of Phase 1, the Department and the consultant will re-evaluate the scope and fee for Phase 2 based on the complexity of the Build alternative(s) coming out of Phase 1.

## 1.0 PROJECT MANAGEMENT

Project Management is expected for the entire 24-month duration of the Part A task, includes the separate phases identified above to successfully navigate the project development process through the public hearing and post-hearing obligations and to meet agency and stakeholders expectations of the selected alternative.

### 1.1 Part A Initiation and Coordination with NHDOT

The Project Team will perform the following tasks as a part of the Project Initiation and Coordination with NHDOT:

- Project startup and contract initiation to prepare contract and subconsultant agreements.
- Monthly project coordination meetings and/or conference calls with the NHDOT, including meeting minutes.
- Coordination with NHDOT to identify additional activities (if any) or necessary modifications to contract.

### 1.2 Coordination with Subconsultants

The Project Team will coordinate approved project scope with subconsultants and track progress compared to approved budgets and schedules. Subconsultants will be included in meetings, as required, during the design progress.

### 1.3 Project Schedule Management

The Project Team will perform the following tasks as part of Project Schedule Management:

- Prepare the initial project schedule for design and reviews.
- Periodically update the design schedule, bi-monthly.
- The Part A project duration is expected to be 24 months with notice to proceed anticipated in Fall 2019.
- The project schedule will provide tasks, task durations, identify task precedents and dependents, as well as project milestones. The project schedule will not be resource loaded.

### 1.4 Develop and Prepare Monthly Progress Reports and Invoices

The Project Team will develop and provide monthly invoicing and progress reports. Subconsultant invoices will be reviewed by HDR prior to inclusion in the Project Team invoice.

## **1.5 Task Closeouts**

The Project Team has developed a scope of work to determine the preliminary engineering and NEPA permitting for the corridor based on an initial corridor concept. At the conclusion of Phase 1, the entire team will re-evaluate the scope and fee and effort required for Phase 2 tasks and will revise the scope of work and fee estimate for Phase 2 accordingly.

In addition, the task includes final closeout of Part A project, including delivery of electronic files, reports, plans, presentations and other materials prepared for the Project.

## **1.6 Project Management Plan and Quality Assurance Plan**

The Project Team will develop a Project Management Plan, which will include key contacts, organizational chart, any safety requirements and the project schedule, with a list of deliverables.

The Project Team will also develop a Quality Assurance/Quality Control Plan, including a schedule of QC reviews, identify required credentials for QC reviewers, and provide requirements for documentation of QC reviews.

### **Deliverables:**

- Project Schedule & Bi-monthly updates
- Monthly Invoicing
- Project Closeout Documents and Files

### **Assumptions:**

- The anticipated project schedule is 24 months. Project reporting and invoicing, Quality Control Reviews and deliverable schedule has been estimated for 24 months.
- The project schedule will not be resource loaded.
- The project will be reevaluated at the conclusion of Phase 1, and the scope of work and fee will be reevaluated based on the complexity of the design. This is anticipated to affect tasks identified as Phase 1. For Project Management Tasks, the effort will be similar throughout the Preliminary Engineering and Environmental Coordination, and would not change based on complexity of the project.

## **2.0 SURVEY AND RIGHT-OF-WAY (Phase 1)**

A boundary survey of the existing NH Route 120 Corridor and Interstate 89 Exit 18 Interchange will be developed under this task and is expected to be required by the selected alternative. There is lower level of risk associated with this effort at the beginning of the Project phases due to the research required of adjacent parcels and the higher degree of confidence of the existing right-of-way from record plans.

### **2.1 ROW Facilitation & Review Meetings**

A meeting will be scheduled to initiate survey and right-of-way efforts between the Project Team and NHDOT. The meeting will include:

- Project overview
- Turnover of DOT project data and ROW files
- Establish project limits



## **2.2 Base Plan Preparation**

Using electronic topographic survey data in from Microstation, text point files, LandXML, and other formats provided by the Department, the Project Team will convert the information to digital surface model and topographic base plan for use by the team members for design needs. Typical software platforms utilized by the team members include:

- Microstation, InRoads, & ArcGIS (HDR)
- AutoCAD and Carlson (DSI)
- AutoCAD and ArcGIS (FHI)

## **2.3 Records Research & Data Collection**

The Project Team will research town, county and state records, including the following:

- Town road and property records
- State right-of-way and archive records
- County road, court, registry and probate records.
- Abutter's deeds and plans

## **2.4 Boundary Survey**

The Project Team will provide services under the supervision of a Professional Licensed Surveyor (PLS). Efforts associated with survey will include the following:

- Field recovery of right-of-way and abutting boundary monuments
- Establish geodetic control network on NH State Plane Coordinate System
- Perform boundary survey of existing right-of-way.
- Process survey control data using least squares adjustment at 95% confidence level. Side shot data will be processed on adjusted controls and verified.
- Develop legacy alignments and establish right-of-way limits based on survey and boundary control standards of practice at the current NHLSA Ethics and Standards

The proposed boundary survey limits for Part A have been agreed to include:

- NH Route 120 – the limits of NH Route 120 from Hanover Street to 300' North of Etna Road
- Hanover Street – 300' North and South of the intersection with NH Route 120
- Evans Drive – 300' West of NH Route 120
- Heater Road – from the Medical office building driveway west of NH Route 120 to the intersection with Labombard Road east of NH Route 120
- Old Etna Road – from the driveway approximately 600' west of NH Route 120 to 200' east of N. Labombard Road and Etna Road intersection





## 2.5 Develop Preliminary Right-of-Way Plan

The Project Team will submit a preliminary existing right-of-way plan to NHDOT for review. The plans will incorporate information developed as part of Tasks 2.3 and 2.4.

## 2.6 Existing ROW Plan Review Meeting

Attendance at one ROW facilitation meeting is expected to discuss Preliminary ROW Plan review comments.

## 2.7 Develop Final Existing Right-of-Way Plan

After receipt of NHDOT comments, the Project Team will develop final existing right-of-way plans. The submission of plans will include the plan as well as a written narrative describing how comments were addressed. The right-of-way plan will be submitted in both CADD format (DWG or DGN) as well as in PDF. Hard copies will not be provided. A plan showing existing boundary monumentation and survey traverse will be submitted in CAD format (DGN or DWG). Geodetic control data will be submitted in ASCII file format. The existing right-of-way plan will be recorded with the county registry.

### Deliverables:

- Existing Right-of-Way Plan in CADD format (DWG) and in PDF.
- Plan showing existing boundary monumentation and survey traverse in CADD format.
- Geodetic data control in ASCII file format.

**Assumptions:**

- The task provides conversion of files for existing right-of-way development and conversion to formats used by team members for use in alternatives analysis and development.
- All final files will meet NHDOT CAD Deliverables including integrating DSI's AutoCAD files into Microstation for use in plan development.
- It is anticipated that one revision following the OTS will be required for the Final Existing ROW submittal.

### **3.0 ALTERNATIVES SCREENING & TRAFFIC ANALYSIS (Phase 1)**

The purpose of the Alternatives Screening & Traffic Analysis Task is to collect existing conditions for the base conditions traffic models, and develop design criteria and project constraints with the Department and Stakeholders in order to reduce the number of alternatives advanced.

#### **3.1 Roadway & Traffic Data Collection**

##### **3.1.1 Traffic Data Collection**

The traffic analysis study area will include the NH Route 120 corridor from Hanover Street to Etna Road and is bounded by the intersection of Hanover Street and NH Route 120 and continues northerly to the intersection of Lahaye Drive and NH Route 120. As Mount Support Road acts as a bypass to the congestion on NH 120, Heater Road and Mount Support Road will also be included from NH 120 to Lahaye Drive. Both routes are shared by vehicles, pedestrians and bicyclists and therefore the data collection and analysis will be included all these travel modes, as described below.

The following distinct traffic scenarios will be analyzed during the AM and PM peak period weekday conditions. These analysis time periods and scenarios dictate the data collection described below:

- Existing 2020
- Future 2040 No-Build
- Future 2040 Build

The data collection program will include Automatic Traffic Recorders (ATRs), Video Turning Movement Counts (VTMCs), field inventories and field observations within the study area along NH Route 120.

##### **AUTOMATIC TRAFFIC RECORDER (ATR)**

ATR data will be provided by the NHDOT from their permanent Continuous Count Station located one (1) mile south of the Hanover Town Line for the last three years. The ATR data will be used to validate manual turning movement counts, calibrate traffic analysis and determine the growth rate as detailed in Task 3.2.

##### **VIDEO TURNING MOVEMENT COUNTS (VTMC)**

Video Turning Movement Counts (VTMC) for all travel modes will be collected for one representative weekday (Tuesday, Wednesday or Thursday) during good weather conditions at the following locations identified within the study area:

- NH 120 intersections:
  - Hanover Street

- SB I-89 ramp terminal
- NB I-89 ramp terminal
- Evans Drive
- Heater Road
- Etna Road/Old Etna Road
- Lahaye Road
- Heater Road/Mount Support Road intersections:
  - School access
  - Old Etna Road
  - Hanover Street
  - Lahaye Road

The turning movement counts will be collected during the following peak periods and while local schools are in session:

- AM peak period (6:00 AM – 10:00 AM)
- PM peak period (3:00 PM – 7:00 PM)

Unless otherwise noted, all VTMCs will identify vehicle classifications to include:

- Passenger cars (include 4-tire vans and pick-up trucks);
- Medium trucks (2 axles/6 tires or 3 axles);
- Heavy trucks (4+ axles) - including WB-40, WB-50, WB-62 and WB-67;
- Pedestrians;
- Bicyclists; and
- Buses.

## FIELD INVENTORY

The following data will be collected at the locations identified in study area section above:

- Roadway pavement marking conditions;
- Roadway signage;
- Existing traffic control/ITS equipment;
- Roadway geometry;
- Roadway lane configurations and lane widths;
- Truck routes;
- Street lighting;
- Transit and school bus routes, including bus stop locations and typical stopping patterns (i.e. on/in travel lane, in shoulder, off road, or other);
- Driveway configurations;
- Field traffic operation observations;
- Pedestrian and bicycle accommodations.

### 3.1.2 Electronic File Review, Coordination, and CADD Setup

The Project Team's efforts anticipated within this task include:

- Collection and review, organization, distribution to team members, assembly and conversion of files for the Project Team's use for the project.

- Assemble and collection of existing record plans and as-built drawings from the NHDOT.
- Bridge Design review and coordination of structures including bridge inspection forms, load ratings, and studies.
- Review and assessment of the Department's Interstate Culvert Inventory.
- Initial project setup including collaboration tools, SharePoint sites, websites for successful collaboration with the Project Team and NHDOT.
- CADD setup and closeout of the project will meet the NHDOT's 2017 CAD/D Procedures and Requirements provided on the Department's website: <https://www.nh.gov/dot/cadd/>

### 3.1.3 Survey Field Review

A field review of the compiled base mapping will be conducted to review existing conditions, identifying conflicts or issues, and mapping deficiencies. The field reconnaissance will compare base mapping and include:

- Roadway features – review of the existing roadways and intersections and ancillary features impacted by the anticipated development. Existing features including curbs, retaining walls, bridge structures, traffic signs and structures, traffic signal equipment, aerial and underground utilities, existing sidewalks and curbed ramps,
- Drainage – identification closed drainage and culvert locations; catch basins, closed drainage system, roadway cross slope resulting in drainage issues, and culvert conditions; inlet and outlet conditions;
- Clear Zone – location and visually inspect of existing guardrail and bridge approach rail condition; identification of hazards (obstructions and critical slopes);
- Collection of new existing features with global positioning system (GPS) equipment for inclusion in the base mapping, as needed.
- Bridge & Culverts – review of the existing bridges and large culvert structures including a visual inspection of the bridge(s). Detailed measurements will only be taken for defects considered critical. The Department has conducted inspections of the interstate and ramp culverts for past projects. The inspection reports, condition assessments and recommendations will be reviewed and utilized for this study.

### 3.1.4 Base Plan and DTM Creation

The Project Team is responsible to process electronic and hard copy, as applicable, files provided by the NHDOT to create required base mapping and three dimensional (3D) models, right-of-way plans and property owner information in the Project Team's software platform.

## 3.2 Base Network Model

Existing and future transportation conditions, projecting background growth to 2040, current on-going developments, other approved and planned developments and their proposed mitigation measures as well as any planned regional projects will be included in this task.

The Project Team shall develop traffic volume maps of the two (2) traffic analysis periods (AM & PM). The maps will cover the following volume scenarios:

- 2020 Existing Traffic Volumes
- 2040 Future No Action Traffic Volumes
- 2040 Future with Action Traffic Volumes

HDR will collect origin/destination data using *Streetlight Data* to assist in developing the proposed traffic volumes and travel demand model. From previous conversations with the Regional Planning Commission and the NHDOT, there is no existing travel demand model for the area. *Streetlight Data* collects geospatial information created by mobile phones, GPS devices, connected cars and commercial trucks, fitness trackers, and other devices; and the software will help the Project Team process the information to identify patterns by tracking origins, destinations, and routes. As the information is integrated into the traffic models, the Project Team will calibrate and review the data with the Department.

In addition, the Project Team will collect the signal timing and cabinet data from the Adaptive Signal System installed previously on the corridor from Bureau of Traffic; as well as coordinate with NHDOT TMS&O (formally Traffic Management Center) to review recently proposed Intelligent Transportation System infrastructure at Exit 18.

### **3.2.1 Draft & Final Methodology Letter of Understanding (MLOU) and Project Measures of Effectiveness (MOEs)**

The Methodology Letter of Understanding is a brief memorandum and outline of the proposed methodology for traffic forecasting and analysis. This will include the study area definition, analysis years, software, and relevant information submitted for NHDOT and FHWA approval of the analysis process and documentation. The information is relevant to provide adequate level of analysis, identify the measures of effectiveness (MOEs), and documentation to meet FHWA documentation requirements for an interchange modification. The Final MLOU will incorporate the agreed upon requirements with FHWA and NHDOT to develop a Minor Interchange Modification Request document, identified in Task 5.4.4.

### **3.2.2 Develop Future Traffic Forecasts for Design Year**

HDR will develop the background traffic growth forecasts for the existing roadway network based solely on historic growth rates supplemented with specific growth tied to known development activity. Future year traffic volumes will also be developed by HDR for a scenario where the Hanover Street Bridge is replaced with a vehicular connection. This will require use of a travel demand model to be created by HDR.

### **3.2.3 Develop and Calibrate Base Network Model**

A traffic operations analysis will be conducted within the study area using Aimsun (traffic modeling software). Results of these analyses will provide a quantitative assessment of existing vehicular traffic operations that meet the expectations outlined within the MLOU.

In addition, quality control and calibration of the microsimulation model is included and required to complete the traffic modeling.

### **3.2.4 Draft and Final Memorandum on Calibrated Base Network Model**

Aimsun maintains the travel demand model as well as the operational analysis model within the same file. A draft and final technical memorandum will be submitted to summarize the development and calibration of the traffic model.

## **3.3 Alternatives Development & Analyses**

This task includes the initial investigation of constraints, establishment of design criteria, and prioritization of project goals. A workshop will be held to kick off development of concepts, which will be reduced to a

shortlist of concepts through the public involvement process. Further refinement of the concepts will be completed in Task 5.0 in order to meet FHWA interchange modification requirements, NEPA documentation, and Public Meetings.

### **3.3.1 Establishment of Roadway Design Controls and Criteria**

The task's efforts focus on establishing the design controls and criteria needed for the preliminary and final design including, but not limited to, existing concerns, design criteria, and needs and concerns of the project for bridge, clear zone, drainage and water quality, pavement design, right-of-way, traffic management, utilities, multi-modal needs, and other requirements of the NHDOT Project Development process.

### **3.3.2 Alternatives Development & Screening**

Prior to the identification of alternatives and after collection of the public input through the Stakeholder Outreach Meetings, the Project Team and NHDOT will define the project's purpose and need and associated goals and objectives. The Alternatives Development & Screening Task will be structured to create evaluation criteria that will determine if the alternatives meet the project's purpose and need, and, then focus the alternatives engineering effort to develop reasonable and cost-effective options to meet the project goals. The process establishes the rationale for elimination of alternatives that will be discussed within the NEPA documentation as alternatives considered but dismissed. Within the process, the Project Team will hold a workshop to brainstorm improvement ideas for the study area and jointly develop screening criteria to determine if the alternatives meet the project's purpose and need. Using these criteria, the team will identify a shortlist of alternatives to develop and analyze in greater detail. The process will follow a three (3) step approach outlined below:

#### **3.3.2.1 Level 1 Screening & Evaluation Criteria**

Following the approval of the Public Involvement Plan (Task 9.0) and the Stakeholder Outreach Kick-Off Meetings, the Project Team will facilitate a one-day workshop-styled design meeting with the Department and key stakeholders in the City of Lebanon. The Project Team will consolidate and present the information previously presented and gathered at the Stakeholder Outreach Kick-off Meetings for the purpose of brainstorming potential improvements to be evaluated during the Alternatives Development Phase. This design meeting will also serve to develop the criteria and methodology with the key stakeholders and NHDOT to build early consensus and reduce the number of reasonable alternatives requiring analysis. We anticipate that these efforts associated with this exercise will include –

- Review of multi-modal traffic data collection, analysis of the past traffic studies and completion of the existing conditions traffic network model.
- Presentation of the existing conditions, project data, and a field walk with the key stakeholders to identify design criteria and project controls, along with gathering anecdotal information relevant to the project for the purpose of gaining a broader perspective for brainstorming of concepts.
- Facilitating discussion of design criteria and prioritization of area resources and potential areas of conflict.
- Fostering potential alternatives discussion with the stakeholders to establish a list of solutions.

- Compiling meeting minutes, notes, graphics presented, and summary of the meeting.

Level 1 evaluation criteria will utilize available data from the existing traffic analysis and data gathering efforts to provide a high level qualitative and quantitative review intended to identify fatal flaws, general performance characteristics and large environmental impacts. The purpose of this screening is to eliminate the obviously infeasible alternatives or alternatives that do not meet the Purpose and Need and identify the alternatives which appear to best achieve the project goals for consideration. The Project Team proposes to consolidate alternatives for Level 2 Screening by:

- Existing base traffic model and understanding of the traffic patterns
- Past NHDOT studies and RPC and NH Route 120 Working Group Charrettes recommendations in congruence with Project Purpose and Need
- Consolidating stakeholder input
- Order of magnitude cost comparisons
- Collaborating with Department staff

At the conclusion of the Level 1 Screening and acceptance by the Department, the Project Team will be tasked with evaluating the feasibility of up to 10 potential ideas for the project in the Level 2 Screening

### 3.3.2.2 Level 2 Screening

The purpose of the Level 2 Screening is to eliminate or classify alternatives which don't perform as well and therefore are "not recommended" coming out of the Level 1 Screening. Considerations will include potential environmental impacts and, construction challenges.. An outcome of this screening will be to identify up to two (2) efficient, effective and contextually-appropriate "build" alternatives. **The No-Action or No-Build Alternative must be defined and carried through the entire evaluation and assessment process and will be the third alternative.**

Upon acceptance by the Department, the Project Team will prioritize the list of potential alternatives utilizing the developed methodology and determine the feasibility of each alternative. This feasibility review will result in a decision matrix for the list of alternatives from the meeting, and document the high-level screening of the traffic operations and safety, multi-modal (transit, pedestrian, bicycle) operations and safety, potential resource and property impacts, stakeholder conflict, geometric challenges and program level costs of each alternative, as necessary.

Following the feasibility review, a second meeting with the NHDOT will be scheduled to review the findings and reduce the number of potential alternatives to a shortlist of up to two alternatives that will be further developed and analyzed in Tasks 5.0. In addition, the summary is also expected to be presented in a format acceptable to the Department to publish within the Public Informational Meetings to complete the Alternatives Development & Screening process.

### 3.2.2.3 Level 3 Screening (See Phase 2 & Task 5.0)

Upon acceptance of the Level 2 Screening by the Department, the remaining two (2) Alternatives will be further developed in Task 5.0 with illustrative design sufficient to provide:

- i. Plan and profile of roadways
- ii. Typical sections of roadways
- iii. Preliminary right-of-way impacts
- iv. Conceptual Program Level Estimates

The illustrative designs for the roadways and major structures will be completed to allow for the evaluation of resource impacts and permitting needs, and satisfactorily demonstrate the pertinent design criteria.

### **3.4 Safety Analysis, Crash Data Request and Review**

Crash data will be requested from the NHDOT for the study area. Period of crash data analysis will be determined in coordination with the NHDOT, but it is anticipated that up to 10 years of data will be made available to the Project Team. The NHDOT will tabulate and sort crash data collected from the Department of Safety for HDRs use in the preliminary engineering documentation. A qualitative analysis of the available crash data will be performed for the study area to determine crash patterns, crash issues, identify pedestrian and bicycle related crashes, and recognize any potential improvements that may be implemented to reduce and prevent crashes.

### **3.5 Project Team Coordination & Technical Support**

The Project Team will coordinate traffic data collection and analysis to assist with the preparation of traffic related planning, environmental requirements, and public outreach activities. Traffic data compiled from NHDOT sources and collected by HDR will include traffic volumes, truck percentages, signal timing parameters and traffic operational delay data to support air quality, noise and economic analysis. No additional data will be collected to support environmental permitting and documentation.

### **3.6 QA/QC**

The Project Team will perform QA/QC reviews of the draft and final calculations, analyses, and reports in accordance with the Quality Management Plan.

#### **Deliverables:**

- Draft & Final Methodology Letter of Understanding (MLOU) and Project Measures of Effectiveness (MOEs)
- Draft and Final Memorandum on Calibrated Base Network Model
- Draft and Final Traffic and Safety Analysis Summary Report

#### **Assumptions:**

- Trafficware SynchroGreen is the Adaptive Signal Technology Software on NH Route 120.
- Deliverables are anticipated to be referenced materials within the NEPA documentation and FHWA and justification deliverables.
- Alternatives Screening Workshop is anticipated to provide materials include aerial plans, existing condition plans and cross sections, existing traffic network model, and 2D animation to assist in identifying concerns and opportunities.





## **4.0 TSM & TDM Study (Phase 2)**

A Transportation System Management and Travel Demand Management improvement evaluation will be conducted to identify strategies and opportunities within the existing network to improve traffic operations and complement ultimate solutions proposed. This task is envisioned to be scheduled after the Alternatives Screening is complete and the entire design team can evaluate interim and system improvements that complement or extend the use of the current network.

### **4.1 Development of Interim Improvement Options**

This task will start with the proposed alternatives and determine interim solutions that fit in the framework of an ultimate improvement, but are held to short term constraints that may include: funding constraints, maintaining the existing I-89 bridge, limiting or avoiding significant roadway widening, and/or finding solutions limited to lane reassignment and improved signal timing and progression.

This task will include an operational analysis of up to three (3) interim configurations.

### **4.2 ITS/TDM Strategies Evaluation**

A brief Intelligent Transportation Systems (ITS) analysis will be conducted to determine if ITS infrastructure and identify high level strategies to help improve the short and long-term operations of Interstate 89 and NH Route 120 corridors. The system will be evaluated including Interstate 91, US Route 4, and NH Routes 10, 12A, and 120. The analysis will be conducted on up to three (3) ITS/TDM strategies to assist in determining intermediate options for the NH Route 120 corridor.

### **4.3 Alternative Sketches & Concept Plans**

Upon completion of the Interim Improvement Option and ITS/TDM Strategies Evaluation, the Project Team will review potential options and opportunities with the Department in order to prepare up to three (3) conceptual alternatives based on the evaluations in Tasks 4.1 & 4.2. Alternative sketches are envisioned to be developed for specific improvements, within the corridor, and not focused on major corridor improvements. An ITS/TDM sketch is envisioned to be large scale GIS graphic, or similar, to illustrate opportunities to implement technology, monitoring, or other to improve operational performance.

### **4.4 Alternative Conceptual Estimates**

The Project Team will prepare conceptual program estimates for up to three (3) alternatives to be included with the sketches submitted.

### **4.5 Documentation & NHDOT Review (1 Meeting Assumed)**

An over-the-shoulder (OTS) meeting is anticipated with the NHDOT to present findings within a draft technical memorandum and decision matrix format, illustrate improvements, as well as assist in the continued development of any alternatives found. Final technical documentation and presentation of alternatives and estimates is anticipated following the OTS meeting, and in concurrence with the Methodology Letter of Understanding and documentation to meet FHWA documentation requirements for an interchange modification.

#### **Deliverables:**

- Interim Alternative Sketches & Concept Plans and Estimates
- Interim Strategies & Evaluation Technical Memorandum

**Assumptions:**

- The effort to prepare and analyze the interim configurations requires selection and concurrence of the alternatives of Task 5.0.

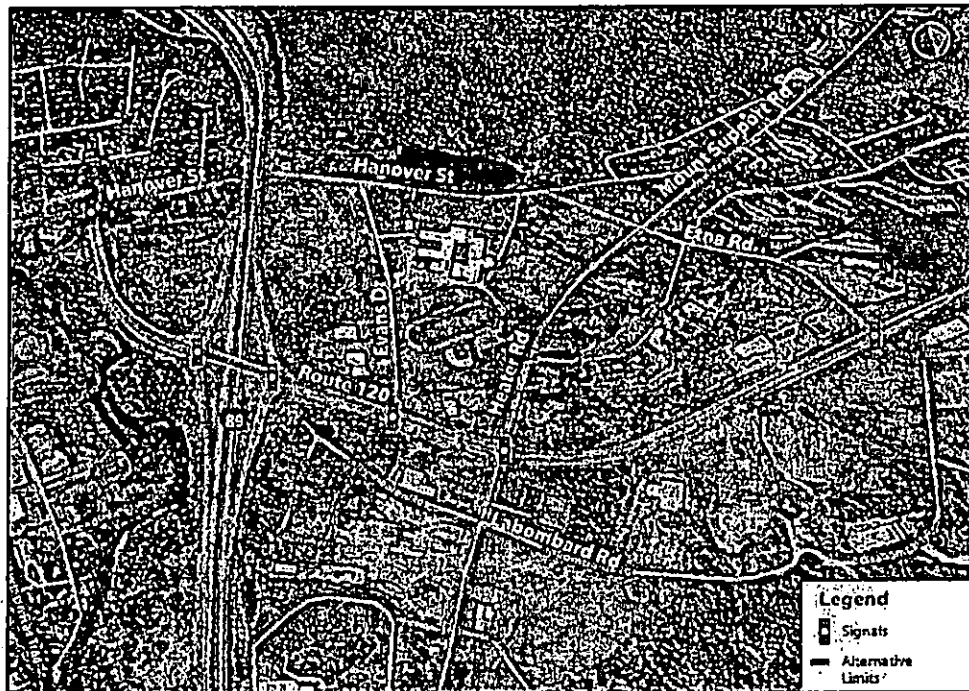
## 5.0 Alternative Development & Evaluation (Phase 2)

Task 5.0, Alternative Development & Evaluation (Phase 2) will commence upon acceptance by the Department of the Level 2 Screening and the shortlisted alternatives. These shortlisted alternatives will be included in the project documentation, in order to determine the selected alternative or "Build Alternative" in the NEPA process documentation process. The Project Team is responsible for documenting that the recommended alternatives complies with applicable standards and criteria. Where appropriate, the required variances will be identified.

The Scope of Work for Phase 2 Tasks has been developed based on a corridor improvement including reconfiguration of the I-89 Exit 18 interchange. As a result of the Alternatives Screening, the Phase 2 Scope of Work may be refined to fit the level of design and documentation required for the build alternatives. The illustrative designs for the roadways and major structures will be completed sufficiently to allow for the evaluation of resource impacts and permitting needs, and satisfactorily demonstrate the pertinent design criteria.

### 5.1 Roadway & Traffic Design

The build and preferred alternatives will be identified with input from analysis performed in Task 3.0. The corridor, interchange and intersection concepts are expected to include the limits identified in the figure below.



## **5.1.1 Traffic Design**

### **5.1.1.1 Develop Concepts into Full Alternatives**

Subsequent to the Alternatives Screening Level 2, the Project Team will develop the proposed alternative design analyzed to improve operational issues for all modes of transportation. HDR assumes this task will develop up to four (4) different configurations that will be analyzed to develop the future year alternative models.

A potential list of alternatives evaluated includes:

- No-Build 2040 condition
- An ultimate design providing the required additional capacity for 2040 of NH Route 120 and Exit 18
- Up to two other build options

### **5.1.1.2 Develop Future Year Alternative Models**

HDR will analyze these alternatives for 2040 traffic volumes to satisfy NEPA requirements and identify a preferred alternative. Supporting documentation in technical format will be provided for up to three (3) build options as described in 5.1.1.1, however final analyses and technical documentation will be provided for the No-Build and the two (2) build alternatives developed for Task 5.0.

## **5.1.2 Roadway Design – Preparation of Concepts - Plans, Profiles, Typicals & Cross Sections**

The Project Team shall develop up to two (2) Level 3 build alternatives based on the results of the Level 2 Screening from Task 5.2.3. These alternatives may be carried directly from the Level 2 Screening or may be modified or new alternatives based on what is learned in the Level 2 Screening.

The Preparation of Concepts - plans, profiles, typicals & cross sections task involves development of typical sections and conceptual plans and graphics to determine the impacts, costs, and advantages and disadvantages of each concept. These concepts will be developed concurrently with traffic microsimulation to establish that design elements provide adequate capacity for the 2040 design year. Draft concepts will be prepared for the Department's approval utilizing tissues, design software and CAD, and GIS. This effort will include:

- Roll plan submission of alternatives to include general plans, profiles, and critical cross sections of each roadway and a multi-modal facility
- Inclusion of environmental resources, bridges and/or culverts
- Typical Sections of Improvement
- Preliminary Traffic Management & Sequencing, Typical/Critical Sections, Impacts, & Preliminary Construction Schedule
- Preparation of materials, attendance and presentation at the Department's Traffic Control Committee (TCC) Meeting
- Preliminary Water Quality Designs and potential BMPs determined by a Pavement Only Analysis of each alternative
- Preliminary Utility Conflict Identification of each alternative
- Environmental Impact identification of each alternative

- Conceptual cost estimate for each alternative. Only the major items will be quantified. Other items will be accounted for via assumed cost percentages of the major items. An itemized estimate including all quantities is not required.
- Design Narrative/draft engineering report documenting controls and considerations for each alternative

### **5.1.3 Multi-modal Facility Design (Bike/Ped/Transit) Evaluation**

The Project Team will evaluate multi-modal requirements and impacts associated with the conceptual alternatives and stakeholder engagement. The Project Team will consider on and off road improvements for multi-modal users based on the input gathered from NHDOT and local stakeholders.

### **5.1.4 Right-of-Way Impact Determination & Preliminary Layout**

For conceptual alternatives requiring additional impact and easement, the Project Team will assist the Department in identification of potential right-of-way acquisitions and easements required for the public hearing plan.

### **5.1.5 Decision Matrix – Evaluation and Comparison of Alternatives**

The successful project documentation will compare the reasonable alternatives in a decision matrix to identify the impacts, risks, concerns to enable the NHDOT in selecting the preferred alternative. Environmental and cultural resources identified and assembled through the tasks in Section 8.0, Environmental Coordination, will be provided to the designers to evaluate alternatives merit, tabulate impacts, and select an alternative meeting the goals of the project and documentation required.

### **5.1.6 Constructability, Traffic Management and Traffic Control Impacts Evaluation**

The project team will evaluate construction sequencing and traffic management requirements to construct the selected alternatives and assist in Task 5.2.7.

### **5.1.7 Documentation of Alternatives & Impacts**

Documentation to support the Preliminary Engineering Report, as well as FHWA interchange modification and NEPA documentation.

### **5.1.8 Conceptual Cost Estimates & Quantities**

Program Cost Estimates will be prepared to assist in decisions and supporting program requirements.

The project team anticipates providing draft submissions through the over-the-shoulder design meetings and process, and a final submission for NHDOT approval in Task 5.1.

## **5.2 Bridge Evaluation & Estimating**

The Project Team will study the bridge and culvert structures for potential impact and rehabilitation to meet the proposed alternative needs. These efforts will include:

- Review and discussion with roadway and traffic engineers to understand the proposed alternatives and potential impacts
- Evaluate existing load rating with proposed roadway width and treatments

- Identify problems and proposed solutions with existing structures to meet the project goals
- Plan sheets, memorandums and support documents for the reports and meetings
- Evaluate potential construction sequencing concerns to develop decision matrices
- Develop program conceptual estimates of construction costs using available square-foot costs for similar projects

Based on review of the existing plans, the anticipated structures for NH 120 include:

- Bridge 128/126 – NH Route 120 over I-89
- Bridge 121/127 – Pedestrian Bridge over I-89
- Interstate 89 (SB On to NB Off Gores): Two (2) – 66" RCP Culverts (190' Long) installed by NH P3821B in 1967
- Interstate 89 (SB On to NB Off Ramps): Four (4) – 66" RCP Culverts (278' Long) installed by NH P3821B in 1967
- Interstate 89 (SB Off to NB On Ramps): Two (2) – 66" RCP Culverts (190' Long) installed by NH P3821B in 1967
- Interstate 89: Two (2) – 48" RCP Culverts (164' Long) approximately 300' North of the Pedestrian Overpass installed by NH P3821B in 1967
- NH Route 120: 2 – 66" RCP Culverts approximately 400' from the intersection of Hanover Street/NH Route 120 (130' Long)
- NH Route 120: 48" RCP Culvert approximately 100' north of the intersection of Heater Road/NH Route 120 (120' Long)
- Heater Road: 2 – 60" RCP Culverts at the int. of Heater Road/NH Route 120 (90' Long)
- Old Etna Road: 36" RCP Culvert approximately 100' east of the intersection of Old Etna Road/NH Route 120 (100' Long)

HDR will develop conceptual plan and sections for modifications to four (4) structures for this phase of work:

- Bridge 128/126 – NH Route 120 over I-89
- Interstate 89 (SB On to NB Off Ramps): Four (4) – 66" RCP Culverts (278' Long)
- Interstate 89 (SB Off to NB On Ramps): Two (2) – 66" RCP Culverts (190' Long)
- Heater Road: 2 – 60" RCP Culverts at the int. of Heater Road/NH Route 120 (90' Long)

It is anticipated that one (1) plan sheet will be developed for each of these four (4) bridges. Modifications to the remaining structures will be summarized in a narrative to be included in the Preliminary Engineering Report (PER).

## **5.3 Reporting and Documentation**

### **5.3.1 Draft and Final Traffic and Safety Analysis Summary Report**

A traffic and safety analysis summary report will be compiled which documents existing, No-Build and Build traffic conditions along with a summary of the study area crash analysis, multi-modal accommodations, and traffic modeling. The Calibrated Base Network Memorandum will be included within the appendix of the Traffic and Safety Analysis Summary Report.

### **5.3.2 Coordination with Disciplines for Engineering Report**

Coordination between the team members to complete documentation for the Preliminary Engineering Report and FHWA interchange modification requirements will be necessary to complete each

document. It is assumed this will include conference calls, email correspondences, and administrative time to complete the tasks below.

### **5.3.3 Preparation and Submission of Draft Preliminary Engineering Report (PER)**

The Preliminary Engineering Report will document the existing roadway, traffic and bridge conditions, proposed alternatives, design criteria, and needs and concerns of the project for bridge, clear zone, drainage and water quality, pavement design, right-of-way, traffic management, utilities, multi-modal needs, and other requirements of the NHDOT Project Development process.

### **5.3.4 Revisions and Submission of Final PER**

The Project Team will incorporate, respond to and consolidate comments of the Draft Preliminary Engineering Report to finalize the document.

### **5.3.5 Preparation and Submission of Draft Minor Interchange Modification Report (MIMR)**

It is our understanding that based on conversations between FHWA and NHDOT that an Interchange Justification Report (IJR) or Interchange Modification Report (IMR) will not be required based on the anticipated level of design changes at the study area interchange. Instead an abbreviated Minor Interchange Modification Report (MIMR) is proposed which provides a high-level summary of the traffic and safety analysis completed along with a description of the preferred interchange configuration. This document will focus on safety, operational and engineering to determine the interchange modification does not have an adverse effect on the interstate facility, and not intended to duplicate efforts completed during the Environmental Coordination and NEPA documentation. It is assumed that FHWA will clarify and identify the specific Policy Points, if any, will need to be addressed as part of the MIMR document, and the document does not contain a narrative on all eight (8) FHWA Interstate Access Policy Points. The final document is expected to be included in the appendix of the NEPA document for final FHWA review and approval.

### **5.3.6 Revisions and Submission of Final MIMR**

The Project Team will incorporate, respond to and consolidate comments of the Draft MIMR to finalize the document.

## **5.4 Project Team Coordination**

Coordination between the team members to exchange technical knowledge through collaboration tools, conference calls, email correspondences, and working group meetings.

## **5.5 QA/QC**

The Project Team will perform QA/QC reviews of the draft and final deliverables in accordance with the Quality Management Plan.

## **5.6 Over-the-Shoulder (OTS) & NHDOT Coordination Meetings (5 Assumed)**

Over-the-shoulder (OTS) and coordination meetings with NHDOT are assumed for this design phase. Five (5) meetings have been assumed with traffic and design engineers and environmental specialists to facilitate the design direction, prepare for future meetings, identify new opportunities for the project area, deliverable review and concurrence, and other potential changes required for a quality submission.

**Deliverables:**

- Draft Alternatives concept plans, profiles, typicals & cross sections and evaluations submitted through the Over-the-Shoulder Meetings
- Preliminary traffic management & sequencing, typical/critical Sections, impacts, & preliminary construction schedule
- Preparation of materials, attendance and presentation at the Department's Traffic Control Committee (TCC) Meeting
- Preliminary water quality designs and potential BMPs determined by a pavement only Analysis of each alternative
- Design narrative/draft engineering report documenting controls and considerations for each alternative
- Decision matrix – evaluation and comparison of alternatives
- Utility and environmental impact worksheet documentation
- Conceptual estimate and quantities of major items only for each alternative. Final Concepts included in the Preliminary Engineering Report (PER) and Interchange Modification Report (MIMR)
- Draft & Final Preliminary Engineering Report (PER)
- Draft & Final Minor Interchange Modification Report (MIMR)

**Assumptions:**

- One comment revision is anticipated between Draft reports and the Final Submission.
- The final documents are expected to be included in the appendix of the NEPA document for final F I IWA review and approval.

## **6.0 NHDOT DESIGN FACILITATION & COORDINATION**

### **6.1 Utility Design Coordination (Phase 1)**

The Project Team will provide required plans and support documentation for the Department to complete the Utility Verification. The Project Team will be responsible for transcribing and incorporating existing utility information into existing utility CAD files (DGN) following the NHDOT CADD Manual. This scope assumes that NHDOT Bureau of Highway Design, Design Services Section will perform utility investigations including:

- Perform required 1<sup>st</sup> Verification correspondences and meetings with utilities.
- No Additional Meetings are required for coordination with Design Services and Utility Companies for Part A Design Services.

### **6.2 Geotechnical Design Coordination (Phase 2)**

The Project Team will provide required plans, alignment and coordinate information, and other necessary documentation for the Department to complete the subsurface investigations and reports. This scope assumes that NHDOT will perform geotechnical investigation and design including:

- Performing necessary subsurface investigation.
- It is assumed that NHDOT Geotechnical Section will perform geotechnical design of the foundations and prepare draft geotechnical recommendations.
- No Additional Meetings are required for coordination with the Bureau of Materials and Research.





### **6.3 Additional Survey Request & Coordination for Part B (Phase 2)**

The Project Team will prepare and provide a survey request for required topographic survey to prepare the project for Part B Design. This scope assumes:

- Correspondences and request will be provided electronically.
- No Additional topographic survey by the HDR Project Team.
- No Additional Meetings are required for coordination with the Department.

#### **Deliverables:**

- Base plans and electronic deliverables, as required.

#### **Assumptions:**

- This scope assumes that NHDOT Bureau of Highway Design, Design Services Section will perform utility investigations, including required 1<sup>st</sup> Verification correspondences and meetings with utilities.
- No additional meetings are required for coordination with Design Services and Utility Companies for Part A Design Services.
- This scope assumes that NHDOT will perform geotechnical investigation and design including performing subsurface investigations, testing and explorations.
- No Additional Team Meetings are required for coordination with the Bureau of Materials and Research and Design Services Survey Section.
- It is assumed that no geotechnical recommendations will be available or required for Part A services.
- All correspondences and request will be provided electronically.

## **7.0 POST-HEARING/FINAL SUBMISSION (Phase 2)**

The Post-Hearing/Final submission will follow the Department's Project Development Process and submit a refined alternative from the Public Hearing to satisfy the Department's response to public comments. The task deliverables are a revision submission of public hearing plan and previous submitted materials in Task 5.0 of the selected alternative. A new alternative is not envisioned or included in the effort. The Project Team will support the Bureaus of Highway Design, Environment and Right-of-Way to prepare the selected alternative for Final Design.

### **7.1 Traffic Design**

The Project Team will supplement previous developed analyses from the Alternatives Analysis, as required to support the Public Hearing comments and responses. The effort may require additional capacity analyses and technical reporting, however no additional traffic volume modeling is assumed in the task.

For preparation of final design estimates support, estimated costs for traffic signals, and major sign structures will be provided by the Department.

### **7.2 Roadway Design**

The refined alternative is expected to address design changes that arise through the hearing process and finalize post-hearing comments. The Post-Hearing/Final Submission will include refinement of the following items, as necessary:

### **7.2.1 Post-Hearing/Final Submission Plan Revisions**

Upon receipt of the Public Hearing Comments, the Project Team will make recommendations to the Department for adjustments, as necessary, and incorporate the Department's revisions to prepare the plans and files for use in a Part B Design. The Post-Hearing/Final Submission includes revisions to the following plans developed under Task 5.0. No additional or new plans are expected to be developed for this submission. Anticipated plans include:

- Roll plan submission of refined alternative to include general plans, profiles, and cross sections (approximately every 50') of each roadway
- Typical Sections of Improvement
- Preliminary traffic management revisions to sequencing concepts and typical/critical sections
- The plans will incorporate any additional environmental resources, bridge and culvert, utilities, traffic signal, and potential sign structure designs by other team members to support the conceptual estimate and adjusted through the hearing process
- Additional or revised Best Management Practices refined through the hearing process
- A multi-modal facility within the NH Route 120 may be considered, however no new design or adjacent corridors are included in preparation of the revisions.

### **7.2.2 Preliminary Estimating**

For preparation of final design estimates support, the Project Team will adjust the conceptual estimate and quantities of major items only for the selected alternative as required by the Public Hearing Comment Response. An itemized estimate including all quantities is not anticipated.

### **7.2.3 Final Documentation**

In addition, the Project Team will revise and update the documentation previously submitted in accordance with the Public Hearing recommendations and revisions. Anticipated efforts for include reevaluation -

- Existing utilities, conflicts and potential costs based on hearing comments and utility coordination
- Environmental impact update and summary of the environmental commitments, including reevaluation of the preliminary water quality designs and adjustments made to previous calculations and analysis
- Updates to the preliminary construction duration/estimate based on the plan revisions and comments
- Revisions and updates to the geometric reports, design calculations, and design variances or exceptions required based on the revisions
- Revisions to the Preliminary Engineering Report, a separate or new design narrative is not included in this effort

## **7.3 Bridge Design**

For Bridge Design Post-Hearing/Final Support, the Project Team will support the team with a more in-depth evaluation of the refined alternative for estimating and understanding final design requirements. For the scoping purposes, the four (4) structures are included in the Post-Hearing/Final Design:

- Bridge 128/126 – NH Route 120 over I-89
- Interstate 89 (SB On to NB Off Ramps): Four (4) – 66" RCP Culverts (278' Long)

- Interstate 89 (SB Off to NB On Ramps): Two (2) – 66" RCP Culverts (190' Long)
- Heater Road: 2 – 60" RCP Culverts at the int. of Heater Road/NH Route 120 (90' Long)

For the bridges and culverts identified above, it is envisioned a conceptual sketch of the preferred (1) alternative submitted for each Bridge structure (>10') will include:

### **7.3.2 Development of Bridge Section & Construction Sequencing**

Bridge designers will require discussion and orientation of the alternatives advanced for Post-Hearing/Final Submission. The task includes evaluation of the roadway typical section across the bridge. The plans and sections developed under scope Section 5.2 will be assessed and modified to reflect updates to design development. The following information will be produced for the selected alternative and hearing concept.

- Bridge Plan & Typical Section, assuming two (2) sheets per structure (8 Sheets)
- Construction Phasing (Bridge Structures Only), assuming one (1) sheet per structure (4 Sheets)
- Design sketches for other alternatives utilized for estimating, assuming up to one (1) sheet per structure (4 sheets)

### **7.3.3 Preliminary Calculations & Design Support**

Bridge Design calculations for substantial changes due to realignment and rearrangement of travel lanes; loading from pavement, barrier, multi-use and sidewalk changes; and/or barrier modifications. The task includes documentation to support updates to the Design Narrative and Documentation listed in Task 7.2.

### **7.3.4 Preliminary Estimating**

For preparation of final design estimates support, the Project Team will evaluate square-foot costs, supplemented by unit weighted costs (as necessary) to aid in determination of the rehabilitation and retrofit, widenings and extensions, replacements, and repairs, as necessary.

## **7.4 Project Team Coordination & Prepare Submission**

The task includes preparation of materials and submission of the Post-Hearing/Final Submission documents with the entire design bridge, environmental, roadway, public involvement, and traffic team.

## **7.5 QA/QC**

The Project Team will perform QA/QC reviews of the draft and final deliverables in accordance with the Quality Management Plan.

## **7.6 OTS & NHDOT Coordination Meetings (1 Assumed)**

Over-the-shoulder (OTS) and coordination meetings with NHDOT are assumed for this design phase. One (1) meeting is assumed with traffic and design engineers and environmental specialists to facilitate the design direction of the Post-Hearing/Final Submission.

### **Deliverables:**

- Revised Bridge, Roadway and Traffic Post-Hearing/Final Plans, Estimates, and Documentation

**Assumptions:**

- Only the Selected Alternative presented in the Public Hearing will be revised and prepared for Part B Final Design, not included in this scope of services. Task 7.0 is intended to prepare the concept and files for Final Design.
- The conceptual estimate will be a refined program estimate by major items and use of percentages based on engineering judgment and past bid history for the selected alternative. An itemized estimate including all quantities is not anticipated.
- Attendance and resubmission to the Traffic Control Committee is not required
- A preliminary signal plan is not required for Pre-preliminary; however considerations will be given during development of the right-of-way layout in Task 5.0.
- One comment revision is anticipated between Draft and the Final Submission.

## **8.0 ENVIRONMENTAL COORDINATION**

For scoping considerations, the Project Team assumes the level of documentation required to satisfy the National Environmental Protection Act (NEPA) will be a Categorical Exclusion (CE), as outlined in the project checklist provided by the Department. As the alternatives are developed, and a Preferred Alternative is identified, the documentation required may be modified to meet the requirements under NEPA. Upon review and consolidation of the build alternatives through the Alternatives Screening process, the environmental documentation will be refined for inclusion in the CE.

### **8.1 Data Collection & Bridge Bat Survey**

#### **8.1.1 Data Collection (Phase 1)**

Existing resource data will be collected through state and federal data sites (reports and GIS mapping), existing environmental documents for nearby projects, environmental permit applications for nearby projects, corridor studies, and mapping and information from local governments.

An initial "desktop" collection of available resource information such as the National Wetlands Inventory (NWI) mapping, waterways or watercourses maps, Soil Survey data, and appropriate Hydric Soil Lists will be completed to facilitate screening and before conducting the wetland delineation within the data collection task above. A two-day field visit will be undertaken to ground truth the GIS data and to identify any sensitive habitat within the study area. Mapping will be prepared for key resources including floodplains, wetlands, soils, active farmlands, public and conserved lands, cultural resources, sensitive habitat, and contaminated properties. This mapping and baseline documentation will be used by the Project Team in the initial development of the range of alternatives.

#### **8.1.2 Bridge Survey for Bat Species (Phase 2)**

A visual bat survey will be conducted of the NH Route 120 over I-89 Bridge. It is assumed inspection of the pedestrian bridge over I-89 and the culverts in the project area will not be required.

The project team will utilize the U.S. Department of Transportation's *"Appendix D: Bridge/Structure Assessment Guidance Federal Transportation Agency/State Department of Transportation (DOT) Preliminary Bat Assessment Guidelines for Bridges/Structures"* as a basis for the bridge inspections. The New Hampshire DOT's *"Appendix D: Bridge/Structure Assessment Form"* will be filled out for the NH Route 120 over I-89 bridge.

If the project extends beyond 300' from currently paved surfaces, is more than 5 miles long, or is larger than 20 acres total size, the project may not qualify for the FHWA-USFWS PA for NLEB. If this occurs, it is assumed the NHDOT will coordinate and organize any acoustic surveys needed.

## **8.2 Purpose and Need Development & Agency Coordination**

The Project Team will develop the Purpose and Need in coordination with FHWA and NHDOT. In addition, the Project Team will conduct agency coordination required for the NEPA document (and future environmental permits under Part B) with FHWA, NHDOT, U.S. Fish and Wildlife Service (FWS), the National Oceanic and Atmospheric Administration (NOAA), U.S. Army Corps of Engineers New England District Regulatory Division, New Hampshire Fish and Game (NHFG), and the New Hampshire Natural Heritage Bureau (NHNHB). In addition, the Project Team is expected to attend Natural Resource Agency Coordination Meetings held by the NHDOT during Phase 1 and Phase 2.

### **8.2.1 Purpose and Need Development (Phase 1)**

The Project Team will prepare a written description of the project and a concise Purpose and Need statement. The Purpose and Need will be submitted to NHDOT and FHWA for review and concurrence. Revisions will be made based on comments received.

### **8.2.2 Agency Coordination Letters (Phase 1)**

For these coordination letters, existing project and site information will be used where available.

#### **New Hampshire Natural Heritage Bureau Review**

The Project Team will use the DataCheck tool on the NHNHB website to conduct initial coordination with this agency. A brief project description will be prepared to accompany the coordination. No separate coordination letter will be prepared under this scope.

#### **U.S. Fish and Wildlife Service Review**

The Project Team will conduct a web-based IPaC consultation for the project to identify listed species which may occur in the project area.

#### **New Hampshire Fish and Game**

It is assumed there will be no separate letter prepared for the NHFG, since they are notified of the project through the NHNHB coordination process.

#### **National Oceanic and Atmospheric Administration**

No project letter is proposed for NOAA NMFS, since USACE correspondence indicates no NMFS coordination needed. This would be confirmed with NMFS at the outset of the project.

### **8.2.3 Listed Species Consultation (Phase 2)**

It is assumed there will be listed species in the project area, therefore, it is assumed supporting documentation/maps will subsequently be prepared by the Project Team for submittal to USFWS by NHDOT for review via the IPaC website system. Survey information generated under Task 8.1.2 of this scope will also be included for submittal to FWS. The Project Team will complete the regulatory review determination key in the USFWS IPaC webtool for NHDOT's use in consultation with

USFWS. NHDOT will provide the USFWS concurrence letter for inclusion in the NEPA document. It is assumed a Biological Assessment will not be required.

#### **8.2.4 Natural Resource Meetings (Phase 1)**

The Project Team is anticipated to attend two (2) Natural Resource Agency Coordination Meetings during Phase 1 held by the NHDOT to present the environmental aspects of the initial data gathering as well as important feedback during the Alternatives Screening Level 1 and Level 2 to assist in determining the build alternatives prepared in Level 3. It is assumed three members of the Project Team will be in attendance at each meeting and meeting minutes will be prepared.

#### **8.2.5 Natural Resource Meetings (Phase 2)**

The Project Team is anticipated to attend up to two (2) Natural Resource Agency Coordination Meetings during Phase 2 held by the NHDOT to present the environmental aspects of the project at major milestones based on the build alternatives. It is assumed three members of the Project Team will be in attendance at each meeting and meeting minutes will be prepared.

### **8.3 Wetland Delineation and Invasive Species Review (Phase 2)**

As part of the preliminary design, delineation of wetlands and watercourses that may be impacted by construction is required. The delineation will be conducted in accordance with the U.S. Army Corps of Engineers (USACE) 1987 Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region and the definitions contained in 33 CFR 3.23.2(a) through (f). Additionally, wetland resources will be delineated in accordance with State of New Hampshire regulations and guidelines by a New Hampshire Certified Wetland Scientist (NHCWS). All wetland resources will be assessed for their respective functions and values in accordance with the U.S. Army Corps of Engineers New England District Highway Methodology Supplement dated 1999. It is assumed the delineation will be limited to areas near potential impacts (adjacent to roadway). The Project Team will review available resource information such as the National Wetlands Inventory (NWI) mapping, waterways or watercourses maps, Soil Survey data, and appropriate Hydric Soil Lists before conducting the wetland delineation. The Project Team assumes four field days for two staff to conduct the wetland delineation. If access to private property is required, it is assumed this will be arranged by NHDOT.

As part of the scope of work for Wetlands Delineation and Assessment, the following tasks will be completed by the Project Team:

- Once the alternatives are selected for the Level 3 Screening, the staff will conduct a field investigation to identify and delineate wetlands within the proposed project area. The three (3) parameters utilized to identify wetlands – hydrophytic vegetation, hydric soils and wetlands hydrology – will be evaluated. This effort will include the preparation of sixteen (16) Delineation Field Sheets, for eight (8) transects, within wetland areas. Wetlands will be delineated up to 100 feet from the designated limits of disturbance for the project. Flags associated with this task will be surveyed by the Project Team using a GPS with sub-meter accuracy.
- Upon survey completion, the wetlands limits and Cowardin wetland type, in accordance with NHDOT standards, will be shown on plans for identification.
- Prepare a Draft and Final Wetland Delineation Report detailing the results of the delineation. The Report will contain a narrative, site location map, site photographs, wetland/upland data sheets, and applicable mapping. The Wetland Delineation Report will be stamped by a New Hampshire Certified Wetland Scientist.

- The Project Team will also identify the Ordinary High Water (OHW) elevation in the field for all perennial watercourses within the project area. Elevations will be marked 50-feet upstream and downstream of all culvert and bridge crossings. The OHW elevation will be marked by placing a wire flag at the appropriate elevation. The location of OHW flags will be documented with a GPS with sub-meter accuracy in the field. The edge of water for perennial watercourse will be marked on both sides to a distance of up to 100-feet from the designated limits of disturbance for the project.
- Top-of-Bank will be marked for all perennial watercourses on both sides to a distance of up to 100-feet from the designated limits of disturbance for the project.
- Intermittent watercourses will be marked with a center line, unless there are identifiable "banks", in which case the Top-of Bank on both sides of the watercourse will be marked to a distance of up to 100-feet from the designated limits of disturbance for the project. Also, any identifiable OHW marks will be flagged in the field with a single flag.

The Project Team will conduct an invasive species inventory in the field of the prominent invasive species within the areas of proposed activity in the study area based on the Invasive Plant Atlas of New England (IPANE) species list. It is important to note that this work should be performed during the growing season. The Project Team will map (onto the 40-scale hard-copy plans) all occurrences of populations, or patches, of the above-listed invasive species within all proposed construction areas associated with the project. Scattered individuals of invasive species will not be mapped.

Species density, aerial coverage and/or stem counts will not be collected or estimated as part of the inventory. The Project Team will document the boundary of invasive species in the field with a sub-meter accuracy GPS Unit. We will then transfer the invasive species management area GIS layers to digital plans which will be called "Invasive Species Management Plan" sheets. It is assumed the NHDOT will provide invasive species management specifications.

#### 8.4 Stream Crossing Assessment (Phase 1)

The Project Team will identify all intermittent and perennial stream crossings within the project study area limit of disturbance and use will use USGS StreamStats tool to estimate the watershed sizes for each stream crossing. The Project Team field evaluate and perform visual inspections of each crossing will be documented in the field, including cross sectional channel geometry measurements of the existing stream within a reference reach as required by the *Wetlands Stream Crossing Worksheet* (dated 3/2019); perform hydraulic calculations to determine design capacity, calculate peak discharge, predict channel geometry based on *Regional Hydraulic Curves*, headwater and tailwater flooding conditions; and confirm water course impairments, flood plain, water body classifications, Aquatic Organism Passage requirements, and potential impacts with the environmental project team to determine the Tier classification for each crossing in accordance with the NHDES Stream Crossing Rules (Env-Wt 900). The level of detail of field inspection and data collection will be based on the requirements of the *Wetlands Stream Crossing Worksheet*. The Project Team conducted a preliminary review of watershed sizes and anticipates the culverts, listed in Task 5.3, qualify under the NHDES Stream Crossing Rules as:

- Interstate 89 (SB On to NB Off Gores): Two (2) – 66" RCP Culverts – Tier 2
- Interstate 89 (SB On to NB Off Ramps): Four (4) – 66" RCP Culverts – Tier 3
- Interstate 89 (SB Off to NB On Ramps): Two (2) – 66" RCP Culverts – Tier 3
- Interstate 89: Two (2) – 48" RCP Culverts – Tier 2
- NH Route 120: 2 – 66" RCP Culverts – Tier 3
- NH Route 120: 48" RCP Culvert – Tier 1
- Heater Road: 2 – 60" RCP Culverts – Tier 3
- Old Etna Road: 36" RCP Culvert – Tier 1

The task will not include a geomorphic review and analysis of the water course characteristics to determine new structure designs. Draft and Final Technical Memoranda will be produced describing methods and results, and will be supported by graphics and photographs of crossing areas to assist the Department with recommendations for the Final Design and Permitting, expected to be completed in Part B Services. A separate NHDES Wetlands Stream Crossing Worksheet will be prepared for each of the eight streams listed above and will be included in the Technical Memorandum.

## **8.5 Surface and Groundwater Analysis**

### **8.5.1 Data Analysis and Background Review (Phase 1)**

Data will be gathered, documented, and reviewed for existing surface waters and water quality within the project area. Information to be gathered will include the NHDES Surface Water Quality Assessment and 303D impaired waters listing for 2014 and draft 2016 listing and other relevant information. Specific focus will be given to the draft 2016 listing of impaired waters for the Mascoma River (NHRIV801060106-13) and 2 unnamed brooks to the east (NHRIV801060106-10) and west (NHRIV801060106-41) of Route 120. Data compilation and review will be conducted, and will build upon existing GIS data layers including: LiDAR contour topographic data, land use/land cover, impervious surfaces, NRCS soil survey, roads, and infrastructure such as water, sewer, outfalls, catch basins, manholes, parcel boundaries.

### **8.5.2 Pavement Runoff Analysis for Existing and Proposed Conditions (Phase 2)**

A runoff analysis for transportation areas will be conducted for Total Nitrogen, Total Phosphate and Total Suspended Solids and runoff volume for the existing condition and the Preferred Alternative. This will include the calculation of pollutant loads, targets, and sources delivered from pavements via stormwater and other non-point sources. These efforts will leverage previously developed methods including models, spreadsheets, and reporting templates. This will build upon existing information developed for NHDOT, the City of Lebanon, and elsewhere and assumes the pavement drainage areas will be provided by HDR in GIS format. Draft and Final Technical Summary Memoranda will be prepared. A single round of review comments is assumed.

### **8.5.3 Investigation of Appropriate Water Quality Treatment Measures (Phase 2)**

The Project Team will investigate appropriate water quality treatment measures necessary to minimize nutrient impacts on surface waters. We will develop a menu of prioritized and optimized stormwater control measures for pavement runoff appropriate for the transportation environment. Specifically, a list of potential stormwater control measures will be developed for each subwatershed to identify target areas. This will include specific BMP type, preliminary sizing, land use type (i.e., roads, driveways, right-of way), soil type, and total areas needed for management (i.e., X acres for specific BMPs). The team will recommend and work with the DOT to identify stormwater control measures including suggestions for Route 120 and identifying retrofit opportunities. Draft and Final Technical Summary Memoranda will be prepared. A single round of review comments is assumed.

### **8.5.4 Determine Appropriate Size and Placement of Structural BMPs (Phase 2)**

The Project Team will determine the appropriate BMP size and location within the project area for presentation at the Public Hearing. This will include considerations of the preliminary engineering topographic survey to identify site constraints and hydraulics. Recommended BMPs will be designed to 35% including site constraints, hydraulics, and sizing to achieve water quality goals. Considerations will be given to management of new road lanes and existing untreated pavement areas. A site walk of the project area will be undertaken to facilitate the analysis.



#### **8.5.5 Chloride Load Assessment (Phase 2)**

The project team will conduct an assessment of chloride loadings based on the number of travel lanes for the pre-and anticipated proposed alternative and include an analysis of the effects to receiving waters. The analysis will consider winter maintenance, chloride reduction measures, chloride load estimates from existing and proposed lanes, and load down to the subwatershed level. The breakdown of sources and estimated chloride load at the subwatershed level will be connected to an analysis of receiving water impacts, and potential chloride impairments identified in the 2016 draft 303D listing for the Mascoma River (NHRIV801060106-13) immediately downstream of Route 120. Because the project will not discharge to a chloride impaired water an AOT chloride management plan (Env-Wq 1303-11(g)) is not needed. The analysis will follow methods previously approved by NHDOT for similar projects. Subtask elements include: A) review current winter maintenance protocol and regulatory framework for chloride, B) calculate chloride loads for current and proposed conditions, and C) completion of a technical memorandum summary. A single round of review comments is assumed.

### **8.6 Cultural Resources (Historic)**

#### **8.6.1 Request for Project Review Form (Phase 1)**

The Project Team will initiate the Section 106 process by preparing a Request for Project Review (RPR) form for submission to the New Hampshire Division of Historical Resources (NHDHR). The form will include a description of the project with supporting documentation/maps, a defined project boundary, documentation of architectural resources within the project area, and description of potential ground-disturbing activity and known archeological resources. A preliminary Area of Potential Effect (APE) will be proposed at this time for SHPO review. This task will require a site visit to determine the APE and to photograph properties within the APE. In addition, a file review will be conducted at NHDHR for previously identified historic resources, both architectural and archeological, and research on construction dates will be undertaken through online assessor's data. Two (2) rounds of comments on the Draft form are assumed.

#### **8.6.2 Project Area Form (Phase 1)**

The Project Team will prepare a Project Area Form, if required by NHDHR, which will encompass properties within the defined APE. Major narrative sections will include Historical Background, Applicable NHDHR Historic Context(s), Architectural Description and Comparative Evaluation, Statement of Significance per National Register of Historic Places criteria, Period(s) of Significance, Statement of Integrity, and Bibliography/References. Note that the Project Area form won't make eligibility determinations, but instead it will make recommendations if necessary. The extent of the area evaluated will be determined based on the Visual APE defined for the project. It is assumed the Project Area Form will evaluate up to 75 buildings and structures and that documentation of each property within the APE will be necessary.

#### **8.6.3 Section 106 Coordination and Meetings**

The Project Team will assist with the preparations for and attend up to four (4) Cultural Resources Coordination Meetings to discuss potential eligibility and effects determinations for the project. This will include the preparation of PowerPoint presentations, handouts, and preparation for the meeting including team conference calls. The Project Team will prepare minutes for each meeting.

documenting the topics of discussion, comments and issues, follow-up action items, and any agreements or resolutions discussed. Minutes of the meeting will be distributed electronically.

#### **8.6.3.1 Section 106 Coordination and Meetings (Phase 1)**

The Project Team is anticipated to attend two (2) Cultural Resources Coordination Meetings during Phase 1 to discuss potential eligibility for the project and collect important feedback during the Alternatives Screening Level 1 and Level 2 to assist in determining the build alternatives prepared in Level 3. It is assumed three members of the Project Team will be in attendance at each meeting and meeting minutes will be prepared. In addition, it is assumed that two (2) conference calls will be required to prepare for these meetings.

#### **8.6.3.2 Section 106 Coordination and Meetings (Phase 2)**

The Project Team is anticipated to attend two (2) Cultural Resources Agency Meetings during Phase 2 discuss the effects determinations for the project based on the build alternatives. It is assumed three members of the Project Team will be in attendance at each meeting and meeting minutes will be prepared. In addition, it is assumed that two (2) conference calls will be required to prepare for these meetings.

#### **8.6.4 Cultural Resources Impact Analysis (Phase 2)**

The Project Team will prepare a coordination packet, including an introductory letter, existing conditions documentation (a summary of the resources, the Phase 1A Archaeological Assessment, and the Request for Project Review Form), the Determination of Effect, Effects Forms, and supporting project documentation for submission to NHDHR. Up to four (4) Effects Forms are assumed. Effects forms will only be prepared for the Preferred Alternative. Two rounds of review by NHDOT and FHWA are assumed. This packet will be adapted for submission to the Advisory Council on Historic Preservation (ACHP) through the e106 system. It is assumed NHDOT and FHWA will coordinate Native consultation, if any, with support provided by the Project Team.

#### **8.6.5 Memorandum of Agreement (Phase 2)**

The Project Team will work with NHDOT, FHWA, NHDHR, and ACHP to prepare a Memorandum of Agreement (MOA) for the Project, if required. Two rounds of comments are assumed on the MOA. It is assumed NHDOT will coordinate signature of the MOA. The Project Team will also prepare an e106 submission.

#### **8.7 Cultural Resources (Archaeology) (Phase 1)**

The Project Team will conduct a Phase 1A Archaeological Sensitivity Assessment for the project. The APE for the study is assumed to follow NH 120 from its intersection with Hanover Street, through the I-89 Exit 18 interchange, and to the intersection with Etna Road, approximately 320 acres. The study will adhere to NHDHR's Archaeological Standards and Guidelines (2004). As part of the study, the following information will be compiled for the project area:

- Project information including the project size, location, and plans. The project area and APE will be identified on the most recent USGS quadrangle and, if available, maps of project plans provided by the client will be included.
- Environmental information including a description of mapped soils, bedrock geology, physiography and hydrology in the vicinity of the project area.

- Discussion of existing conditions within the project area including present land use and evidence of prior disturbance. A site visit will be conducted to observe and photograph existing conditions.
- A description of previously reported archeological and historical resources in the vicinity of the project area. This information will be obtained during research at the NHDHR and will include known archeological sites, previous archeological surveys, and National Register listed and eligible structures and districts.
- Historical maps and an interpretation of potential historic resources within the project area.
- Photographs of structures within the project's area of potential effects.
- Soil coring and/or shovel testing information to assess the likelihood of intact soils and of possible archeological deposits.
- An assessment of the archeological sensitivity and potential of the project area and recommendations regarding Phase IB testing.

The Project Team will prepare the Draft Phase 1A for review by NHDOT and FHWA, respond to one round of comments on the report, and deliver a Final report for transmission to NHDHR. Should the Phase IA investigation determine that a Phase IB Intensive Archeological Investigation would be necessary, such work would be undertaken in subsequent phases of design.

### 8.8 Noise Analysis (Phase 2)

The Project Team will complete an assessment of the project area to determine whether it meets the definition of a Type I Project, and if a noise analysis will be required. For purposes of this scope, it is assumed that one (1) assessment will be required for two (2) separate neighborhoods east and west of the Interstate 89.

Should a noise analysis be required, the Project Team will complete a Noise Analysis of the project area. The proposed Noise Analysis will follow the New Hampshire Department of Transportation (NHDOT) *Policy and Procedural Guidelines for the Assessment and Abatement of Highway Traffic Noise for Type I or Type II Highway Projects* (November 2016).

- Existing noise measurements will be taken to validate the accuracy of the TNM (traffic noise model). This work will entail travel to the project area and performance of validation noise monitoring at up to 4 locations throughout the project area.
  - This work will utilize CADD files of the proposed alignments and other data made available to the Project Team (GIS parcel information, aerials, etc.).
- The Project Team will predict the noise levels for the existing year and proposed design year for the No-Build alternative and the Build alternative to determine if potential mitigation options are feasible and reasonable.
  - This analysis will use the Federal Highway Administration (FHWA) Traffic Noise Model (TNM), Version 2.5, predict the noise levels for the existing year and the proposed design year (typically 20 years in the future) for the No-Build alternative and the build alternative along the entire project limits.
  - If necessary, model and determine if noise barriers are feasible and reasonable. Public outreach is not considered part of this scope and can be added as additional services.
  - This analysis will utilize information made available to HDR, as well as data developed during Alternatives Analysis study within Task 3.0. This will include peak hourly traffic volumes, vehicle mix in % autos, % medium trucks, % heavy trucks, % buses, and % motorcycles, posted speeds, alignments, as well as roadway, receiver and terrain elevations.
- The Project Team will develop a draft noise technical report and implement comments into a final report.

- Perform QA/QC reviews of the analysis and report.

## **8.9 Air Quality Assessment (Phase 2)**

The Lebanon NH Route 120 project would generate air pollutant emissions from both construction and operation of the project. With respect to National Ambient Air Quality Standards, the project area is designated by EPA as in attainment for all criteria air pollutants, and is expected to remain in attainment with respect to all NAAQS, including the newest NAAQS, the 2015 ozone standard of 70 parts per billion. No NAAQS maintenance area status currently exists in the project area.

The air quality study area is proposed to include the NH Route 120 and immediate vicinity surrounding the corridor between Hanover Street and Etna Road. Based on the current NAAQS status of the project area (i.e., no nonattainment or maintenance status), the project is not subject to Transportation Conformity requirements under 40 CFR 93, Subpart A. Therefore, a qualitative air quality assessment is proposed for documenting the impacts of this project under the National Environmental Policy Act and no quantitative analyses are expected for this project.

## **8.10 Contaminated Properties Review (Phase 1)**

The Project Team will identify contaminated/hazardous materials sites located either directly within the project footprint or within reasonable project limits where a contamination source could directly or indirectly affect the project area.

The screening of contaminated properties will consist of the following tasks: 1) review of historic aerial photographs to evaluate past and current land use within the project areas, 2) review of State and Federal regulatory databases, which will entail reviewing NHDES OneStop Database files for, listed sites within 1,000' of the project, listed landfill sites within 4,000' of the project, review of the NHDES PFAS sampling map for water quality exceedances within 4,000' of the project and performing an EDR search, and 3) a site reconnaissance of the project areas to look at land use and observable physical evidence of contamination or potential contamination sources. The information will be described in a summary report that includes a list of all parcels with potential contamination concerns. It is assumed that RASCAL database will not need to be populated during this phase of the project.

Appropriate LRS language into the environmental document. Additionally, review the following records will occur to determine if any proposed bridge work will impact suspect ACM, if present:

- As Built Plans
- Maintenance Records
- Repair Records
- Construction Date
- Utilities

## **8.11 Section 4(f) Evaluation (Phase 2)**

If applicable, the Project Team will prepare an Individual Section 4(f) evaluation which will include a discussion of the applicability of Section 4(f) to the project, alternatives, findings, and measures to minimize harm. A Draft Individual Section 4(f) Evaluation will be provided to FHWA and NHDOT for review. The Project Team will then revise the Draft Evaluation to address comments received by NHDOT and FHWA, resubmit the documentation to NHDOT and FHWA for their final review, and issue a Final Individual Section 4(f) Evaluation.

## **8.12 Section 6(f) Consultation (Phase 1)**

The Project Team will prepare a letter to the NH Department of Natural and Cultural Resources confirming there are no Section 6(f) resources within the project area and thus that a Section 6(f) evaluation will not be required.

## **8.13 Environmental Study Document (Individual CE) (Phase 2)**

The Project Team will prepare an Individual Categorical Exclusion (CE) in accordance with the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) Guidelines, FHWA Guidelines and NHDOT Guidelines. The CE will draw upon analysis prepared under other tasks and supplement it as necessary to develop the required NEPA document.

In general, the CE process will:

- provide for project notification to Federal, state and local agencies
- provide for cooperative consultation among agencies through agency coordination
- assess the environmental impacts, both adverse and beneficial, of the Proposed Action and No Action on the natural, cultural, and social environment
- identify unavoidable adverse environmental effects
- identify secondary and cumulative environmental impacts
- identify mitigation measures to address and minimize adverse environmental impacts from the construction, operation, and maintenance of the Proposed Action
- identify potential permits and certifications needed to complete the project

Additionally, the environmental process will address specific legislative requirements (Executive Orders, agency coordination, Section 4(f), Section 6(f), and Section 106, among others), by identifying specific findings and necessary follow-on actions within the environmental document.

The CE will assess the environmental impacts associated with a single Build Alternative, which will be identified as the Preferred Alternative in the Engineering Report. Alternatives considered during the planning process but eliminated from detailed analysis will also be discussed in a summary form in the CE, however detailed environmental analysis for all of the alternatives considered will not be provided.

### **8.13.1 Project Description, Purpose and Need and Agency Coordination**

After consolidation of the build alternatives, the approved project description and Purpose and Need statement will be included in the CE as well as in all public and agency notifications issued relative to NEPA processing. A summary of agency coordination will also be prepared as part of this task.

### **8.13.2 Preferred Alternative and Alternatives Dismissed**

The CE will evaluate a single build alternative and a No-Build Alternative. The alternative screening and selection process leading to the identification of the Preferred Build Alternative will be summarized in the CE. In addition, a detailed description of the Preferred Alternative will be developed and included in the CE.

### **8.13.3 Affected Environmental and Environmental Consequences**

#### ***Land Use***

Existing land uses in the study area will be described. Potential impacts that will be explored include changes in land use, and consistency with local, regional, and state plans of development. The existing conditions discussion will provide the foundation for the discussion of Secondary and Cumulative Impacts.

#### *Social and Economic Resources*

Demographic data including income and employment statistics will be collected by the consultant team for the project study corridor. Information on existing neighborhoods, neighborhood organizations, and/or important community assets/resources in the study area will also be collected. Sources of information to be consulted include the US Census and the 2012 Lebanon Master Plan.

Potential social and economic impacts associated with the Proposed Action will be analyzed and mitigation measures (if any) will be identified. The impact assessment will focus primarily on direct physical impacts and will consider the following issues among others:

- Community disruption including change of access to, from, or within existing residential or non-residential areas
- Right-of-Way impacts (access partial and full property acquisitions)
- Interruption of emergency and community services
- Adverse and/or beneficial impacts on the local tax base and employment
- Consistency with the 2012 Lebanon Master Plan vision for 2030

#### *Farmlands*

Farmlands will be identified within the study area and impacts of the Build and No-Build Alternatives will be assessed.

#### *Air Quality*

Based on the findings of the Air Quality Assessment, existing air quality conditions and impacts of the Build and No-Build Alternatives will be summarized in the CE. The analysis will include impacts related to both construction and operation. Appropriate mitigation measures will also be identified, if needed.

#### *Noise*

Based on the findings of the Noise Assessment, existing noise conditions and impacts of the Build and No-Build Alternatives will be summarized in the CE. The analysis will include impacts related to both construction and operation of the interchange. Appropriate mitigation measures will also be identified, if needed.

#### *Surface and Groundwater Quality*

Data on existing groundwater within the study area will be collected from sources such as the Town of Lebanon, NH GRANIT, and NHDES. These resources and potential impacts of the Preferred Alternative will be described in the CE. The CE will also summarize the findings of the Surface Water Analysis and BMPs.

#### *Floodplains*

The Project Team will identify and describe regulatory floodways and 100-year floodplain zones in the study area using National Flood Insurance Program (NFIP) maps and/or information developed

by the Federal Emergency Management Agency (FEMA) and/or the state of New Hampshire. Potential project encroachments into floodplains and floodways will be identified and described and measures proposed to minimize flood risks and to mitigate adverse impacts will be suggested, as required by Executive Order 11988.

#### *Wetlands*

The findings of the wetland delineation will be summarized in the CE. Direct and indirect, and temporary and permanent impacts of the Build Alternative will be assessed in terms of both quantity (acreage and volume) and quality (functions and values). Methods to avoid and minimize wetland impacts will be assessed and described. If there are no practicable alternatives to avoid impacting wetlands, potential mitigation options will be discussed. The CE will summarize resource agency coordination on mitigation requirements. Conceptual wetland mitigation compensation options will be addressed in the CE, based on regulatory agency coordination.

#### *Wildlife, Vegetation and Threatened and Endangered Species*

Existing terrestrial and aquatic habitats in the study area, and wildlife and vegetation within them, will be identified and described in terms of location and characteristics. Existing information may include the New Hampshire Wildlife Action Plan, coordination with NH Fish and Game Department, existing GIS mapping, aerial photographs. Field investigation will supplement this task to verify existing data, and fill in gaps, as needed. Field work may include photographs and notes documenting habitat and wildlife. No detailed surveys are included in this task. In addition, the presence and/or absence of endangered and threatened species and habitats will be documented in the CE. Potential impacts from the project will be identified and described and measures to avoid, minimize and mitigate impacts will be presented. A summary of coordination with regulatory agencies and mitigation discussions will be included in this narrative.

#### *Parks/Recreation/Conservation Lands*

Public parks, recreation areas and conservation lands will be identified within the project area. Potential impacts to these resources resulting from the implementation of the Preferred Alternative will be described. This analysis will be coordination with the Section 4(f) Evaluation and Section 6(f) compliance, as applicable.

#### *Cultural Resources*

As part of the Request for Project Review, the Project Team will define a Draft Area of Potential Effects (APE) for the project. The CE will describe the APE and historic and archaeological resources located within this area, as identified through a windshield survey, research at NHDHR, the Phase 1A-Archaeological Survey, and a Project Area Form. The Project Team will also summarize the effects of the Build Alternative on these resources, and identify mitigation measures agreed upon through the Section 106 consultation process.

#### *Hazardous Materials*

The Project Team will summarize the results of the records search memorandum in the CE. The potential for project impacts from hazardous materials/contaminated sites will be then be evaluated. The Project Team will coordinate with NHDOT to evaluate the presence of asbestos or lead painting on existing infrastructure structures, and will assess measures required to conduct geotechnical investigations within areas of potential contamination.



### *Visual Resources*

The Project Team will complete a visual analysis which will define the viewshed, document existing visual conditions within the viewshed, and assess impacts to visual resources resulting from the Build Alternative. Simulations prepared as part of the Public Participation will be used as the foundation for the analysis.

### *Environmental Justice*

No work is carried under this scope for assessing and describing Environmental Justice Impacts. It is assumed that NHDOT Bureau of Labor and Compliance will complete the EJ Analysis, and provide it to the Project Team for inclusion in the document.

### *Traffic and Transportation*

Existing traffic conditions and the impacts of the No-Build and Build Alternatives on traffic and transportation will be summarized in the CE based on the findings in the Preliminary Engineering Report. The existing roadway network in the project area will be described including information on traffic volumes, vehicle mix, and circulation patterns. The potential for impacts to the transportation system due to construction, as well as any operational impacts, will be identified and described. This includes impacts to emergency access. Measures to mitigate these impacts will be presented in the CE.

### *Considerations Relating to Pedestrians and Bicyclists*

Existing pedestrian and bicyclist facilities in the project vicinity and existing safety issues will be described based on the findings in the Preliminary Engineering Report. Potential impacts to these facilities due to the construction and implementation of the project will also be discussed.

### *Public Utilities and Services*

The Project Team will review existing public utilities and services information provided by NHDOT in the project area to determine if any public utilities will be removed, replaced or relocated under the Build Alternative. Impacts and mitigation measures will be summarized.

### *Construction Impacts*

Impacts associated with construction of the Build Alternative will be discussed, including those related to:

- Land use
- Neighborhoods
- Access/vehicular traffic circulation
- Business vitality
- Air Quality
- Noise
- Water quality/stormwater/wetlands
- Wildlife and listed species
- Floodplains and resiliency
- Provision of emergency services
- Hazardous waste/contamination



This analysis will consider potential impacts from construction activities and necessary avoidance, minimization and mitigation measures.

#### *Secondary and Cumulative Impacts*

The impact analysis for secondary impacts will generally follow the guidelines outlined in the Federal Highway Administration's Position Paper on Secondary and Cumulative Impact Assessment (August 20, 1992). The cumulative impact analysis will generally follow that same guidance, plus the Council on Environmental Quality (CEQ) Cumulative Effects Handbook (January 1997). For both analyses, the general steps will include:

- Defining the geographic area and time frame appropriate to the secondary and cumulative impacts analyses, based on the findings of the individual impact analyses for resources, ecosystems, and human community elements conducted for the CE.
- Identifying the important cause-and-effect relationships between the project activities and impacts to resources
- Determining the magnitude and significance of the effects over the relevant time frames, based on the resource characterizations from the data collection phase.
- Identifying relevant minimization, avoidance and mitigation measures, evolving as general or regulatory trends in the affected area.
- Summarizing any unmitigated adverse impacts and their significance.

#### *Summary of Impacts*

The Project Team will prepare a summary of impacts which will be presented in a matrix within the CE.

#### *Environmental Commitments*

The Project Team will prepare a summary of Environmental Commitments for inclusion within the CE.

#### **8.13.4 Permits, Approvals and Certifications**

The Project Team will identify a list of potential required permits for construction and operation of the Proposed Action, including state and federal permits and approvals.

#### **8.13.5 References, Citations and Appendices**

The Project Team will develop a list of sources and gather relevant appendices for inclusion within the CE. Appendices may include supporting studies and agency coordination letters.

#### **8.13.6 Preparation of Supporting Graphics**

Standard 8.5x11 inch and 11x17 inch report graphics will be prepared to illustrate relevant project elements for the CE document. Where necessary, this mapping will be supplemented by existing GIS information. A maximum of five (5) base report graphics for the CE are estimated for this scope of work.

#### **8.13.7 Draft Individual CE**

The Project Team will prepare an Administrative Draft CE, along with an electronic copy in MS Word format for purposes of utilizing Track Changes, and submit to NHDOT for their internal review and comment, and for their distribution to FHWA for comment, as appropriate.

#### **8.13.8 Final CE**

Upon receiving comments from NHDOT and FHWA on the Draft CE, and following the Public Hearing, the Project Team will meet with NHDOT and FHWA to review and address comments, as needed. The Project Team will then prepare a Final CE. Ten (10) printed copies and five (5) CDs will be provided.

### **8.14 Meetings and Coordination**

The Project Team will attend up to two (2) meetings and up to four (4) conference calls with NHDOT Bureau of Environment (BOE) in support of the preparation of the CE during the Part A.

#### **8.14.1 Meetings and Coordination (Phase 1)**

For Phase 1 of the design, the anticipates attending one (1) meeting and scheduling two (2) conference calls with NHDOT Bureau of Environment (BOE) in support of the Alternatives Screening.

#### **8.14.2 Meetings and Coordination (Phase 2)**

For Phase 2 of the design, the anticipates attending one (1) meeting and scheduling two (2) conference calls with NHDOT Bureau of Environment (BOE) in support of the preparation of the CE during the Part A.

### **8.15 Project Team Coordination**

Coordination between the HDR design team and FHI's environmental review team will be necessary throughout the course of the study. It is assumed this will include up to three (3) meetings and six (6) conference calls.

#### **8.15.1 Project Team Coordination (Phase 1)**

For Phase 1 of the design, it is assumed this will include up to one (1) meeting and three (3) conference calls.

#### **8.15.2 Project Team Coordination (Phase 2)**

For Phase 2 of the design, it is assumed this will include up to two (2) meetings and three (3) conference calls.

### **Deliverables:**

- Two (2) agency coordination letters
- One New Hampshire DOT Bridge/Structure Assessment Form
- Draft and Final Wetland Delineation Reports
- Invasive Species Management Plan sheets
- Draft and Final Stream Crossing Assessment
- Draft and Final Pavement Runoff Analysis Technical Memoranda

- Draft and Final Water Quality Treatment Measure Technical Memoranda
- Draft and Final Chloride Load Assessment Technical Memoranda
- Draft and Final Request for Project Review Form
- Draft and Final Project Area Form
- Draft and Final Effects Forms (4)
- Draft and Final Memorandum of Agreement
- Draft and Final Phase 1A Archaeological Sensitivity Assessment
- Draft and Final Noise Technical Report
- Draft and Final Air Quality Assessment
- Draft and Final Hazardous Materials Records Search Memoranda
- Draft and Final Individual Section 4(f) Evaluation
- Draft and Final Individual CE

**Assumptions:**

- Listed in subsections above.

## **9.0 PUBLIC ENGAGEMENT AND COMMUNICATION**

The Project Team shall support a dynamic public participation process that enhances NHDOT practices as stated in the guidance document, "Public Involvement Process for New Hampshire Transportation Improvement Projects".

### **9.1 Prepare Public Involvement Plan (Phase 1)**

The Project Team will develop a Public Outreach and Communication Plan. The Project Team will identify stakeholders, key issues, and existing communications networks, such as newspapers, newsletters, radio stations, and electronic communication/social media tools that best assist the entire team in meeting the project goals.

#### **9.1.1 Prepare Public Involvement Plan**

Within 30 days of the initial site visit, the Project Team will develop a Public Outreach and Communication Plan. To develop the plan a site visit will be made shortly after project kick-off to view the project area and meet one-on-one with town officials and key stakeholders to understand key issues and identify effective methods of communicating with the public. Potential locations for public and stakeholder meetings will be examined as well as locations for informal communications such as bulletin boards at retail shops, library, town hall, social clubs, markets, and Facebook pages.

A draft public involvement plan will be developed and reviewed by NHDOT. Following NHDOT approval, it will be shared with the Project Advisory Committee (PAC) at its first meeting to solicit ideas and recommendations. Following the PAC meeting, the plan will be finalized, and implementation will begin immediately.

#### **9.1.2 Stakeholder Outreach Kick Off Meetings (2 Assumed)**

In addition, two (2) Stakeholder Outreach Kick Off Meetings are anticipated to collect information and present the project process to the communities. The meetings will be held in the City of Lebanon and Town of Hanover to solicit input from elected officials and citizens. Preparation of materials to facilitate the "blank sheet" meeting are included in this task.

## 9.2 Project Advisory Committee (Working Group) Meetings

A Project Advisory Committee will be established for this project in collaboration with NHDOT and the Project Team to review and discuss alternatives and to facilitate local input into important design decisions. Members of this committee will include representatives of the Route 120 Working Group as well as other constituencies not previously involved in Route 120 planning efforts. The intent of the newly constituted PAC is to build upon the efforts/history of the Route 120 Working Group while broadening the scope of citizen representation in the planning effort.

The primary responsibility of the PAC will be to participate in the overall project process, provide and disseminate information, review and comment on draft documents and Section 106-related issues and address specific environmental, social and economic issues associated with the development of project recommendations. The Project Team will provide PAC members a reasonable opportunity to review materials in advance of a scheduled advisory committee meeting. All project information will be sent via e-mail or by hard copy, if email is unavailable.

In addition to appropriate NHDOT staff, the following will be invited to participate in the project PAC:

- Top officials from the Towns of Lebanon and Hanover or designee;
- A representative from the Lebanon and Hanover Planning Commissions;
- A representative from the Lebanon and Hanover Conservation Commissions;
- A representative from Greater Lebanon Chamber of Commerce;
- A representative from Upper Valley Lake Sunapee Regional Planning Commission;
- A representative from Lebanon/Hanover Bicycle and Pedestrian Committee;
- A representative from Lebanon School District;
- A representative from Dartmouth-Hitchcock Medical Center;
- Members from other interested parties including area businesses; residents and abutters;
- A representative from Advance Transit;
- A representative from Vital Communities;
- A representative from Upper Valley Transportation Management Association;
- District State Senator and Representative;
- Others as identified, including through Environmental Justice outreach, and approved by NHDOT

It is anticipated that the PAC will meet up to five (5) times during this project. It is assumed that there will be up to three (3) HDR and two (2) FHI attendees at five (5) PAC meetings. The Project Team will:

- Fully develop the role and objectives of the PAC with NHDOT, so that the advisory role is clearly understood by all.
- Work with NHDOT and the PAC to ensure that representation is appropriate.
- Develop a tentative PAC meeting schedule, corresponding to key decision points in the project. Plan five (5) meetings of the PAC.
- Maintain a database of PAC members.
- Be responsible for scheduling the date and time, identifying the meeting location, and developing draft meeting notices for NHDOT approval.
- Prepare a draft agenda for each PAC meeting.
- Revise and finalize each PAC meeting agenda.
- Develop and coordinate meeting materials (i.e. reports, slides, illustrations, graphics, designs, and maps).

- Send (via mailed postcard or email) meeting reminders to each of the PAC members three days prior to each meeting;
- Distribute/publish (ground mail, email) PAC meeting notices and agenda to PAC Members, all draft documents to each PAC member and posting meeting notices and agenda on the project web site, two weeks prior to the scheduled meeting.
- Facilitate each PAC meeting (At the first PAC meeting, present the objectives of the project, answer questions to clarify the objectives, and respond to general questions about the project).
- Distribute meeting notes to PAC members.

#### **9.2.1 Project Advisory Committee (Working Group) Meetings (Phase 1)**

For the purposes of the scope, two (2) of the five (5) meetings are anticipated during Phase 1.

#### **9.2.2 Project Advisory Committee (Working Group) Meetings (Phase 2)**

For the purposes of the scope, three (3) of the five (5) meetings are anticipated during Phase 2.

### **9.3 Public Officials & Public Informational Meetings**

The purpose of the Public Information Meetings (PIM) is to obtain input from the public regarding the development of this project and its recommendations. These meetings will be planned to coordinate public participation in the NEPA process (including Section 106 requirements), both for public scoping and review of the Environmental Assessment (EA). Public Information Meetings will be developed as "open house" style with brief presentations.

This scope includes up to four (4) Public Information Meetings held at key project milestones. It is assumed that there will be up to three (3) HDR and two (2) FHI attendees at two (2) PIM meetings, and three (3) HDR and three (3) FHI attendees at two (2) PIM meetings. The PIM meetings are expected to last up to two hours each. The Project Team will be expected to arrive one hour prior to the meeting to set up for the meeting and one hour after the meeting to interact one-on-one with the public/respond to individual questions as well as return the room to its original set up.

For each of these meetings, the Project Team will be responsible for:

- Scheduling the date, time and meeting location;
- Developing an agenda for meetings for NHDOT approval;
- Developing handout material, including display graphics (up to 8 boards per meeting) for NHDOT review and approval prior to publication. It is assumed that materials for the PIM will utilize information developed for corresponding PAC meetings;
- Conducting a dry-run of presentation for NHDOT before meeting; and
- Presenting the project materials at the meeting.

No formal stenographer or audio recording is assumed for this task.

The Project Team will attend up to four (4) individual public official meetings such as a briefing at a Town Council meeting, Town Commission, civic or special interest group. The Project Team will utilize materials (PowerPoint presentation, meeting handouts) prepared for previous meetings. No Section 106 consulting parties meetings will be covered by this task. It is assumed that there will be up to two (2) HDR and one (1) FHI attendee at the public officials meetings.

#### **9.3.1 Public Officials & Public Informational Meetings (Phase 1)**

For the purposes of the scope, two (2) of the four (4) Public Information Meetings and two (2) of the four (4) Public Official Meetings are anticipated during Phase 1.

The Project Team anticipates sending will be up to three (3) HDR and two (2) FHI attendees at one (1) PIM meeting, and three (3) HDR and three (3) FHI attendees at one (1) PIM meeting. For the Public Official Meetings, the Project Team anticipates sending two (2) HDR and one (1) FHI attendee.

### **9.3.2 Public Officials & Public Informational Meetings (Phase 2)**

For the purposes of the scope, two (2) of the four (4) Public Information Meetings and two (2) of the four (4) Public Official Meetings are anticipated during Phase 2.

The Project Team anticipates sending will be up to three (3) HDR and two (2) FHI attendees at one (1) PIM meeting, and three (3) HDR and three (3) FHI attendees at one (1) PIM meeting. For the Public Official Meetings, the Project Team anticipates sending two (2) HDR and one (1) FHI attendee.

## **9.4 Preparation and Documentation of Meetings**

The Project Team will be responsible for the preparation of all meeting presentations and provide a written summary of all Public Advisory Committee, Public Informational Meetings and Public Officials meetings. The Project Team will:

- Prepare five (5) core PowerPoint presentations for use at PAC, PIM and local officials meetings;
- Prepare thirteen (13) written summaries of meetings that will submitted to NHDOT for review, approval and posting on the project website;
- Prepare and revise alternative graphics, plans, and renderings created during alternative design phases and engineering tasks.
- Revise, finalize, and distribute meeting notes to attendees.

### **9.4.1 Preparation and Documentation of Meetings (Phase 1)**

Preparation for meetings and documentation of information is assumed for the eight (8) Phase 1 public meetings outlined under Task 9.0.

### **9.4.2 Preparation and Documentation of Meetings (Phase 2)**

Preparation for meetings and documentation of information is assumed for the seven (7) Phase 2 public meetings outlined under Task 9.0.

## **9.5 Communications Materials and Activities**

### **9.5.1 E-bulletins (Phase 1)**

The Project Team will produce up to four (4) e-bulletins annually to inform the public about project developments and special topics. The e-bulletin communications will be designed as short (no more than equivalent of 1-8 ½ page) and designed for electronic formatting. Potential topics and milestones for e-bulletins could include:

- Description of DDI design, with link to a video.
- Summary of land use, current and future, in the project area

- At the beginning of the project, announcing the project and advertising the first public meeting, the Public Advisory Committee and how to stay informed about the project.
- At development of preliminary draft alternatives phase when alternatives are ready for public review and a public informational meeting is scheduled.
- At development of final draft alternatives phase when alternatives are ready for public review and a public informational meeting is scheduled.
- At the conclusion of the design phase announcing the preferred design and next steps, including schedule for construction.

In addition to posting on the NHDOT project website, the e-bulletins will be sent to the Towns, Medical Center and local employers, Dartmouth College, Upper Valley List Serve (managed by Vital Communities) and other civic-focused Facebook and social media networks for distribution.

Project updates are expected throughout the process, materials are assembled from effort through Tasks in the Preliminary Engineering and Environmental Coordination, and would not change based on the complexity of the project.

#### **9.5.2 Contact List (Phase 1)**

The Consultant shall maintain a mailing list of Interested Parties throughout the project process. The Interested Parties mailing list shall include, but may not be limited to:

- Legislators from US Congress, Executive Council, State Representative and Senate;
- Individuals or organizations that have indicated an interest in this project;
- Stakeholders;
- Media;
- Abutters;
- Section 106 Consulting Parties;
- Local Municipal Officials; and
- Others.

#### **9.5.3 Media Relations (Phase 1)**

The Project Team will provide supportive materials to NHDOT communications staff to assist the department with publicizing public meetings in newspapers, radio and TV stations that cover the Upper Valley area. The Project Team will provide a draft media advisory to NHDOT for four (4) public meetings with pertinent information on the date, time, location and purpose of the public meetings and project status. Outreach to media outlets will occur within two weeks in advance of four (4) public meetings. NHDOT will be responsible for initiating all media contact.

Draft media advisories are expected throughout the process, materials are assembled from effort through Tasks in the Preliminary Engineering and Environmental Coordination, and would not change based on the complexity of the project.

#### **9.5.4 Website (Phase 1)**

The Project Team will provide NHDOT relevant project information in electronically formatted files for the agency to post in the "Project Center" section "Project Specific Information" subsection of the NHDOT website - <http://www.nh.gov/dot/projects/index.htm>. Information provided may include notices of upcoming public meetings, meeting presentations, meeting summaries, project reports, educational videos, e-bulletins and contact information on how to communicate with the Project



Team. The Project Team will also review project page and update monthly, for the duration of the project.

In addition, the Consultant will provide information about the project for posting on the City of Lebanon and Town of Hanover website.

Website coordination is expected throughout the process, materials are assembled from effort through Tasks in the Preliminary Engineering and Environmental Coordination, and would not change based on complexity of the project.

#### **9.5.5 Promotional & Educational Materials & Development (Phase 2)**

A successful solution to the traffic operations may conclude with alternative interchange and intersections, similar to the Diverging Diamond Interchange (DDI) proposed in the previous design workshops. The team will assist and develop informational or promotional materials to educate the public on the design of the alternative interchange, if selected, and how to navigate through the newer intersections for all modes of transportation. Alternative intersection materials will include:

- Development of a DDI informational pamphlet and printed materials
- Securing rights to use DDI videos and promotional materials created by other DOTs and agencies to utilize during presentations
- Creating real-time operational videos of existing alternative intersections and/or interchanges with drones to utilize during presentations
- Creating side-by-side existing and proposed intersection microsimulations utilizing the traffic software.

For Part A services, traffic simulations and fly-through renderings requiring three (3) dimensional models of the existing and proposed and a project specific video and tutorial of the selected alternative are not included. It is anticipated the promotional materials will be developed after the Alternative Screening has reduced the potential build alternatives developed under Task 5.0.

#### **9.5.6 Other Communication Activities (Phase 1)**

Throughout the course of Part A, miscellaneous communication activities will occur with members of the public, especially during the periods leading up to and following public meetings. A sampling of communication tasks we anticipate are:

- Coordination with the City of Lebanon and Town of Hanover to send out e-alerts in advance of upcoming meetings;
- Design and mailing of flyers to community gathering locations;
- Develop and maintain a database of all comments received;
- Directly respond to comments or coordinate a response from another member of the study team
- Track all comments and responses within database; and
- Provide reports of comments for NHDOT within the monthly progress report.
- It is assumed that these communication activities will not exceed 2 hours per month.

The Project Team will provide completed and phase-specific content (text, photos, graphics and links), as requested, for NHDOT's distribution through social media outlets, including Department's Facebook page and Twitter.



Communication is expected throughout the process, materials are assembled from effort through Tasks in the Preliminary Engineering and Environmental Coordination, and would not change based on complexity of the project.

## **9.6 NHDOT Coordination Meetings**

Project Team and NHDOT coordination meetings are anticipated to provide public meeting expectations, delivery, set agendas, and dry runs prior to the public outreach process. The following meetings are anticipated with the NHDOT –

- One (1) meeting for comment review and approval of the Public Involvement Plan and prior to the Stakeholder Kick-off Meetings
- Four (4) Meetings prior to each of the Public Officials or Public Informational Meetings
- One (1) Meeting prior to the Public Hearing

### **9.6.1 NHDOT Coordination Meetings (Phase 1)**

Three (3) meetings are anticipated with the NHDOT for Phase 1 –

- One (1) meeting for comment review and approval of the Public Involvement Plan and prior to the Stakeholder Kick-off Meetings
- Two (2) Meetings prior to each of the Public Officials or Public Informational Meetings

### **9.6.2 NHDOT Coordination Meetings (Phase 2)**

Three (3) meetings are anticipated with the NHDOT for Phase 2 –

- Two (2) Meetings prior to each of the Public Officials or Public Informational Meetings
- One (1) Meeting prior to the Public Hearing

## **9.7 Team Coordination Meetings**

Internal coordination meetings are anticipated to provide the appropriate design, management, and supporting information to administer the public meetings in a professional manner.

### **9.7.1 Team Coordination Meetings (Phase 1)**

It is assumed two (2) staff each from HDR and FHI will conference to coordinate information for the eight (8) Phase 1 public meetings outlined above.

### **9.7.2 Team Coordination Meetings (Phase 2)**

It is assumed two (2) staff each from HDR and FHI will utilize conference to coordinate information for the six (6) Phase 2 public meetings outlined in the tasks above and for the Public Hearing.

## **9.8 Public Hearing (Phase 2)**

The Project Team will support NHDOT in conducting one (1) Public Hearing, in the event that the project has Right-of-Way impacts. For this meeting, the Consultant will be responsible for:

- Bureaus of Highway Design and Right-of-Way general administration, support, and documentation of the State and City rights-of-way, corridor, parcels, and existing easements.
- Preparation of colored Hearing Plans
- Preparing up to three (3) boards for use at the hearing;

- Conducting a dry-run of presentation for NHDOT before the hearing;
- Support DOT in presenting the project materials at the hearing;
- Publishing/posting the approved meeting minutes on the project webpage; and Posting any PowerPoint presentations from meeting on the project webpage.

It is assumed that the Project Team will not provide a formal stenographer or audio recording for this task.

**Deliverables:**

- Draft and Final Public Outreach and Communication Plan,
- Two (2) initial kick-off meetings anticipated.
- Five (5) Public Advisory Committee Meetings will be held.
- Four (4) Public Informational Meetings will be held.
- Four (4) Public Official Meetings will be held.
- PowerPoint Presentations for each meeting identified.
- Eight (8) E-bulletins to inform the public about project developments and special topics.
- Six (6) NHDOT Coordination meetings are included in the scope.
- One (1) Public Hearing Meeting will be held.

**Assumptions:**

- It is assumed one revision between Draft and Final submissions for Task 9.1
- One kick-off meeting will be the City of Lebanon and the second may be with either the NH Route 120 Working group or the Town of Hanover for Task 9.1.
- It is assumed that there will be up to three (3) HDR and two (2) FHI attendees at five (5) PAC meetings for Task 9.2.
- It is assumed that there will be up to three (3) HDR and two (2) FHI attendees at two (2) PIM meetings, and Three (3) HDR and three (3) FHI attendees at two (2) PIM meetings for Task 9.3.
- It is assumed that there will be up to two (2) HDR and one (1) FHI attendee at the Public Officials meetings for Task 9.3
- It is assumed graphics presented will be completed during development of the project and will be utilized in presentations, no additional or new graphics are anticipated in Task 9.4.
- For Task 9.5 Communication Materials and Activities, it is assumed:
  - Stakeholder Meetings – envisioned as a "blank sheet" with the standard materials, aerials and base mapping or survey as appropriate
  - For Public Informational Meetings the materials will be representative of the increasing effort in the process. It is anticipated:
    - Meeting #1 will be a summary of review of Alternatives Screening. Anticipated materials include aerial plans, aerial images and video of potent solutions from other projects, and solution graphics prepared as needed.
    - Meeting #2 & #3 – Update of Design Process – Anticipated materials include aerial plans, color graphics of solutions evaluated, compilation of videos from other states & FHWA, and Aimsun animations – potential video of side by side comparison of existing and proposed solutions (up to 3 cleaned up animations)
    - Meeting #4 – Final PIM – Anticipated materials include aerial plans, color graphics of solutions evaluated, drive through animation, a project specific narration is not anticipated for Part A.
- It is assumed that no formal stenographer or audio recording is required by the Project Team for this task.

*Attachment 1*

**CERTIFICATION WITH REGARD TO THE PERFORMANCE OF  
PREVIOUS CONTRACTS OR SUBCONTRACTS SUBJECT TO  
THE EQUAL OPPORTUNITY CLAUSE AND THE FILING OF REQUIRED REPORTS**

The CONSULTANT X, proposed subconsultant \_\_\_\_\_, hereby certifies that it has X, has not \_\_\_\_\_, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Order 11246 and that it has X, has not \_\_\_\_\_, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

HDR Engineering Inc.

(Company)

By: Cynthia L. Joudrey

Cynthia L. Joudrey, P.E.

Vice President

(Title)

Date: June 29, 2020

**Note:** The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by consultants and proposed subconsultants only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime consultants and subconsultants who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such consultant submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

(Revised: June, 1980) **NOTE: TO BE COMPLETED BY CONSULTANT WHEN SIGNING AGREEMENT.**

*Attachment 2*


**CONSULTANT DISCLOSURE STATEMENT  
FOR PREPARATION OF  
ENVIRONMENTAL EVALUATIONS**

I hereby affirm that I have read and reviewed the Council on Environmental Quality (CEQ) regulation [40 CFR 1506.5(C)] and related guidance issued by CEQ and that pursuant thereto this firm has no financial or other interest in the outcome of this project.

I further hereby affirm that the information provided herein is true and correct and acknowledge that any knowingly false statement or false representation as to any material part contained herein may subject me to a fine and/or imprisonment, pursuant to pertinent provisions of the United States Code.

June 29, 2020

(Date)



(Signature)

Cynthia L. Joudrey, P.E., Vice President

Attachment 3

CERTIFICATION OF CONSULTANT/SUBCONSULTANT

I hereby certify that I am the Vice President and duly-authorized representative of the firm of HDR Engineering Inc. and that neither I nor the above firm I here represent has:

- (a) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above CONSULTANT) to solicit or secure this Contract,
- (b) agreed, as an express or implied condition for obtaining this Contract, to employ or retain the services of any firm or person in connection with carrying out the Contract, or
- (c) paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above CONSULTANT) any fee, contribution, donation or consideration of any kind for, or in connection with, procuring or carrying out the Contract:

I/WE do also, under penalty of perjury under the laws of the United States, certify that, except as noted below, the company or any person associated therewith in the capacity of (owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of Federal funds): (a) is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency; (b) has not been suspended, debarred, voluntarily excluded or determined ineligibility by any Federal agency within the past three years; (c) does not have a proposed debarment pending; and (d) has not been indicted, convicted or had a civil judgment rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.

except as here expressly stated (if any): N/A.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate below to whom it applies, the initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

I acknowledge that this certificate is to be furnished to the State Department of Transportation and the Federal Highway Administration, U. S. Department of Transportation, in connection with this Contract involving participation of Federal-aid highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

June 29, 2020

(Date)

Cynthia L. Joudrey

(Signature)

Cynthia L. Joudrey, P.E., Vice President

*Attachment 4*

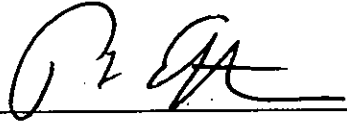
**CERTIFICATION OF STATE DEPARTMENT OF TRANSPORTATION**

I hereby certify that I am the Director of Project Development of the Department of Transportation of the State of New Hampshire, and the above consulting firm or its representatives has not been required, directly or indirectly, as an express or implied condition in connection with obtaining or carrying out this Contract, to:

- (a) employ or retain, or agree to employ or retain, any firm or person, or
- (b) pay, or agree to pay, to any firm, person, or organization, any fee, contribution, donation, or consideration of any kind:

except as here expressly stated (if any):

July 13, 2020  
(Date)

  
(Signature)

*Attachment 5*

**CERTIFICATION FOR FEDERAL-AID CONTRACTS  
EXCEEDING \$100,000 IN FEDERAL FUNDS**

The prospective participant certifies, by signing and submitting this agreement, 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 Federal 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, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (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 Federal 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, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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.

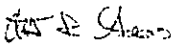
The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower-tier subcontracts which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

Attachment 6

IN WITNESS WHEREOF the parties hereto have executed this AGREEMENT on the day and year first above written.


**Consultant**

WITNESS TO THE CONSULTANT

By:   
Anthony R. Gouveia

Dated: June 29, 2020

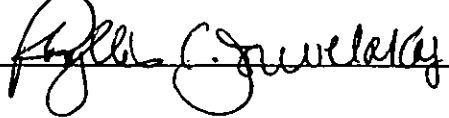
CONSULTANT

By:   
Cynthia L. Joudrey, P.E.  
Vice President  
(TITLE)

Dated: June 29, 2020


**Department of Transportation**

WITNESS TO THE STATE OF NEW HAMPSHIRE

By: 

Dated: July 13, 2020

THE STATE OF NEW HAMPSHIRE

By:   
Director of Project Development

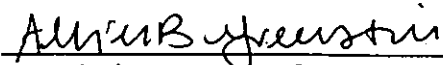
for DOT COMMISSIONER

Dated: July 13, 2020

**Attorney General**

This is to certify that the above AGREEMENT has been reviewed by this office and is approved as to form and execution.

Dated: 7/23/2020

By:   
Assistant Attorney General

**Secretary of State**

This is to certify that the GOVERNOR AND COUNCIL on \_\_\_\_\_ approved this AGREEMENT.

Dated: \_\_\_\_\_

Attest:

By: \_\_\_\_\_  
Secretary of State



**Certificate of Authority # 1**

*(Corporation, Non-Profit Corporation)*

**Corporate Resolution**

I, Elizabeth C. Buell, hereby certify that I am duly elected <sup>Assistant</sup>~~Clerk/Secretary/Officer~~ of  
(Name) an excerpt from the minutes of  
HDR Engineering, Inc. I hereby certify the following is ~~a true copy of a vote taken at~~  
(Name of Corporation)

a meeting of the Board of Directors/~~shareholders~~, duly called and held on January 1, 2018,  
by Consent and Agreement  
~~at which a quorum of the Directors/shareholders were present and voting.~~

**VOTED:** That Cynthia L. Joudrey, Vice President  
(Name and Title) (may list more than one person) is

duly authorized to enter into contracts or agreements on behalf of  
HDR Engineering, Inc. with the State of New Hampshire and any of  
(Name of Corporation)

its agencies or departments and further is authorized to execute any documents  
which may in his/her judgment be desirable or necessary to effect the purpose of  
this vote.

Consent and Agreement

I hereby certify that said ~~vote~~ has not been amended or repealed and remains in full force  
and effect as of the date of the contract to which this certificate is attached. This authority  
remains valid for thirty (30) days from the date of this Corporate Resolution. I further certify  
that it is understood that the State of New Hampshire will rely on this certificate as evidence that  
the person(s) listed above currently occupy the position(s) indicated and that they have full  
authority to bind the corporation. To the extent that there are any limits on the authority of any  
listed individual to bind the corporation in contracts with the State of New Hampshire, all such  
limitations are expressly stated herein.

**DATED:** 06-26-2020

**ATTEST:** Elizabeth C. Buell Elizabeth C. Buell, Assistant Secretary  
(Name & Title)





# CERTIFICATE OF LIABILITY INSURANCE

Page 1 of 2

DATE (MM/DD/YYYY)  
06/29/2020

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).

PRODUCER Willis Towers Watson Midwest, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA	CONTACT NAME: Willis Towers Watson Certificate Center	
	PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378	
	E-MAIL ADDRESS: certificates@willis.com	
INSURED HDR Engineering, Inc. 1917 South 67th Street Omaha, NE 68106	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A: Liberty Mutual Fire Insurance Company	23035
	INSURER B: Ohio Casualty Insurance Company	24074
	INSURER C: Liberty Insurance Corporation	42404
	INSURER D:	
	INSURER E:	
	INSURER F:	

## COVERAGES

CERTIFICATE NUMBER: W16996675

REVISION NUMBER:

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 INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY	Y	Y	TB2-641-444950-030	06/01/2020	06/01/2021	EACH OCCURRENCE \$ 2,000,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000
	<input checked="" type="checkbox"/> Contractual Liability						MED EXP (Any one person) \$ 10,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY \$ 2,000,000
	<input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC						GENERAL AGGREGATE \$ 4,000,000
	OTHER:						PRODUCTS - COMP/OP AGG \$ 4,000,000
A	AUTOMOBILE LIABILITY	Y	Y	AS2-641-444950-040	06/01/2020	06/01/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000
	<input checked="" type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$
B	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR	Y	Y	E00(21)57919363	06/01/2020	06/01/2021	EACH OCCURRENCE \$ 5,000,000
	<input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE						AGGREGATE \$ 5,000,000
	DED <input checked="" type="checkbox"/> RETENTIONS \$ 0						
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	N/A	Y	WA7-64D-444950-010	06/01/2020	06/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)						E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
							E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate Holder is named as Additional Insured on General Liability, Automobile Liability and Umbrella/Excess Liability on a Primary, Non-contributory basis where required by written contract. Waiver of Subrogation applies on General Liability, Automobile Liability, Umbrella/Excess Liability and Workers Compensation where required by written contract and as permitted by law. Umbrella/Excess policy is follow form over General Liability, Auto Liability and Employers Liability.

## CERTIFICATE HOLDER

## CANCELLATION

State of New Hampshire - DOT  
Attn: Donald A. Lyford, PE  
7 Hazen Drive  
PO Box 483  
Concord, NH 03302-0483

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2016 ACORD CORPORATION. All rights reserved.

AGENCY CUSTOMER ID: \_\_\_\_\_

LOC #: \_\_\_\_\_

**ADDITIONAL REMARKS SCHEDULE**Page 2 of 2

AGENCY Willis Towers Watson Midwest, Inc.		NAMED INSURED HDR Engineering, Inc. 1917 South 67th Street Omaha, NE 68106
POLICY NUMBER See Page 1		
CARRIER See Page 1	NAIC CODE See Page 1	EFFECTIVE DATE: See Page 1

**ADDITIONAL REMARKS**

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,  
FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

Project: Lebanon 29612 - NH Route 120 Part A

Additional Insured: State



# CERTIFICATE OF LIABILITY INSURANCE

6/1/2021

DATE (MM/DD/YYYY)

6/29/2020

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).

PRODUCER Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000	CONTACT NAME:	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
INSURED 1016040 HDR ENGINEERING, INC. 1917 SOUTH 67TH STREET OMAHA NE 68106	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	INSURER A: Lexington Insurance Company	
	INSURER B:	
	INSURER C:	
	INSURER D:	
INSURER E:		
INSURER F:		

COVERAGES \* CERTIFICATE NUMBER: 16828353 REVISION NUMBER: XXXXXXXX

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 INSD	SUBR VVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			NOT APPLICABLE			EACH OCCURRENCE \$ XXXXXXXX DAMAGE TO RENTED PREMISES (Ea occurrence) \$ XXXXXXXX MED EXP (Any, one person) \$ XXXXXXXX PERSONAL & ADV INJURY \$ XXXXXXXX GENERAL AGGREGATE \$ XXXXXXXX PRODUCTS - COMPIOP AGG \$ XXXXXXXX \$
	AUTOMOBILE LIABILITY <input 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			NOT APPLICABLE			COMBINED SINGLE LIMIT (Ea accident) \$ XXXXXXXX BODILY INJURY (Per person) \$ XXXXXXXX BODILY INJURY (Per accident) \$ XXXXXXXX PROPERTY DAMAGE (Per accident) \$ XXXXXXXX \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$			NOT APPLICABLE			EACH OCCURRENCE \$ XXXXXXXX AGGREGATE \$ XXXXXXXX \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	NOT APPLICABLE			PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ XXXXXXXX E.L. DISEASE - EA EMPLOYEE \$ XXXXXXXX E.L. DISEASE - POLICY LIMIT \$ XXXXXXXX
A	ARCH & ENG PROFESSIONAL LIABILITY	N	N	061853691	6/1/2020	6/1/2021	PER CLAIM: \$2,000,000 AGGREGATE: \$2,000,000.

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
LEBANON 29612 - NH ROUTE 120 PART A; \$75,000 DEDUCTIBLE

## CERTIFICATE HOLDER

16828353  
STATE OF NEW HAMPSHIRE - DOT  
ATTENTION: DONALD A. LYFORD, PE  
7 HAZEN DRIVE PO BOX 483  
CONCORD NH 03302-0483

## 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.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.