



The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner



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September 18, 2018

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

REQUESTED ACTION

Authorize the Department of Environmental Services (NHDES) to enter into an Agreement with The H.L. Turner Group, Inc., (Vendor Code #156919), Concord, NH, in an amount not-to-exceed \$219,016.69 to provide a condition assessment of certain elements of Murphy Dam in Pittsburg, NH, effective upon Governor & Executive Council approval through December 31, 2019. Funding is 100% Connecticut-Coos Project (Other) Funds.

Funds are available in the account as follows:

	<u>FY 2019</u>
03-44-44-442010-3812-046-500463	\$219,016.69
Dept of Environmental Services, Connecticut-Coos Project, Engineer Consultants	

EXPLANATION

NHDES is responsible for the operation, maintenance, repair and reconstruction of most state owned dams per NH RSA 482:55-57, including Murphy Dam at the outlet of Lake Francis in Pittsburg. Murphy Dam is among the largest state-owned dams in New Hampshire and a failure could result in significant loss of life and damage to infrastructure in several towns along the Connecticut River. NHDES has determined that there are 1,058 homes, 21 state road crossings and 161 town road crossings that would be inundated if the dam were to fail.

Murphy Dam was constructed in 1938, and NHDES has identified several issues that need to be addressed in this 80-year-old structure:

- On the Broome Gate, which is used to shut off flow into the penstock of the dam, the rollers in the vertical tracks that guide the gate when it is being lowered or raised are not rotating freely and bind when the gate is operated.
- The Dow valves, which are the only means of making controlled releases from the dam, currently vibrate notably during operation. The Dow valve cowlings, linkages and related components are in

need of repair or replacement.

- The penstock thickness is in question after 80 years of service.
- The original mercury manometers, used to measure flows through the bifurcated piping upstream of each Dow valve, are no longer functional, and a new means of flow measurement, not requiring the use of mercury, is required.

An engineering assessment of the condition of these critical elements is needed to direct repair and replacement strategies.

The procurement process for this Agreement, further detailed in Attachment A, was conducted in accordance with NH RSA 21-I:22 by issuing a Request For Qualifications (RFQ) for engineering analyses, internal review and approval of qualifications, and ranking of the most qualified firms. NHDES received responses to the RFQ from four firms. Members of the selection committee reviewed the responses to the RFQ and issued a Request For Proposals (RFP) to the three most qualified firms - GZA GeoEnvironmental, Inc., The H.L. Turner Group, and Gomez and Sullivan Engineers, DPC. Upon receipt of the responses to the RFP, the members of the selection committee ranked the three firms. Rankings were based on firm experience with assessments of dams of similar size and scope, repair strategies for gates, seals, linkages, connections to ductile iron penstocks, measurement, and instrumentation, references for the firm and project manager, quality and content of the proposed scopes of services, and timeline for completion. The Selection Committee selected The H.L. Turner Group as the most qualified firm to provide an assessment of the condition of certain elements at Murphy Dam.

NHDES has negotiated terms and conditions for the services to be provided, authorization to conduct work, billing rates and conditions, and a not-to-exceed cost for this Agreement with The H.L. Turner Group.

The Agreement has been approved by the Office of the Attorney General as to form, execution, and content. We respectfully request your approval.




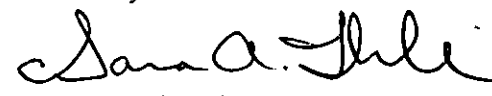
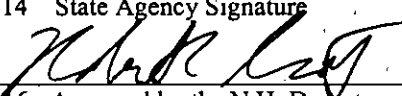
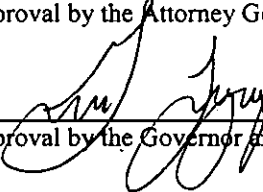
Robert R. Scott, Commissioner

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

AGREEMENT

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

GENERAL PROVISIONS**1. IDENTIFICATION.**

1.1 State Agency Name NH Department of Environmental Services		1.2 State Agency Address PO Box 95 - 29 Hazen Drive, Concord, NH 03302-0095	
1.3 Contractor Name The H.L. Turner Group, Inc.		1.4 Contractor Address 27 Locke Road, Concord, NH 03301	
1.5 Contractor Phone Number (603) 228-1122	1.6 Account Number 03-44-44-442010-3812000-046	1.7 Completion Date December 31, 2019	1.8 Price Limitation \$219,016.69
1.9 Contracting Officer for State Agency James W. Gallagher, Jr., P.E.		1.10 State Agency Telephone Number (603) 271-1961	
1.11 Contractor Signature 		1.12 Name and Title of Contractor Signatory Gerry Blanchette, P.E. - Principal and Senior Vice President	
1.13 Acknowledgement: State of <u>New Hampshire</u> , County of <u>Merrimack</u> On <u>8/16/18</u> , before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public or Justice of the Peace [Seal] 		SARA A. IHLE Notary Public - New Hampshire My Commission Expires September 17, 2019	
1.13.2 Name and Title of Notary or Justice of the Peace Sara A. Ihle, Notary Public			
1.14 State Agency Signature 		1.15 Name and Title of State Agency Signatory Robert R. Scott, Commissioner, NHDES	
1.16 Approval by the N.H. Department of Administration, Division of Personnel (if applicable) By: _____ Director, On: _____			
1.17 Approval by the Attorney General (Form, Substance and Execution) (if applicable) By:  On: <u>10.29.18</u>			
1.18 Approval by the Governor and Executive Council (if applicable) By: _____ On: _____			

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

3. EFFECTIVE DATE/COMPLETION OF SERVICES.

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

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

4. CONDITIONAL NATURE OF AGREEMENT.

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

5. CONTRACT PRICE/PRICE LIMITATION/ PAYMENT.

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

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

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

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

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

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

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

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

7. PERSONNEL.

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

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

Agreement. This provision shall survive termination of this Agreement.

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

8. EVENT OF DEFAULT/REMEDIES.

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

8.1.1 failure to perform the Services satisfactorily or on schedule;

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

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

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

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

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

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

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

9. DATA/ACCESS/CONFIDENTIALITY/PRESERVATION.

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

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

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

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

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

12. ASSIGNMENT/DELEGATION/SUBCONTRACTS.

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

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

14. INSURANCE.

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

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

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

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

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

15. WORKERS' COMPENSATION.

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

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

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

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

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

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

19. CONSTRUCTION OF AGREEMENT AND TERMS.

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

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

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

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

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

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

**EXHIBIT A
SERVICES**

1. WORK TO BE PERFORMED BY THE CONTRACTOR

- 1.1 Work Program: The Work Program, as described below in Section 2, contains certain technical and professional activities to be performed with the funds pursuant to this Agreement.
- 1.2 Contractor Assurance: The H.L. Turner Group, Inc., heretofore known as the "Contractor", in consideration of the compensation to be provided pursuant to this Agreement, hereby covenants and agrees to perform and carry out in a satisfactory and proper manner, as determined by the New Hampshire Department of Environmental Services (NHDES), those activities identified and more particularly described below in the Work Program (individual work tasks and services).
- 1.3 Work Products: All materials, maps, plans, reports, specifications, documents and other work products specified in the Work Program for preparation and submission by the Contractor shall be submitted to NHDES on or before the due dates, and in the number of copies and format specified in the Work Program (see also Section 2.8).

2. WORK PROGRAM

- 2.1 Title: Condition Assessment, Recommended Repair/Replacement Methodologies And Cost Estimates For Certain Operational Elements Murphy Dam Agreement.
- 2.2 Study Areas: Murphy Dam, Pittsburg, NH.
- 2.3 Objective: The purpose of this agreement is to provide a thorough condition assessment of the following specific dam components, along with suggested repair or replacement methodology and estimates for the cost of the repairs or replacements:
- Broome Gate and Operator.
 - Penstock, including determination of wall thickness
 - Dow Valves and Operators
 - Manometer/pressure transducer flow measuring apparatus
- 2.4 Background/Description: Murphy Dam was originally designed and constructed to accommodate hydropower generation. A gate tower in the embankment houses a Broome Gate at the front end of a 13' (156") diameter ductile iron penstock. The penstock outlets into a control house where the outlet works that control the flow released from the dam are located. Within the control house, the end of the 13' penstock bifurcates into three ductile iron pipes (DIP), of which two are 84" diameter, and one is 30" diameter. The flow through each pipe is controlled with 84" and 30" Dow butterfly valves. These three pipes outlet into a concrete energy dissipation structure, which discharges into the Connecticut River. There has been some maintenance done over the last several decades on the penstock and gates, including the linkages and connections with the penstock.

NHDES has identified several issues that need to be addressed:

- On the Broome Gate, the rollers in the vertical tracks, which guide the gate when it is being lowered or raised, are not rotating as freely as they should and appear to bind when the gate is operated.
- The penstock thickness is in question after 75 years of service.
- The Dow valve cowlings, linkages and related other components are in need of repair or replacement. The Dow valves themselves currently vibrate notably during operation.
- The original mercury manometers used to measure flows through the bifurcated piping upstream of each Dow valve are no longer functional and have been removed, and a new means of flow measurement not requiring the use of mercury is required.

Contractor will assess the condition of all of these components, operating elements, and flow measurement devices. In addition, Contractor shall prepare engineering recommendations and cost estimates for the repair and/or replacement of gates, connectors, linkages, operating elements, and flow measurement devices. NHDES intends to use the information compiled from the deliverables to contract the needed repairs to the penstock, gates, operational elements and flow measurement devices.

2.5 Tasks: Contractor shall perform the following tasks and provide the deliverables described herein:

Task A: Prepare For Site Visits: – Contractor shall schedule and attend a scope kickoff meeting with NHDES and establish the Assessment Team which will consist of select members of staff from Contractor firm, the Gate Vendor, and Lee Carroll Electrical Engineering. The Assessment Team shall review all pertinent documents associated with the project will meet with NHDES to prepare for site visits.

Task A DELIVERABLES: Contractor shall prepare and provide to NHDES meeting minutes for:

1. A scope kick-off meeting with NHDES
2. Meeting minutes (electronic copy transmitted via email) for an internal Assessment Team meeting to establish equipment and materials needs, personnel, a schedule and durations for dry gate evaluations and for penstock evaluations, and development of a Safety Plan and QA/QC Plan
3. Meeting minutes (electronic copy transmitted via email) for a meeting between the Assessment Team and NHDES

Task B: Initial "Wet" Evaluation of Gates – Contractor shall schedule a one (1) day on-site visit by the Assessment Team and Confined Space Subcontractor to conduct a preliminary evaluation of the Dow Valves and Broome Gate, and inspection/evaluation of the Dow Valve Control House and Broome Gate House using confined space protocol.

NHDES shall operate the Dow Valves such that the valves and flow conditions can be observed in various valve positions. The Broome Gate shall be observed in its typical open (raised) position inside the Broome Gate House. Initial assessment of the electrical service from the existing utility pole at the intersection of the access roads to the Dow Valve control house and Broome Gate house, as well as electrical systems serving the Dow Valves, Dow Valve Control house, Broome Gate and Broome Gate house, will also be conducted at this time. The Contractor shall:

1. Prepare equipment and materials for site visit.
2. Provide transportation to site.
3. Dow Valve Gatehouse Assessment:
 - a. Institute confined space protocols.
 - b. Gain access to all levels of gatehouse for initial assessment.
 - c. Witness operation of all three (3) Dow Valves (operation by NHDES) O at various valve openings per direction from Contractor.
 - d. Review existing manometer/flow operation.
 - e. Record Dow Valve and manometer operation as observed.
 - f. If possible, gain access to discharge channel during full valve closure mode. Observe downstream side of valves including discharge areas (steel and concrete).
 - g. As an option to be performed only at the request of NHDES after review of the results of items 3.c., 3.e. and 3.f., above, perform a Computational Fluid Dynamic (CFD) Analysis of the Dow Valves to assess the performance of the valves. Contractor shall consult with NHDES as to the necessity of the CFD Analysis. Contractor must receive written approval from NHDES to proceed with a CFD Analysis prior to implementation. Written approval may be in the form of email.
4. Broome Gate House Assessment:
 - a. Institute confined space protocols.
 - b. Gain access to lower (dry) level of gatehouse where Broome Gate is "dogged" in place.
 - c. Install "tag line" or equal to prevent gate from swinging or rotating.
 - d. NHDES to lift gate such that entire perimeter, including bottom of gate is visible. Crib gate in place if needed (Confined Space SubContractor will crib gate).
 - e. Visually assess visible components of Broome Gate. Perform ultrasonic thickness (UT) testing of components where accessible.
 - f. Witness lowering of gate into gate guides, and into fully closed position.
 - g. Observe leakage at discharge canal of Dow Valve Gatehouse.
 - h. Witness refilling of penstock with Broome Gate in lowered position.
 - i. Observe gate raised to gate dogging level of Gatehouse.
 - j. Observe gate being dogged.
 - k. Record Broome Gate operation as observed.

Task B DELIVERABLES: Contractor shall prepare and provide to NHDES the following:

1. Confined space protocol documents.
2. Field reports on operation of the Dow Valves with flowing water in penstock including photos and videos, initial assessment of the Broome Gate, and initial assessment of electrical systems.
3. Report on CFD Analysis, if performed, including description of analysis, results of CFD simulations and a summary of the performance factors of the valves.

Task C: Deep Dive Broome Gate, Guides and Seat Assessment, Penstock Assessment, Dry Dow Valve Assessment, Electrical Systems Assessment – Contractor shall schedule a maximum of three (3) days on-site visit by the Assessment Team, the Confined Space Subcontractor, the Dive Subcontractor, and the Testing Company (penstock wall thickness testing). One day of deep dive is approved upon contract ratification. Prior written approval from NHDES required for Contractor to execute additional day(s) of deep dive for Broome Gate accessories assessment (written approval may be in the form of email). The Contractor will consult with NHDES before the first day on-site to determine which Subcontractor(s) (including the Testing Company) will be considered necessary on-site the first day. The Contractor will consult with NHDES at the end of each field day to determine which Subcontractor(s) will be necessary on-site the next day.

The Contractor is to oversee all work by the Assessment Team and Subcontractors to assure all appropriate safety measures are in place, conduct assessments of the Broome Gate, guides and seats (including dive inspections), penstock condition and thickness, Dow Valves including connections to the penstock, existing flow measurement devices, and electrical systems. A properly equipped Remote Operation Vehicle (ROV) for inspection of the Broome Gate, guides, and seats shall be available in the event that conditions in the penstock with the Broome Gate open (Dow Valves closed) are determined to be unsafe for divers.

Once dive operations and/or the ROV inspection are complete, Broome Gate will be closed and the penstock emptied by opening of Dow Valves (operations by NHDES) to allow for the dry assessments of the penstock (including penstock wall thickness testing), Dow Valves, existing flow measurement devices and electrical systems. Contractor shall schedule a one (1) day on-site visit by the Assessment Team, the Confined Space Subcontractor, and the Testing Company (penstock wall thickness testing). Contractor to oversee all work by the Assessment Team and Subcontractors to assure all appropriate safety measures are in place, conduct assessments of the Dow Valves (including connections to the penstock), penstock (including wall thickness testing), existing flow measurement devices and electrical systems. The Contractor shall:

1. Prepare equipment and materials for site visit.
2. Provide transportation to site.

3. Perform assessments of the Broome Gate, guides and seats:
 - a. Institute confined space protocols.
 - b. Witness closing of Dow Valves (operation by NHDES).
 - c. With Broome Gate system "locked-out/tagged-out", Dive Subcontractor to have powerful lights, have constant communication with Assessment Team, and video record the entire dive focusing on the Broome Gate, guides and seats.
 - d. Contractor to provide Dive Subcontractor with direction during dive.
 - e. Dive Subcontractor to follow gate guides to penstock level and check for flow in the penstock. If conditions are determined to be unsafe for diving, END DIVE.
 - f. If it is determined that safe diving conditions exist, Dive Subcontractor to follow gate guides to penstock level collecting video footage of Broome Gate and guides, communicating with the Assessment Team during the dive to note highlights. Particular attention shall be given by the Dive Subcontractor to the gate guides, sill and head seal areas of the Broome Gate inside the penstock to allow for confirmation of the condition of those elements that can't be confirmed when the Broome Gate is in place and only downstream seal surfaces are visible.
 - g. If it is determined that safe diving conditions DO NOT exist, the Contractor shall, in consultation with NHDES, implement use of the ROV to collect video footage for certain parts of the assessment. Lowering/seating of the Broome Gate will be conducted by NHDES without the assistance of the Dive Subcontractor.
4. Preparation for Assessments of the Penstock, Dow Valves, Existing Flow Measurement Devices, and Electrical Systems.
 - a. Institute confined space protocols for access to all levels of Broome Gate house.
 - b. Broome Gate to be lowered to bottom of penstock (operation by NHDES).
 - c. Dive Subcontractor, with direction from NHDES, to seal Broome Gate and eliminate or reduce flow in the penstock to the extent practicable.
 - d. Dive Subcontractor ends dive.
 - e. Assessment Team to witness opening of the Dow Valves (operation by NHDES).
 - f. Dive Subcontractor to assess air quality in the penstock.
 - g. Contractor to provide safe access to penstock inside Broome Gate house.
 - h. Contractor to assess Broome Gate house, guides and seals to water level.
5. Assessments of the Penstock, Dow Valves, Existing Flow Measurement Devices, and Electrical Systems.
 - a. Contractor shall schedule a one (1) day on-site visit by the Assessment Team, the Confined Space Subcontractor, and the Testing Company (penstock wall thickness testing).
 - b. Contractor to institute confined space protocols.
 - c. Contractor to establish stationing for penstock assessment utilizing original

- stations from design drawings prepared by Charles T. Main down to Dow Valves, and including downstream of the Dow Valves if possible.
- d. Contractor to provide rolling staging (or equal) and powerful lighting to perform penstock assessment, including penstock wall thickness.
 - e. Assessment Team and Testing Company to conduct penstock thickness testing.
 - f. Assessment Team to collect notes and video and photographic footage of penstock, including documentation of the stationing, and highlighting specific areas of interest.
 - g. Assessment Team to assess downstream side of Broome Gate as well as sill, jambs, and head sealing surfaces.
 - h. Assessment Team to walk top/above grade portion of the penstock.
 - i. Assessment Team to collect notes and video and photographic footage of penstock, Broome Gate, and Dow Valves including transitions, gate seals, penstock thickness testing, Dow Valve connections to the penstock, specific areas of interest, existing flow measurement devices, electrical systems, including documentation of the stationing at each point in the penstock.

Task C DELIVERABLES: Contractor shall prepare and provide to NHDES the following:

1. Confined space protocol documents.
2. Documentation of data collected from dives, including video and photographs.
3. Field reports (per day) on all elements of assessment.

Task D: Draft Report: – Contractor to prepare a draft report of all assessments conducted under this Agreement.

1. Contractor to review and assemble all notes, videos, photographs, penstock thickness testing results, and all other data collected and develop a draft report with observations, recommendations for repair/replacement, and opinions of cost.

Task D DELIVERABLES: Contractor shall prepare and provide to NHDES the following:

1. Draft report.

Task E: Meet with NHDES to Review Draft Report, Receive Comments, Finalize Report: – Contractor to meet with NHDES to review draft report, receive comments and finalize report.

1. Contractor to schedule a meeting with NHDES to review draft report.
2. NHDES to perform internal review of draft report.
3. NHDES to schedule a meeting with Contractor to review comments on draft report.
4. Contractor to provide final report, including but not limited to:
 - a. Evaluation of Dow Valves including CFD Analysis, if performed.
 - b. Broome Gate including gate dive video.
 - c. Penstock assessment by station and loading (static and dynamic).
 - d. Penstock thickness evaluation.

The H.L. Turner Group, Inc.
As-needed Engineering and Technical Support Services Agreement
Exhibit A - Services

- e. Photographs.
- f. Outline of specifications on flow measurement device/system.
- g. Observations.
- h. Recommendations.
- i. Opinions of cost for all deficiencies observed.
- j. Life expectancy of components assessed.

Task E DELIVERABLES: Contractor shall prepare and provide to NHDES the following:

1. Deliver final report (see Section 2.8).

Task F: Preliminary Request For Proposals (RFP): – Contractor to prepare a preliminary RFP and construction documents for repair or replacement of components, including instrumentation.

1. Contractor to prepare a preliminary RFP and construction documents for repair or replacement of components, including instrumentation.

Task F DELIVERABLES: Contractor shall prepare and provide to NHDES the following:

1. Draft RFP and construction documents.

Task G: Meet with NHDES to Review Comments, Finalize RFP: – Contractor to meet with NHDES to review comments on draft RFP, finalize RFP.

1. NHDES to perform internal review of draft RFP.
2. NHDES to schedule a meeting with Contractor to review comments on draft RFP.
3. Contractor to provide final RFP, including construction documents for repair or replacement of components, including instrumentation (see Section 2.8).

Task G DELIVERABLES: Contractor shall prepare and provide to NHDES the following:

1. Deliver final RFP, including construction documents for repair or replacement of components, including instrumentation.

Subcontractors: The Contractor shall be fully responsible to the State for an acts, errors and omissions of subcontractor(s). Subcontractor(s) shall be bound by the same terms and conditions as those that bind the Contractor to the State, but there shall be no direct contractual relationship between the subcontractor(s) and the State. The Contractor shall be responsible for delivering all reports and documentation generated by any subcontractor.

2.6 The State's Responsibilities: The State shall be responsible for providing the Contractor with the following;

- Assist the Contractor by placing at their disposal all available information pertinent to the project including all reports, studies, and other information relative to the site.
- Make provisions for the Contractor to enter upon NHDES owned properties to perform the work assigned under this agreement.

The H.L. Turner Group, Inc.
As-needed Engineering and Technical Support Services Agreement
Exhibit A - Services

- Provide other assistance as needed, including operation of the Dow Valves and Broome Gate, to facilitate the completion of assigned work in a timely and cost-effective manner.
- 2.7 Final Report Format: Contractor shall provide electronic copies of all final reports, RFPs, forms and other documentation generated as part of this Agreement to NHDES. Two hard copies of the final report (Section 2.5 - Task E) and final RFP (Section 2.5 - Task G), including associated documents, appendices, etc., shall be provided to NHDES.
- 2.8 Program Administration: The Contractor will meet or conference call with NHDES staff at the request of NHDES as needed throughout each project.
- 2.9 Project Duration: Governor and Council approval through December 31, 2019.

TABLE A-1
MAN-HOURS AND RATES SUMMARIZED BY LABOR CATEGORY
Murphy Dam Condition Assessment

LABOR	Units	Multiplier	Task Title and Deliverable:	Task A		Task B		Task C		Task D		Task E		Task F		Task G		Man-hours	Sub totals
				Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee		
				Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee		
Principal, Project Manager	hr.	\$58.71	\$172.85	26	\$4,494.13	11	\$1,901.36	29	\$5,012.68	36	\$6,222.64	4	\$691.40	16	\$2,765.62	12	\$2,074.21	134	\$23,162.04
Senior Project Engineer	hr.	\$45.18	\$133.02	22	\$2,926.37	11	\$1,463.18	29	\$3,857.48	30	\$3,990.50	4	\$532.07	24	\$3,182.40	10	\$1,330.17	130	\$17,292.17
Senior Project Engineer - Instrumentation	hr.	\$36.06	\$106.17	6	\$637.00	11	\$1,167.83	0	\$0.00	8	\$849.33	3	\$318.50	8	\$849.33	0	\$0.00	36	\$3,821.98
EIT/Project Engineer	hr.	\$26.00	\$76.55	8	\$612.38	11	\$842.03	29	\$2,219.89	24	\$1,837.15	0	\$0.00	16	\$1,224.77	4	\$306.19	82	\$7,042.41
CFM/Project Engineer	hr.	\$33.66	\$99.10	8	\$792.80	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	8	\$792.80
Senior Project Designer	hr.	\$33.79	\$99.48	2	\$198.97	2	\$198.97	4	\$397.93	14	\$1,392.76	0	\$0.00	16	\$1,591.73	8	\$795.86	46	\$4,576.21
Senior Administration	hr.	\$20.68	\$60.89	4	\$243.54	5	\$304.43	8	\$487.08	48	\$2,922.48	1	\$60.89	24	\$1,461.24	16	\$974.16	106	\$6,453.81
TOTAL - LABOR				76	\$9,905.18	51	\$5,877.79	99	\$11,978.07	160	\$17,214.86	12	\$1,602.85	104	\$11,085.08	50	\$5,480.89	552	\$63,141.42

REIMBURSABLE EXPENSES		Units	Unit Rate	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee
Mileage	mi.		\$0.535	0	\$0.00	450	\$240.75	450	\$240.75	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	900	\$481.50
Lodging and Meals GSA per Diem (Tasks B&C for Eng. Team)	day		\$144.00	0	\$0.00	4	\$576.00	3	\$432.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	7	\$1,008.00
Postage	rate		\$5.00	0	\$0.00	3	\$15.00	5	\$25.00	5	\$25.00	2	\$10.00	4	\$20.00	4	\$20.00	23	\$115.00
Reproduction	rate		\$0.10	25	\$2.50	100	\$10.00	100	\$10.00	800	\$80.00	200	\$20.00	200	\$20.00	150	\$15.00	1375	\$137.50
Cadd Bond Paper	sq. ft.		\$0.35	25	\$8.75	100	\$35.00	300	\$105.00	300	\$105.00	200	\$70.00	200	\$70.00	150	\$52.50	1275	\$448.25
Photographs - Color	rate		\$0.10	7	\$0.70	50	\$5.00	150	\$15.00	150	\$15.00	100	\$10.00	100	\$10.00	100	\$10.00	657	\$65.70
Videos - CD or Thumb Drive	rate		\$4.50	0	\$0.00	5	\$22.50	10	\$45.00	10	\$45.00	10	\$45.00	5	\$22.50	0	\$0.00	40	\$180.00
TOTALS																			\$2,433.95

SUBCONTRACTOR COSTS		Units	Unit Rate	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee	Qty.	Fee
General Contractor/Confined Space:																			
- Confined Space Protocol (4 Days): 1 day for Gates, 1 for deep dive, 1 for spare dive and 1 for penstock.				1	\$600.00													1	\$600.00
- 1 day for Broome Gate (includes GSA per diem & Mobil/Demob)		rate				1	\$7,389.00			1	\$7,389.00							1	\$7,389.00
- Day 1 - Deep Dive (includes GSA per diem & Mobil/Demob)		rate						1	\$7,389.00									1	\$7,389.00
- (IF NEEDED) Day 2 - Deep Dive (includes GSA per diem)		rate						1	\$6,182.00									1	\$6,182.00
- 1 Day Penstock (includes GSA per diem & Mobil/Demob)		rate						1	\$15,377.00									1	\$15,377.00
Dive Contractor: Deep Dive, 70 +/-, 9 Person Dive Team				1	\$600.00													1	\$600.00
- Day 1 includes GSA per diem, mobil/demob (9 Person DEEP Dive Team)		rate						1	\$24,029.00									1	\$24,029.00
- (IF NEEDED) Day 2 includes GSA per diem, mobil/demob (9 person Deep Dive Team)		rate						1	\$17,621.00									1	\$17,621.00
- Hyperbaric chamber		rate						1	\$3,450.00									1	\$3,450.00
- Remote Operated Vehicle Budget		rate						1	\$4,025.00									1	\$4,025.00
- Dive video equipment & Editing		rate						1	\$1,500.00									1	\$1,500.00
Gate Vendor (incl. per diem expenses)		rate		1	\$1,800.00	1	\$5,857.63		\$2,020.00	1	\$9,000.00	1	\$962.00	1	\$9,000.00	1	\$2,700.00	1	\$31,339.63
Lee Carroll Electrical Engineering		rate		1	\$856.00	1	\$2,220.30			1	\$780.00			1	\$1,170.00	1	\$780.00	1	\$5,806.30
Testing Company: (includes expenses)																			
- Penstock UT Thickness Measurements		rate						1	\$4,433.00									1	\$4,433.00
(IF NEEDED) Gate Vibration Model/CFD Analysis Budget		rate				1	\$15,000.00											1	\$15,000.00
TOTAL - SUBCONTRACTOR COSTS					\$3,856.00		\$30,466.93		\$86,026.00		\$9,780.00		\$962.00		\$10,170.00		\$3,480.00		\$144,740.93
(IF NEEDED) Add'l. Assessment Team Field Day Budget		rate						1	\$8,457.00										\$8,457.00
10% Mark-Up on Qualified Expenses			10%																
EXPENSES TOTAL					\$11.95		\$904.25		\$872.75		\$250.00		\$155.00		\$142.50		\$97.50		\$2,433.95
TOTAL - EXPENSES (with mark-up)					\$13.15		\$994.68		\$960.03		\$275.00		\$170.50		\$156.75		\$107.25		\$2,677.35
TOTAL - LABOR, EXPENSES & SUBCONTRACTORS					\$13,774.33		\$37,339.39		\$107,418.69		\$27,269.86		\$2,735.35		\$21,411.83		\$9,067.84		\$219,016.69

(IF NEEDED) - Requires prior written approval from RHDES

Contractor Initials *MRP*
Date *16 Aug 2015*

TABLE A-1
MAN-HOURS AND RATES SUMMARIZED BY LABOR CATEGORY
 Murphy Dam Condition Assessment

Task Title and Deliverable:	Units	3.94415	Unit Rate	Task A		Task B		Task C		Task D		Task E		Task F		Task G		Man-Hours	Sub Totals
				Qty	Est	Qty	Est	Qty	Est	Qty	Est	Qty	Est	Qty	Est	Qty	Est		
				Qty	Est	Qty	Est	Qty	Est	Qty	Est	Qty	Est	Qty	Est	Qty	Est		
LABOR																			
Principal, Project Manager	hr.	688.71	\$172.85	26	\$4,484.13	11	\$1,891.36	26	\$4,484.13	26	\$4,484.13	4	\$691.40	16	\$2,765.62	12	\$2,074.21	134	\$23,162.84
Senior Project Engineer	hr.	546.18	\$133.82	22	\$2,944.04	11	\$1,472.02	26	\$3,529.32	26	\$3,529.32	4	\$532.87	24	\$3,191.68	10	\$1,338.17	130	\$17,383.17
Senior Project Engineer - Instrumentation	hr.	326.08	\$168.17	6	\$5,290.02	11	\$1,849.87	6	\$1,967.22	6	\$1,967.22	3	\$588.51	6	\$1,967.22	0	\$0.00	36	\$5,845.83
EIT/Project Engineer	hr.	326.08	\$168.17	6	\$5,290.02	11	\$1,849.87	6	\$1,967.22	6	\$1,967.22	3	\$588.51	6	\$1,967.22	0	\$0.00	36	\$5,845.83
CFM/Project Engineer	hr.	326.08	\$168.17	6	\$5,290.02	11	\$1,849.87	6	\$1,967.22	6	\$1,967.22	3	\$588.51	6	\$1,967.22	0	\$0.00	36	\$5,845.83
Senior Project Designer	hr.	326.08	\$168.17	6	\$5,290.02	11	\$1,849.87	6	\$1,967.22	6	\$1,967.22	3	\$588.51	6	\$1,967.22	0	\$0.00	36	\$5,845.83
Senior Administrator	hr.	326.08	\$168.17	6	\$5,290.02	11	\$1,849.87	6	\$1,967.22	6	\$1,967.22	3	\$588.51	6	\$1,967.22	0	\$0.00	36	\$5,845.83
TOTAL LABOR				78	\$4,484.13	51	\$1,891.36	59	\$4,484.13	59	\$4,484.13	17	\$2,765.62	52	\$2,074.21	22	\$2,944.04	347	\$57,443.47
REIMBURSABLE EXPENSES																			
Alcohol	ml	90.00	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Lodging and Meals GSA per Diem (Task BAC for Eng. Team)	day	\$144.00	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Per diem	day	\$144.00	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Reproduction	hr.	50.10	\$0.00	25	\$12.50	100	\$50.00	100	\$50.00	100	\$50.00	200	\$100.00	200	\$100.00	100	\$50.00	225	\$112.50
Cable Band Paper	sq. ft.	80.70	\$0.00	25	\$12.50	100	\$50.00	100	\$50.00	100	\$50.00	200	\$100.00	200	\$100.00	100	\$50.00	1275	\$637.50
Photographs - Color	hr.	80.70	\$0.00	7	\$3.50	30	\$15.00	100	\$50.00	100	\$50.00	100	\$50.00	100	\$50.00	100	\$50.00	657	\$328.50
Videos - CD or Thumb Drive	hr.	\$4.50	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	40	\$180.00
TOTAL REIMBURSABLE EXPENSES																		40	\$180.00
SUBCONTRACTOR COSTS																			
General Contractor/Qualified Spacer:																			
- Confined Space Protocol (4 Days): 1 day for Gates, 1 for spare dms, 1 for spare dms and 1 for peristaltic	hr.			1	\$600.00													1	\$600.00
- 1 day for Brown Gate (includes GSA per diem & Mobil/Domestic)	hr.			1	\$7,369.00													1	\$7,369.00
- Day 1 - Deep Dive (includes GSA per diem & Mobil/Domestic)	hr.			1	\$6,142.00													1	\$6,142.00
- (IF NEEDED) Day 2 - Deep Dive (includes GSA per diem)	hr.			1	\$13,377.00													1	\$13,377.00
- 1 Day Peristaltic (includes GSA per diem & Mobil/Domestic)	hr.			1	\$600.00													1	\$600.00
Dive Contractor: Deep Dive, 78 ft., 5 Person Dive Team	hr.			1	\$24,028.00													1	\$24,028.00
- Day 1 includes GSA per diem, mobil/doms (5 Person Deep Dive Team)	hr.			1	\$17,621.00													1	\$17,621.00
- (IF NEEDED) Day 2 includes GSA per diem, mobil/doms (5 Person Deep Dive Team)	hr.			1	\$2,460.00													1	\$2,460.00
- Haverhill diver	hr.			1	\$4,023.00													1	\$4,023.00
- Remote Operated Vehicle Budget	hr.			1	\$1,300.00													1	\$1,300.00
- Dive video equipment & Editing	hr.			1	\$1,800.00													1	\$1,800.00
Gate Vendor (incl. per diem expenses)	hr.			1	\$8,667.00													1	\$8,667.00
Lee Carroll Electrical Engineering	hr.			1	\$2,230.00													1	\$2,230.00
Tamlin Company (includes expenses)	hr.			1	\$4,433.00													1	\$4,433.00
- Peristaltic UT Thickness Measurements	hr.			1	\$18,000.00													1	\$18,000.00
IF NEEDED: Gate Vibration Model/CFD Analysis Budget	hr.			1	\$18,000.00													1	\$18,000.00
TOTAL SUBCONTRACTOR COSTS					\$3,824.00				\$20,028.00				\$8,780.00		\$992.00		\$18,170.00		\$3,490.00
IF NEEDED: Aerial Assessment Team Field Day Budget	hr.							1	\$8,467.00										\$8,467.00
10% Mark-Up on Qualified Expenses																			
EXPENSES TOTAL					\$11.22		\$204.25		\$872.75		\$729.00		\$155.00		\$143.00		\$67.00		\$2,422.22
TOTAL - LABOR, EXPENSES & SUBCONTRACTORS					\$13,774.33		\$20,232.25		\$107,418.00		\$27,709.00		\$2,735.34		\$21,411.00		\$9,867.04		\$219,615.99

EXHIBIT B
CONTRACT PRICE AND METHOD OF PAYMENT

All services shall be performed to the satisfaction of DES before payment is made. All payments shall be made upon receipt and approval of stated outputs and upon receipt of an associated invoice. The billing is to be done on a monthly basis as a percentage completion of tasks as per the work program detailed in Exhibit A. Table A-1 in Exhibit A provides a detailed breakdown of costs for the project.

A detailed itemization of the cost by personnel category, subcontractor costs, and reimbursable expenses is contained in the attached Table B-1. Billing will be based on a time and materials basis. Hourly labor rates (i.e. fully loaded) are based on direct labor rates with an effective multiplier (DS + OH + fee) of 2.94415, which includes a profit multiplier of 10%. Actual costs for additional field days for the General Contractor/Confined Space, Dive Subcontractor, and Assessment Team will be subject to prior written approval by NHDES for as needed additional field days. Costs for the Computation Fluid Dynamic Analysis of the Dow Valves require prior written approval from NHDES.

The total cost of the contract shall not to exceed \$219,016.69. DES agrees to pay the invoices as submitted by the Contractor. Invoices are subject to the approval of the Contract Officer before payment is processed.

B-1

Contractor Initials

Date 16 AUG 2018

TABLE B-1

Unit rate is established at individual hourly rate multiplied by a factor of 2.94415 to account for overhead and fringe benefits. This multiplier includes an additional 10% profit multiplier.

LABOR	Units	Unit Rate	Man Hours	Fee
H1 Turner Labor Categories				
Principal, Project Manager	hr.	\$58.71	134	\$23,162.04
Senior Project Engineer	hr.	\$45.18	130	\$17,292.17
Senior Project Engineer - Instrumentation	hr.	\$36.06	36	\$3,821.98
EIT/Project Engineer	hr.	\$26.00	92	\$7,042.41
CFM/Project Engineer	hr.	\$33.66	8	\$792.80
Senior Project Designer	hr.	\$33.79	46	\$4,576.21
Senior Administration	hr.	\$20.68	106	\$6,453.81
TOTAL LABOR COSTS		Total Labor Costs	552	\$63,141.42
SUBCONTRACTOR COSTS	Units		# of Units	Fee
General Contractor/Confined Space:	nte		1	\$600.00
Confined Space Protocol (4 Days): 1 day for Gates, 1 day for deep dive, 1 day for spare dive and 1 day for penstock.				
1 day for Broome Gate (incl.GSA/diem & Mob/Demob)	nte		1	\$7,389.00
Day 1 - Deep Dive (incl.GSA/diem & Mob/Demob)	nte		1	\$7,389.00
(IF NEEDED)* Day 2 - Deep Dive Assistance (includes GSA per diem & mob/demob)	nte		1	\$6,182.00
1 Day Penstock (incl.GSA/diem & Mob/Demob)	nte		1	\$15,377.00
Dive Contractor: Deep Dive, 70' +/-, 9 Person Dive Team	nte		1	\$600.00
Day 1 includes GSA per diem, mob/demob (9 Person DEEP Dive Team)	nte		1	\$24,029.00
(IF NEEDED)* Day 2 includes GSA per diem (9 Person DEEP Dive Team)	nte		1	\$17,621.00
Hyperbaric chamber	nte		1	\$3,450.00
Remote Operated Vehicle (ROV) Budget	nte		1	\$4,025.00
Dive video equipment & editing	nte		1	\$1,500.00
Gate Vendor: (includes per diem expenses)	nte		1	\$31,339.63
Lee Carroll Electrical Engineering	nte		1	\$5,806.30
Testing Company: (includes expenses)				
Penstock UT Thickness Measurements	nte		1	\$4,433.00
(IF NEEDED)* Gate Vibration Model/CFD Analysis Budget	nte		1	\$15,000.00
TOTAL SUBCONTRACTOR COSTS		Total Subcontractor Costs		\$144,740.93
REIMBURSABLE EXPENSES	Units	Unit Rate	# of Units	Fee
Mileage	mi.	\$0.535	900	\$481.50
Lodging and Meals GSA per Diem (Tasks B&C for Eng. Team)	day	\$144.00	7	\$1,008.00
Postage	nte	\$5.00	23	\$115.00
Reproduction	nte	\$0.10	1375	\$137.50
Cadd Bond Paper	sq. ft.	\$0.35	1275	\$446.25
Photographs - Color	nte	\$0.10	657	\$65.70
Videos - CD or Thumb Drive	nte	\$4.50	40	\$180.00
10% Mark-Up on Qualified Expenses		10%		\$243.40
TOTAL REIMBURSABLE EXPENSES		Total Reimbursable Expenses		\$2,677.35
(IF NEEDED)* Additional Assessment Team Field Day Budget	nte			\$8,457.00
PROJECT TOTAL				\$219,016.69

(IF NEEDED)* - Requires prior written approval from NHDES

Contractor Initials *MRB*

Date *16 AUG. 2018*

EXHIBIT C
SPECIAL PROVISIONS

There are no Special Provisions.

ATTACHMENT A

Procurement Process

The procurement process for this Agreement was conducted in accordance with RSA 21-I:22. In January 2017, NHDES advertised in the Manchester Union Leader and on the Administrative Services website a Request For Qualifications (RFQ) from professional consultants for a condition assessment, recommended repair and/or replacement methodologies, and estimates for the cost of the repairs and/or replacements of the Broome Gate and operator, the penstock (including determination of wall thickness), Dow Valves and operators, and manometer/pressure transducer flow measuring apparatus.

The following four firms responded to the RFQ:

- Kiser Hydro - Norway, MI
- GZA GeoEnvironmental, Inc. - Bedford, NH
- The H.L. Turner Group, Inc. - Concord, NH
- Gomez and Sullivan Engineers, DPC - Utica, NY

An internal NHDES selection committee reviewed and ranked the responses to the RFQ. The committee consisted of James Gallagher, Jr., P.E., the Chief Engineer for the Dam Bureau with more than 40 years of experience with dam design, contracting, construction and safety; Daniel Mattaini, P.E., the Administrator of the Operations and Maintenance Section of the Dam Bureau who has over 25 years of experience as an engineer for hydrologic and dam related projects; and Kent R. Finemore, P.E., Assistant Chief Engineer of the Dam Bureau, who has over 25 years of experience as an engineer for civil design and construction.

Members of the selection committee reviewed the responses to the RFQ and issued a Request For Proposals (RFP) to the three most qualified firms - GZA GeoEnvironmental, Inc., The H.L. Turner Group, and Gomez and Sullivan Engineers, DPC. Upon receipt of the responses to the RFP, the members of the selection committee ranked the three firms. Rankings were based on firm experience with assessments of dams of similar size and scope, repair strategies for gates, seals, linkages, connections to ductile iron penstocks, measurement, and instrumentation, references for the firm and project manager, quality and content of the proposed scopes of services, and timeline for completion. The firm ranked first by the majority of the members of the Selection Committee would be the selected firm with whom NHDES would negotiate a final scope of work and price.

A scoring summary is provided in Table AT-1 on page AT-2. As shown in the summary, all three members of the selection committee chose The H.L. Turner Group, and they were selected. Following the selection, NHDES commenced negotiations with The H.L. Turner Group to establish a fee schedule for the contract. The negotiated fees are fair and reasonable for the scope of work.

Table AT-1

Reviewer 1

		Firm			
Criteria	Weighting	GZA W-P	HL Turner Steel-Fab	GSE Casco	
Past firm experience with assessments of dams of similar size and scope, repair strategies for gates, seals, linkages, connections to ductile iron penstock, measurement, instrumentation, etc.	55%	10.00	10.00	9.00	
References for firm and project manager	5%	10.00	10.00	9.00	
Quality and content of proposed scope of services	30%	10.00	10.00	7.00	
Timeline for Completion	10%	9.00	10.00	9.00	
	Total =>	9.90	10.00	8.40	
		2	1	3	

Reviewer 2

		Firm			
Criteria	Weighting	GZA W-P	HL Turner Steel-Fab	GSE Casco	
Past firm experience with assessments of dams of similar size and scope, repair strategies for gates, seals, linkages, connections to ductile iron penstock, measurement, instrumentation, etc.	55%	9.00	10.00	8.00	
References for firm and project manager	5%	10.00	8.00	9.00	
Quality and content of proposed scope of services	30%	9.00	10.00	8.00	
Timeline for Completion	10%	10.00	9.00	10.00	
	Total =>	9.15	9.80	8.25	
		2	1	3	

Reviewer 3

		Firm			
Criteria	Weighting	GZA W-P	HL Turner Steel-Fab	GSE Casco	
Past firm experience with assessments of dams of similar size and scope, repair strategies for gates, seals, linkages, connections to ductile iron penstock, measurement, instrumentation, etc.	55%	9.00	10.00	8.00	
References for firm and project manager	5%	10.00	10.00	10.00	
Quality and content of proposed scope of services	30%	9.00	10.00	8.00	
Timeline for Completion	10%	9.00	8.00	10.00	
	Total =>	9.05	9.80	8.30	
		2	1	3	

State of New Hampshire

Department of State

CERTIFICATE

I, William M. Gardner, Secretary of State of the State of New Hampshire, do hereby certify that THE H.L. TURNER GROUP INC. is a New Hampshire Profit Corporation registered to transact business in New Hampshire on October 26, 1990. I further certify that all fees and documents required by the Secretary of State's office have been received and is in good standing as far as this office is concerned.

Business ID: 151379

Certificate Number : 0004158315



IN TESTIMONY WHEREOF,
I hereto set my hand and cause to be affixed
the Seal of the State of New Hampshire,
this 26th day of July A.D. 2018.

A handwritten signature in black ink, appearing to read "William M. Gardner".

William M. Gardner
Secretary of State

ACTION BY CONSENT
IN LIEU OF SPECIAL MEETING OF THE
BOARD OF DIRECTORS
OF
THE H.L. TURNER GROUP INC.

Pursuant to New Hampshire Revised Statutes Annotated 293-A:8.21, the undersigned, being the sole director of The H.L. Turner Group Inc., a New Hampshire corporation (the "Corporation"), in lieu of a special meeting, hereby takes the action set forth below:

VOTED: **That the following Officers and Staff of the Corporation are hereby granted the authority to sign contracts on behalf of the Corporation, binding the Corporation to the terms and conditions of said contracts.**

Harold Turner, Jr.	President
Gerard R. Blanchette	Senior Vice President
William A. Turner	Senior Vice President
William Hickey	Senior Vice President
Douglas Proctor	Senior Vice President
Heidi Nadeau	EVP / CFO
Paul Becht	Vice President
Stephen Caulfield	Vice President
John Lavigne	Associate Principal

Dated: _____

7/26/18

Dated: _____

7/26/18

Harold Turner, Jr., Sole Director

Harold Turner, Jr., Secretary



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/9/2018

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 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 Foy Insurance Group - Manchester 1889 Elm St Manchester NH 03104	CONTACT NAME: Heidi SanSouci PHONE (A/C, No, Ex): (603) 641-8111 FAX (A/C, No): (603) 641-0222 E-MAIL ADDRESS: Heidi.SanSouci@FoyInsurance.com
INSURED The H.L. Turner Group, Inc. 27 Locke Road Concord NH 03301	INSURER(S) AFFORDING COVERAGE INSURER A: Hartford Casualty Insurance Co NAIC # 29424 INSURER B: Hartford NAIC # 00914 INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES

CERTIFICATE NUMBER: Master 17/18

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 <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> SS 00 08 04 05 GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			04SBALH1798	12/10/2017	12/10/2018	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMPROP AGG \$ 2,000,000 Hired Auto (BOP) \$ 1,000,000
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS			04SBALH1798	12/10/2017	12/10/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB DED <input checked="" type="checkbox"/> RETENTION \$ 10,000 OCCUR CLAIMS-MADE			04SBALH1798	12/10/2017	12/10/2018	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$
B	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 <input checked="" type="checkbox"/> N	N/A	04WECRI9127 3A. CT, ME, NH, VT	12/10/2017	12/10/2018	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

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

Project: Murphy Dam - Gates and Penstock Conditions Assessment Project.

State of New Hampshire is additional insured if written signed contract, agreement, or permit to such exists prior to loss subject to form indicated above in General Liability section.

CERTIFICATE HOLDER

CANCELLATION

State of New Hampshire
Department of Environmental Services
Water Division, Dam Bureau
P.O. Box 95, 29 Hazen Drive
Concord, NH 03302-0095

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

Melissa Fini/MMELIS

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HLTURN-01

CJOHNSON

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/09/2018

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 Ames & Gough 859 Willard Street Suite 320 Quincy, MA 02169	CONTACT NAME:	
	PHONE (A/C, No, Ext): (617) 328-6555	FAX (A/C, No): (617) 328-6888
	E-MAIL ADDRESS: boston@amesgough.com	
INSURED The H. L. Turner Group, Inc. 27 Locke Road Concord, NH 03301	INSURER(S) AFFORDING COVERAGE	
	INSURER A: Travelers Casualty & Surety Co. of America A++, XV	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES

CERTIFICATE NUMBER:

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
	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:						
	AUTOMOBILE LIABILITY						
	<input type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY						
	UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE						
	DED RETENTION \$						
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N <input type="checkbox"/> N/A						
	If yes, describe under DESCRIPTION OF OPERATIONS below						
A	Prof. Liability			106429705	01/01/2018	01/01/2019	Per Claim Limit 1,000,000
A				106429705	01/01/2018	01/01/2019	Aggregate Limit 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
All Coverages are in accordance with the policy terms and conditions.

RE: Murphy Dam - Gate and Penstock Conditions Assessment Project

CERTIFICATE HOLDER

CANCELLATION

The State of New Hampshire
Department of Environmental Services
Water Division, Dam Bureau
P.O. Box 95, 29 Hazen Drive
Concord, NH 03302-0095

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