

PUBLIC NOTICE

REQUEST FOR QUALIFICATIONS DESIGN BUILD REHABILITATION OF THE BLAIR COVERED BRIDGE OVER THE PEMIGEWASSET RIVER – CAMPTON, NH

The Town of Campton is inviting a Request for Qualifications (RFQ) to completely rehabilitate the Blair Covered Bridge and to restore a 6-Ton capacity.

This project is described in the attached “Application – National Historic Covered Bridge Preservation Program.”

Proposal Instructions: Each response must include the following information:

1. Name, address, brief history and description of firm.
2. Résumés of key personnel to be assigned to this project.
3. Related projects / areas of expertise / experience. Include descriptions of other projects designed by this firm similar to this Project. Include reference contact information.
4. Design/Build Companies must have a minimum of three recent years experience with design and construction and rehabilitation of covered bridges.
5. A brief description of the firm’s approach to planning, designing and implementing this project.

Project information required is available at website <http://www.camptonnh.org/> or contact Ann Marie Foote, Town Administrator, Town of Campton, Main St. 1307 NH Route 175, Campton, NH 03223 for a copy of the project description. All inquiries concerning this request shall be made in writing and shall be submitted to: Ann Marie Foote, Town Administrator, Town of Campton, Main St. 1307 NH Route 175, Campton, NH 03223, Fax (603)726-4000.

Prior to Contract Award

1. RFQ’s (5 Five copies) will be judged by a Selection committee will pre-qualify and shortlist consultants to send a Request for Proposal (RFP).
2. Pre-qualified contractors will submit a RFP.

Proposal Due Date: All submissions must be dated and signed by the submitter and be received at the office of – Ann Marie Foote, Town Administrator, Town of Campton, Main St. 1307 NH Route 175, Campton, NH 03223, on or before July 20, 2009, no later than 4:00 pm.

Submissions received after the date and time specified will be marked as “Late” and will not be eligible for consideration in this process, and will be returned to the submitter unopened. There will be no exceptions to this requirement.

This is a rigid time frame which the Town of Campton needs to follow, and in turn, the Consultant need to abide by in order for the Town of Campton to present a “full and complete” package to the State.

**Blair Covered Bridge over the Pemigewasset River – Campton
NBI structure number: 003501170007600**

June 29, 2009

Flow Chart and Schedule for the Consultant Selection

June 2009

1. Prepare Request for Qualifications (RFQ) and process for Selectman – Subcommittee/Selectman (6/29)

July 2009

1. Send (6/30) and receive Request (7/20) For Qualifications (RFQ) for a Consultant - Selectman
1. Judge RFQ and Select a shortlist of consultants (10+/-) (7/23)– Subcommittee
2. Judge RFQ and Select a shortlist of consultants (3+/-) from the subcommittee's recommendation (7/27)– Selectman
3. Send Request for Proposal (RFP) to selected consultants (3+/-)(7/29), include interview date - Selectman

August, 2009

1. Receive (8/10) and review RFP's, hold interviews (8/17) with the shortlisted consultants and select the best qualified consultant (8/24) – Selectman
2. Notify the selected consultant (8/26), schedule scoping meeting - Selectman
3. Hold Scoping meeting Consultant (8/31) and Selectman

September 2009

1. Consultants prepare and submit scope of work (9/10)
2. Review (7/24) and negotiate scope of work prepared by Consultant (9/15) – Subcommittee/Selectman
3. Consultants prepare and submit Contract Proposal based with Fee based on the scope of work (9/18)
4. Review and negotiate Consultants Proposal (9/21) – Subcommittee/Selectman
5. Seek DOT and FHWA approval (9/22) for Phase I Preliminary Engineering contract

October thru November, 2009: Phase I, Preliminary Engineering

1. Award Phase I Preliminary Engineering contract (10/6)
2. Phase I: Engineering Study, preliminary plans, estimate, schedule and identify environmental permit impacts
3. Start Design/Build selection process

REHABILITATION OF THE BLAIR COVERED BRIDGE
OVER THE PEMIGEWASSET RIVER – CAMPTON,

ATTACHMENT A

**CONSULTANT SELECTION PROCESS
FOR
STATE BRIDGE AID COMPLIANCE**

Selection of a Consultant to provide design services (see **Attachment B**) will comply with RSA 21-I:22.

Firms to be considered for selection must demonstrate experience in the discipline required (bridge design) and have a minimum of two licensed professional engineers on staff, one of whom shall be registered in the branch classification of structural engineer.

A minimum of three firms shall be selected to provide a brief technical proposal which should address the following issues: Firm qualifications, project understanding, project approach, project schedule, and resumes of the project design team to be assigned to the project. This procedure may be supplemented with an interview of the firms being considered. Solicitation of the Request for Proposal (RFP) should include a description of the anticipated scope of work.

Upon review of the RFP's and conductance of interviews if so used, the municipality's selection committee shall rate the firms in order of preference. The top rated firm shall be notified of their standing and be requested to submit a fee proposal for services. The municipality shall provide the top rated firm with a copy of **Attachment B**, "Design Procedures for Municipally-managed State Bridge Aid Program Projects" to ensure that the Consultant understands the level of design detail and submittal requirements for NHDOT approval.

Should the municipality be unsuccessful in reaching a satisfactory negotiated fee with the top rated firm, it may terminate without prejudice and commence negotiations with the second rated firm. If no agreement can be reached with the second, the municipality can move onto the third. Once negotiations are terminated with a firm, they may not be reopened.

A copy of the negotiated contracted fee WILL be submitted to NHDOT prior to execution so that they may advise the municipality of any provisions or excess costs not qualifying for reimbursement.

REHABILITATION OF THE BLAIR COVERED BRIDGE
OVER THE PEMIGEWASSET RIVER – CAMPTON,

ATTACHMENT B

DESIGN PROCEDURES
FOR
MUNICIPALLY-MANAGED STATE BRIDGE AID PROGRAM PROJECTS

1. Purpose

These administrative procedures are applicable to all bridge projects designed by Licensed Professional Engineers for municipally-managed projects. All studies and plans shall be submitted through the municipality to NHDOT's Municipal Highways Engineer in the Bureau of Planning and Community Assistance for review and approval.

2. Engineering Study

The municipal Engineer or Consultant shall prepare an Engineering Study for the project to include the following:

A. Existing Conditions

This section shall contain a description of the existing bridge and roadway to include bridge width and length; type of bridge superstructure and substructure; and general alignment of the approach roadway, including any significant geometric or topographical conditions.

B. Design Criteria

This section shall contain a listing of the relevant design criteria and manuals to be used, including bridge loading and design speed. At a minimum, (see **Attachment 1**) the design of roadway elements shall conform to the current standards, specifications, policies and guidelines enumerated in the Department's Highway Design Manual and Bridge Design Manual, except as approved. Further, the contract documents for construction of the project shall require that all items of work shall comply with the material and construction requirements of the current Standard Specification for Road and Bridge Construction of the New Hampshire Department of Transportation, except as approved.

C. Proposed Roadway Alignment

This section shall include a description of the methodology and reasoning used to determine the proposed roadway alignment. The discussion shall include horizontal and vertical curves; travel way and shoulder widths; and impacts of the proposed roadway alignment, to include wetlands, utilities, other existing structures, and private property.

D. Bridge Renovation Studies and Recommendations

Bridge renovation studied shall be indicated in narrative and the recommended bridge type shown in plan, elevation and typical section along with the requisite reasoning therefor. The typical section shall portray the components of the substructure and superstructure, materials of construction, beam spacing, and dimensions of pavement, curbs, etc.

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E. Boring Layout and Logs

Borings shall be taken if determined necessary by the municipal Engineer or Consultant. The number and content of the boring logs shall be sufficient to present a reasonably accurate picture of subsurface conditions.

F. Hydrologic and Hydraulic Studies

The hydrologic and hydraulic parameters at the bridge sites shall be determined using accepted engineering methods.

G. Cost Estimate

An itemized cost estimate shall be furnished for the proposed bridge type and roadway alignment. Item numbers and names shall conform to the Item Description Master File as furnished by NHDOT.

H. Environmental Considerations

The Engineering Report should identify the natural, cultural, social and economic resources that may be affected by each of the alternatives considered. The final design should comply with applicable environmental laws, rules, regulations, and guidelines regarding, but not necessarily limited to, RSA 482-A (NH Fill and Dredge in Wetlands Act), RSA 227-C:9 (Directive for Cooperation in the Protection of Historic Resources) and Section 404 of the Clean Water Act (Federal Dredge and Fill Permit). Federal involvement in a project (e.g. Section 404 Permit) can trigger other Federal environmental regulations or requirements.

To facilitate compliance with RSA 227-C:9, the municipality/Consultant should schedule an initial meeting with the NH Division of Historical Resources (NHDHR) early in the Engineering Study Phase to identify potential historical or archeological concerns. To assist all participants in the process, that meeting should be scheduled through NHDOT's Bureau of Environment Cultural Resources Manager as part of NHDHR's attended bimonthly meetings conducted at the NHDOT to review cultural resource issues on a multitude of projects.

The Consultant is advised to describe the scope of the project and bring pictures of not only the bridge, but also of the property in the four quadrants that might be affected by the project construction. NHDHR can then advise the municipality/Consultant of concerns it may have regarding potential historical or archeological issues. Results of the meeting may require engagement of one or more cultural resource sub-consultants to research and provide pertinent information in compliance with RSA 227-C:9, leading to additional meeting(s) with NHDHR, or a determination made that no further contact is required as there is no affect on cultural resources.

A list of State and Federal environmental regulations/requirements, which may be applicable, is provided at the end of **Attachment B**.

3. Preliminary Plans

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Preliminary plans, which may later be incorporated into the final plans, shall include, but not be limited to:

- a) Location plan (small scale, as 1" per mile) (to be removed from contract drawings).
- b) General plan and elevation of the bridge.
- c) Cross-section of the approach roadway adjacent to the bridge.
- d) Cross-section of the lower roadway or water course through the bridge area.
- e) Cross-section of the bridge.
- f) General notes, including design loading, foundation type, allowable foundation loads, minimum frost cover, superstructure type, and seismic design category.
- g) Hydrologic and hydraulic data, including drainage area and design flood volume, velocity, and elevation.
- h) Profiles of all roadways affected by the project.
- i) Boring locations and logs if available.
- j) Existing ground contours and proposed finished channel contours, including proposed channel and slope protection.
- k) Roadway plan and critical cross-sections.

4. Bridge Load Rating Analysis

The Consultant shall perform a load rating analysis for the bridge using the AASHTO Strength Design Method (Load Factor Design), to be submitted on a form as provided by the NHDOT.

5. Finalized Plans and Contract Proposal (Optional) – Campton may elect to proceed with Design/Build

Following review of the Preliminary Plans by the NHDOT, finalized plans and contract proposal, including specifications, shall be prepared and submitted to the NHDOT for review and approval. This submission shall include an up-dated quantity list and cost estimate.

Before finalized plans and contract proposal are submitted, it shall be independently checked in detail by a structural and highway designer, other than the original designer, and reviewed by the Consultant's supervising engineer in responsible charge of the project.

The municipal Engineer's or Consultant's Licensed Professional Engineer stamp for the State of New Hampshire shall appear on the plans and contract proposal to be advertised. The stamp shall be that of the professional engineer who prepared the plans and contract proposal or under whose direct supervisory control it were prepared.

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6. Construction Services (Optional) – Campton may elect to proceed with Design/Build

The Consultant shall render services to the municipality including, but not restricted to, the following:

A. Consultation

If and when required during the construction of the project, the Consultant shall provide general consulting services and advice and review of all detail construction drawings.

B. Checking Shop Drawings, Interpretation, Etc.

- a) Review, check and approve all working drawings prepared by others to include the construction contractors or their subcontractors. This work shall include, but not be limited to, all structural steel and architectural shop plans; erection plans; and plans for cofferdams, falsework, evaluation of designs of temporary structures, and any other items required to conform to the NHDOT's Standard Specifications.
- b) Render interpretations, as necessary, of the drawings and specifications and submit recommendations for necessary modifications in either or both to meet unanticipated construction conditions and prepare necessary drawings and specifications to cover same.
- c) Prepare such detailed drawings as may be needed to supplement the contract drawings to permit the proper completion of the project.

C. Field Inspection Services - as deemed necessary by the municipality.

7. As-Built Plans (Optional) – Campton may elect to proceed with Design/Build

The municipality or Consultant shall submit one (1) set of reproducible as-built plans (sepias not acceptable) to the NHDOT's Municipal Highways Engineer in the Bureau of Planning and Community Assistance. The as-built plans will be due following approval of the completed construction work and prior to reimbursement by the NHDOT of the municipality for their share of construction costs.

REHABILITATION OF THE BLAIR COVERED BRIDGE
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State & Federal Environmental Regulations/Requirements

State

1. NH Dredge & Fill Permit (Wetlands) RSA 481-A
2. Water Quality Certificate (Section 401)
3. Coastal Zone Management Consistency
4. NH Rivers Management & Protection Program
5. NH Lakes Management & Protection Program
6. NH Shoreland Protection Act
7. NH Native Plant Protection Action of 1987
8. NH Endangered Species Conservation Act of 1979
9. Directive for Cooperation in the Protection of Historic Resources RSA 227-C:9
10. Public Waters Access Advisory Board

Federal

1. National Environmental Policy Act
2. Federal Highway Administration (FHWA) Env. Regs. 23 CFR 771,772
3. FHWA Technical Advisory T6640.8A
4. Section 4(f), DOT Act
5. Uniform Relocation Assistance and Real Property Acquisition Act of 1970
6. Title VI of Civil Rights Act of 1964/Executive Order 12898
7. Surface Transportation and Uniform Relocation Assistance Act of 1987; Section 123(f) (Historic Bridges); Section 130 (Wildflowers)
8. Safe Drinking Water Act
9. Sections 106/110 of the National Historic Preservation Act
10. Wild & Scenic Rivers Act
11. Land and Water Conservation Fund Act (Section 6f)
12. Executive Order 11990 (Protection of Wetlands)
13. Rivers and Harbors Act of 1899
14. Federal Water Pollution Control Act (1972), as amended by Clean Water Act
15. Executive Order, 11988 (Floodplain Management)
16. National Flood Insurance Act
17. Coastal Zone Management Act
18. Farmland Protection Policy Act of 1981
19. Resource Conservation and Recovery Act of 1976 (Haz. Waste)
20. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Haz. Mats.)
21. Superfund Amendments and Reauthorization Act (Haz. Waste)
22. Endangered Species Act of 1973
23. Fish and Wildlife Coordination Act
24. Clean Air Act

Other regulations/requirements may also apply, during project development (pre-construction), construction, or post-construction (maintenance).

List of Disciplines (Function Codes)

Code	Description	Code	Description
01	Acoustical Engineer	32	Hydraulic Engineer
02	Administrative	33	Hydrographic Surveyor
03	Aerial Photographer	34	Hydrologist
04	Aeronautical Engineer	35	Industrial Engineer
05	Archeologist	36	Industrial Hygienist
06	Architect	37	Interior Designer
07	Biologist	38	Land Surveyor
08	CADD Technician	39	Landscape Architect
09	Cartographer	40	Materials Engineer
10	Chemical Engineer	41	Materials Handling Engineer
11	Chemist	42	Mechanical Engineer
12	Civil Engineer	43	Mining Engineer
13	Communications Engineer	44	Oceanographer
14	Computer Programmer	45	Photo Interpreter
15	Construction Inspector	46	Photogrammetrist
16	Construction Manager	47	Planner: Urban/Regional
17	Corrosion Engineer	48	Project Manager
18	Cost Engineer/Estimator	49	Remote Sensing Specialist
19	Ecologist	50	Risk Assessor
20	Economist	51	Safety/Occupational Health Engineer
21	Electrical Engineer	52	Sanitary Engineer
22	Electronics Engineer	53	Scheduler
23	Environmental Engineer	54	Security Specialist
24	Environmental Scientist	55	Soils Engineer
25	Fire Protection Engineer	56	Specifications Writer
26	Forensic Engineer	57	Structural Engineer
27	Foundation/Geotechnical Engineer	58	Technician/Analyst
28	Geodetic Surveyor	59	Toxicologist
29	Geographic Information System Specialist	60	Transportation Engineer
30	Geologist	61	Value Engineer
31	Health Facility Planner	62	Water Resources Engineer

List of Experience Categories (Profile Codes)

Code	Description	Code	Description
A01	Acoustics, Noise Abatement	E01	Ecological and Archeological Investigations
A02	Aerial Photography; Airborne Data and Imagery Collection and Analysis	E02	Educational Facilities; Classrooms
A03	Agricultural Development; Grain Storage;	E03	Electrical Studies and Design
A04	Air Pollution Control	E04	Electronics
A05	Airports; Nav aids; Airport Lighting; Aircraft Fueling	E05	Elevators; Escalators; People-Movers
A06	Airports; Terminals and Hangars; Freight Handling	E06	Embassies and Chanceries
A07	Arctic Facilities	E07	Energy Conservation; New Energy Sources
A08	Animal Facilities	E08	Engineering Economics
A09	Anti-Terrorism/Force Protection	E09	Environmental Impact Studies, Assessments or Statements
A10	Asbestos Abatement	E10	Environmental and natural Resource Mapping
A11	Auditoriums and Theaters	E11	Environmental Planning
A12	Automation; Controls; Instrumentation	E12	Environmental Remediation
B01	Barracks; Dormitories	E13	Environmental Testing and Analysis
B02	Bridges	F01	Fallout Shelters; Blast-Resistant Design
C01	Cartography	F02	Field Houses; Gyms; Stadiums Shopping Centers
C02	Cemeteries (Planning and Relocation)	F03	Fire Protection
C03	Charting; Nautical and Aeronautical	F04	Fisheries; Fish Ladders
C04	Chemical Processing and Storage	F05	Forensic Engineering
C05	Child Care/Development Facilities	F06	Forestry and Forest Products
C06	Churches; Chapels	G01	Garages; Vehicles Maintenance Facilities; Parking Decks
C07	Coastal Engineering	G02	Gas Systems (<i>Propane; Natural, Etc.</i>)
C08	Codes; Standards; Ordinances	G03	Geodetic Surveying: Ground and Air-borne
C09	Cold Storage; Refrigeration and Fast Freeze	G04	Geographic Information System Services: Development, Forecasting Analysis, and Data Collection
C10	Commercial Building (<i>Low Rise</i>);	G05	Geospatial Data Conversion: Scanning Digitizing, Compilation
C11	Community Facilities	G06	Attributing, Scribing, Drafting Graphic Design
C12	Communications Systems; TV; Microwave	H01	Harbors; Jetties; Piers, Ship Terminal Facilities
C13	Computer Facilities; Computer Service	H02	Hazardous Materials Handling and Storage
C14	Conservation and Resource Management	H03	Hazardous, Toxic, Radioactive Waste Remediation
C15	Construction Management	H04	Heating; Ventilating; Air Conditioning
C16	Construction Surveying	H05	Health Systems Planning
C17	Corrosion Control; Cathodic Protection Electrolysis	H06	High-rise; Air-Rights-Type Buildings
C18	Cost Estimating; Cost Engineering and Analysis; Parametric Costing;	H07	Highways; Streets; Airfield Paving; Parking Lots
C19	Cryogenic Facilities	H08	Historical Preservation
D01	Dams (<i>Concrete; Arch</i>)	H09	Hospital and Medical Facilities
D02	Dams (<i>Earth; Rock</i>); Dikes; Levees	H10	Hotels; Motels
D03	Desalinization (<i>Process and Facilities</i>)	H11	Housing (<i>Residential, Multi-Family; Apartments; Condominiums</i>)
D04	Design-Build - Preparation of Requests for Farm Mechanization Proposals	H12	Hydraulics and Pneumatics
D05	Digital Elevation and Terrain Model Development	H13	Hydrographic Surveying
D06	Digital Orthophotography		
D07	Dining Halls; Clubs; Restaurants		
D08	Dredging Studies and Design		

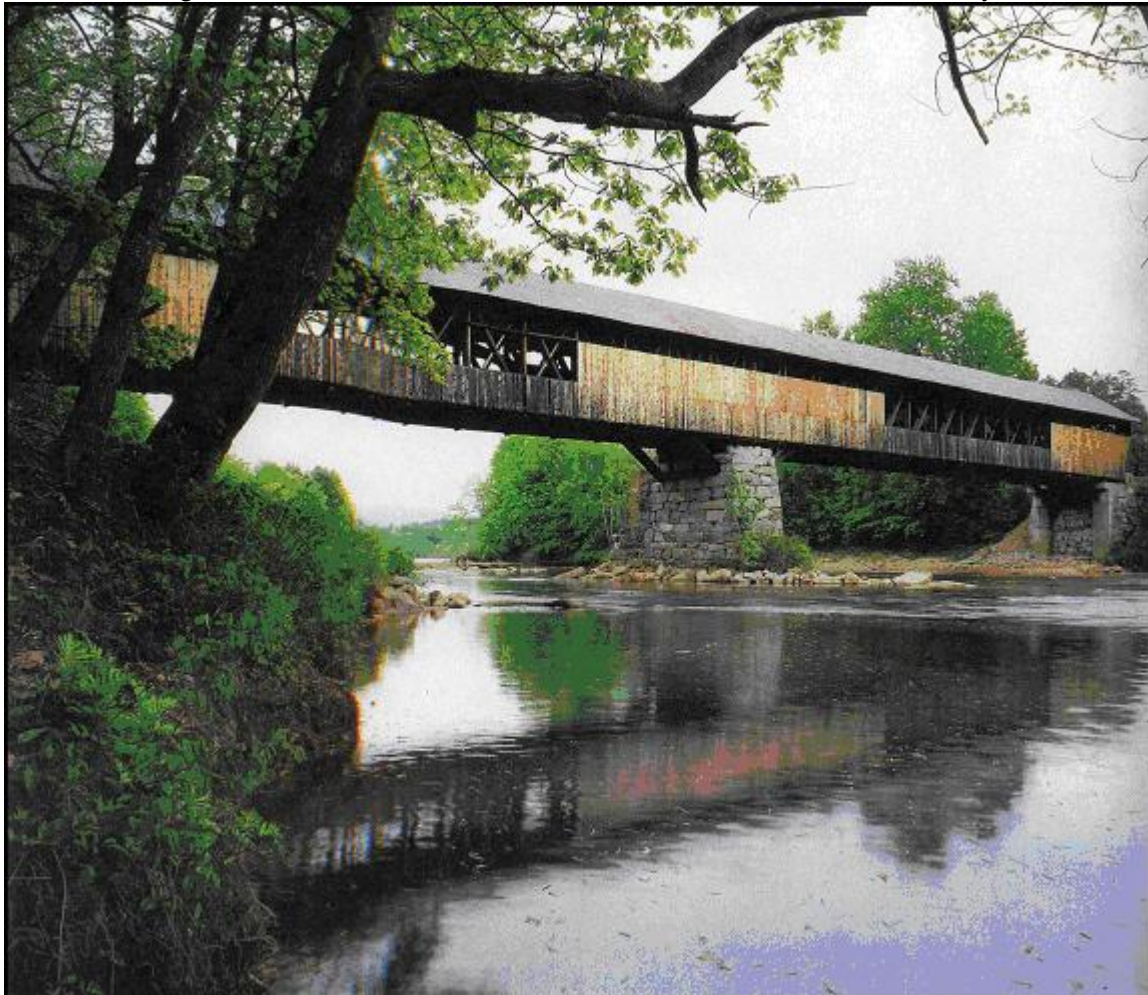
Code	Description	Code	Description
I01	Industrial Buildings; Manufacturing Plants	R01	Radar; Sonar; Radio and Radar Telescopes
I02	Industrial Processes; Quality Control	R02	Radio Frequency Systems and Shieldings
I03	Industrial Waste Treatment	R03	Railroad; Rapid Transit
I04	Intelligent Transportation Systems	R04	Recreation Facilities (<i>Parks, Marinas, Etc.</i>)
I05	Interior Design; Space Planning	R05	Refrigeration Plants/Systems
I06	Irrigation; Drainage	R06	Rehabilitation (<i>Buildings; Structures Facilities</i>)
J01	Judicial and Courtroom Facilities	R07	Remote Sensing
L01	Laboratories; Medical Research Facilities	R08	Research Facilities
L02	Land Surveying	R09	Resources Recovery; Recycling
L03	Landscape Architecture	R10	Risk Analysis
L04	Libraries; Museums; Galleries	R11	Rivers; Canals; Waterways; Flood Control
L05	Lighting (<i>Interior; Display; Theater, Etc.</i>)	R12	Roofing
L06	Lighting (<i>Exteriors; Streets; Memorials; Athletic Fields, Etc.</i>)	S01	Safety Engineering; Accident Studies; OSHA Studies
M01	Mapping Location/Addressing Systems	S02	Security Systems; Intruder and Smoke Detection
M02	Materials Handling Systems; Conveyors; Sorters	S03	Seismic Designs and Studies
M03	Metallurgy	S04	Sewage Collection, Treatment and Disposal
M04	Microclimatology; Tropical Engineering	S05	Soils and Geologic Studies; Foundations
M05	Military Design Standards	S06	Solar Energy Utilization
M06	Mining and Mineralogy	S07	Solid Wastes; Incineration; Landfill
M07	Missile Facilities (<i>Silos; Fuels Transport</i>)	S08	Special Environments; Clean Rooms, Etc.
M08	Modular systems Design; Pre-Fabricated Structures or Components	S09	Structural Design; Special Structures
N01	Naval Architecture; Off-Shore Platforms	S10	Surveying; Platting; Mapping; Flood Plain Studies
N02	Navigation Structures; Locks	S11	Sustainable Design
N03	Nuclear Facilities; Nuclear Shielding	S12	Swimming Pools
O01	Office Buildings; Industrial Parks	S13	Storm Water Handling and Facilities
O02	Oceanographic Engineering	T01	Telephone Systems (<i>Rural; Mobile; Intercom, Etc.</i>)
O03	Ordnance; Munitions; Special Weapons	T02	Testing and Inspection Services
P01	Petroleum Exploration; Refining	T03	Traffic and Transportation Engineering
P02	Petroleum and Fuel (<i>Storage and Distribution</i>)	T04	Topographic Surveying and Mapping
P03	Photogrammetry	T05	Towers (<i>Self-Supporting and Guyed Systems</i>)
P04	Pipelines (Cross-Country - Liquid and Gas)	T06	Tunnels and Subways
P05	Planning (Community, Regional Areawide and State)	U01	Unexploded Ordnance Remediation
P06	Planning (<i>Site, Installation and Project</i>)	U02	Urban renewals; Community Development
P07	Plumbing and Piping Design	V01	Value Analysis; Life-Cycle Costing
P08	Prisons and Correctional Facilities	W01	Warehouse and Depots
P09	Product, Machine Equipment Design	W02	Water Resources; Hydrology; Ground Water
P10	Pneumatic Structures, Air-Support Buildings	W03	Water Supply; Treatment and Distribution
P11	Postal Facilities	W04	Wind Tunnels; Research/Testing Facilities Design
P12	Power Generation, Transmission, Distribution	Z01	Zoning; Land Use Studies
P13	Public Safety Facilities		

APPLICATION
National Historic Covered Bridge Preservation Program

State: New Hampshire	Priority #1
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1. **Project Type (preservation, rehabilitation, or restoration):** Rehabilitation
2. **NBI structure number:** 003501170007600
3. **Location:** The Blair Covered Bridge is located over the Pemigewasset River on Blair Road in the Town of Campton, County of Grafton, State of New Hampshire.
4. **Congressional District and Representative:** NH Congressional District #2 – Paul W. Hodes
5. **Year Built:** 1870; Repaired in 1977
6. **Town, State Bridge No:** Campton 117/076 - Blair Road over the Pemigewasset River.
7. **Structure Description: (Summary, qualities qualifying for National Register):**

History: The Blair Covered Bridge, completed in 1870, is a two-span Long truss structure with laminated wooden arches, crossing the Pemigewasset River in Campton, New Hampshire. The present structure is the second bridge to be erected at this site. It stands on the dry-laid stone abutments of the previous bridge, built in 1829. The overall length of the bridge is 292'-10" with two span lengths of 139'-3" and 131'-0" from east to west, respectively. The overall width of the bridge is 20'-2" and it has 13'-3" of vertical clearance above the roadway inside the bridge.



Blair Covered Bridge – Downstream Elevation

The Blair Covered Bridge is the second bridge constructed at this site - the first bridge, constructed in 1829, had been destroyed by fire. The Town eventually voted to construct a new bridge in 1869, which was built by Hiram W. Merrill of Plymouth, NH, at a total cost of \$3,350. Like its predecessor, Blair Bridge uses a truss design patented by Col. Stephen H. Long (1784-1864), a native of Hopkinton, NH. It is New Hampshire's only surviving example of Long's patent to retain wedges at the lower chords to prestress the trusses during construction.

The abutments and pier are comprised of dry laid split granite stone with concrete backwalls and bridge seats added in 1977. A concrete nose on the pier had previously been added to prevent the pier stones from being dislodged by ice and debris in the river, especially during high flow conditions.



View of Truss Interior



Voids and Settlement in the Stone Pier and Abutments

Present Condition and Description

Overall, the bridge is in poor condition and is considered structurally deficient. The timber deck planks are worn and split with loose ends and lifting of the planks. The truss timbers and arch planks are warped, checked, and split with heavy decay in the bottom chords at the pier. Four bottom chord splice keys are broken in the second span and there are additional areas of splits and dry rot. The pier has cracks and voids with numerous stones loose. The abutments also have cracks and voids in the stonework with several broken sections being loose. Heavy spalls are also apparent in the concrete backwalls.



Splits and Rot in Timber Members

Hydraulics

The bridge spans over the Pemigewasset River in Campton, New Hampshire. The Flood Insurance Rate Maps (FIRM) dated February 20, 2008 and produced by the Federal Emergency Management Agency (FEMA) for Campton, New Hampshire places the bridge and the immediate area around the bridge in the 100-year flood plane. This means the bridge is located in an area that is expected to see a flood event equal to or exceeding that magnitude once every 100 years. A 100- year flood event has a one percent (1%) chance of being equaled or exceeded during any year.

Rehabilitation Options

Several deficiencies in the bridge need to be corrected in order to return the bridge to structural adequacy. Correcting these deficiencies is identified as being the minimum or base rehabilitation. This work will repair or replace broken, rotted or damaged members, replace the roof covering and floor system, and add fire protection and lighting systems. The roof replacement is included as a budgetary cost due to its age, poor installation and potential damage that could occur during rehabilitation of the bridge. This recommendation will be evaluated further during the design phase of the project.

Summary and Cost Estimates

The bridge is in overall poor condition, depending on the specific component, and is in need of complete rehabilitation. (See Item #9 below.) A cost estimate was prepared which includes repairs or replacements of damaged or deteriorated members, temporary support of the bridge during construction, replacement of the metal roof, cleaning of the bridge, rethinking the pier & abutments, concrete repairs, possible installation of lighting and a linear fire detection system, application of a fire retardant paint, drainage & pavement improvements to the approaches, realignment of the trusses & arches, and removal & replacement of the floor beams & decking as needed. The total estimated construction cost of the rehabilitation including contingencies is \$2,150,000.

8. Previous Repair work (Description, year, etc.):

The bridge remained unaltered for many years, other than perhaps routine maintenance efforts. Portions of the timber truss and associated members were repaired/rehabilitated in 1977 by Milton Graton, a well-known local covered bridge contractor and artisan. However, the bridge has deteriorated significantly during the ensuing 30+ years since these repairs were completed.

9. Proposed Project:

The intent of this project is to completely rehabilitate the Blair Covered Bridge and to restore a 6-Ton capacity. As much rehabilitation as possible will be completed to the extent allowed by the availability of funds. This may require that the project proceed in phases, such as a design-build phase for emergency repairs to maintain structural integrity, with subsequent phases and rehabilitation work designed and constructed as soon as funds can be secured and engineering completed. The scope of work includes the following:

- A. Remove and replace the existing metal roof
- B. Remove, replace, or strengthen deteriorated bridge members including:
 - Roof rafters and cross beams
 - Upper and lower lateral bracing
 - Knee braces
 - Truss chord members (top and bottom)
 - Truss diagonals and verticals
 - Portions of all arches
 - Floor beams and deck planks
 - All bed timbers at the abutments and piers
 - Repair and replace siding
- C. Provide temporary support during member replacement and jacking of bridge trusses to restore camber
- D. Vertical realignment of both trusses including shimming of the truss members
- E. Realign arches and replace selected portions that are deteriorated
- F. Evaluate and possibly replace arch steel rods including tension adjustment of all rods
- G. Remove dirt and debris from all areas of the bridge
- H. Re-chink both stone abutments and pier
- I. Repair concrete at the pier and abutments
- J. Apply water repellent to all exposed concrete surfaces

- K. Install a fire protection system and bridge lighting for traffic safety and security
- L. Remove and repave 50' of the approaches to the bridge
- M. Install new approach guardrail
- N. Install proper signage at each approach

11. Has SHPO certified that preservation of the bridge is warranted in accordance with the SHPO's statewide preservation plan? How would this benefit statewide preservation efforts, enhance history and economic development of the community? Other benefits of successful completion of this project?

The New Hampshire Department of Transportation adheres to a bridge management plan, deriving from a statute passed in 1953 that calls for preservation of all the State's surviving covered bridges. NHDOT receives assistance in fulfilling this mandate from the New Hampshire Division of Historical Resources, and the State Historic Preservation Office (SHPO). In 2005, the SHPO and NHDOT recognized the significance of Blair Bridge as the State's only surviving example of a pre-stressed Long truss bridge by placement of a state historical marker at the western portal of the span. The SHPO certifies that preservation of Blair Bridge fulfills objectives of the *New Hampshire State Historic Preservation Plan 2006-2010*, including a goal to "work with NHDOT and FHWA to draft, ratify, and implement a plan to . . . preserve those bridges that are found to have a high level of significance." Blair Bridge is adjacent to a new regional headquarters and welcome center of the United States Forest Service and stands four miles north of Plymouth, NH, an important center for tourism. Plymouth State University offers the only in-state courses in historic preservation. Rehabilitation of Blair Bridge will provide a rare local opportunity for students in the preservation studies program to observe actual work on a covered wooden bridge.

12. Has the work plan been reviewed by the SHPO or Certified Local Government and does it meet the goals of the State Historic Preservation Plan, the Secretary of the Interior's Standards for Rehabilitation, and standards/guidelines developed by the FHWA for this program?

The work plan for rehabilitation of the Blair Covered Bridge is in the conceptual stage, pending the acquisition of needed funding for completing the work. In its current stage, the rehabilitation plan has been/will be reviewed for compliance with the *Secretary of the Interior's Standards for Rehabilitation* by the New Hampshire SHPO both in regular project review meetings at NHDOT and at the bridge site. As noted above, rehabilitation will fulfill objectives of the *New Hampshire State Historic Preservation Plan 2006-2010*. Under New Hampshire statutes the presence of state funding for part of the budgeted rehabilitation mandates continuous review by SHPO of the work plan and the actual rehabilitation. The possible application of federal funding to this project will similarly mandate scrupulous review of the project by SHPO under Section 106 of the National Historic Preservation Act of 1966, as amended, and under Section 4(f) of the Department of Transportation Act of 1966.

13. Does the State or local government plan to support the project with funds or other resources (e.g., donated materials or labor)? Indicate amount.

An estimate of the total rehabilitation cost of this project is \$2,150,000 (including extensive substructure rehabilitation or replacement). Construction of an initial phase for emergency repairs is anticipated in early 2010. The Town of Campton is committed to obtaining the resources necessary to fund its share of overall costs. Based on the total project cost estimate, approximately \$430,000 would be shared between the NHDOT (80% or \$344,000) and the Town of Campton (20% or \$86,000).

14. Describe current use and load carrying capacity of the bridge and proposed use and load carrying capacity of the bridge.

The project goal is to increase its current 3-Ton/Passenger Cars Only load limit and restore a minimum 6-Ton load capacity generally required by the State of New Hampshire statutes to carry vehicular traffic. The close proximity of the Blair Covered Bridge to Interstate 93 and US Route 3 reinforces its potential significance as a tourist and recreational attraction.

15. FHWA desires a publishable report due 6 months after completion of the project which includes a history of the bridge, original and new construction techniques, an accurate documentation of the restoration work with photographs, cost information, etc. In addition, provide the name of the responsible person in charge of the final report.

The Town of Campton will undertake to ensure that such publishable report is provided. The responsible individual is Ann Marie Foote, Town Administrator for Campton, NH, with support from NHDOT Bridge Design.

16. If any innovative techniques are used for the repair work, performance of these may need to be evaluated, generally for 2 years after completion. State if this work involves any new techniques or process. If the bridge is evaluated for 2 years, the final project report will be due within 6 months after completion of the evaluation.

The use of innovative techniques is uncertain at this time. It is possible that such techniques and materials would be proposed during development of the project and utilized during construction, but the extent of their use on this project are not presently known. Rehabilitation of the superstructure, built in 1870, can be accomplished by applying traditional timber framing techniques. However, the Blair Covered Bridge stands on dry-laid stone abutments and a pier that were constructed for an earlier bridge of 1829. The burning of the earlier bridge in 1868 caused spalling and cracking of some of the stones of the substructure. The general condition of the substructure, as shown in the page 2 photographs, has raised concerns regarding stability, especially under flood and ice conditions. The evaluation and possible strengthening of the substructure may invite the use of innovative techniques for testing structural integrity, stabilizing the masonry, or performing construction activities, all completed in accordance with the *Secretary of the Interior's Standards for Rehabilitation*, to be explored further during the design process.

17. Schedule for Start of Work (month/year):

It is anticipated that a design-build phase for emergency repairs would begin construction in early 2010, with subsequent design and construction activities occurring sequentially thereafter according to funding availability.

18. Schedule for Completion of Work (month/year):

Completion of rehabilitation work is anticipated by late 2011 or early 2012.

COST ESTIMATES:

	A. FHWA Funds Requested 80%	B. Other Sources 20%	A + B
Preliminary Engineering cost, if requested	\$200,000	\$50,000	\$250,000
Estimated Construction Cost for Complete Rehabilitation and Strengthening	\$1,520,000	\$380,000	\$1,900,000
Cost of Innovative Portion Performance Evaluation	Unknown at this time.	Unknown at this time.	Unknown at this time.
Cost for preparation of final project report	\$4,000	\$1,000	\$5,000
Other costs	n/a	n/a	n/a
Total Cost of Project	\$1,724,000	\$431,000	\$2,155,000

State Department of Transportation

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