



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



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William Cass, P.E.
Commissioner

David Rodrigue, P.E.
Assistant Commissioner
Andre Briere, Colonel, USAF (RET)
Deputy Commissioner

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

Bureau of Highway Design
March 1, 2024

REQUESTED ACTION

Authorize the Department of Transportation to enter into an Agreement with AECOM Technical Services, Inc., Manchester, New Hampshire, Vendor #174584, for an amount not to exceed \$727,595, for preliminary design, public involvement process, final design, and associated environmental and cultural services for rehabilitation or replacement of the existing bridge carrying NH 127 over the Blackwater River in the Town of Webster, effective upon Governor and Council approval through April 30, 2027. 100% Federal Funds.

Funds to support this request are available in the following account in State FY 2024 and State FY 2025, and funding is contingent upon the availability and continued appropriation of funds in FY 2026, with the ability to adjust encumbrances between State Fiscal Years through the Budget Office if needed and justified:

Table with 4 columns: Account Number, FY 2024, FY 2025, FY 2026. Rows include Consolidated Federal Aid and Gen Consultants Non-Benefit.

EXPLANATION

The Department requires preliminary design, public involvement process, final design, and associated environmental and cultural services for rehabilitation or replacement of the existing bridge carrying NH 127 over the Blackwater River in the Town of Webster. This agreement is included in the State's Ten-Year Transportation Improvement Plan (Webster 41429).

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 consultant selection process for this qualifications-based contract was initiated by a solicitation for consultant services for Webster 41429, preliminary design, public involvement process, final design, and associated environmental & cultural services for rehabilitation or replacement of the existing bridge carrying NH 127 over the Blackwater River in the Town of Webster.

for consideration and approval by the Assistant Commissioner. Upon receipt of that approval, three (3) shortlisted firms were notified on September 25, 2019, through a technical "Request for Proposal" (RFP). Committee members individually rated the firms on November 14, 2019, 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 sixteen (16) consultant firms that were considered for this assignment, with the three (3) short-listed firms shown in bold, is as follows:

| <u><i>Consultant Firm</i></u> | <u><i>Office Location</i></u> |
|---------------------------------------|-------------------------------|
| AECOM Technical Services, Inc. | Manchester, NH |
| BETA Group, Inc. | Manchester, NH |
| CMA Engineers, Inc. | Portsmouth, NH |
| CME Associates, Inc. | Nashua, NH |
| Collins Engineers, Inc. | Portsmouth, NH |
| Dubois & King | Bedford, NH |
| GM2 Associates, Inc. | Concord, NH |
| Green International Affiliates, Inc. | Westford, MA |
| Hardesty & Hanover | Bedford, NH |
| Kleinfelder Northeast, Inc. | Manchester, NH |
| McFarland-Johnson, Inc. | Concord, NH |
| Stantec Consulting Services | Auburn, NH |
| TEC Engineering Corp. | Hampton, NH |
| Vanasse Hangen Brustlin, Inc. | Bedford, NH |
| Weston & Sampson Engineers, Inc. | Manchester, NH |
| WSP USA, Inc. | Merrimack, NH |

The firm of AECOM Technical Services, 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.

AECOM Technical Services, Inc. has agreed to furnish the professional engineering services for an amount not to exceed \$727,595. 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,



William J. Cass, P.E.
Commissioner

Attachments

November 14, 2019

PROJECT: Webster 41429 (Part A)

DESCRIPTION: This Project includes preliminary design, public involvement process, final design, and associated environmental & cultural services for rehabilitation or replacement of the existing bridge carrying NH 127 over the Blackwater River in the Town of Webster. Constructed in 1951, it is a three-span, 166 foot-long, concrete rigid frame bridge with a total width of 34.0 feet and a rail-to-rail width of 28.0 feet. This bridge is on the Department's State Red List of deficient structures and has a target advertising date in fiscal year 2023 in the draft 10-year plan. Scope of work may include: Perform an in-depth inspection of bridge, including superstructure and substructure. Core and test the abutment, pier, and superstructure concrete, if necessary; Design a replacement or rehabilitation of the existing bridge that addresses the concerns associated with the bridge structure; Environmental investigations to prepare and complete all appropriate environmental documentation and all necessary permitting; Roadway Design associated with the bridge rehabilitation or replacement effort; Traffic Control evaluation and design; Provide final bridge load rating, including NHDOT Bridge Rating Form 4; Public Involvement support services, and construction support services. No change in lane capacity is anticipated with this effort. Environmental efforts are needed to prepare and complete all appropriate environmental documentation including cultural resource investigations and permitting to satisfy Federal and State requirements. The Consultant will also be required to assist the Department in the public involvement process that may also require a public hearing depending on the selected alternative. This work will require Professional Engineer and Land Surveyor licensure in the State of New Hampshire.

| | T | R | A | N | K | T | R | A | N | K |
|--------------------------------|---|---|---|---|---|---|----|---|---|---|
| AECOM Technical Services, Inc. | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 1 | | |
| CME Associates Inc. | 3 | 3 | 3 | 3 | 3 | 2 | 17 | 3 | | |
| GM2 Associates, Inc. | 2 | 2 | 2 | 2 | 2 | 3 | 13 | 2 | | |

EVALUATION OF TECHNICAL PROPOSALS

| Rating Considerations | W E I G H T | AECOM Technical Services, Inc. | CME Associates Inc. | GM2 Associates, Inc. |
|--|----------------------------|--------------------------------|---------------------|----------------------|
| Comprehension of the Assignment | 20% | 19 | 16 | 19 |
| Clarity of the Proposal | 20% | 19 | 17 | 19 |
| Capacity to Perform in a Timely Manner | 20% | 18 | 18 | 18 |
| Quality & Experience of Project Manager/Team | 20% | 19 | 18 | 18 |
| Previous Performance | 10% | 8 | 8 | 7 |
| Overall Suitability for the Assignment | 10% | 9 | 9 | 8 |
| Total | 100% | 92 | 86 | 90 |

Ranking of Firms: 1. AECOM
2. GM2
3. CME

EVALUATION OF TECHNICAL PROPOSALS

| Rating Considerations | W E I G H T | AECOM Technical Services, Inc. | CME Associates Inc. | GM2 Associates, Inc. |
|--|----------------------------|--------------------------------|---------------------|----------------------|
| Comprehension of the Assignment | 20% | 20 | 16 | 19 |
| Clarity of the Proposal | 20% | 19 | 19 | 17 |
| Capacity to Perform in a Timely Manner | 20% | 19 | 15 | 17 |
| Quality & Experience of Project Manager/Team | 20% | 19 | 15 | 19 |
| Previous Performance | 10% | 10 | 8 | 10 |
| Overall Suitability for the Assignment | 10% | 10 | 6 | 10 |
| Total | 100% | 97 | 75 | 91 |

Ranking of Firms: 1. AECOM
2. GM2
3. CME

EVALUATION OF TECHNICAL PROPOSALS

| Rating Considerations | W E I G H T | AECOM Technical Services, Inc. | CME Associates Inc. | GM2 Associates, Inc. |
|--|----------------------------|--------------------------------|---------------------|----------------------|
| Comprehension of the Assignment | 20% | 18 | 16 | 18 |
| Clarity of the Proposal | 20% | 18 | 17 | 18 |
| Capacity to Perform in a Timely Manner | 20% | 17 | 16 | 16 |
| Quality & Experience of Project Manager/Team | 20% | 17 | 15 | 17 |
| Previous Performance | 10% | 10 | 8 | 10 |
| Overall Suitability for the Assignment | 10% | 7 | 7 | 8 |
| Total | 100% | 89 | 79 | 87 |

Ranking of Firms: 1. AECOM
2. GM2
3. CME

EVALUATION OF TECHNICAL PROPOSALS

| Rating Considerations | W E I G H T | AECOM Technical Services, Inc. | CME Associates Inc. | GM2 Associates, Inc. |
|--|----------------------------|--------------------------------|---------------------|----------------------|
| Comprehension of the Assignment | 20% | 19 | 16 | 18 |
| Clarity of the Proposal | 20% | 19 | 16 | 19 |
| Capacity to Perform in a Timely Manner | 20% | 19 | 18 | 17 |
| Quality & Experience of Project Manager/Team | 20% | 16 | 14 | 15 |
| Previous Performance | 10% | 9 | 6 | 6 |
| Overall Suitability for the Assignment | 10% | 9 | 7 | 7 |
| Total | 100% | 90 | 77 | 82 |

Ranking of Firms: 1. AECOM
2. GM2
3. CME

EVALUATION OF TECHNICAL PROPOSALS

| Rating Considerations | W E I G H T | AECOM Technical Services, Inc. | CME Associates Inc. | GM2 Associates, Inc. |
|--|----------------------------|--------------------------------|---------------------|----------------------|
| Comprehension of the Assignment | 20% | 18 | 17 | 18 |
| Clarity of the Proposal | 20% | 18 | 18 | 18 |
| Capacity to Perform in a Timely Manner | 20% | 18 | 18 | 18 |
| Quality & Experience of Project Manager/Team | 20% | 18 | 17 | 18 |
| Previous Performance | 10% | 9 | 8 | 9 |
| Overall Suitability for the Assignment | 10% | 9 | 7 | 8 |
| Total | 100% | 90 | 87 | 89 |

Ranking of Firms: 1. AECOM Technical Services, Inc.
2. GM2 Associates, Inc.
3. CME Associates, Inc.

EVALUATION OF TECHNICAL PROPOSALS

| Rating Considerations | | W E I G H T | AECOM Technical Services, Inc. | CME Associates Inc. | GMZ Associates, Inc. |
|--|-------------|----------------------------|--------------------------------|---------------------|----------------------|
| Comprehension of the Assignment | 20% | | 20 | 19 | 19 |
| Clarity of the Proposal | 20% | | 19 | 18 | 19 |
| Capacity to Perform in a Timely Manner | 20% | | 19 | 15 | 16 |
| Quality & Experience of Project Manager/Team | 20% | | 18 | 17 | 16 |
| Previous Performance | 10% | | 9 | 8 | 8 |
| Overall Suitability for the Assignment | 10% | | 9 | 7 | 5 |
| Total | 100% | | 94 | 84 | 83 |

Ranking of Firms:

1. AECOM
2. CME
3. GMZ

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ATACHMENTS

- A. **SCOPE OF SERVICES FOR PRELIMINARY DESIGN** Prepared by AECOM Technical Services, Inc. dated December 14, 2022.

AGREEMENT EXECUTION ATACHMENTS

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. SIGNATURE PAGE
7. CERTIFICATION OF GOOD STANDING
8. CERTIFICATION OF AUTHORITY / VOTE
9. CERTIFICATION OF INSURANCE

AGREEMENT
FOR PROFESSIONAL SERVICES

PREAMBLE

THIS AGREEMENT made this 14th day of March in the year 2024 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 AECOM Technical Services, Inc., with principal place of business at 1155 Elm Street, 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, 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 approved Environmental Document; and bring the proposed action to a public hearing for layout approval (if needed). These services are outlined in the CONSULTANT'S Scope of Services dated 12/14/2022 and Fee Proposal dated 02/22/2023. The Scope of Services is included in this AGREEMENT as Attachment A. The Fee Proposal 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

The purpose of this project is to evaluate and design the rehabilitation or replacement of the bridge carrying NH Route 127 over the Blackwater River in Webster NH, Bridge No. 099/123. This contract is for preliminary design services and will advance the design through alternatives evaluation, public involvement process, selection, and development of a preferred alternative, and if needed, a public hearing. The existing bridge was constructed in 1941 and is a 3-span, concrete rigid frame structure with a bituminous wearing surface.

Designs shall consider temporary and permanent erosion-control measures, traffic control measures, utility coordination, drainage, and treatments to minimize environmental impacts. Coordination may be required between the DEPARTMENT and the Town of Webster, NH. The CONSULTANT shall be prepared to support such efforts as required. Responsibilities of the CONSULTANT team shall include attendance at meetings when requested, preparation of minutes reflecting meeting commitments, and preparation of illustrative plans and exhibits for the meetings, as directed by the DEPARTMENT.

B. GENERAL SCOPE OF WORK

The development of the preliminary engineering for this project is expected to be performed in two phases (Parts A and B).

The Part "A" 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. Part "B" will involve Final Design efforts and will encompass the engineering and permitting efforts needed to advance the design from NEPA approval to project advertising, including final design plans, specifications and estimates for the project. This scope of services is for the first phase (Part A) only; Part "B" is not included in this scope of work.

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 or terminate the contract.

The following general tasks are included in Part "A":

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- 1.) Develop and evaluate improvement alternatives;
- 2.) Preliminary design of roadway and other necessary design elements;
- 3.) Evaluation of the existing bridge structure;
- 4.) Evaluation of bridge preservation, rehabilitation and/or replacement alternatives;
- 5.) Consideration of construction phasing, constructability and construction access;
- 6.) Develop preliminary Traffic Control Plan that is acceptable and economical for travelers;
- 7.) Identify all impacted natural and cultural resources potentially affected by the proposed action, and investigate means of minimizing or mitigating the impacts;
- 8.) Prepare an environmental document for the proposed action to comply with the National Environmental Policy Act (NEPA) (including Cultural Resource investigations in accordance with Section 106 of the National Historic Preservation Act) and the identification of any permitting requirements;
- 9.) Assist the Department with public involvement support services, including preparation of illustrative plans, exhibits, and meeting minutes for any meetings, including a Hearing plan;
- 10.) Support such efforts as required in the coordination between the DEPARTMENT and the Towns, including preparation of illustrative plans and exhibits for any meeting;
- 11.) Identify and document the existing right-of-way;
- 12.) Advance the design through the Slope and Drain phase of plan development.

C. SCOPE OF WORK (SPECIFIC)

The CONSULTANT shall be responsible for developing engineered alternatives through an iterative process of design and review involving the DEPARTMENT, STATE, and Federal environmental resource agencies, regional planning commissions, the local community, and the public. The work, as further described in the CONSULTANT's Scope of Services dated January 29, 2020 (Revised December 14, 2022) (Attachment A), requires the development and refinement of engineering plans and technical documentation in accordance with the following criteria and involving the following work efforts:

The CONSULTANT shall be responsible for the preparation of preliminary designs, including all preliminary plans, computations, estimates, and documents for required submissions to the DEPARTMENT, the Federal Highway Administration, and/or any other STATE or Federal agency, that may be required.

The preliminary engineering design shall take into consideration all factors affecting the cost of the construction, such as site-specific foundation considerations; earthwork quantities; erosion and sedimentation control; traffic control; water-quality-treatment issues; construction phasing and

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complexity; utilities affected; right-of-way needs; environmental issues and commitments; preliminary cost; construction materials; etc.

The CONSULTANT shall, when requested by the DEPARTMENT, render such assistance as required, including the preparation, presentation of, and explanation of sketches and plans for, or at, any meetings or conferences held by the DEPARTMENT. Meeting notes and conference memos shall be the responsibility of the CONSULTANT.

Designs shall conform to the current standards, specifications, policies and guidelines enumerated in the Federal Aid Policy Guide, Subchapter G, Part 625, or to 23 Code of Federal Regulations, Part 625 and the DEPARTMENT'S Design Manuals, and most current Standard Plans for Road Construction, except as approved.

All plotting, drafting, and calculations performed by the CONSULTANT shall be independently checked by members of the CONSULTANT'S staff other than those who performed the original work. The work of each stage submission (including quantity estimates) shall have been appropriately checked.

The CONSULTANT shall verify all computations and design calculations. The CONSULTANT shall furnish one (1) permanent, legible copy and one electronic format (PDF) copy of the design calculations, suitably bound, and when directed, all study plans, work plans, alternate studies, and estimates indexed in accordance with DEPARTMENT procedures.

The CONSULTANT'S Licensed Professional Engineer stamp for the State of New Hampshire shall appear on the construction plans, reports, and any other documents that will be submitted to the DEPARTMENT. Stamps shall be those of the professional engineers who prepared them or under whose direct supervisory control they were prepared.

The work shall be as described in the CONSULTANT'S Scope of Services, Attachment A, and requires the development and refinement of engineering plans and technical documentation in accordance with the following criteria and involving the following work efforts:

1. Preliminary Engineering

Preliminary Engineering shall consist of all efforts needed to collect data, prepare base plans, develop a range of reasonable alternatives, evaluate alternatives and investigate their consequences to allow the Department to select a proposed action, in accordance with the policy and procedures of the DEPARTMENT and the provisions of this AGREEMENT. Tasks under Preliminary Engineering include the following:

- a. Existing Conditions Data Collection and Field Reviews
- b. Bridge Inspection

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c. Topographic Survey and Base Plan Preparation

The development of base plans drafted by the CONSULTANT using updated ground survey, if applicable.

d. Right-of-Way Boundary Preparation

The CONSULTANT shall complete a boundary survey of the main project roadway and any intersecting municipal or State roads to a minimum distance of 500 ft. beyond the anticipated limits of the proposed improvements to a 95% confidence interval and 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. Work shall be performed to the survey and boundary control standards of practice and the current NHLA Ethics and Standards. – Not Required

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. [The CONSULTANT shall be responsible to record the base plan- not required].

e. Traffic Data Collection and Analysis

f. Crash Data Analysis

g. Development of Engineering Criteria

The CONSULTANT shall follow appropriate engineering criteria based on the latest AASHTO Policy on Geometric Design of Highways and Streets, AASHTO LRFD Bridge Design Specifications, NHDOT Highway Design Manual, and NHDOT Bridge Design Manual, as amended. Engineering shall take into account the functional classification of the roadways being addressed; volumes of traffic; methods of construction; erosion control; traffic control; cost; right-of-way needs and impacts to private property; and environmental constraints and the need to avoid or minimize impacts to environmental resources.

h. Alternatives Development and Evaluation

Each alternative will be developed to an equal level of detail and presented in a plan package.

i. Cost Estimates

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The Cost Estimates shall be prepared with each submission. Construction Engineering and environmental mitigation costs shall also be included. Estimates shall be submitted with a narrative explaining all major cost and/or quantity changes.

j. Roadway Plans

k. Structural Design Calculations and Plans

l. Traffic Control Plans and Construction Phasing

m. Drainage Design and Stormwater Treatment

n. Aesthetics and Landscaping Plan

o. Constructability Reviews – The project will be reviewed for constructability with information being provided to support the design, environmental document and/or permit applications, and public outreach.

p. Technical Reports

The CONSULTANT shall prepare Technical Reports to address engineering issues that, to varying degrees, will be incorporated into the Draft Environmental document and Engineering Report. Technical support and writing shall be required to address the engineering aspects of the study as required to supplement and complete environmental documentation.

The CONSULTANT shall prepare an Engineering Report to document the existing conditions within the corridor, and to summarize all pertinent issues, recommendation, design decisions and engineering details relative to the proposed action. Any rejected alternatives should also be documented to explain the justification for their rejection and for inclusion in the Environmental document.

q. Design Narrative

The CONSULTANT shall prepare a brief narrative, to be submitted with each submission, explaining any changes to design criteria and controls, the design issues addressed in that submission, the design rationale, specific items and issues of interest, and documenting any major changes. In addition, the narrative shall include anticipated or outstanding issues and the CONSULTANT'S recommendations.

r. 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 City, local Planning Commission, state or federal agencies, or others as appropriate.

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2. Environmental Documentation

The NEPA Documentation task covers the documentation needed to comply with the National Environmental Policy Act (NEPA) (including Cultural Resource investigations in accordance with Section 106 of the National Historic Preservation Act). The CONSULTANT shall develop a formal Purpose and Need statement, identify and document impacts of the alternatives to all relevant natural and cultural resources, and identify any permitted requirements.

Resources and impacts to be identified and evaluated include, but are not limited to:

- a. Water-Based Resources: including Groundwater, Surface Waters, Floodplains, Wetlands and wetland mitigation, and Stream Crossings.
- b. Stormwater treatment requirements
- c. Land-Based Resources: Soils, Active Farmlands, Parks, Recreation areas, Public and Conserved Lands, Section 4(f) Resources and Section 6(f) Resources.
- d. Land Use
- e. Wildlife: Wildlife and Habitat, Fisheries, and Threatened and Endangered Species.
- f. Cultural Resources (Historic and Archaeological) The CONSULTANT shall conduct all necessary phases of Section 106 public outreach.
- g. Visual Resources
- h. Social and Economic Resources
 - i. Noise
 - j. Air Quality
 - k. Invasive Species
 - l. Hazardous Materials or Contaminated Properties
 - m. Limited Reuse Soils
 - n. Environmental Justice (provided by the DEPARTMENT)
 - o. Construction Impacts
 - p. Section 4(f)
 - q. Section 6 (f)

D. PUBLIC PARTICIPATION

The CONSULTANT shall provide a public participation program involving public and private stakeholders and the general public in the decision-making process to aid in the determination of the proposed action and to provide updates throughout the design process. The CONSULTANT shall prepare presentation graphics, handouts and support displays for public participation and posting to the

ARTICLE I

DEPARTMENT's project webpage, be available to make presentations and draft meeting minutes.

Specific types of meetings include:

- a. Public Advisory Committee Meetings – Not included in this contract
- b. Public Officials Meetings
- c. Public Informational Meetings
- d. Stakeholder Meetings – Not included in this contract
- e. Public Hearings – as required

E. GEOTECHNICAL

The acquisition of subsurface data, preparation of geotechnical recommendations, and analysis are anticipated as part of this contract. The DEPARTMENT anticipates completing the full geotechnical program required for the project. In support of the DEPARTMENT's geotechnical program, the CONSULTANT shall provide engineering to include preliminary and final subsurface exploration plan development and siting of the subsurface explorations by providing the station(s), offset(s) and associated GPS coordinate(s) for proposed or actual subsurface exploration locations for all bridge structures, as well as highway design elements, to include but not be limited to water quality BMP's, roadways, retaining walls, box culverts, etc.

F. UTILITIES

The utility coordination for this project will be performed by the DEPARTMENT. The CONSULTANT shall provide existing detail plans to the DEPARTMENT for submission to the utility companies for utility verification. The CONSULTANT shall incorporate utility locations, as identified by the individual utility owner, into the plans. There are no know utilities on the bridge and no future utilities are anticipated.

G. QUALITY CONTROL

The CONSULTANT shall be the Engineer-of-Record for this work, as such the CONSULTANT shall be responsible to ensure that the design and supporting documentation is accurate, checked, and thoroughly reviewed prior to each submission. DEPARTMENT staff will review the CONSULTANT'S submissions to ensure that DEPARTMENT objectives are being met and standard practices and

ARTICLE I

procedures are adhered to. It is the CONSULTANT's and the Engineer-of-Record's responsibility to ensure the design is complete, accurate and meets all DEPARTMENT requirements.

The DEPARTMENT will reject any data that does not comply with the above. The DEPARTMENT will decide when the data and services have fully met the project requirements. The CONSULTANT will not be paid for insufficient work.

The CONSULTANT's designated Quality Control personnel shall sign-off on each submission prior to transmittal to the DEPARTMENT. The CONSULTANT shall, upon request, provide to the DEPARTMENT any and/or all QC documentation pertaining to work efforts on the project.

H. 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. Any available electronic 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.).
 - b. Any additional topographic surveys of adjacent parcels, mitigation sites, wetland boundaries, or other pertinent items deemed necessary by the project team will be undertaken and processed by the DEPARTMENT. Incorporation of this information into the topographic base plan shall be the responsibility of the CONSULTANT.
 - 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 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.
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.

ARTICLE I

- 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: Any additional information collected or prepared by the DEPARTMENT that could supplement the CONSULTANT's Right-of-Way Boundary (e.g. existing right-of-way layout per record plans, property lines to a tax map level, parcel owners, title abstracting, etc.) will be provided by the DEPARTMENT in MicroStation format for incorporation into the plans by the CONSULTANT.
4. Plans of prior highway and bridge construction projects within the project limits, as available.
5. Latest structural inspection and underwater inspection of the bridge.
6. The location of all existing and proposed utilities through direct contact with the various utility companies.
7. Geotechnical investigations and recommendations, if available:
8. Electronic files of the Environmental resource data collected in previous studies.
9. Crash data and Safety Analysis within the study area.
10. Ground survey, as needed, within the study area to supplement the digital surface model. The DEPARTMENT will process the raw survey data and incorporate into the digital surface model.
11. The DEPARTMENT's latest high-resolution color aerial photography (which is geo-referenced and ortho-rectified).
12. Conceptual design and layout of highway lighting (temporary and permanent) if available and deemed necessary.
13. Conceptual design and layout of ITS features, if deemed necessary.

I. WORK SCHEDULE AND PROGRESS REPORTS

The CONSULTANT shall begin performance of the services designated in the AGREEMENT 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

ARTICLE I

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

J. SUBMISSION OF REPORTS, PLANS AND DOCUMENTS

Each submission shall be supplemented with such drawings, illustrations and descriptive matter as are necessary to facilitate a comprehensive review of proposed concepts. Any and all CAD/D-related work during the course of this project shall be performed in conformance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT, which will be coordinated on each assignment.

Upon completion of the AGREEMENT, the CONSULTANT shall turn over all documentation, including, but not limited to, all reports, test results, drawings, plans, and all financial supporting documentation in their original format and in the format submitted to the DEPARTMENT.

K. DELIVERABLES

All work and supporting documents compiled under this AGREEMENT shall be developed by the CONSULTANT and delivered to the DEPARTMENT according to the following formats;

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/.)

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 2016 or NHDOT compatible version |
| Spreadsheets: | Microsoft Excel 2016 or NHDOT compatible version |
| Databases: | Microsoft Access 2016 or NHDOT compatible version |

ARTICLE I

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:

File Transfer Sites, Bluebeam, SharePoint.

Email: Files 20 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 NHDOT websites created under this AGREEMENT shall meet the ADA Section 508 requirements as stated in the NH DoIT Website Standards. Those standards are outlined in Vendor Resources and Procurement | NH Department of Information Technology.
- b. Website Documents: All documents posted to a website created under this AGREEMENT, or that are submitted to be posted to a NHDOT website, shall meet ADA Section 508 accessibility requirements. Compliance requirements can be found at <https://www.section508.gov/create/>.

Upon completion of the AGREEMENT, the CONSULTANT shall turn over all documentation, including, but not limited to, all reports, test results, drawings, plans, and all financial supporting documentation in the formats described above.

L. Date of Completion

In accordance with the Governor and Council Resolution authorizing this AGREEMENT, the date of completion for the Design of professional services rendered under this AGREEMENT is April 30, 2027.

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.

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.

Direct salary costs are estimated at:

\$162,028.63

- 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 ending March 31, 2023, 128.43% shall be used for invoicing for the life of the AGREEMENT.

Overhead costs are estimated at:

\$208,093.37

- 3) A fixed fee amount based on the estimated risk to be borne by the CONSULTANT [maximum 10.00% of Labor Costs (including overhead costs)] for profit and non-reimbursed costs.

The fixed fee is:

\$37,012

- 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

ARTICLE II

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.

Direct expenses are estimated at:

\$320,461.00

AGREEMENT NOT-TO-EXCEED TOTAL \$727,595.00

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 \$727,595.00, the sum of the amounts shown in Article II, Section A (which amount is based on the CONSULTANT'S fee and manhour estimates of 4,183 hours), 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 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.

ARTICLE II

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.
- 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.

ARTICLE II

- 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 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.

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.

B. CONTRACT PROPOSALS

After the CONSULTANT has furnished to the DEPARTMENT contract drawings, special provisions, specifications, and estimate of quantities by items, the DEPARTMENT will prepare the documents for receipt of proposals from construction contractors and for execution of a construction contract or contracts.

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 Apollo Drive, Chelmsford, MA.

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

ARTICLE IV

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 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:

ARTICLE IV

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 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,

ARTICLE IV

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.

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". A copy of each subcontract shall be submitted for the DEPARTMENT'S files.

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.

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

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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, 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.

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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, 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

ARTICLE IV

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.

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

ARTICLE IV

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 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.

ARTICLE IV

- (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.

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.

ARTICLE IV

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

WEBSTER 41429

Rehabilitation or Replacement of Br. No. 099/123: NH 127 over Blackwater River

December 14, 2022

AECOM SCOPE OF SERVICES – PART “A” SERVICES

STATEMENT OF UNDERSTANDING

AECOM Technical Services, Inc. (AECOM) proposes to provide professional engineering services to the New Hampshire Department of Transportation Bureau of Bridge Design (NHDOT-BoBD) for the Preliminary Engineering (Part “A”) of the rehabilitation or replacement of Br. No. 099/123, (Sgt. William Tracey Memorial Bridge) which carries NH Route 127 over the Blackwater River in the Town of Webster. For the purpose of developing budget hours, it is assumed that rehabilitation options will need to be studied and evaluated against full replacement with a **replacement structure eventually being required**.

The bridge is on the Department’s State Red List of deficient structures and has a target advertising date in fiscal year 2022 in the Draft 2021-2030 Ten Year Plan.

Constructed in 1941, the 166-foot-long, continuous three-span reinforced concrete arch rib rigid frame bridge is 34 feet wide, with a curb-to-curb roadway width of 26 feet. The 10-inch-thick cast-in-place concrete bridge deck is carried by four arched rigid frame girders that are integral with the deck and each girder is supported by two slender column piers. Since 2013, the bridge has been on the State Red List due to the “poor” condition rating of the deck and superstructure.

The most recent NHDOT Bridge Inspection Report (12/09/2019 inspection) indicates various conditions of concrete deterioration, leaching at joints, spalls at sidewalk fascias, soffits and previous patches. For continuous Rigid Frame T-Beams the deterioration is more concentrated at exterior fascia beams with several delaminations and spalled areas and some exposed rebar. Construction joints exhibit areas of fine to moderate cracks with leaching and efflorescence at underside of beams. The inspection reports identify diagonal cracks and spalling in the girder webs at bearings, however, AECOM noted during site visits that concrete repair and beam end reconstruction have been performed at these locations.

Reinforced concrete columns are integral with the beams and exhibit minor vertical cracks, minor spalls with minor crack and spall at Pier 2 footing. Abutments exhibit various degrees of spalling and exposed rebar at backwalls and bridge seats. Bridge bearings are also rusted and paint peeling or missing.

The bridge is historically significant for its association with the Blackwater Dam Flood Control Project, and as a representative example of rigid-frame bridge design technology.

Of the four surviving bridges of this type in New Hampshire, the Webster Bridge is one of three unaltered from their original design. The bridge was determined individually eligible for the National Register under Criterion C in 2014, and also eligible under Criterion A as a contributing resource to the Blackwater Dam Area Historic District. The implications of the bridge's historical significance on project alternatives will be assessed as part of the historical assessment within the Type, Span and Location-(TS&L) Study Report phase.

The intent of the project is to develop a rehabilitation or replacement solution for the Webster Bridge that will balance the structural /highway functional needs with the historic and engineering significance of the bridge crossing and provide a service life of approximately 75 years. In the TS&L Study Report rehabilitation considerations for maintaining the existing substructure will be carefully, evaluated and compared to replacement options. **For the purpose of developing hours, a bridge replacement is assumed.**

Prior to the TS&L Report AECOM will prepare and submit a **Rehabilitation Report**. The Rehabilitation Report will investigate rehabilitation options and present the findings of the non-destructive testing (NDT) program. Although it is **assumed that the bridge will be replaced**, for purpose of scoping it is assumed that the NDT program would be required for assessing the rehabilitation alternative against a replacement. Once the Rehabilitation Report is accepted, the rehabilitation recommendation can be advanced to the TS&L Report to be compared to the replacement options. See Task 5.0 and Task 6.0 for more information. The anticipated scope of the NDT program to assess rehabilitation options generally includes detailed field inspection and condition assessment of the structure, evaluation of deck replacement methodologies and construction phasing options, and recommendations for concrete repairs to the abutments and piers, possible minor scour protection repairs, bridge railing replacement, girder bearing repairs, and substructure concrete repairs. For this NDT scope, based on previous site observations, the current condition 4 rating of the bridge deck, and the evidence of its continuous maintenance, it is **assumed , if a rehabilitation alternative was chosen, that the deck will be replaced in its entirety and any condition assessment associated with the deck will be limited primarily to visual and how its condition impacts its removal from the integrated T-Beams to be evaluated for remaining in place.** The existing bridge girders, columns and footing elements have the potential for rehabilitation. To be evaluated are the two interior frame lines that appear to be in good condition and the exterior frame lines that have been more affected by the penetration of moisture and efflorescence from the deck and through construction joints. Rehabilitation and significant service life extension of the girders will require a comprehensive understanding of the bridge's condition, as well as evaluation of beam bearing shear cracking.

It is anticipated that AECOM's visual bridge inspection program will be performed in two days. Supplementing AECOM's visual bridge inspection, testing by NDT Corporation (NDT) will be performed. Information on the quality of the concrete will be quantified on the surface and inside a representative sample of the structural members and substructure elements. It is anticipated that the field-testing phase, led by NDT, will be performed in three days. Traffic control services and access equipment rental services for access under

the bridge will be subcontracted by AECOM and NDT each for their two day and three day, respectively, proportional time of services. NDT will provide for the laboratory testing program. Testing coverage and representative sampling quantities will be planned by AECOM and used in coordination with NDT's concrete testing technology to efficiently assess the concrete. A combination of strength testing, petrographic analysis and chloride concentrations will be analyzed from concrete core samples and powder samples.

The NH 127 over Blackwater River Bridge is 80 years old and over its lifetime has been subjected to several deterioration mechanisms. Based on the age of the bridge and its geographic location, deterioration mechanisms can include chloride-induced corrosion from deicing salt application, carbonation-induced corrosion, freeze-thaw damage, as original concrete is likely not air-entrained, and possibly alkali-silica reaction (ASR) if reactive aggregates were used during construction. It is critical that a complete understanding of the bridge condition is obtained if any significant service life extension is to be achieved.

Access will be from an Under-Bridge-Inspection-Unit (UBIU) and subcontracted proportionally between AECOM and NDT as previously noted. Field testing will utilize 3 established ASTM field testing procedures along with a number of lab testing procedures all intended to assess the concrete integrity of the structural members and predict the service life of this historic bridge:

1. Ground penetrating radar (GPR) ASTM D6432 (high frequency antennae)
2. Corrosion Potential Survey (Half-cell testing ASTM C876) – determines the probability of active corrosion
3. Pulse velocity ASTM C597 (collected with NDT's proprietary sonic/ultrasonic equipment) – detects concrete defects such cracking, delaminations and low compressive strength.
4. Concrete powder/cores samples will be collected, and laboratory testing will be conducted:
 - o **Concrete chloride concentration** analysis to determine the depth and level of chloride contamination in the concrete and evaluate if that puts the structure at risk for corrosion. Results from concrete powder samples and cores will be plotted.
 - o **Carbonation depth** evaluation conducted on all cores removed from the structure to identify if the concrete pH has been lowered which will initiate corrosion. Due to the age of the structure there is a significant risk that carbonation-induced corrosion is affecting the durability of the structure.
 - o **Petrographic evaluation** on 1 core sample to provide detailed information regarding the type of aggregates, binder composition, and distress mechanisms present in the concrete samples such as air/void and alkali-silica reaction (ASR).
 - o **Compressive strength** testing to determine the concrete quality which will also validate the concrete strength measurements provided from NDT's sonic testing.

Service life modeling will be developed to estimate how the structure will deteriorate over time and with this knowledge, informed decisions regarding appropriate rehabilitation strategies and required investments will be made and presented in the Rehabilitation Report for review and assessment against replacement alternatives. Rehabilitation alternatives considered in the Rehabilitation Report will focus on repairs and staging approach strategies. Vector Corrosion Services (VCS), will assist AECOM in arriving at the most appropriate cost-effective repair and mitigation solution for the structure elements. Rehabilitation may include conventional concrete repair, Electrochemical Chloride Extraction (ECE), Impressed Current Cathodic Protection (ICCP) and/or Carbon Fiber Reinforced Polymer (CFRP) or other appropriate methods with the latter applied particularly at girder bearing ends.

A key component of the Alternatives assessment is the evaluation of the required staging of the work. Full deck replacement and unfavorable detour circumstances will require investigation of several staging considerations:

- Provide for alternating single-lane traffic on the applicable portion of the bridge.
- Temporary bridge.
- Full closure of existing bridge with accelerated techniques to limit closure time.

From previous review of the existing structural cross-section and current girder spacing it has been determined that for bridge rehabilitation or replacement considerations the existing deck width is not suitable to multi-stage the deck or superstructure demolition and replacement while maintaining a minimum single temporary lane. To mitigate this for rehabilitation considerations, a first phase widening to the east by adding an additional rigid frame will provide the necessary width to maintain a single lane during construction. For rehabilitation this will also maintain the historic character of the bridge and provide the needed width for staging the work. For **replacement bridge** this will result in a wider structure. The temporary bridge consideration, most likely limited to single lane due to temporary ROW disturbance, would allow single-stage rehabilitation or replacement, while maintaining the existing or similar cross-section but the benefits is likely outweighed by additional costs due to site topography. Full bridge closure consideration allows for more facilitated construction access and accelerated bridge opportunities, but these benefits need to be assessed against any hardships induced by significant detour time. AECOM's construction consultant, Construction Expert Consulting, Inc. ("CXC") will assist with constructability and cost evaluations of construction systems, such as precast vs cast-in-place (CIP) girder framing, demolition techniques and shoring systems in developing very realistic costs for alternatives comparison.

As part of the TS&L Study rehabilitation consideration a preliminary girder analysis will be performed to evaluate negative moment regions under bridge deck demolition and stresses in the ribs. This analysis will better define the superstructure shoring and shielding requirements needed to mitigate the stresses in the ribs. It is anticipated that a shoring and shielding system could take advantage of the intermediate piers stiffener cross members to support the system when adequately shored to pier footings.

Full replacement alternatives considered in the TS&L study will be those for a single-span steel superstructure. Steel girder replacement superstructure will be evaluated against the pros and cons of the rehabilitation alternative for, but not limited to, historical, constructability, staging, service life, aesthetics and costs. **It is noted that either a full replacement or widening (with a deck replacement) will require a closed drainage system. No open scuppers will be considered on a new bridge or deck and any runoff from the increased impervious surface will need to be treated.** Staging strategies similar to rehabilitation noted above will dictate the proposed replacement section. Similar traffic staging requirements are an equally important consideration as rehabilitation with a short-term bridge closure being a strong consideration with use of Accelerated Bridge Construction (ABC) techniques. ABC techniques such as paired steel girder erection, precast abutments, full depth precast deck panels as well as potential for a lateral slide or launching will be investigated.

The Webster Bridge carrying NH 127 over the Blackwater River is located about 700 feet downstream of the Blackwater Dam. At the bridge location the Blackwater River has a drainage area of 128 square miles. The Blackwater Dam, a US Army Corps of Engineers facility, is a flood control structure capable of storing 46,000 acre-feet of water, or the equivalent of 6.7 inches of runoff over the entire drainage. The dam therefore significantly reduces flood flows at the bridge. Since the construction of the dam in 1941, peak discharges at the bridge have never exceeded 2,500 cfs as indicated in the records of the USGS Gaging Station 0108700, located on the Blackwater River about 2 miles downstream of the bridge. These flow records will be used to determine the hydraulic design, scour design and scour check flood discharges at the bridge.

The latest bridge inspection report indicates minor damage to the channel/channel protection, and the condition of the riprap is unknown. Available plans also indicate pier foundations on bedrock, and the piers and abutments are protected by riprap. These elements and the presence of ledge on the river bank will be investigated for the scour evaluation during the hydraulic engineer inspection and with the geotechnical borings. The current bridge is a replacement of an earlier smaller bridge. According to the bridge plans the new roadway was a fill condition but the proposed abutments were founded below the existing grade at that time and pier footings were carried to not less than 1'-0" into sound ledge. There is no indication on the plans that any boring data had been obtained or is currently available. For this project AECOM's expectations is that four borings, one behind each existing abutment and one offset to the east, would be taken to address a proposed replacement longer span and widened bridge or a rehabilitated widened bridge structure. For pier widening it would be desirable to determine the location and integrity of existing ledge in the vicinity of proposed piers by taking rock cores. Extending the existing continuous pier footings to be founded on sound rock is a consideration but isolated footings may be more prudent to avoid drilling or excavating rock immediately adjacent to the existing piers in order to avoid damage. It is assumed that the any boring and subsurface exploration work will be obtained by the NHDOT and is not part of AECOM's scope.

A 1-D hydraulic model (HEC-RAS) will be developed to estimate the hydraulic profiles of the Blackwater River in the vicinity of the bridge for the hydraulic design, scour design and scour check floods. The model will be used to calculate flow velocities and water depths at the piers and abutments. The effective FEMA FIS for Merrimack County (2010) includes a detailed study of the Blackwater River, but it ends about 1,700 downstream of the project bridge. AECOM contacted the USCOE regarding hydrographic surveys in the vicinity of the dam and bridge for use in this hydraulic analysis. The Northeast District of the USCOE stated that they have not done any bathymetric survey of the Blackwater River in the vicinity of the dam. They reported that they developed a HEC-RAS model which includes the Blackwater Dam and the Blackwater River to the Merrimack River, but it was not refined and only used LIDAR data. Due to the lack of available river cross sections, for this bridge hydraulic study we will need survey for nine (9) cross sections.

Using these parameters and the FHWA publication HEC-18 – Evaluating Scour at Bridges (2012), all elements of scour will be calculated including: aggradation / degradation, contraction scour, and pier and abutment scour, as applicable. This includes a rock scour analysis to determine the erodibility of the rock. For the purpose of the calculations, the river bed material gradation and bedrock characteristics testing will need to be done.

NH 127 (Battle Street) is a State Route Class I roadway that is oriented primarily south to north. The existing roadway width is 26 feet at the bridge consisting of two (2)-11 foot lanes and 2 foot shoulders. The roadway width opens out to 28 feet just south and north of the bridge within the guardrail approaches but tapers quickly to approximately 24 feet beyond the guardrail approaches consisting of two (2)-11 foot lanes and 1 foot shoulders. The right of way width is 50'. Based on the 1940 Record Plans the vertical grade through the bridge section rises from south to north at 5.20%. The posted speed limit is 40 mph through the project area.

For both the replacement and rehabilitation options, the proposed roadway horizontal alignment will be based on the staging requirements for constructing the bridge.

With a posted speed of 40 mph, the design speed is proposed at 50 mph. For both bridge options the horizontal alignment is anticipated to be shifted several feet to the south. For 50 mph, per the MUTCD, is the taper length is the width of shift multiplied by the design speed (WS) which results in several hundred feet of approach on each side of the bridge. The design speed will be discussed with the department.

The vertical alignment is proposed to mimic the existing vertical alignment.

There are two drainage structures located on the north side of the existing bridge. These outlet to a mortar rubble headwall on the northeast quadrant of the bridge slope. A new catch basin will be proposed on the northeast quadrant for the widened section and will tie into the existing drainage system. The increase in overall impervious area will require a drainage treatment system. Best Management Practices will be implemented. Location of the drainage treatment system is anticipated to impact right of way.

Right-of-Way plans will be developed for any drainage easements or takings as required. Preliminary Right-of-Way plans will be produced after the Slope & Drain plans have been developed.

An existing utility line exists on the westerly side of NH 127, with the widening proposed to the east side this utility line is not anticipated to be impacted.

Route 127 is not listed on the National Highway System (NHS) and therefore does not require a formal design exception to be approved by FHWA. Design deviation will be required for the 4' shoulders. The other controlling criteria will also be evaluated as the design is developed. The design deviations will be presented in the Engineering Report.

A Traffic Control Plan (TCP) will be prepared to address and detail the required temporary control of traffic associated with the proposed bridge construction.

The TCP will be developed in a manner to provide safe and efficient movements for all facility users through the construction area. This will be done in accordance with the 2009 Manual on Uniform Traffic Control Devices (MUTCD) and all other federal, state and local guidelines and standards for work zone safety, including the NHDOT Work Zone Traffic Control Standard Plans.

Work Zone Traffic Control Plans will be provided for the proposed construction and will be developed to specifically address the work anticipated. The plans will identify proper lane taper lengths, as required to facilitate lane shifts and closures. All necessary traffic control devices such as signs, channelizing devices (drums/cones), temporary pavement markings, changeable message signs, and barriers will be detailed. The plans will be developed in a manner to minimize impacts to roadway capacity.

If the proposed construction staging requires an alternating one-way traffic condition, then temporary signalization would be necessary to safely control the vehicle movements over the bridge in each direction. The temporary signal system will incorporate the White Plains Road approach to Route 127, to eliminate the conflict of White Plains Road motorists turning left to travel north, while southbound traffic is proceeding over the bridge.

In addition to temporary traffic control signals, other traffic control measures and devices will need to be evaluated and implemented for the approaches to the bridge to enhance driver awareness of the downstream construction area and temporary signalization. This is particularly critical for vehicles coming from the north, given the horizontal curve to the right that may hinder sight distance. Proper location and spacing of advanced signage, including portable changeable message signs, is critical to overcome the sight restrictions.

As part of the Part A scope of work an Engineering Report will be produced detailing all design elements.

AECOM with our Sub, Hoyle Tanner will initiate an Early Environmental/Historical Action program for the Webster bridge rehabilitation or replacement and all appropriate

team discipline members will work interactively together to understand the project impacts and limitations of preferred rehabilitation or replacement methods and assess to arrive at the most appropriate solution.

Public outreach and gaining public input and support will be an important element to the project success. Hoyle, Tanner will assist AECOM with attendance at initial "Blank Plan" public information meeting, two (2) public officials/information meeting and a public hearing for a total of four (4) meetings under Part A.

The general services to be provided by AECOM will consist primarily of the following:

- AECOM will host a facilitation meeting to coordinate between the AECOM Team and NHDOT. Meeting will be an initiation of survey and right-of-way efforts.
- Review of existing Plans, Inspection Reports, traffic data including provided crash data, and other pertinent data provided by NHDOT-BoBD.
- Perform Traffic Counts and Traffic Analysis.
- General field review of the site and determination if available information is accurate and/or if additional information is required.
- Perform a structural condition inspection program with field inspection of the existing structure to determine extents of girder section loss and substructure repairs necessary for full rehabilitation and prepare inspection report. (Assumes bridge deck to be fully replaced).
- Perform a supplemental visual field inspection with testing by NDT Corporation to sufficient extent as to assess the quality of concrete on the surface and inside each of the structural girder members and substructure elements. Findings and appropriate rehabilitation strategies will be documented in the Rehabilitation Report.
- Perform survey and LIDAR Scan of the bridge site and development of electronic base map plan.
- Develop request for borings and submit to BoBD and review subsequent findings provided by BoBD.
- Perform Hydraulic Study and Report.
- Review the Geotechnical Report provided by NHDOT.
- Perform early and ongoing coordination with NHDHR to determine appropriate technical studies and to avoid, minimize or mitigate potential adverse effects on the historic structure and district.
- Perform a site visit for Bat Survey by Hoyle Tanner.
- Perform quality control review on early action preliminary environmental impact tasks conducted by Hoyle Tanner as well as quality control review on permit application preparation.
- Hold a "Blank Plan" public information meeting.
- Prepare a Rehabilitation Report developed from the findings of the above noted field inspection and NDT testing results. Identify the preferred rehabilitation alternative with bottoms-up cost estimating of repairs and precast and cast-in-place considerations. The preferred alternative will be advanced to the TS&L study for comparison with replacement alternatives.

- Prepare a TS&L Report identifying preferred alternative with bottoms-up cost estimating of rehabilitation vs. replacement.
- Perform a Safety Analysis and prepare preliminary construction phasing plan and preliminary traffic management/detour plan.
- Provide services supporting the two (2) Public Officials/Public Informational meetings.
- Provide services supporting the public hearing effort for NHDOT-BoBD.
- ROW Hearing Layout Plan, presentation etc.
- Provide services for early environmental and permitting application needs.
- Prepare Preliminary Bridge Plan Submission (40%) with Preliminary Estimate consistent with the NHDOT Bridge Design Manual.
- Prepare Preliminary Roadway Submission for the Highway effort and Traffic Control Plans (30%) consistent with NHDOT Highway Design Manual.
- Prepare the Slope and Drain Submission with a Water Quality Treatment memorandum after the Preliminary Bridge Plan Submission while negotiating Part B efforts.
- Preliminary ROW Plans

SCOPE OF SERVICES

The AECOM scope of services is as follows:

Task 1.0 Project Management, Coordination, Communications, (PMCC)

The PMCC and administrative tasks anticipated for the project include:

- 1.1. Project initiation, planning, and internal staff mobilization. (Assumes 8 hours for PM and Administrator plus 1 hr for each of five (5) Subconsultant Contracts for the PM and Administrator.)
- 1.2. Project Kick-off Meeting with NHDOT-BoBD, AECOM PM & design staff (7)
- 1.3. Detail scheduling (Gant Chart) & monthly updates (assume a 30 month duration with scheduling revised every other month.)
- 1.4. Invoicing & Monthly Progress Reporting (assume 30 AECOM Invoices plus total of 40 subconsultant Invoices = 70 at 1 hr per Invoice.)
- 1.5. Ongoing Coordination and Communications with NHDOT-BoBD & Project Team. (Assumes ½ hour per week for 30 months for PM and .25 hours per week for Bridge Lead and Administrator.)
- 1.6. Project Safety Plan (covering general site visits & detailed/snooper-truck inspection)
- 1.7. QA/QC oversight

Task 2.0 Request & Review Existing Information provided by NHDOT-BoBD

The project team will request pertinent existing reference information for early review including:

- 2.1. Existing Bridge plans (Flood Control Project No. 4-A Davisville Rd, October 1940), Bridge Plans, Nov 1940, other)
- 2.2. Existing inspection reports.
- 2.3. Existing (prior) bridge deck coring reports if available.
- 2.4. Existing repair plans or reports if available
- 2.5. Existing load ratings calculations & Form4 (if available)
- 2.6. Traffic Crash Data for Safety Analysis (peak volume traffic during construction season)

Task 3.0 Field Investigations.

- 3.1. AECOM will host a facilitation meeting to coordinate between the AECOM Team and NHDOT. Meeting will include an initiation of survey and right-of-way efforts and will include a project overview, turnover of DOT project data and ROW files and establish project limits.
- 3.2. Preliminary field visit to reconcile data (PM, Lead Bridge Designer, Lead Roadway Designer, Lead Traffic Engineer). Field visit for Bat Survey is provided for in Task 10.4 of Early Environmental Action under Hoyle Tanner and Associates' scope document.
- 3.3. Field visit by two AECOM Hydraulics staff (Hydraulics Engineer and support staff member) for evaluating the site and obtaining sedimentation samples as needed in channel and embankments as safety permits for scour assessment needs.
- 3.4. An AECOM NH Certified Wetland Scientist will identify the boundaries of wetlands within 200 feet of anticipated bridge repair/rehabilitation work and place wetland flagging to delineate the boundaries present. In addition, AECOM will also prepare a Wetland Delineation Report describing the wetland resources present, general boundaries; and the respective Cowardin classifications; functional assessment evaluation; and photographs.

Task 4.0 Perform Structural Condition Inspection Program including: Field Inspection and GPR/Sonic/Ultrasonic Girder and Substructure Condition Survey

The Project Team will coordinate with NHDOT-BoBD to prepare for and perform a detailed field inspection of the existing rigid frame girder arches and substructure elements and perform a Sonic/Ultrasonic testing along with a GPR survey to determine structural condition and extents of repairs necessary and prepare summary memoranda as follows:

- 4.1. A joint pre-inspection site review by AECOM's PM and AECOM's inspection Team Leader and NDT's inspection Team Leader will be performed in advance of the work for planning purposes and preparation of the Project Safety Plan. (Note: NDT time is under separate proposal for Task 4.4 as an AECOM Direct Expense).

4.2. AECOM will meet/coordinate with NHDOT-BoBD after the initial site review to discuss the work, safety considerations, and pre-arrange the inspection program work access, scheduling & duration, coordination of traffic control, and any other requirements necessary to facilitate the work.

4.3. Detailed Bridge Inspection (AECOM):

- AECOM bridge inspectors will perform a detailed field inspection in accordance with the NHDOT Bridge Inspection Manual, March 2017-v1.0; specifically, Section 5.2.3.1.2, In-Depth Inspections by Consultants. This field inspection will exclude the existing bridge deck and be performed for the rigid frame girders and substructure piers, abutments and exposed portions of pier footings. The inspection shall be performed with rehabilitation of these elements in mind, including detailed measurements, notes, and photos of deteriorated areas. Exposed concrete areas of the substructure will be sounded where accessible and deteriorated and hollow areas noted. Bearings will be inspected hands-on at the abutments to evaluate and quantify potential repairs or replacement. It is assumed the entire deck will be replaced. However, the underside of the deck will be sounded to identify current or projected unsound areas requiring safety repair prior to initiation of rehabilitation or staging construction. This inspection will also aid in assessing the deck demolition impacts on existing monolithic rigid frame girders and demolition approach that would be taken to preserve integrity of the existing girder frames.
- The underside and web faces of the existing rigid frame girders and diaphragms will be visually inspected and sounded with hammers to identify suspect deteriorated areas, extent of spalls or member loss, extent of cracks and source of efflorescence leaching.

It is assumed that NDT and AECOM will provide an Under-Bridge-Inspection-Unit (UBIU) for access and traffic control (signs & cones), as necessary, for the inspection activities. AECOM will subcontract these services over a 2- day period. (NDT will subcontract these services over a 3- day period). Overtime hours would be included for a contingency to complete their respective inspection and testing work with the lane closures and the UBIU.

- Girder and substructure concrete core locations will be identified for subsequent testing by NDT corporation for chloride ion content, carbonation and concrete strength.
- An Inspection Summary Memorandum (ISM) will be prepared and submitted to the Department for reference in advance of the Bridge Rehabilitation Report. The ISM will detail and summarize the results of the detail field inspection with narratives, sketches with notes, and photos. The memorandum will document any significant concrete deterioration of the rigid frame girders, diaphragms, abutments, piers, exposed pier footings, condition of bearings and field measurements of member section losses to

the extent observable. The condition of the Bridge bituminous pavement WILL NOT be documented.

- 4.4. Non-Destructive Testing (NDT) (by NDT Corporation) GPR/Sonic/Ultrasonic Rigid Frame Girder Arch and Substructure Condition Survey (Provided under AECOM Direct Expense for NDT Corporation): For NTD Scope under this Task see NDT Corporation Scope document. Scope hours under AECOM staff are for coordination with NDT on the NDT scope effort.

Task 5.0 Rehabilitation Report: Prepare Bridge Rehabilitation Report

AECOM will prepare a Rehabilitation Report that will summarize existing conditions and identify the rehabilitation options. Project objective will be defined and Field data from NDT inspections, as-built plans and existing inspection reports will be reviewed to establish rehabilitation options. Available geotechnical data will be assessed for further needs. The AECOM Inspection Summary Memorandum and the NDT GPR/Sonic/Ultrasonic Rigid Frame Girder Arch and Substructure Condition Survey Report including the Service Life Modeling will be attached as appendices to the Bridge Rehabilitation Report. Findings from those surveys will be summarized in the Report to evaluate the options. Options will be evaluated for natural and cultural resource impacts, construction staging, and traffic limitations. Estimated costs will be documented, and preferred rehabilitation option recommended for advancement to the TS&L Study.

- 5.1. Provide Project Description that includes project limits, general history of project site and subject bridge, general source of existing and new project data resources used to compile report, goals of the rehabilitation report and general discussion for basis of rehabilitation options being considered.
- 5.2. Identify Natural and Cultural Resource impacts as relates to bridge rehabilitation options.
- 5.3. Provide Existing Conditions as related to existing bridge deterioration. Compile data and photos, reference and summarizing AECOM field investigation and NDT findings.
- 5.4. Determine and document limits of rigid frame girder arch concrete repairs (Bridge deck assumed to be fully replaced).
- 5.5. Determine and document limits of pier and substructure repair
- 5.6. Determine and document limits of pier abutments and exposed footing repair.
- 5.7. Evaluate the need for bearing or beam end repairs.
- 5.8. Determine requirements for temporary shoring and jacking needed for beam end or bridge seat repair.

- 5.9. Preliminary design check for un-shored girder during deck demolition and replacement vs. shoring and protective deck shielding spanning river.
- 5.10. Evaluation of replacement bridge rail and approach rail transitions.
- 5.11. Determine load capacity of the existing bridge. A load rating will be performed in accordance with Chapter 6 and 12 of the NHDOT Bridge Inspection and Bridge Design Manuals and the AASHTO Manual for Bridge Evaluation (MBE), 3rd edition. To assess potential reuse of the concrete rigid frames, the rating will use LRFR methodology for the HL-93 loading. The equivalent HS load rating factor will also be reported. Members assumed to be in the analyses are the replacement concrete deck, one interior and one exterior concrete rigid frame.

The Frame Member Definition capability of AASHTOWare BrR software will be used for structural analysis, computation of member capacities, and determination of load ratings. Rigid frame columns will be included in the model for calculation of force effects but assumed not to control the overall structure rating. To the extent applicability, BrR will be used to develop loads and distribution factors internally. Additional loads, if required, will be calculated by hand and added to the BrR input. Quality control will include verification of a representative sample of software output, ensuring appropriate design codes have been adhered to, and that the analysis methods utilized are appropriate for the structure.

A load rating report in letter format will be provided to elaborate on the modeling techniques utilized, assumptions made, and interpretation of the results. The load rating package will include the following attachments:

- Supporting calculations of BrR input.
 - A discussion of all assumptions used to conduct the load rating
 - Sketches and diagrams of areas with observed concrete deterioration indicating location, extent of deterioration, and remaining section (note it is anticipated that the rating will be based on fully rehabilitated members).
 - Printouts of the BRR Bridge Workspace (BWS) Report of rating input and output.
 - A completed Bridge Capacity Summary sheet (Form 4) bearing the seal and signature of a P.E. registered in New Hampshire.
- 5.12. Provide Rehabilitation and Repair Options Description.
 - 5.13. Preliminary design of new exterior fascia rigid frame T-beam arch and column utilizing cast-in-place (cip) concrete construction.
 - 5.14. Preliminary design of new exterior fascia rigid frame T-beam arch and column utilizing precast and post-tensioning construction.
 - 5.15. Identify Traffic Impacts associated with performing rehabilitation work.

- 5.16. Prepare Estimated Rehabilitation Option Costs from collaboration with Construction Expert Consulting.
- 5.17. Prepare Feasibility and Recommendation of rehabilitation option to advance for further consideration in the TS&L Study.

Task 6.0 TS&L: Prepare Bridge Type Size and Location (TS&L) Report

AECOM will prepare a Type Size and Location (TS&L) Report that will assess replacement alternatives against the preferred rehabilitation alternative brought forward from the Rehabilitation Report. It is assumed that the rehabilitation alternative will be evaluated against a single span steel bridge alternative. The Study Report will follow, in general, the TS&L outline per Section 2.8 and Bridge Design TS&L Checklist of Appendix 2:8-A1 of the Bridge Manual, as applicable. AECOM will determine the preferred alternative by applying considerations for, but not necessarily limited to, geometric, environmental, project staging and stage construction, foundations, geotechnical, structural, hydraulics, and roadway geometry, intersection, sections and slope and drainage, maintenance, utilities, traffic control and phased construction, Right-of Way, cultural resources, aesthetics, feasibility and costs. Additional preliminary design calculations for unique structural issues will be performed to verify that the alternatives remain feasible. Advantages and disadvantages, remaining cultural and natural resource issues and costs will be compared to arrive at the preferred alternatives.

- 6.1. Prepare Cover, Title Sheet, and Index /Table of Contents.
- 6.2. Perform additional data check request and review of required data not identified in Task 2.0
- 6.3. Assemble necessary photographs to the extent that provide a good understanding of the existing bridge, bridge site, and approaches.
- 6.4. Prepare Introduction describing the report, references, and other reports used to prepare the TS&L study.
- 6.5. Provide a Project Description clearly defining the project, project area, goals, and summary of the preferred alternative. A vicinity map shall be shown.
- 6.6. Prepare a listing of Design Criteria to be used for the bridge replacement or rehabilitation design and relative approach roadway design within project limits.
- 6.7. List design exceptions (if needed)
- 6.8. Perform the Structural Study and documentation for the applicable constraints noted above documenting how each eliminate or support the preferred alternatives.
- 6.9. Evaluate new deck joint replacements including strategies for jointless bridge deck.

- 6.10. Design replacement bridge rail and approach rail transitions for either alternative.
- 6.11. Preliminary design of single-span steel arch girder superstructure and abutment substructures.
- 6.12. Evaluate work phasing and maintenance of one lane of alternating traffic on bridge during construction.
- 6.13. Evaluate Accelerated Bridge Construction (ABC) techniques to mitigate negative impacts to the traveling public, including coordination with traffic engineers
- 6.14. Collaborate with Environmental team on potential environmental impacts and resulting permitting requirements for work anticipated as the result of the bridge rehabilitation/replacement study and early historic coordination.
- 6.15. Prepare Executive Summary
- 6.16. Develop TS&L Plan, Profile and Typical Section for each of the Alternatives. Assume 6 sheets.
- 6.17. AECOM will collaborate with Construction Expert Consulting team for preparation of a Bottom-Up Estimate that will be prepared as part of the assessment for the preferred alternative. This estimate will reflect more realistic construction costs than a typical Slope-Intercept Costs per Square Foot prepared at the TS&L concept level. **This work will be supported by our construction subcontractor, Construction Expert Consulting, Inc. ("CXC") as an AECOM Direct Expense. (See Task 7.0 under Construction Expert Consulting, Inc. ("CXC") Scope document.)**
- 6.18. QA/QC Review
 - AECOM will make an electronic (.pdf) file format submission of the DRAFT Bridge TS&L Study Report, attend a review meeting, and subsequently reconcile NHDOT Comments into the FINAL Bridge TS&L Report to be submitted in bound hard copy and electronic (.pdf) file format.

Task 7.0 Concepts, Estimating, Construction Scheduling and Constructability Reviews (Provided under AECOM Direct Expense of Construction Expert Consulting, Inc. ("CXC"))

AECOM's construction consultant, ("CXC"), will assist AECOM through the Rehabilitation Report and TS&L Study Report and Preliminary Plan phases with input and advice on constructability assessment, accelerated bridge construction (ABC), shoring system concepts, bottoms-up estimating and construction time duration/scheduling in various areas. Scope hours under AECOM staff are for site visit and kick-off meeting with CXC. (Task 7.1 as listed under CXC Scope). For CXC Scope under this Task see Construction Expert Consulting, Inc. ("CXC") Scope document.

Task 8.0 Bridge Hydraulic Study

- 8.1. **Hydrologic Analysis.** An existing Hydraulic Analysis and Scour Evaluation Report is not available. Behavior of the hydraulics and geomorphology at the bridge site and associated bridge scour mechanism(s) needs to be understood for the evaluation of the potential scour and existing scour countermeasures and the hydraulic and scour designs for the rehabilitated or replacement bridge. The Hydraulics should be Performed as early as possible following the selection of the preferred alternative by NHDOT. All work will be done in accordance with NHDOT BDM and AASHTO requirements and FHWA guidelines. USGS Gaging Station 0108700 is located on the Blackwater River about 2 miles downstream of the bridge. The USCOE Blackwater Dam is approximately 700 feet upstream of the bridge. The records from the USGS, USCOE, StreamStats and other available sources will be used to determine the hydraulic design, scour design and scour check flood discharges at the bridge.
- 8.2. **Hydraulic Analysis.** The hydraulic analysis will include a 1-D hydraulic model using the USCOE HEC-RAS model to estimate the hydraulic profiles of the Blackwater River in the vicinity of the bridge (BDM Section 2.7). Bathymetric survey will be required since there is no available survey. It will be performed by the subconsultant Doucet Survey, and this is described in Task 15, Survey. It is proposed that nine (9) river cross sections be taken in the vicinity of the bridge. This will include three (3) cross sections upstream and six (6) downstream. The FEMA Flood Insurance Study for Merrimack County (2010) for the Blackwater River ended about 1,700 ft downstream of the project bridge. The FEMA hydraulic model will be obtained and may provide information for the HEC-RAS downstream boundary condition. The hydraulic model and analysis will include one bridge alternative (existing or replacement bridge) for the scour design and check flood conditions. This modeling does not include duplicate or corrective effective hydraulic models or pre-, post- or temporary construction condition models.
- 8.3. **Stability Analysis and Countermeasures.** A scour evaluation will be conducted, and scour countermeasures and channel protection will be designed, as required. The hydraulic variables obtained from the hydraulic model will be used to predict potential scour at the existing or proposed bridge, as well as to design any scour countermeasures. This work will be done in accordance with FHWA HEC-18, the scour guidelines, and HDS-7 for hydraulic design of bridges. The potential scour will be computed for the scour design and scour check floods. Using these parameters and the FHWA publication HEC-18 – Evaluating Scour at Bridges (2012), all elements of scour will be calculated including: aggradation / degradation, contraction scour, and pier and abutment scour, as applicable. This includes a rock scour analysis to determine the erodibility of the rock. These results will provide information on the types of scour mechanisms and the expected depths of scour at the substructure units.
- 8.4. **Preliminary Hydrologic and Hydraulic Report.** A Technical Report describing the evaluation and findings will be prepared. The report will

summarize the procedures and results of the hydraulic and scour analysis. The potential scour depths and scour mechanisms will be used for the design of any scour countermeasures for the rehabilitated bridge or the foundation design of the replacement bridge. This Report will be submitted to the Department for review and approval prior to the preparation of the Final Hydraulic Report.

- 8.5. **Final Hydraulic Report.** The Final Hydraulic Design Report shall include the hydraulic and scour analysis, and it shall incorporate the comments of the Department. It shall also include any required scour countermeasures and/or channel protection and supporting documentation. It shall follow the guidelines of Final Hydraulic Design Report in accordance with the NHDOT BDM Manual Section 2.7.8 and the Checklist in Appendix 2.7-A9.

Task 9.0 Conceptual Roadway and Traffic Layouts,

- 9.1. Conceptual roadway and traffic control layouts will be developed for both the bridge rehabilitation and replacement options. The design will include horizontal alignments, vertical alignments, typical sections and pavement layout. The traffic control concepts will include staging alignments and layouts as well as detour options. The design will be advanced to a point where preliminary recommendations and cost estimates are performed, and the Engineering Report development will begin. The conceptual layouts will be submitted as roll plans.
- 9.2. Obtain Traffic Counts
- 9.3. Perform Traffic Analysis
- 9.4. Evaluate temporary signalization, traffic control measures and devices addressing single-lane traffic, approach curve and White Plains Road intersection.

Task 10.0 Early Environmental Action

Below is AECOM's Scope for this Task. Hoyle, Tanner & Associates, Inc. (Hoyle, Tanner) as a Direct Expense for Major Sub, will be performing major role for the Early Environmental Tasks. For Hoyle, Tanner scope for this Task see Hoyle, Tanner & Associates, Inc. Scope document.

- 10.1. **Initial Contact Letters.** AECOM's Senior Environmental Scientist and Senior Archaeologist will provide Quality Control review of draft contact letters prepared by Hoyle, Tanner.
- 10.2. **On-Line Regulatory Reviews – Cultural Resources.** AECOM's Senior Archaeologist will perform online reviews of the EMMIT system for cultural resources.
- 10.3. **Resource Agency Meetings.** AECOM's Senior Archaeologist will email a request to be placed on the agenda for the BOE Cultural Resources Program monthly meetings. This scope assumes two (2) meetings with this resource

agency. Task includes completion of meeting minutes and submittal to parties for input and finalization.

- 10.4. **NEPA documentation.** AECOM's Senior Environmental Scientist will provide quality control review of the Non-Programmatic Categorical Exclusion documentation prepared by Hoyle, Tanner.
- 10.5. **Cultural Resources documentation.** Initial consultation with NHDHR and the EMMIT system has provided information that the bridge is considered individually eligible for listing in the National Register of Historic Places (NRHP) and is also contributing to a potential NRHP eligible historic district (Blackwater Dam Flood Control District). AECOM's Architectural Historian will prepare the Transportation Request for Project Review (RPR) form for submittal to the BOE Cultural Resources Program. As part of the RPR, qualified cultural resources staff meeting the Secretary of the Interior's standards (36 CFR 61) will conduct a file review and site visit. Work will also include research and preparation of two Effects tables, one each for the bridge and dam historic district to be prepared by Preservation Company. The Effects tables assumes removal of the bridge. **Preservation Company will be a Sub to AECOM and their costs will appear as a Direct Expense to AECOM. Preservation Company final scope and fee will appear as a separate Proposal.** Additional NHDHR inventory may be needed for the Blackwater Dam historic district area. A project area form was completed for the dam in 2000, but states additional information is necessary. This area form update will be completed by Preservation Company under Task B of their scope. Though there are no recorded archaeological sites within the presumed APE, the area may yet retain archaeological sensitivity. AECOM's Senior Archaeologist anticipates preparation of an archaeological sensitivity study and shovel test pit (STP) testing (Phase IA/IB).

Activities required to mitigate any adverse effects is difficult to be estimated at this time. Assuming replacement or substantial rehabilitation is required, a range of mitigation options could apply, such as HAER level documentation and/or an interpretive sign. Allocation for this effort has been provided for under Mitigation Tasks D and Task E of Preservation Company scope of work. AECOM's Architectural Historian will provide QC review of the Area Form update, Effects Tables, HAER Documentation as well as other Mitigation documentation as provided by Preservation Company in their Tasks B, C, D and E. AECOM assumes the Senior Archaeologist will attend 2 public involvement meetings at 1 hour each associated with Section 106 efforts and this time is included in Task 10.5.

- 10.6. **Environmental Commitments.** AECOM will work with Hoyle, Tanner in reviewing and establishing the necessary commitments to be made to avoid, minimize or mitigate project impacts identified through the process of evaluating the Non-Programmatic CE Criteria.
- 10.7. **Non-Programmatic CE Impact Summary Review and Finalization.** AECOM will review the draft version of the Non-Programmatic CE prepared

by Hoyle, Tanner before it is submitted to NHDOT for review and comment. AECOM will provide a final version for signature and filing.

Task 11.0 Public Involvement

Below is AECOM's Scope for this Task. Hoyle, Tanner & Associates, Inc., as a Direct Expense for Major Sub, will be performing major role for the Public Involvement Task. For Hoyle, Tanner scope for this Task see Hoyle, Tanner & Associates, Inc. Scope document.

- 11.1. AECOM/Hoyle, Tanner will provide assistance to NHDOT-BoBD for the public involvement effort for the project by preparing meeting presentation materials and attending four meetings. It is assumed that there will be one early "Blank Plan" public information meeting to gather initial reaction to the project and later two (2) Town of Webster officials informational meeting. AECOM will attend and provide support for a public hearing. Attendance at public meetings is assumed to include the PM, Lead Bridge Engineer, and Senior Traffic Planner from AECOM and Environmental Engineer from Hoyle Tanner. It is assumed that NHDOT-BoBD will coordinate and arrange with the Town for suitable meeting locations and appropriate public notice. AECOM will coordinate the meetings with Hoyle, Tanner. AECOM will review Hoyle, Tanner PowerPoint presentations and boards based on AECOM graphics. AECOM will review Hoyle, Tanner meeting minutes.

Task 12.0 Preliminary Plans (40%)

Upon acceptance of the TS&I. Report by the Department, the design and plans for the preferred option and traffic control plans will be progressed by AECOM to a 40% design level.

- 12.1. Bridge geometry calculations including profiles, cross slopes, top of concrete elevations, stations and bearings and top-of-formwork.
- 12.2. Deck Design calculations
- 12.3. Finalize selected alternative analysis and design:
 - A new widened Replacement structure with single-span steel arch girders and composite cast-in-place deck or a Rehabilitated structure widened with a cast-in-place or precast P/T rigid frame concrete girder arch and new full width composite deck.
- 12.4. Preliminary Roadway Plans (30%) will be developed for the preferred bridge alternative. The design will be performed in accordance with the Highway Design Manual. The Preliminary Roadway Plans will include preliminary right of way impacts: 10 (see assumed Preliminary Plan List in Clarifications section)
- 12.5. Preliminary Traffic Control Plans will be developed for the preferred bridge alternative. The work effort assumes the proposed construction staging requires an alternating one-way traffic condition, and temporary signalization will be necessary to safely control the vehicle movements over the bridge in each direction. The detour plan will be further advanced for the contractor's use if

- necessary, during construction: 4 (see Preliminary Plan List in Clarification section)
- 12.6. Preliminary Construction Phasing Sections: 1 (see assumed Preliminary Plan Sheet List in Clarifications section)
 - 12.7. Preliminary Bridge Plans: 13 (see assumed Preliminary Plan Sheet List in Clarifications section)
 - 12.8. Collaborate with Environmental Team for document preparation needs and attend meetings with Cultural Resources and Natural Resource Agencies.
 - 12.9. Finalize Hydraulic Study (See Task 8.0)
 - 12.10. Preliminary Bottoms-Up Cost Estimate
 - 12.11. QA/QC Review.
 - 12.12. Finalize Engineering Report. THIS TASK IS NOT USED. It is assumed that an Engineering Report is not required.
 - 12.13. AECOM will make an electronic plan submission, attend one review meeting, and subsequently reconcile NHDOT comments for the Preliminary Plans.
 - 12.14. Finalize Preliminary Bottoms-Up Cost Estimate. THIS TASK IS NOT USED. The preliminary estimate of Task 12.10 would not have an update.
 - 12.15. QA/QC Review. THIS TASK IS NOT USED. There will be no “re-submittal” of preliminary plans. Comments would be incorporated in the next submission which is not part of this project scope.

Task 13.0 Prepare Slope and Drain Submission

Upon approval of the Preliminary Bridge and Roadway plans the Slope and Drain Submittal will be developed in accordance with the Highway Design Manual.

- 13.1. The Slope and Drain design will include the drainage design, stormwater treatment systems, erosion control measures, temporary and permanent easements and topline cross sections. This will be a cut sheet submittal. It is assumed 12 cut sheets will be required. In this Task AECOM will provide a memo addressing the provisions of Water Quality Treatment.
- 13.2. Preliminary ROW plans will be developed after the Slope and Drain design has been completed.

Task 14.0 Environmental Permits

The majority of Task 14 will be conducted by Hoyle, Tanner with oversight and Quality Control review by AECOM.

- 14.1. AECOM will provide quality control review of permit applications prepared by Hoyle Tanner, including applications for NH DES Wetland and Shoreland permits and the USACE Section 404/10 approval
- 14.2. NH DES Wetland Permit Application Plans

- a. AECOM will develop the Wetland Impact Plans for Hoyle, Tanner (assumed 3 cut sheets are required)
 - Front Sheet
 - Symbols Sheet
 - Wetland Plan Sheet
- 14.3. US Army Corps of Engineers (USACE) Permit - **No AECOM scope**. See Hoyle, Tanner Scope document.
- 14.4. NH DES Alteration of Terrain and Shoreland Permits – **Not Required**
- 14.5. NH DES 401 Water Quality Certification – **Not Required**

Task 15.0 Survey (Provided under AECOM Direct Expense of Doucet Survey LLC).

AECOM subcontractor Doucet Survey LLC will provide survey, mapping and electronic base plans as necessary for the project. For Doucet Survey scope for this Task see Doucet Survey LLC Scope document.

CLARIFICATIONS

1. AECOM and NDT Corporation will provide an Under-Bridge Inspection Unit (UBIU), traffic control (signs and ones) and required uniformed officers. This expense will be a direct expense within AECOM and NDT's fee proportioned based on respective days of services by each
2. Soil borings, rock coring and Geotechnical Report will be provided by NHDOT. This includes the testing and computation of the Erodibility Index for the scour analysis of the substructure units in accordance with FHWA HEC-18, "Evaluating Scour at Bridges", Chapter 4.
3. There are no known utilities on the bridge at this time and no future utilities are anticipated.
4. It is assumed that compensatory wetland mitigation will not be needed, and that mitigation will be limited to standard BMPs such as sediment and erosion controls.
5. At this time, services for technical studies, such as archaeological sensitivity report or determination of effects report for historical and/or archaeological studies are difficult to scope in this proposal. Scoped services consist of preparation of the RPR and participation in meetings, and preparation of the effects table and associated research. Assuming bridge removal, the table would be simple. If the project does end up being rehabilitation, the effort is more complex and would require additional scope. Preservation Company maintains it is difficult to scope for mitigation activities before we get further into design and consultation with NHDHR and BOE cultural. Depending upon the outcome of the agency review completed during the Non-Programmatic CE process, a scope amendment may be submitted to engage

these efforts for our subconsultant, The Preservation Co., AECOM and the Department can discuss further how to include this effort in Part A Scope so as not to have a potential delay in the project to approve a scope change.

6. **It is noted that either a full replacement or widening (with a deck replacement) will require a closed drainage system. No open scuppers will be considered on a new bridge or deck per the new NHDES rules and any runoff from the increased impervious surface will need to be treated. A drainage treatment swale will most likely be required due to increase in non-pervious surfaces as well.**
7. AECOM will obtain new traffic count data necessary for AECOM to analyze existing and future construction period conditions necessary to prepare the traffic management plans. It is assumed that NHDOT will provide any additional existing traffic data should it be available. NHDOT will provide the necessary crash data for AECOM to perform the Safety Analysis.
8. It is assumed for inspection and NDT testing estimating purposes that bridge rehabilitation alternative includes full deck replacement.
9. Only Part A Scope is addressed at this time. For the purposes of preparing a fee estimate the Preliminary Plan Sheet List assumes a Bridge Rehabilitation with additional sheets required for rehabilitation details. Typical bridge replacement sheets are assumed similar for the sheet development list. The following Preliminary Plan Sheet List for the Preliminary submission stage is assumed for the basis of estimating:

| Preliminary Plans Sheet List | |
|------------------------------|--|
| Sheet No. | Title |
| 1. | Front Sheet |
| 2. | General Plan & Elevation (Notes, Quantities, Hydraulic Data) |
| 3. | Site Plan & Profile |
| 4. | Construction Access and Grading Plan |
| 5. | Boring Log (1 of 2) |
| 6. | Boring Log (2 of 2) |
| 7. | Construction Phasing Sections |
| 8. | Abutment A Widening Developed View |
| 9. | Abutment B Widening Developed View |
| 10. | Pier Widening Developed View |
| 11 | Typical Repair Concepts |
| 12. | Framing Plan |
| 13. | Girder Elevations and Repair Plan |
| 14. | Typical Deck Section |
| 15. | Roadway Typical Sections (1 sheet) |
| 16. | Roadway General Plan (1 sheet) |
| 17. | Roadway Profile |
| 18. | Traffic Control Plan 1 of 2 |
| 19. | Traffic Control Plan 2 of 2 |
| 20. | Traffic Control Detour Plan |
| 21. | Traffic Control Details |
| 22. | Roadway Details |
| 23-28 | Roadway Cross-sections (6 sheets) |
| 28 | TOTAL # of Plan Sheets Estimated |
| | |

COST PROPOSAL

Cost proposal to complete this effort can be found in Attachment B.

SCHEDULE

Based on the above tasks and approximated durations, we anticipate the following preliminary milestone dates:

- Notice to Proceed – January 2023
- Kick-off meeting & Preparations for Bridge inspection – February 2023
- Detailed Bridge Field Inspection by AECOM and NDT – April 2023
- Soil Borings and Geotechnical Report by NHDOT – August 2023
- Hydraulics Report – November 2023
- Field sampling (cores) and materials testing by NDT Corporation – April 2023
- Field Inspection and Testing Results Report – June 2023
- Electronic base map plan prepared by Doucet Survey – May 2023
- Bridge Rehabilitation Report Submission – November 2023
- Bridge TS&L Report & Preliminary Staging/Traffic Plan Submission – February 2024
- Public Hearing – May 2024
- Preliminary Plans (40%) – August 2024
- Section 106 – November 2024
- NEPA – May 2025
- Non-Programmatic CE and Section 4f – May 2025
- Preliminary Plans, Specifications & Estimate (PPS&E) (80%) – N/A (Part B)
- Plans, Specifications & Estimate (PS&E) (90%) – N/A (Part B)
- Contract Plans (100%) – N/A (Part B)
- Project Advertisement by NHDOT (earliest) – N/A (Part B)
- As-Built Load Rating Report/Form 4 – N/A (Part B)

A more detailed project schedule in Gant chart format (indicating inter-dependencies) will be prepared as part of the project initiation effort and updated monthly for progress tracking purposes.

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.

AECOM Technical Services, Inc.

(Company)

By: _____

John W. Anderson
Vice President

(Title)

Date: 02/08/2024

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

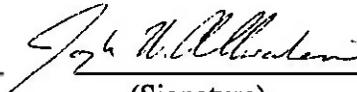
**CONSULTANT DISCLOSURE STATEMENT
FOR PREPARATION OF
ENVIRONMENTAL EVALUATIONS**

I hereby affirm that I have read and reviewed the Council on Environmental Quality (CEQ) regulation [40 CFR 1506.5(b)(4)] 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.

02/08/2024

(Date)



(Signature)

Attachment 3

CERTIFICATION OF CONSULTANT/SUBCONSULTANT

I hereby certify that I am the Vice President and duly-authorized representative of the firm of AECOM Technical Services, 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):

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.

02/08/2024

(Date)


(Signature)

Attachment 4

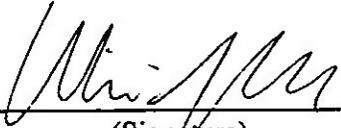
CERTIFICATION OF STATE DEPARTMENT OF TRANSPORTATION

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):

3/14/24
(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.

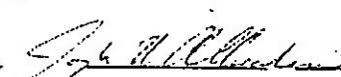
Consultant

WITNESS TO THE CONSULTANT

By: 
Project Controls Analyst

Dated: 02/08/2024

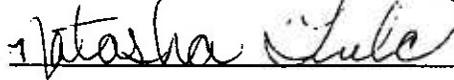
CONSULTANT

By: 
Vice President
(TITLE)

Dated: 02/08/2024

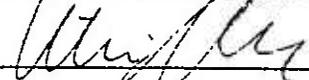
Department of Transportation

WITNESS TO THE STATE OF NEW HAMPSHIRE

By: 

Dated: 3/14/24

THE STATE OF NEW HAMPSHIRE

By: 
Director of Project Development
for DOT COMMISSIONER

Dated: 3/14/24

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: 04/27/24

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

State of New Hampshire

Department of State

CERTIFICATE

I, David M. Scanlan, Secretary of State of the State of New Hampshire, do hereby certify that AECOM TECHNICAL SERVICES, INC. is a California Profit Corporation registered to transact business in New Hampshire on September 27, 1995. 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: 237154

Certificate Number: 0006671927



IN TESTIMONY WHEREOF,

I hereto set my hand and cause to be affixed
the Seal of the State of New Hampshire,
this 19th day of April A.D. 2024.

A handwritten signature in black ink, appearing to read "David M. Scanlan".

David M. Scanlan
Secretary of State

Certificate of Authority # 2

(Corporation, Non-Profit Corporation)

Corporate Bylaws

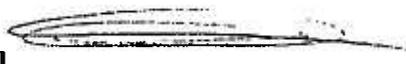
I, Armond Tatevossian, hereby certify that I am duly elected Clerk/Secretary/Officer of
(Name)
AECOM Technical Services, Inc.. I hereby certify the following is a true copy of the
(Name of Corporation)

current Bylaws or Articles of Incorporation of the Corporation and that the Bylaws or
Articles of Incorporation authorize the following officers or positions to bind the
Corporation for contractual obligations Vice President/Authorized Signatory
(list officer titles or position)

I further certify that the following individuals currently hold the office or positions
authorized: Joseph Allwarden
(list individuals holding positions authorized)

I further certify that it is understood that the State of New Hampshire will rely on this
certificate as evidence that the person listed above currently occupies the position indicated
and that they have full authority to bind the corporation. This authority **shall remain valid**
for thirty (30) days from the date of this certificate.

DATED: February 8, 2024

ATTEST 
(Name & Title)

Armond Tatevossian
Secretary





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
04/03/2024

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 Marsh Risk & Insurance Services CA License #0437153 633 W. Fifth Street, Suite 1200 Los Angeles, CA 90071 Attn: LosAngeles.CertRequest@Marsh.Com CN101348564-STND-GAUE-24-25 04 2027 | CONTACT NAME: Marsh U.S. Operations PHONE (A/C, No., Ext): 866-966-4664 FAX (A/C, No.): 212-948-0533 E-MAIL ADDRESS: LosAngeles.CertRequest@marsh.com | | | | | | | | | | | | | | | | | | | | |
|--|---|-------------------------------|--|--------|--|--|-------|-----------------|--|-----|---|--|-------|-------------|--|--|-------------|--|--|-------------|--|
| | <table border="1"> <tr> <th colspan="2">INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A : ACE American Insurance Company</td> <td></td> <td>22667</td> </tr> <tr> <td>INSURER B : N/A</td> <td></td> <td>N/A</td> </tr> <tr> <td>INSURER C : Illinois Union Insurance Co</td> <td></td> <td>27960</td> </tr> <tr> <td>INSURER D :</td> <td></td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> <td></td> </tr> </table> | INSURER(S) AFFORDING COVERAGE | | NAIC # | INSURER A : ACE American Insurance Company | | 22667 | INSURER B : N/A | | N/A | INSURER C : Illinois Union Insurance Co | | 27960 | INSURER D : | | | INSURER E : | | | INSURER F : | |
| INSURER(S) AFFORDING COVERAGE | | NAIC # | | | | | | | | | | | | | | | | | | | |
| INSURER A : ACE American Insurance Company | | 22667 | | | | | | | | | | | | | | | | | | | |
| INSURER B : N/A | | N/A | | | | | | | | | | | | | | | | | | | |
| INSURER C : Illinois Union Insurance Co | | 27960 | | | | | | | | | | | | | | | | | | | |
| INSURER D : | | | | | | | | | | | | | | | | | | | | | |
| INSURER E : | | | | | | | | | | | | | | | | | | | | | |
| INSURER F : | | | | | | | | | | | | | | | | | | | | | |

COVERAGES **CERTIFICATE NUMBER:** LOS-002734607-14 **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.

| NSR 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 GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER: | | | HDO G47343045 | 04/01/2024 | 04/01/2025 | EACH OCCURRENCE \$ 250,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 250,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 250,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$ |
| A | AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY <input type="checkbox"/> OTHER: | | | ISA H1073888A | 04/01/2024 | 04/01/2025 | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ |
| | UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$ | | | | | | EACH OCCURRENCE \$ AGGREGATE \$ \$ |
| A | 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 | WLR C50718748 (AOS) SCF C50718852 (WI Retro) | 04/01/2024 04/01/2024 | 04/01/2025 04/01/2025 | <input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 2,000,000 E.L. DISEASE - EA EMPLOYEE \$ 2,000,000 E.L. DISEASE - POLICY LIMIT \$ 2,000,000 |
| C | ARCHITECTS & ENG. PROFESSIONAL LIAB. | | | EON G21654693 005 "CLAIMS MADE" | 04/01/2024 | 04/01/2025 | Per Claim/Agg \$ 2,000,000 Defense Included |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Re: NHDOT WEBSTER X-A004(630) Client Ref No: 41429 PRELIMINARY DESIGN, Professional Liability Deductible: \$75,000.

State of New Hampshire and New Hampshire Department of Transportation are named as additional insured for GL coverage, but only as respects work performed by or on behalf of the named insured and where required by written contract. Contractual Liability is included in the General Liability coverage.

| | |
|--|--|
| CERTIFICATE HOLDER New Hampshire Department of Transportation 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 <i>Marsh Risk & Insurance Services</i> |
|--|--|