



Diane Nichols Tradd
Assistant City Manager/DPD Director

Kevin E. Coughlin
Deputy Director

Appendix A: Merrimack Riverwalk Phase II Design Technical Scope of Work

Introduction

The Merrimack Riverwalk Phase II project is the continuation of a major multi-year development program to create a linear park and walkway along the Merrimack River. The Merrimack Riverwalk is a popular walkway mainly constructed on top of the sewer interceptor along the Merrimack River, and occasionally cantilevered over the river or built on riverside property. It contains several access points and rest nodes. In addition to providing access to Lowell National Historical Park attractions and other destinations directly along its route, the Riverwalk connects with the Lowell Canalway, a linear park/walkway along Lowell's 5.6 miles of historic canals.

Merrimack Riverwalk Phase II is being completed by a Project Team involving a partnership between the City of Lowell and Lowell National Historical Park. Its objective is to extend the Riverwalk from its current terminus behind Boott Mills, a renovated mixed-use complex; behind and through Massachusetts Mills, a renovated residential complex; and then over the Concord River to terminate adjacent to the Lowell Memorial Auditorium. This would complete the final link in the Riverwalk and provide highly-visible entryways near Bridge and Merrimack Streets that will draw users to the Riverwalk.

The project may be understood as three separate components to be designed concurrently (*see attachment 1*):

1. **Boott Mills Access:** Improvements to the existing access point behind Boott Mills to bring the access ramp there into compliance with the Americans with Disabilities Act (ADA).
2. **Bridge Street Node (BSN):** A 700' extension of the Riverwalk below the Cox Memorial (Bridge Street) Bridge; and a stairway access node that provides access to the Riverwalk from street level, an approximately 20' grade change.
3. **Mass Mills Reach:** An approximately 1400' extension of the Riverwalk behind and through Massachusetts Mills complex; and an approximately 80' pedestrian bridge over the Concord River.

Project Details

Although the City has undertaken preliminary design work on several of the following components, changing situations require new concepts to be developed for all the following components. **Respondents should present these components as separate cost items.**

Boott Mills Access

A concrete ramp and staircase currently provide public access between the Boott Mills courtyard and the Merrimack Riverwalk, an approximately 5' change in grade. The access node requires reconstruction to meet current ADA standards. The selected consultant will provide construction documents for the reconstruction suitable to use in-house or include in a construction bid package.

Bridge Street Node

The Bridge Street Node (BSN) Site consists of a .16 acre lot. Two active drainage penstocks are located beneath the Site and discharge to the Merrimack River (the Tailrace and Waste Way). Project design began in 2005 but was delayed several years. In April 2014, geotechnical investigation was completed and new concerns arose. The site is largely urban fill, containing contaminated soil and many potential obstructions such as concrete, buried debris, and abandoned utilities. A ground penetrating radar investigation detected the west penstock (the Waste Way) 12-14' below the surface, and the eastern (the Tailrace) 15-16' below surface. However, subsequent vacuum-rig soil boring revealed the stone/concrete block roof of the Tailrace at only 10' below surface. These penstocks and the brick retaining wall are of unknown overall condition.

The selected consultant will provide construction documents suitable for inclusion in a construction bid package for a new access node. The consultant will take into account concerns about infrastructure weight over the penstocks and against the retaining walls; minimize the amount of infrastructure that would need to be disturbed in the event the penstocks' owner requires access to the penstocks; maximize the abutter's access to their adjacent Heating, Venting, and Air Conditioning (HVAC) system; minimize construction cost; and minimize or eliminate disturbance to the granite river walls.

A concept that was developed in-house is provided (*see attachment 2*) that suggests a simple stairway with an attractive gateway plaza at street level. Accessible ramps are not required at this node because of the limited space available.

Mass Mills Reach

Currently, a small section of Riverwalk owned by Massachusetts Mills exists or is planned along the Concord River and through an arcade alongside the so-called "Picker Building." Two other buildings, the "Power House" and the "Boiler House", block access between the Riverwalk's planned extension along the Sewer Interceptor and the existing section of Massachusetts Mills-owned Riverwalk along the Concord River.

The selected consultant will provide construction documents suitable for inclusion in a construction bid package for an ADA-compliant ramp from the sewer interceptor to the elevation of the Massachusetts Mills-owned Riverwalk; a path through or around the existing buildings; and a pedestrian bridge over the Concord River to the Riverwalk's planned terminus at Lowell Memorial Auditorium. The exact route taken by the path would depend on consultants' cost and constructability analysis and negotiations with Massachusetts Mills.

A concept of a ramp and path through the Boiler House that was developed in-house is provided (*see attachment 3*). Other concepts may include but are not limited to a cantilever around the Boiler House at the confluence of the rivers.

Project Schedule

Due to funding limitations, **all construction must be complete by September 1, 2017**. Schedule is a primary constraint upon the project. The successful respondent will provide an aggressive schedule to the City of Lowell showing a proposed order of tasks that would complete as much of the project as possible before that date. An example schedule is provided, but the consultant is encouraged to submit a schedule they believe would be feasible while meeting the September 1 deadline.

Milestone	Proposed Start	Proposed Completion
Designer Selected and under contract	2/5/2016	4/15/2016
Pre-Schematic Phase Complete <i>(Meetings, Survey Review, Survey)</i>	4/15/2016	4/22/2016
Schematic Phase Complete	4/22/2016	5/22/2016
25% Construction Documents for BSN and Boott	5/22/2016	7/22/2016
100% Construction Documents for Boott	7/22/2016	8/22/2016
75% Construction Documents for BSN	7/22/2016	9/22/2016
100% PS&E for BSN	9/22/2016	10/22/2016
Access through 7' strip and boiler house secured from Massachusetts Mills	Now	10/1/2016
Construction Finished for Boott Improvements	8/22/2016	10/1/2016
25% Construction Documents for Mass Mills Reach <i>(Only for selected elements based on cost estimates/constructability)</i>	8/22/2016	10/1/2016
75% Construction Documents for Mass Mills Reach	10/1/2016	12/1/2016
100% PS&E for Mass Mills Reach, <i>(potentially as an add-alternate)</i>	12/1/2016	2/1/2017
Construction Bid Documents Released		2/12/2017
Construction Firm selected and under contract	2/12/2017	3/30/2017
Construction at Bridge Street Node Complete	3/30/2017	7/1/2017
Construction at Mass Mills Reach Complete	3/30/2017	8/1/2017
All punch list items completed		8/15/2017
Funding Expires		9/1/2017

*Assumes Boott does not need to go through competitive bid process. If this assumption changes, Boott improvements will be undertaken under the same contract as BSN and Mass Mills Reach.

Technical Scope of Work

The successful consultant will be responsible for providing all work and all disciplines necessary to complete the project in conformance with all applicable state and local laws, including Architectural Barriers Act Accessibility Standard (ABAAS) requirements.

Unless specifically noted otherwise, all deliverables shall be submitted to the City of Lowell in both digital and printed versions. All digital drawings shall be provided in PDF and DWG formats. All drawings and documentation prepared for this project shall be the property of the City of Lowell.

Respondents should budget for at least four (4) and not more than eight (8) meetings with stakeholders in Lowell, described in detail below, along with site visits during the construction phase.

1. *Pre-Schematic Phase*

- a. Review all site analysis work completed to date, including 2008 survey of Bridge Street Node site by Precision Land Surveying, Inc; 2010 easement plan of Bridge Street Node site by Precision Land Surveying, Inc; 2014 geotechnical report by TRC Environmental Corporation; as-built drawings of the Boott Mills Access site; and any other geotechnical analysis, documentation of existing utilities, and site documentation available.
- b. Complete any other necessary pre-design site analysis or surveying.
- c. Attend kick-off meeting with Project Team (Lowell National Historical Park and the City of Lowell) staff.

DELIVERABLES: Meeting Notes, Summary Memo

2. *Design Development and Construction Document Phase: Boott Mills Improvements*

- a. Develop schematic plans for Boott Mills Access improvements, including coordination with the City of Lowell and at least one meeting with property owner.
- b. After project team review and comment upon schematics, develop and deliver 100% Construction Documents (CD) for Boott Mills Improvements that could be utilized for in-house construction or used in bid documents. This may include attending one meeting with property owner.

DELIVERABLES: Meeting Notes, 1 Schematic Design, Construction Documents

3. *Design Development and Construction Document Phase: Bridge Street Node*

- a. Complete any necessary structural and/or geotechnical analysis of retaining walls and/or river wall that is not provided in the 2015 geotechnical report by TRC Environmental Corporation.

- b. Develop two (2) schematic design scenarios and associated preliminary cost estimates for Bridge Street Node that meet project goals, including coordination with the City of Lowell and at least one meeting with Massachusetts Mills. Schematics should have a preliminary constructability analysis. Review Team will select one (1) scenario for further design development.
- c. Develop 25% design development drawings for Bridge Street Node. Design development drawings will include, but may not be limited to, plans, exterior elevations, selected details and sections that illustrate key design concepts if appropriate, and revised cost estimates including contingency allowances.
- d. After Project Team review and comment upon 25% drawings, develop and deliver 75% design development drawings.
- e. After Project Team review and comment upon 75% drawings, deliver 100% construction documents including plans, specifications, and estimates that can be used as in a bid Package. The construction drawings and specifications must be prepared in accordance with all applicable state and local regulations suitable for bidding under Massachusetts General Law (including the preparation of both filed sub-bid and general contractor bid packages).

Construction documents will include site pedestrian hardscape design, landscape design, site furnishing, lighting, retaining walls if required, guardrails and railings using existing Riverwalk Phase I design vocabulary whenever possible.

DELIVERABLES: Meeting Notes, 2 Schematic Designs, 25%, 75%, and 100% Construction Documents

4. Design Development and Construction Document Phase: Mass Mills Reach

- a. Complete any necessary structural and/or geotechnical analysis to determine feasible options for building ramps over the sewer interceptor and/or secured to river walls through a cantilever and complete any necessary analysis related to proposed bridge over Concord River.
- b. Develop two (2) schematic design scenarios and associated cost estimates for Mass Mills Reach that meet project goals, including coordination with the City of Lowell and at least one meeting with Massachusetts Mills. Schematics should have a preliminary constructability analysis. The Review Team will select one (1) scenario for further design development.
- c. Develop 25% design development drawings for selected components of Mass Mills Reach. Design development drawings will include, but may not be limited to, plans, exterior elevations, selected details and sections that illustrate key design concepts if appropriate,

and revised cost estimates including contingency allowances. Consultant may advance full design of bridge, or consultant may design abutments and specifications for prefabricated bridge, depending on which provides greater budget and schedule advantages.

- d. After Project Team review and comment upon 25% drawings, develop and deliver 75% design development drawings.
- e. After Project Team review and comment upon 75% drawings, deliver 100% construction documents including plans, specifications, and estimates that can be used as in a bid Package. The construction drawings and specifications must be prepared in accordance with all applicable state and local regulations suitable for bidding under Massachusetts General Law (including the preparation of both filed sub-bid and general contractor bid packages).

Construction documents will include site pedestrian hardscape design, landscape design, site furnishing, lighting, retaining walls if required, guardrails and railings using existing Riverwalk Phase I design vocabulary whenever possible.

DELIVERABLES: Meeting Notes, 2 Schematic Designs, 25%, 75%, and 100% Construction Documents

5. *Final Construction Document and Administration Phase*

- a. Review Team will assemble construction documents to be advertised for bid for construction based on cost estimates and schedule. Consultant will develop invitation to bid/instruction to bidders, general conditions and “boiler plate” specifications, technical specifications for selected components, construction plans, complete construction cost estimates, requirements for coordination with ongoing demolition (if applicable), preparation of ranked bid alternates (if applicable), and preparation of Addenda (if necessary).
- b. Attend a pre-construction conference.
- c. Conduct periodic site observations during construction, including filing and tracking of field reports.
- d. Review, select, and tag landscaping as necessary.
- e. Review, amend, and/or approve all submittals and Shop Drawings.
- f. Prepare, submit, or review change order sketches and Requests for Information (RFIs).
- g. Develop punch-list and conduct final site review.

DELIVERABLES: Package ready for bid under applicable Local, State, and Federal law, Punch List, Field Notes and/or other information as necessary