

City of Biddeford
City Council - Workshop
March 16, 2017 6:00 PM Council Chambers

1. Workshop Discussion Items

- 1.1. Pedestrian & River Walk Master Plan
[Biddeford RiverWalk Master Plan 2016.pdf](#)
[Biddeford Riverwalk Master Plan Layout Plan 2016.pdf](#)
[BiddefordRiverwalkMasterPlanUpdate_FINAL_REPORT12-02-16.pdf](#)
- 1.2. Review of Emergency Medical Service (EMS) Calls

1

BOAT PUT IN / SACO RIVER ACCESS: Future boat/kayak put in and River access.

2

MECHANICS PARK: Existing community open space.

3

MAIN STREET PEDESTRIAN CROSSING: Existing safe crossing.

4

OVERLOOK PLAZA: Existing community open space and River Overlook, includes Identity/Wayfinding board.

5

RIVERWALK PHASE II: NORTH DAM CROSSING: Existing crosswalk/streetscape connector path.

6

SACO RIVERWALK: Existing waterfront trail and seating.

7

RIVERWALK PEDESTRIAN BRIDGE: Existing pedestrian bridge connecting Saco RiverWalk and North Dam Crossing/RiverWalk.

A

SEGMENT A - NORTHDAM MILL WAYFINDING: In-progress wayfinding through NorthDam buildings connecting RiverWalk segments.

8

PEDESTRIAN BRIDGE CONNECTOR: Future pedestrian bridge connecting Saco RiverWalk and Laconia Plaza.

9

LACONIA PLAZA: Existing plaza and Falls Overlook.

COMPLETED PHASES / EXISTING INFRASTRUCTURE

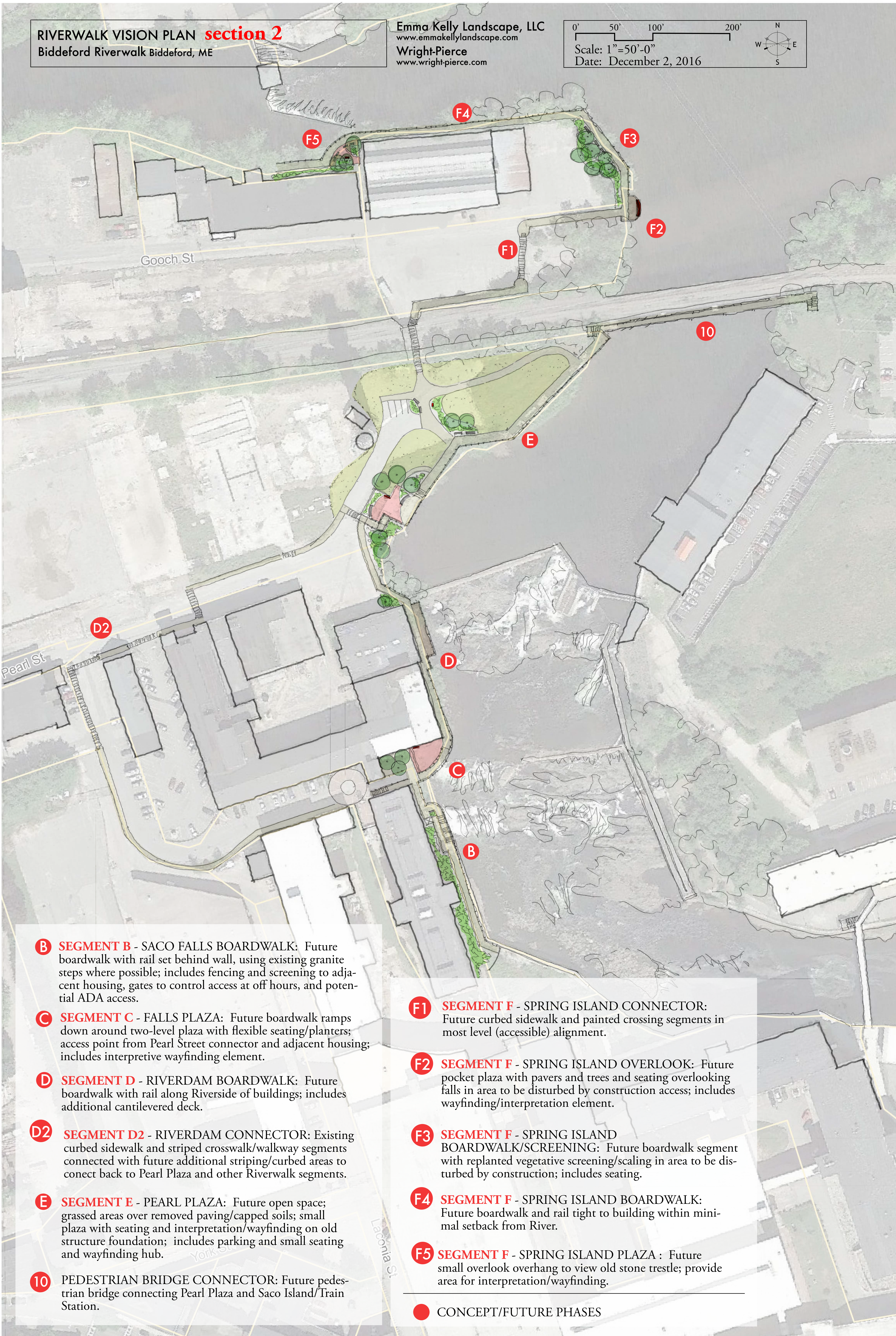
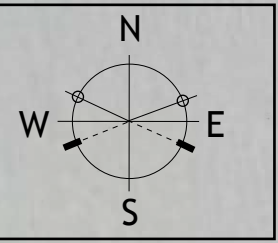
PROJECTS IN PROCESS

CONCEPT/FUTURE PHASES

Emma Kelly Landscape, LLC
 www.emmakellylandscape.com
 Wright-Pierce
 www.wright-pierce.com

RIVERWALK VISION PLAN **section 1**
 Biddeford Riverwalk Biddeford, ME

2



- B SEGMENT B - SACO FALLS BOARDWALK:** Future boardwalk with rail set behind wall, using existing granite steps where possible; includes fencing and screening to adjacent housing, gates to control access at off hours, and potential ADA access.
- C SEGMENT C - FALLS PLAZA:** Future boardwalk ramps down around two-level plaza with flexible seating/planters; access point from Pearl Street connector and adjacent housing; includes interpretive wayfinding element.
- D SEGMENT D - RIVERDAM BOARDWALK:** Future boardwalk with rail along Riverside of buildings; includes additional cantilevered deck.
- D2 SEGMENT D2 - RIVERDAM CONNECTOR:** Existing curbed sidewalk and striped crosswalk/walkway segments connected with future additional striping/curbed areas to connect back to Pearl Plaza and other Riverwalk segments.
- E SEGMENT E - PEARL PLAZA:** Future open space; grassed areas over removed paving/capped soils; small plaza with seating and interpretation/wayfinding on old structure foundation; includes parking and small seating and wayfinding hub.
- 10 PEDESTRIAN BRIDGE CONNECTOR:** Future pedestrian bridge connecting Pearl Plaza and Saco Island/Train Station.

- F1 SEGMENT F - SPRING ISLAND CONNECTOR:** Future curbed sidewalk and painted crossing segments in most level (accessible) alignment.
- F2 SEGMENT F - SPRING ISLAND OVERLOOK:** Future pocket plaza with pavers and trees and seating overlooking falls in area to be disturbed by construction access; includes wayfinding/interpretation element.
- F3 SEGMENT F - SPRING ISLAND BOARDWALK/SCREENING:** Future boardwalk segment with replanted vegetative screening/scaling in area to be disturbed by construction; includes seating.
- F4 SEGMENT F - SPRING ISLAND BOARDWALK:** Future boardwalk and rail tight to building within minimal setback from River.
- F5 SEGMENT F - SPRING ISLAND PLAZA :** Future small overlook overhang to view old stone trestle; provide area for interpretation/wayfinding.

● CONCEPT/FUTURE PHASES

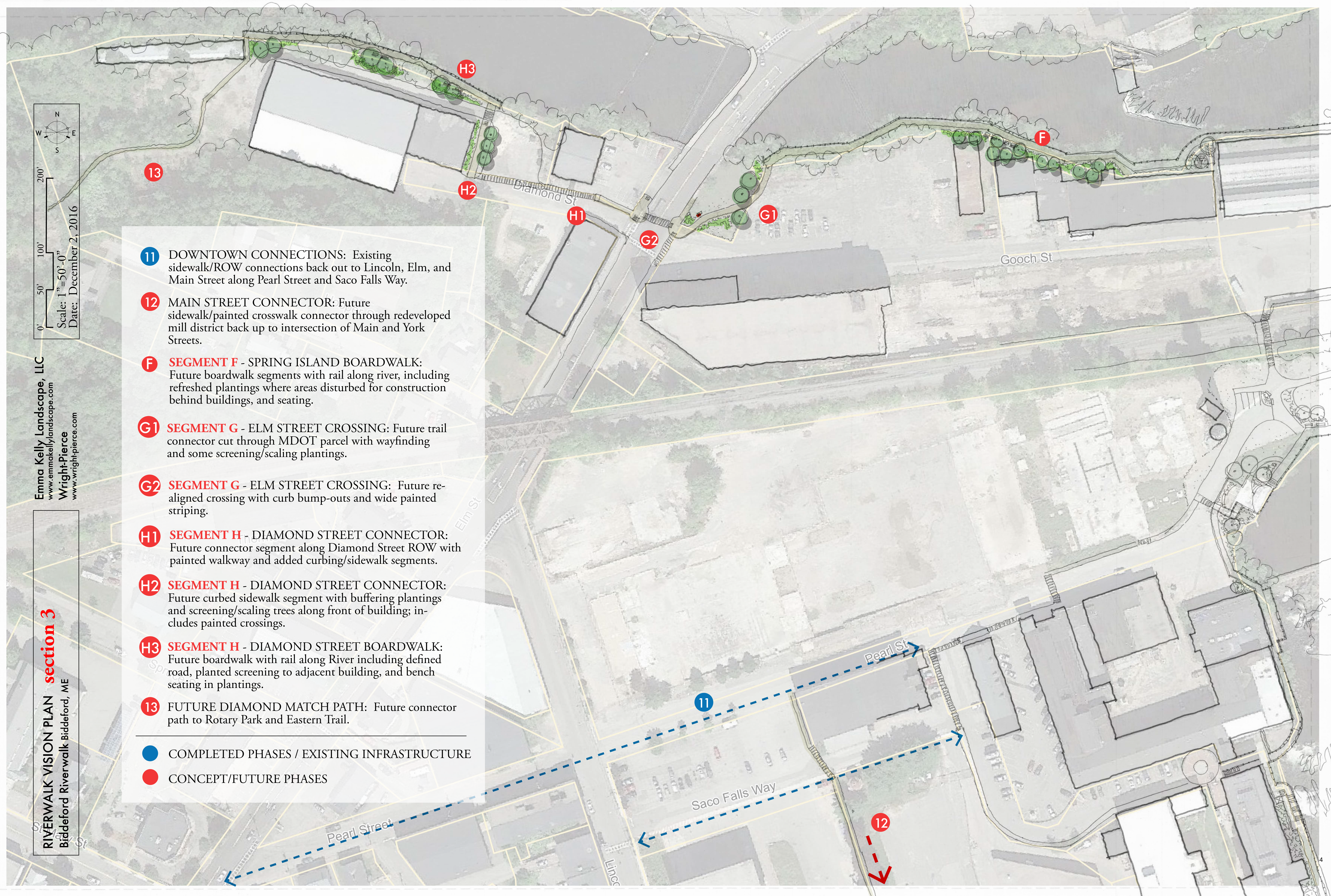


Emma Kelly Landscape, LLC
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Wright-Pierce
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RIVERWALK VISION PLAN **section 3**
Biddeford Riverwalk Biddeford, ME

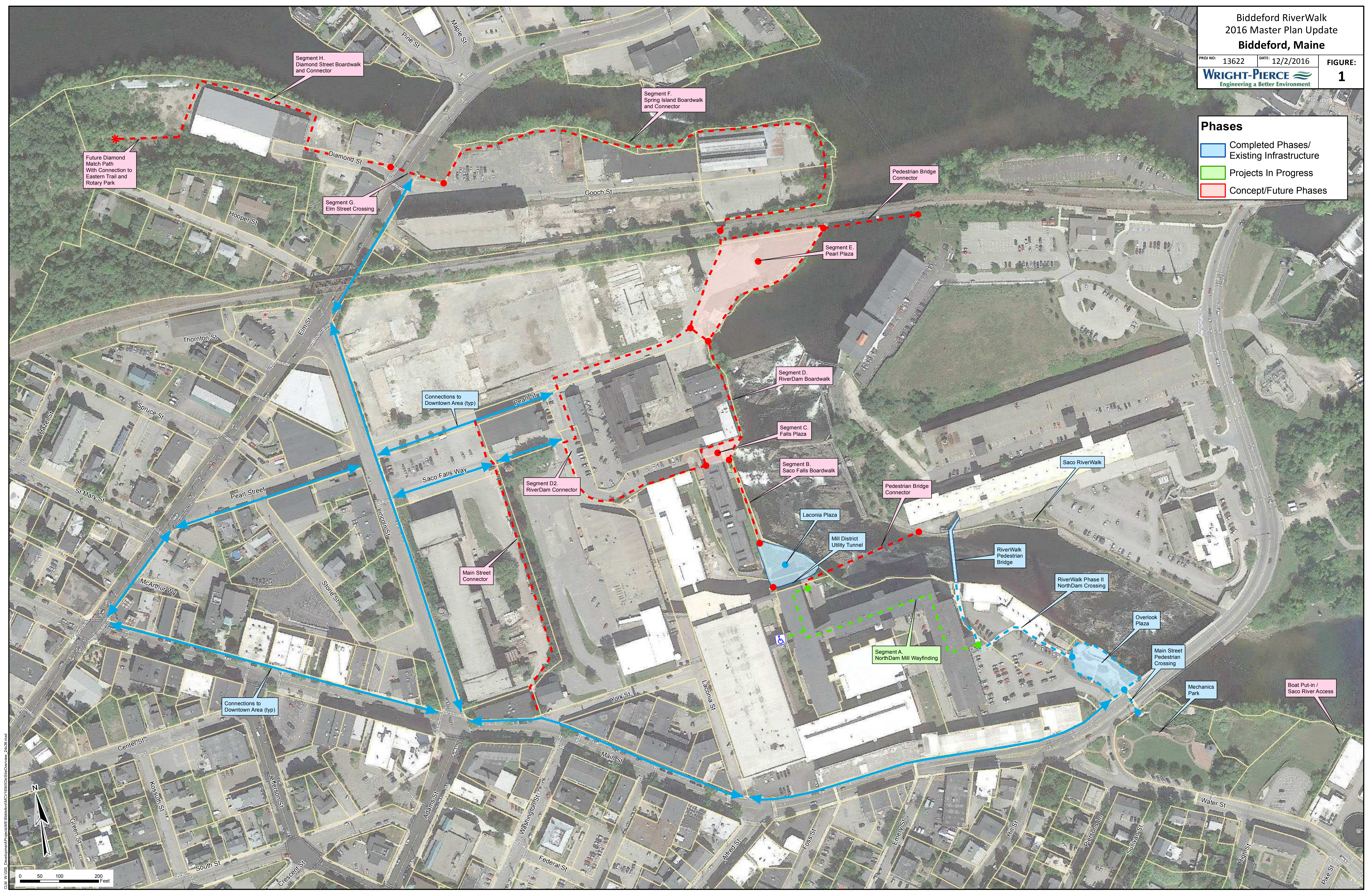
- 11** DOWNTOWN CONNECTIONS: Existing sidewalk/ROW connections back out to Lincoln, Elm, and Main Street along Pearl Street and Saco Falls Way.
- 12** MAIN STREET CONNECTOR: Future sidewalk/painted crosswalk connector through redeveloped mill district back up to intersection of Main and York Streets.
- F** **SEGMENT F** - SPRING ISLAND BOARDWALK: Future boardwalk segments with rail along river, including refreshed plantings where areas disturbed for construction behind buildings, and seating.
- G1** **SEGMENT G** - ELM STREET CROSSING: Future trail connector cut through MDOT parcel with wayfinding and some screening/scaling plantings.
- G2** **SEGMENT G** - ELM STREET CROSSING: Future re-aligned crossing with curb bump-outs and wide painted striping.
- H1** **SEGMENT H** - DIAMOND STREET CONNECTOR: Future connector segment along Diamond Street ROW with painted walkway and added curbing/sidewalk segments.
- H2** **SEGMENT H** - DIAMOND STREET CONNECTOR: Future curbed sidewalk segment with buffering plantings and screening/scaling trees along front of building; includes painted crossings.
- H3** **SEGMENT H** - DIAMOND STREET BOARDWALK: Future boardwalk with rail along River including defined road, planted screening to adjacent building, and bench seating in plantings.
- 13** FUTURE DIAMOND MATCH PATH: Future connector path to Rotary Park and Eastern Trail.

- COMPLETED PHASES / EXISTING INFRASTRUCTURE
- CONCEPT/FUTURE PHASES



Phases

- Completed Phases/
Existing Infrastructure
- Projects In Progress
- Concept/Future Phases



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December 2, 2016
Wright-Pierce Project No. 13622A

Mr. Greg Tansley, AICP
City of Biddeford
205 Main Street
Biddeford, Maine 04005

Subject: Biddeford Riverwalk – Master Plan Update

Dear Greg:

Wright-Pierce, in coordination with Emma Kelly Landscape, are pleased to provide the City of Biddeford with the enclosed updated Riverwalk Master Plan.

In 2013, the City of Biddeford began development of a Biddeford Riverwalk Master Plan with the goal of providing pedestrian and recreational connections and spaces and establish access to the scenic river corridor. Additionally, the RiverWalk is expected to support on-going redevelopment of the Biddeford Mill District and overall vibrancy downtown. Since acceptance of the original master plan, the City has made considerable strides in final design and construction of various elements of the Riverwalk, including construction of the Gateway/Overlook Park, connection to Gateway Plaza, Pedestrian Bridge Connection (Riverwalk Phase 2), collaboration with the City of Saco on the RiverWalk Pedestrian Bridge and the recently completed FPL Remediation and Redevelopment and reconstruction of the Mill District Utility



*Photo 1: Biddeford RiverWalk Phase I -
Overlook Plaza*

Tunnel.

This Master Plan update has been prepared to support future redevelopment efforts and update cost discussions in support of the continued goal of providing pedestrian friendly connection from Main Street to the Diamond Match site with interconnection to the City of Saco RiverWalk. Individual segments are detailed below and include discussion on general details, technical challenges, and planning level costs. Included with this summary are an overview aerial



Photo 2: Laconia Plaza constructed in 2016.



plan highlighting existing and future proposed segments and connection points along with rendered Vision Plans prepared by Emma Kelly Landscape providing additional details for each.

General Planning Considerations

In general, planning considerations have accounted for previously provided public comments noted during the original master planning process in 2013. These include general layout discussions, materials selections, preservation of water views and access points connectivity with the historic nature of the mill district.

Legislation changes enacted in 2015 proposed reduced setbacks for walkways and trails within a downtown revitalization project. These changes allow for segments of a walkway or trail to cantilever over the river no more than 10-feet from the normal high water line provided the project is within the boundaries of a downtown revitalization project; the walkway or trail is attached to existing structures constructed prior to 1971; and if the municipal planning board has determine no other practical means to construct the trail or walkway. Design of all cantilever segments must include a full review and evaluation of this exemption from Shoreland Zoning Laws to ensure compliance.

Given the nature of the development along the Saco River, much of the project area is located within the FEMA mapped floodplains (with varying elevations along the project route). Improvements within the flood zone are anticipated to be constructed of durable materials to withstand possible flooding.

Future Segment Discussion

The enclosed Figure 1 has been prepared to identify the various segments associated with the Riverwalk Master Plan update. Details for each of these segments, are described below.

NORTHDAM MILL WAYFINDING (SEGMENT A)

Summary of Project Details

The NorthDam Mill Wayfinding will provide a connection between the RiverWalk Pedestrian Bridge and NorthDam Crossing (Riverwalk Phase II) projects that have been constructed to the Laconia Plaza area. Wayfinding has been designed and wayfinding signs have been produced. In accordance with the original RiverWalk III Easement, an alternate route through the mills has been proposed and accepted. ADA access is under review by the City and mill owner. The current design, addressed in this Update, contemplates installation of a lift/elevator adjacent to the

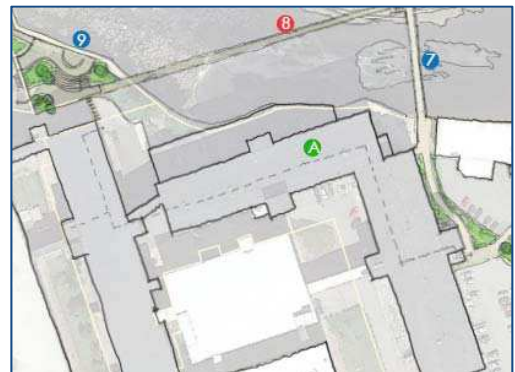


Photo 3: Snip Clip from Emma Kelly Landscape Vision Plan showing approximate location of NorthDam Mill Wayfinding.



existing exterior stair tower on the west side of Building 15. Limited construction is anticipated to complete the accepted alternate route utilizing existing walkways and pathways via wayfinding signage.

Budget Estimate

For the **NorthDam Mill Wayfinding** segment, additional costs associated with the installation of a lift/elevator are anticipated. Due to complexities of these systems, further details are required to prepare a budget estimate for this element and therefore the budget estimate is not included in this update.

SACO FALLS BOARDWALK (SEGMENT B)

Summary of Project Details

Extending northward from Laconia Park, the RiverWalk will run atop and extending beyond the existing concrete and stone masonry retaining walls along the Saco River. This 275 linear foot section of the RiverWalk is proposed to be a raised deck platform and will cantilever up to 10-feet beyond the normal high water line. This section of the RiverWalk will have views upriver to the Saco Falls and downriver to the mill area and recently constructed RiverWalk Pedestrian Bridge.



Photo 4: View of Future Saco Falls Boardwalk area from Laconia Plaza.

It is expected that the materials of construction for this segment will combine elements consistent with the historic and industrial nature of the adjacent mill district, but given the historic flooding and overtopping of the existing retaining wall will require strength and durability.

Property Ownership

It is our understand the City of Biddeford owns the retaining wall abutting the Mill at Saco Falls Building. Tax map information reviewed shows this area approximately 20 linear feet in width at the limit of the FPL parcel and narrowing to approximately the width of the retaining wall on the RiverDam side of the site.

Coordination and negotiation with the Mill at Pepperell LLC stakeholders will define and administer right-of-way access during construction. The permanent easement will be based on final design details with particular attention to details on the northern side of the parcel. Initial



discussions have been had between the property owner and City of Biddeford and a Letter of Intent has been issued pending availability of details.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as **Saco Falls Boardwalk** are:

- **Adjacent Residential Use:** The proposed boardwalk will extend along the river edge, but design will need to accommodate buffering from the adjacent ground-floor residential units in the Mill at Saco Falls, while not limiting view of the Saco Falls and Saco River and/or screening from available sun exposure. If hours of use are anticipated to change from the current RiverWalk dusk to dawn restriction, lighting of this area will need to be evaluated to limit potential impacts to the adjacent units.
- **ADA Accessibility:** Existing topography within the project area suggests limited options for the installation of ADA accessibility along the Boardwalk area. Previously completed topographical survey notes a 13.5-foot grade change between the top of the existing retaining wall and the existing Falls Plaza elevation. To meet ADA, this would require the ramping of the boardwalk and retaining wall at a 5/ grade from Laconia Plaza to the Falls Plaza (impacting the first floor residential units within the Mill at Saco Falls and requiring full replacement of the retaining wall along the Saco River to accommodate the increased height), or the installation of six (6) ramp sections, each extending 30-feet with a 5-foot landing (which due to space requirements cannot be accommodated). The remaining option is the construction of an exterior lift from the higher to the lower elevation.
- **Structural Review and Retaining Wall Design:** Approximately half of the retaining wall proposed to support the cantilevered boardwalk is a granite block retaining wall which is in deteriorated condition and will require stability and repairs. Based on an evaluation of the wall conducted in 2012, “there are several locations where the granite blocks are missing or loose” and a portion of the wall adjacent to the concrete retaining wall that has bowed out and infilled with concrete behind. It was recommended that the retaining wall be repaired to stabilize and prevent further deterioration, which will need to be completed prior to or concurrent with construction of the cantilevered boardwalk.
- **Utility Infrastructure:** An existing sewer line runs between the Mill at Saco Falls and retaining wall connecting from a SMH located adjacent to the stairway to the former FPL site. The SMH is constructed above ground and receives flows from the second story of the building. During construction of the FPL project, the sewer line was noted to be shallow (approximately 1-foot below the ground surface) requiring extra protection and insulation. It is likely that any proposed work in the area will need to address the shallow sewer connection.



- **Construction Access:** The location of the project area and elevation changes will lead to difficulty in access for construction equipment requiring prior coordination with site contractors for completion of the work.

Budget Estimate

For the **Saco Falls Boardwalk** segment, a planning level budget estimate of \$525,000 to \$575,000 has been calculated. This planning level estimate reflects the likely cost of construction based on unit prices for similar projects bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.

FALLS PLAZA (SEGMENT C)

Summary of Project Details

Between the Mill at Saco Falls and the RiverDam Mill complex is a small plaza space with linear connection back to Saco Falls Way. The linear connection is currently the gateway to the Mill at Saco Falls property entrance and provides parking in support of adjacent building. A sidewalk runs along the southern side (along the Pepperell Mill property). The entrance to the Falls Plaza currently includes a concrete ramp at steep grade that transitions to a crushed stone area with basement access to the RiverDam Mill Property.



Photo 5: View of Ramp to Fall Plaza Area.

As described in the earlier RiverWalk master plan, it is anticipated this plaza space will serve as a public/private open space appropriate for seasonal gathering, entertainment, dining and retail use, with future boardwalk ramps down around the two-level plaza with flexible seating/planters and interpretive wayfinding elements.

Materials of construction are anticipated to meet historic and industrial nature of this adjacent mill district and match the existing materials at the entrance to the Mill at Saco Falls including brick, granite and concrete. Given the variable water volume and spray at the edge of the Saco Falls, specific design elements and materials will be needed to keep activity an appropriate distance from the Falls, but continuing to allow visual and experiential accessibility. It is anticipated that the design will include rail and gating elements and non-slip surface materials to allow accessibility and safety.

Planting materials are expected to provide appropriate screening to adjacent residential uses, while directing and allowing views to the river. It is anticipated that items like seasonally-



placed planter units may be used to bring texture and color to the Plaza during appropriate weather.

Property Ownership

The Falls Plaza crosses two separate properties: the property at 100 Saco Falls Way owned by the Mill at Saco Falls and the property at 24 Pearl Street owned by RiverDam Mill LLC.

Coordination and negotiation with the Mill at Saco Falls and RiverDam stakeholders to define and administer right-of-way access and design elements is required. Initial discussions have been had between the property owner and City of Biddeford and a Letter of Intent has been issued pending availability of details.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as **Falls Plaza** are:

- Existing Elevations: As noted above, there is a steep grade change between the elevation at the entrance to the Mill at Saco Falls and the area adjacent to the Saco River (and basement elevation adjacent to the RiverDam Mill). Based on previously completed survey this elevation change is on the order of 10-12 feet, but will need to be confirmed with current site conditions. Coordination with both adjacent mill owners to discuss use of spaces in close proximity to the plaza will be critical in determining the final elevation associated with the plaza area, along with potential options for ADA accessibility, which may include the use of an elevator associated with available public spaces.

Budget Estimate

For the **Falls Plaza** segment, a planning level budget estimate of \$310,000 to \$350,000 has been calculated. This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.



RIVERDAM BOARDWALK (SEGMENT D)

Summary of Project Details

Extending northward from Falls Plaza, the RiverWalk will continue on the riverside of the RiverDam building extending beyond the existing retaining wall along the Saco River to the plaza site on the former Maine Energy Recovery property, now known as 3 Lincoln Street. This 275-linear foot section of the RiverWalk is proposed to be similar in construction to the Saco Falls Boardwalk including a raised deck platform with the northern most 75-feet connecting from the boardwalk to the 3 Lincoln Street plaza area.

The northern portion of the proposed boardwalk would run along an existing concrete retaining wall and ledge adjacent to the RiverDam Mill and location of a brewery within the complex. Discussions by the Mill owner and brewery have noted a preference to construction of a deck area for outdoor seating. This could likely be accommodated with the combined use of the space in this area by the Owner and RiverWalk.

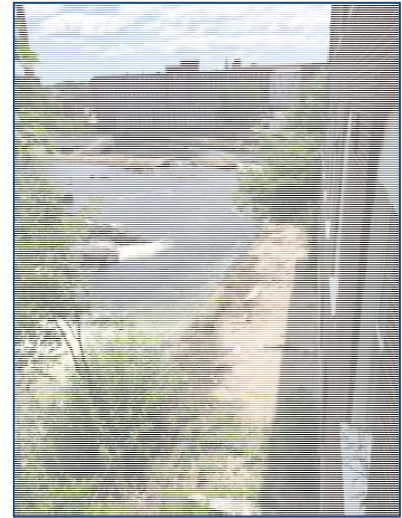


Photo 6: View of Saco River along RiverDam Mill.

It is expected that the materials of construction for this segment will combine details commensurate with the historic and industrial nature of this adjacent mill district and other Boardwalk segments. While this portion of the river sees limited overtopping during wet weather periods, due to proximity to the river, materials of construction will require strength and durability to withstand flood flows and spray/icing from the Saco River. Limited landscaping is expected in this segment.

Property Ownership

This segment of the RiverWalk is located on the parcel identified as 24 Pearl Street under ownership by the RiverDam Mill LLC.

Coordination and negotiation with the RiverDam stakeholders to define and administer right-of-way access and design elements is required. Initial discussions between the property owner and City of Biddeford have been favorable leading to a verbal expression of intent.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as **RiverDam Boardwalk** are:



- **Evaluation of Grade Transitions:** Previously completed topographical survey notes a 23-foot grade change between the existing Falls Plaza elevation and the ground shot collected just north of the limit of the RiverDam Mill Boardwalk. As such, options for transitioning of this grade need to be evaluated. Grade transitions may include the installation of a stairway and/or exterior or interior lift.
- **ADA Accessibility:** Existing topography within the project area provides limited options for the installation of ADA accessibility along the Boardwalk area. It is likely that the transition to the Fall Plaza would require the installation of an exterior or interior lift, as long as public access is provided. Further coordination with the RiverDam Mill is required to assess options.
- **Structural Review and Retaining Wall Design:** The existing retaining wall and RiverDam mill building will need to be assessed for stability and confirmation that the existing infrastructure can support a cantilevered boardwalk and/or what additional structural upgrades would be required to support the boardwalk.
- **Accessibility by Adjacent Buildings:** We understand there is discussion on connection of this space to adjacent mill buildings and uses. Given the limited width of this area, coordination between mill uses and pedestrian uses will require further evaluation.

Budget Estimate

For the **RiverDam Boardwalk** segment, a planning level budget estimate of \$500,000 to \$550,000 has been calculated. This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.

RIVERDAM CONNECTOR (SEGMENT D2)

Summary of Project Details

The RiverDam Connector (Segment D2) has been identified as a secondary access route from Falls Plaza to Pearl Plaza. This route will be designed as ADA accessible, and accommodate bike accessibility as well as offer a safe alternate during high-water/high-ice conditions. This connector will also provide connecting to existing pedestrian routes and connections to the Downtown areas (Lincoln Street and Elm Street) thru Saco Falls Way and Pearl Street.



Photo 7: Snip Clip from Emma Kelly Landscape Vision Plan showing approximate location of RiverDam Connector (label D2)



This route is proposed to run within the existing mill buildings and along the existing defined access roadways, utilizing existing sidewalks where accessible. In keeping with the details of earlier Riverwalk segments, materials of construction are expected include concrete walkways with granite curbing as needed, supplemented with granite seating blocks, landscape areas and sidewalk type lighting.

Property Ownership

Ownership of the RiverDam Connector is thru two separate properties.

The portion of the site from Falls Plaza to Saco Falls Way is anticipated to run along the southern side of the existing roadway part of the 100 Saco Falls Way property, currently owned by the Mills at Saco Falls LP. This connector would then cross the 90 Saco Falls Way property currently owned by Riverdam Mill LLC, connecting to Pearl Street and land owned by the City of Biddeford (3 Lincoln Street).

Coordination and negotiation with the Mill at Saco Falls LP and Riverdam Mill LLC stakeholders to define and administer right-of-way access and design elements is required. Initial discussions between the property owners and City of Biddeford have been favorable leading to a verbal expression of intent.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as **RiverDam Connector** are:

- Separation of Traveled Lane and Pedestrians: As with any roadway, the challenge with this connection will be maintaining defined pedestrian uses and spaces separate from travel ways and parking aisles.
- Access to Existing Commercial/Industrial Uses: Historic use of this area has primarily been for industrial and manufacturing uses, and many manufacturing/industrial uses remain within the existing mill buildings today. In general, the design of this connector will need to incorporate the safe passage of pedestrians and maintain access to businesses for both customer and deliveries.

Budget Estimate

For the **RiverDam Connector** segment, a planning level budget estimate of \$340,000 to \$390,000 has been calculated. This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.



PEARL PLAZA (SEGMENT E)

Summary of Project Details



Photo 8: Snip clip from Wright-Pierce rendering of Pearl Plaza area dated 2015.

Located on the eastern side of the 3 Lincoln Street parcel is a 1.3-acre parcel slated for redevelopment as a plaza area with connection to the RiverWalk trails. Conceptual planning for this Pearl Plaza included the reuse of existing concrete surfaces for an overlook area, concrete walkways along the river with black metal railings, walking trails, seating areas and small portions of landscaping. A

portion of the site is slated for parking to allow access to the

RiverWalk.

The focus of this plaza will be providing views of the back side of the Saco River Falls, and therefore orientation of the space functions are in a southeasterly direction.

Property Ownership

The 3 Lincoln Street site, including the Pearl Plaza portion of the parcel are owned by the City of Biddeford.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as **Pearl Plaza** are:

- **Environmental Restrictions:** The parcel is currently subject to environmental restrictions under the MaineDEP Volunteer Response Action Program (VRAP), with a small portion of the site recently capped. Design details will require the inclusion of an appropriate cap system (soil or impervious surfaces) and review and approval of design details with MaineDEP. Note, however, that the VRAP contemplated utilization of the site as park space. Minimum cap design elements have been approved as part of the VRAP process.



Budget Estimate

For the **Pearl Plaza** segment, a planning level budget estimate of \$280,000 to \$305,000 has been calculated. This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.

SPRING ISLAND BOARDWALK AND CONNECTOR (SEGMENT F)

Summary of Project Details

On the northern side of the railroad trestle, the RiverWalk will provide connectivity to Elm Street via the Spring Island Boardwalk and Connector (Segment F). This Spring Island Boardwalk and Connector is proposed to connect from the railroad underpass to the eastern side of Spring Island, and continuing along the Saco River to the Elm Street Connector. This connector would include at grade trails along the River and a Boardwalk segment behind the Precision building.



Photo 9: View behind existing Spring Island Buildings

Property Ownership

The City of Biddeford owns a small parcel from the railroad underpass to the Saco River. This is part of the 3 Lincoln Street site is currently a vacant and paved area.

The buildings and land surrounding the buildings associated with 20 Gooch Street and 30 Gooch Street are owned by Precision Screw Machine Products. The land at 10 Gooch Street and 59 Elm Street are owned by Fifty Nine Elm Street LLC. Based on the on-line GIS, Gooch Street does not include a defined right-of-way.

The segment between the building at 20 Gooch Street and the Saco River have separate ownership by BIF II US Renewable LLC with the co-owner being noted as Brookfield Renewable Power US Operations. Two separate parcels are noted in the on-line GIS database.

Coordination and negotiation with the Precision Screw Machine Products and Fifty Nine Elm Street LLC stakeholders to define and administer right-of-way access and design elements is required. Additionally, coordination with Brookfield Renewable Resources on potential use of the land along the Saco River behind 20 Gooch Street is required. Initial discussions between



the property owners and City of Biddeford have been favorable leading to a verbal expression of intent.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as ***Spring Island Boardwalk and Connector*** are:

- **Site Flow and Connectivity:** Properties within the Gooch Street area remain manufacturing based at this current time. Large impervious surfaces have been historically constructed to maximize effectiveness of the site, provide parking and accommodate material deliveries. Location of the RiverWalk will need to maintain access to loading docks and delivery locations while providing a safe, defined pathway to safely pass pedestrians. It is likely some curbing or islands will be required to defined vehicle passage separate from pedestrians.
- **Safety:** A portion of this connector is proposed to run along the back (north) side of the Precision building. The existing building is located approximately 10-feet off the shoreline of the river and in a relatively remote area. It is recommended that the planning for this segment include safety features such as gates to close access to this boardwalk during periods when the RiverWalk is closed (currently dawn to dusk).

Budget Estimate

For the ***Spring Island Boardwalk and Connector*** segment, a planning level budget estimate of \$900,000 to \$950,000 has been calculated.

This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.

ELM STREET CROSSING (SEGMENT G)

Summary of Project Details

From the Gooch Street properties, the RiverWalk will cross Elm Street to connect to the Diamond Match properties. The Elm Street crossing will be a major pedestrian crossing and therefore it is anticipated that pedestrian friendly options will be



Photo 10: Snip Clip from Emma Kelly Landscape Vision Plan showing approximate location of Elm Street Connector (labels G1 and G2)



evaluated including material changes to define the crosswalk and/or possible stamped crosswalk patterns and colors. While raised crosswalks were evaluated, given the heavy use of trucks and equipment along this stretch, this option is not preferred.

Traffic calming details, including curb line bump outs and/or safety flashers are likely options at this intersection.

Property Ownership

The Elm Street crossing is proposed to be contained within the Elm Street right-of-way, with a portion of the approach extending along and/or within a parcel owned by the Maine Department of Transportation. This parcel is located on the northeast quadrant of the Elm Street/Gooch Street intersection.

Coordination and negotiation with the MaineDOT to define and administer right-of-way access is required.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as **Elm Street Crossing** are:

- Intersection Improvements: Elm Street is a heavily traveled thoroughfare in the City of Biddeford, and the proposed crossing is generally located at a busy intersection including local businesses. Crosswalk locations will need to be selected to provide a direct connection between the parcels, limit other crossing options and provide adequate site distance to traffic, with particular attention to the Elm Street corridor.

Budget Estimate

For the **Elm Street Crossing** segment, a planning level budget estimate of \$120,000 to \$150,000 has been calculated. This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.

DIAMOND STREET CONNECTOR AND BOARDWALK (SEGMENT H)

Summary of Project Details

Extending from Elm Street, the RiverWalk will continue along Diamond Street and thru the 1 Diamond Street property to provide connection the future Diamond Match Park. The start of



this segment will include the development of a sidewalk along Diamond Street. This sidewalk will continue on the southern side of the building identified as 1 Diamond Street (Gloves Etc building), continuing westerly to connect with the entrance to the Diamond Match Park. The connector will wrap around to the back side of the building at 1 Diamond Street. Currently, there is an approximately 30 foot strip between the back of the building and the banks of the Saco River. Currently, this area appears to be used as a drive aisle around the building, but we understand there is potential for the property owner to look at redevelopment for fishing access and use. This sidewalk would match with other connectors in the RiverWalk, including concrete surface, granite curbing, and the inclusion of landscaping and seating areas where appropriate.

Property Ownership

The first segment in this connector is anticipated to be located within the Diamond Street right-of-way. Work is anticipated to be maintained within this right-of-way.

At the end of Diamond Street, the RiverWalk will connect to the Diamond Match Park thru the 1 Diamond Street property, owned by Gloves Etc., Inc. Coordination and negotiation with Gloves Etc., Inc. to define and administer right-of-way access is required. Initial discussions between the property owner and City of Biddeford have been favorable leading to a verbal expression of intent.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements at the segment designated as ***Diamond Street Connector and Boardwalk*** are:

- Roadway Location: As noted in the aerial imagery, Diamond Street is not the standard roadway with curbing and driveways, but part of a larger paved access for adjacent commercial and industrial businesses. It is likely that maintaining the RiverWalk within the right-of-way will require the construction of a defined roadway and likely review of parking for the adjacent businesses.

Budget Estimate

For the ***Diamond Street Connector and Boardwalk*** segment, a planning level budget estimate of \$475,000 to \$550,000 has been calculated. This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules. A more detailed estimate showing assumptions is attached.



PEDESTRIAN BRIDGE LOCATIONS

Summary of Project Details

As part of this plan, two pedestrian bridge connector options are noted. The first of these Pedestrian Bridge options would extend from Laconia Plaza to the existing RiverWalk Pedestrian Bridge and Mezzanine deck area associated with the Mill at Saco Falls. The total span would be approximately 380-feet in length. The second pedestrian bridge option is proposed to connect the Pearl Plaza to the back parking lot associated with the Amtrak station located in Saco. The connector would be located adjacent and parallel to the existing train trestle crossing the Saco River and approximately 320-foot span.

Property Ownership

The first option for a pedestrian bridge connector would extend from Laconia Plaza (owned by the City of Biddeford) and connect to the existing pedestrian bridge and mezzanine deck owned by Saco Island LLC. Coordination and negotiation with the Saco Island LLC to define and administer right-of-way access is required.

Similarly, the second option (adjacent to the railroad trestle bridge) would extend from property owned by the City of Biddeford to land adjacent to the Amtrak station in Saco. The land adjacent to the Saco River where the eastern abutment is anticipated) would be located on property owned by Central Maine Power (CMP). Coordination and negotiation with CMP to define and administer right-of-way access is also required.

Technical Challenges

Among the issues that need to be addressed in order for the City to proceed with implementation of improvements for either of the **Pedestrian Bridge Locations** include:

- **Span Length:** As discussed above, in the locations proposed, each of the spans would be greater than 300 feet in length, which could not be constructed of a single span length. This would require construction of an in-water abutment for bridge support which would require significant regulatory review.
- **Connectivity to existing properties:** Both segments would require coordination with existing property owners to assess details such as new abutment construction locations, termination and ADA accessibility, property access by pedestrians, vehicles and emergency vehicles, etc.
- **Regulatory Considerations:** Due to the anticipated span, it is likely in-work construction would be required, requiring permitting and mitigation planning with a number of regulatory agencies, including but not limited to Maine Department of Environmental Protection, Army Corps of Engineers, Department of Conservation, etc. .



Budget Estimate

For each of the **Pedestrian Bridge Connector** options, a planning level budget estimate of \$2,150,000 to \$2,750,000 has been calculated. This range should be considered a pre-design planning level estimate. There are a number of factors, including aesthetic design components, abutment construction details, and in-water work that could significantly impact construction costs.

This planning level estimate reflects the likely cost of construction based on unit prices for similar project bid in Maine. It is important to recognize that construction costs may fluctuate due to material price changes and/or economy, as well as bidding timeframes and schedules.

DIAMOND MATCH SITE

The Diamond Match Property located just west of Main Street is a approximate 9.8 acre parcel owned by the City of Biddeford providing for approximately 1,200 linear feet of shoreline along the Saco River. In 2010, the City of Biddeford initiated a study for the redevelopment of the parcel into the Diamond Match Park. The concept plan includes reuse of the parcel with RiverWalk trails, overlook seating areas, various play areas, picnic areas, amphitheater and stage and seating areas, with connection back to the RiverWalk project.

Details related to the design elements are further described in the Diamond Match Park Conceptual Plan prepared by Mitchell & Associates dated July 2010.

Phasing and Construction Discussion

In general, development of a phased approach to the various segments of this project will include a mix of available funding, segment specific funding opportunities, site accessibility and easement coordination.

- It is our understanding the City is working to procure funding for construction of Pearl Plaza, and therefore could accommodate construction of this segment of the RiverWalk in the next one to two years. If this occurs, connection from Laconia Plaza to Pearl Plaza area may be prioritized.
- In general, Boardwalk segments are likely going to require significant design and permitting and be more costly. Connector segments are likely to be less expensive, as they will utilize existing access drives and roadways and have limited impact on natural resources.
- Design of the Saco Falls Boardwalk and RiverDam Boardwalk along with the Falls Plaza are recommended to be completed concurrently. Grades and access of these areas will be critical to reconnect back to infrastructure associated with the Laconia Plaza and Pearl Plaza.



- It is recommended, due to limited construction access, that the work on the Saco Falls Boardwalk and RiverDam Boardwalk be completed concurrently and/or both segments be completed prior to construction of the Falls Plaza and Connector. It is likely construction access to the Boardwalk segments will utilize the Falls Plaza area.

Regulatory Considerations

A number of regulatory concerns and permitting will need to be considered as part of the developing the various phases of the RiverWalk Master Plan. Below highlight general considerations.

SHORELAND ZONING ORDINANCE

The City has implemented a Shoreland Zoning ordinance in conformance with the requirements set forth by the legislature in the late 1990's. In reviewing the proposed improvements against the ordinance it appears that the work will conform to the ordinance as is presently exists without the need for a variance.

SITE PLAN REVIEW AND PERFORMANCE STANDARDS

As with most municipalities in Maine, the City of Biddeford administers as Site Plan ordinance which establishes standards and review authority associated with a number of types of development. This project may require review by the City's Planning Board.

FLOOD HAZARD PERMITTING

One of the primary regulatory issues to be considered as part of the planning efforts for the facilities is the impact of Flood Hazard regulations on planned elements of construction. Portions of the site lie within the 100-year floodplain as shown on the Flood Insurance Rate Maps (FIRM) as developed by the Federal Emergency Management Agency (FEMA).

In the case of Biddeford, construction within the 100-year floodplain, or Special Flood Hazard Area (SFHA), is regulated by the City's Floodplain Ordinance, consistent with the requirements of the Maine Floodplain Management Program. The Maine State Planning Office administers the Maine Floodplain Management Program and provides assistance to communities taking part in the National Flood Insurance program (NFIP). FEMA Region 1 provides additional technical support to the Maine Floodplain Management Program on an as-requested basis.

Physical improvements proposed within the area designated as floodway must be reviewed to establish that the work will not have any adverse effect on flood levels (i.e. increase the risk of damage to other facilities in the area). Submittal of application materials will need to demonstrate that adequate measures will be implemented to protect water quality, as well as administrative aspects such as title, right or interest in the subject properties.



SACO RIVER CORRIDOR COMMISSION

The Saco River Corridor Commission regulates work in proximity to the Saco River and has as its focus the protection of the river's aquatic and riparian habitats and scenic attributes. The proposed improvements will require acquisition of a permit from the Commission.

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Maine Department of Environmental Protection can get involved with the improvements on several levels, including the Natural Resource Protection Act (NRPA) and Stormwater Law. It is unlikely enough new impervious area would be created as a part of the project to trigger the threshold for a permit under the Site Location of Development Act.

Maine DEP Natural Resources Protection Act (NRPA): The NRPA typically requires permit acquisition for disturbance of soil material within 75 feet of a surface water. In this case, excavation and grading along the back of the new boardwalk would trigger the need for a NRPA approval. For those portions of the work that would allow the City to do the work in a way that doesn't create the potential for discharge of sediment into the Saco River, the City may be able to meet this need through the Permit-By-Rule (PBR) process.

Maine DEP Stormwater Permit: In the event the project involves the disturbance of more than one acre, the DEP will require application for a state stormwater permit. While the state stormwater permit typically requires that the applicant implement measures to address impacts in the areas of both stormwater quality and stormwater quantity, the site's proximity to the Saco River suggests that we will only need to address quality-related issues.

Maine Construction General Permit (MCGP): This is a fairly straightforward permit required by the Maine DEP as a result of the delegated NPDES Phase II Stormwater program. It requires submission of erosion and sedimentation control drawings to the DEP, along with a fee. Approval timeframe is generally prompt.

ENVIRONMENTAL REVIEW UNDER NEPA

A separate, but related restriction can be tied to the source of monies paying for the improvements. Use of funding which originates with the federal government, such as Community Development Block Grants from the Maine Department of Economic and Community Development, must receive approval under the National Environmental Policy Act (NEPA). From a practical perspective, the two aspects of NEPA that have the most potential for complications for this type of project include flooding and impacts to historic resources.



Under NEPA, federally funded projects must comply with the President's Executive Order 11988. This generally requires an assessment of alternatives and mitigative actions for work that falls within a special flood hazard area (SFHA) or other floodplain.

In addition, NEPA review generally requires that the State Historic Preservation Office, in this case the Maine Historic Preservation Commission, confirm that the proposed improvements will not have adverse impact on resources of historical significance.

U.S. ARMY CORPS OF ENGINEERS

Section 404 of the federal Clean Water Act regulates activities within waters of the United States. For those projects with limited impacts, federal permitting can often be addressed through the State Program General Permit (SPGP) process, which is often administered jointly with NRPA approval by the Maine DEP. While, it is the goal of this project to avoid the need for Corps involvement in the permitting, temporary access to the Saco River may be necessary during replacement or rehabilitation of retaining walls and may require ACOE coordination.

BUREAU OF PARKS & LANDS SUBMERGED LANDS PROGRAM (DACF)

The Bureau's Submerged Lands Program regulates publicly owned land below the mean low water mark (including tidal rivers such as the Biddeford section of the Saco River). In general, the projects included in this RiverWalk master plan update do not anticipate work below the mean water mark, and therefore should have limited applicability.

Funding Opportunities

There are a considerable number of tasks and suggested improvements contained in the Biddeford RiverWalk Master Plan Update, and many of the tasks have costs associated with them. There is no one funding mechanism that provides a "silver bullet" in terms of covering the costs for implementation of all the recommended improvements, and a significant portion of the costs must often be met with some local funding. In order to bring down local costs, a variety of funding mechanisms will need to be bundled to achieve the desired results. The following is an overview of potential funding sources to support the implementation of Biddeford's RiverWalk efforts. Included in this overview are:

- MaineDOT funding sources - Quality Communities Program;
- Community Development Block Grants;
- Project Canopy Grants;
- Local Sources of Funding, including Tax Increment Financing (TIF);
- Other Grant Programs that may become available from time to time such as the MITF, Maine Riverfront Community Development Bond, etc.



We are hopeful that the details included in this summary and attached mapping and budgetary estimates are helpful in your continued review and planning for the Biddeford RiverWalk extension. Should you require any additional information, please do not hesitate to give me a shout.

Sincerely,

WRIGHT-PIERCE

Stephanie A. Hubbard, PE
Project Manager

Stephanie.hubbard@wright-pierce.com

Jonathan C. Edgerton, PE
Senior Vice President

jonathan.edgerton@wright-pierce.com

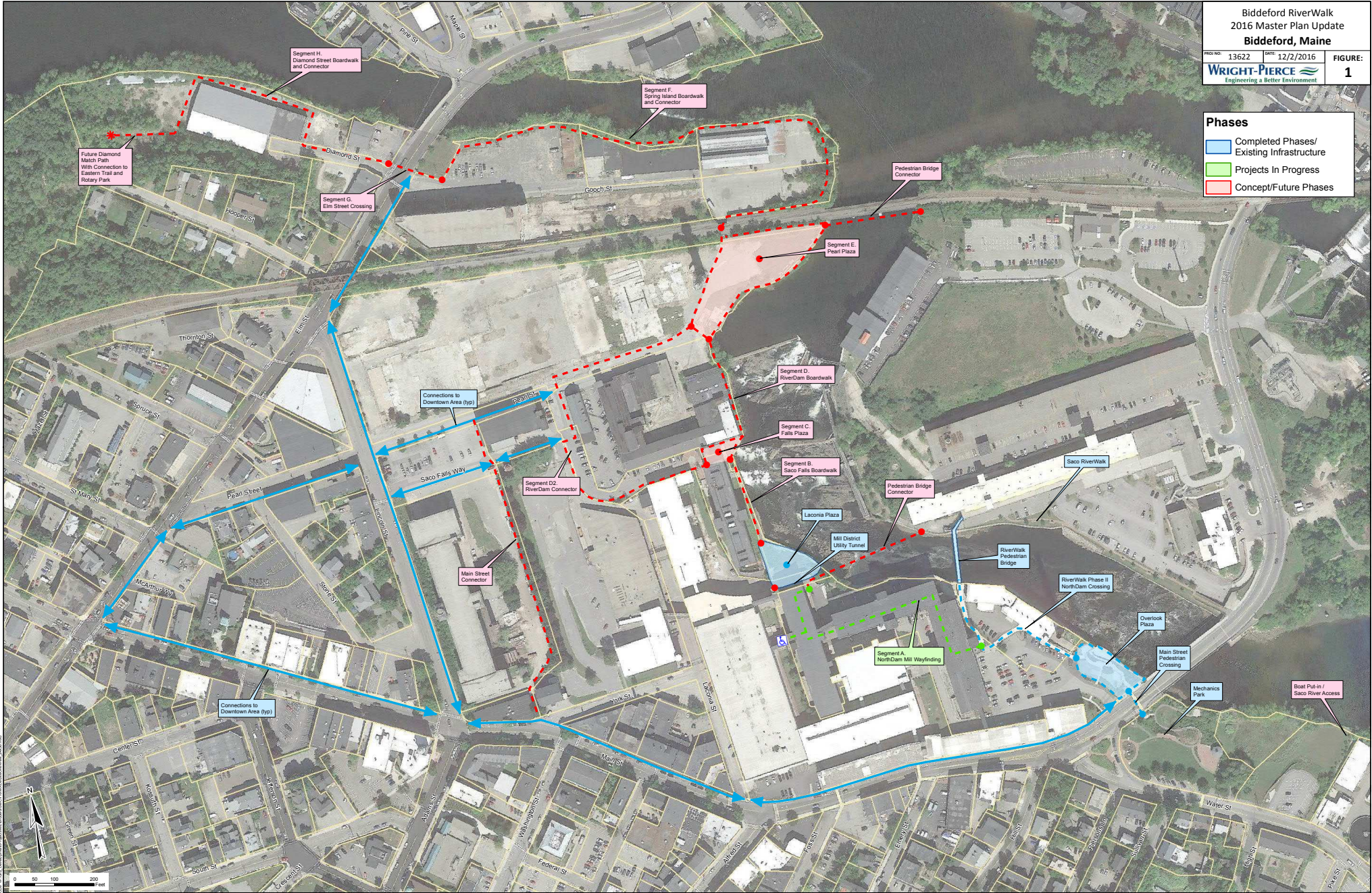
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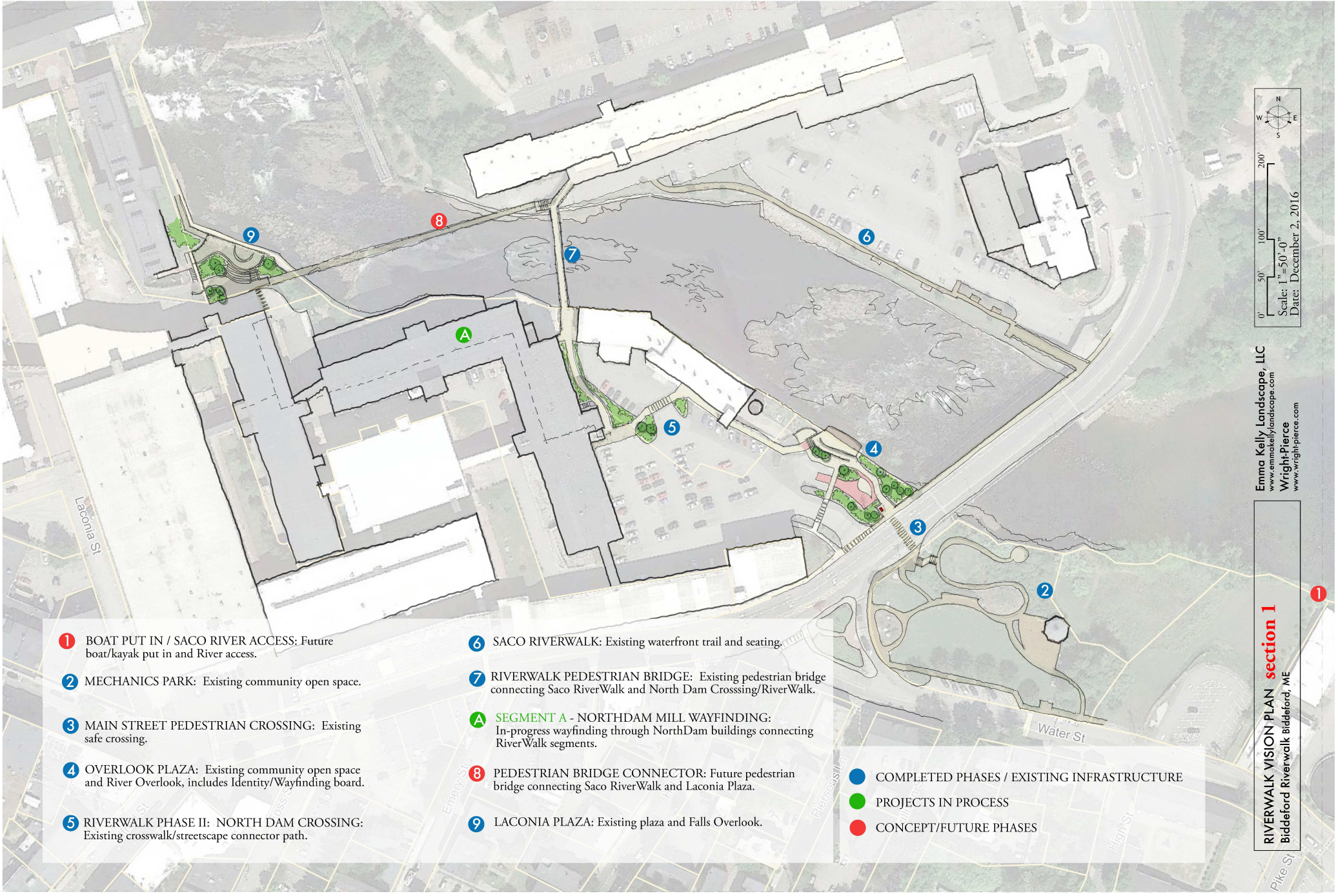
Enclosures

Figures

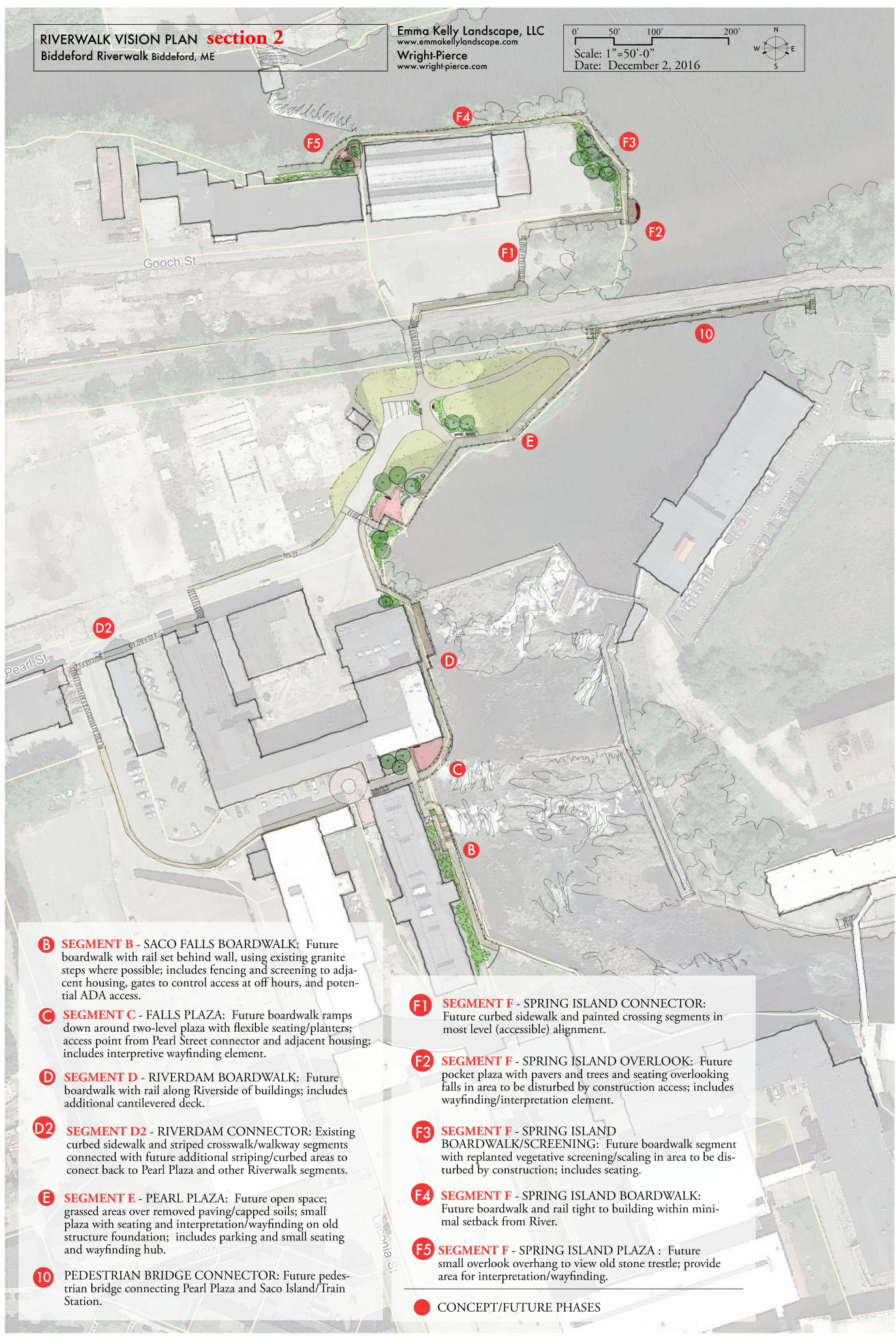
Phases

- Completed Phases/
Existing Infrastructure
- Projects In Progress
- Concept/Future Phases





Emma Kelly Landscape, LLC
www.emmakellylandscape.com
Wright-Pierce
www.wright-pierce.com



B SEGMENT B - SACO FALLS BOARDWALK: Future boardwalk with rail set behind wall, using existing granite steps where possible; includes fencing and screening to adjacent housing, gates to control access at off hours, and potential ADA access.

C SEGMENT C - FALLS PLAZA: Future boardwalk ramps down around two-level plaza with flexible seating/planters; access point from Pearl Street connector and adjacent housing; includes interpretive wayfinding element.

D SEGMENT D - RIVERDAM BOARDWALK: Future boardwalk with rail along Riverside of buildings; includes additional cantilevered deck.

D2 SEGMENT D2 - RIVERDAM CONNECTOR: Existing curbed sidewalk and striped crosswalk/walkway segments connected with future additional striping/curbed areas to connect back to Pearl Plaza and other Riverwalk segments.

E SEGMENT E - PEARL PLAZA: Future open space; grassed areas over removed paving/capped soils; small plaza with seating and interpretation/wayfinding on old structure foundation; includes parking and small seating and wayfinding hub.

10 PEDESTRIAN BRIDGE CONNECTOR: Future pedestrian bridge connecting Pearl Plaza and Saco Island/Train Station.

F1 SEGMENT F - SPRING ISLAND CONNECTOR: Future curbed sidewalk and painted crossing segments in most level (accessible) alignment.

F2 SEGMENT F - SPRING ISLAND OVERLOOK: Future pocket plaza with pavers and trees and seating overlooking falls in area to be disturbed by construction access; includes wayfinding/interpretation element.

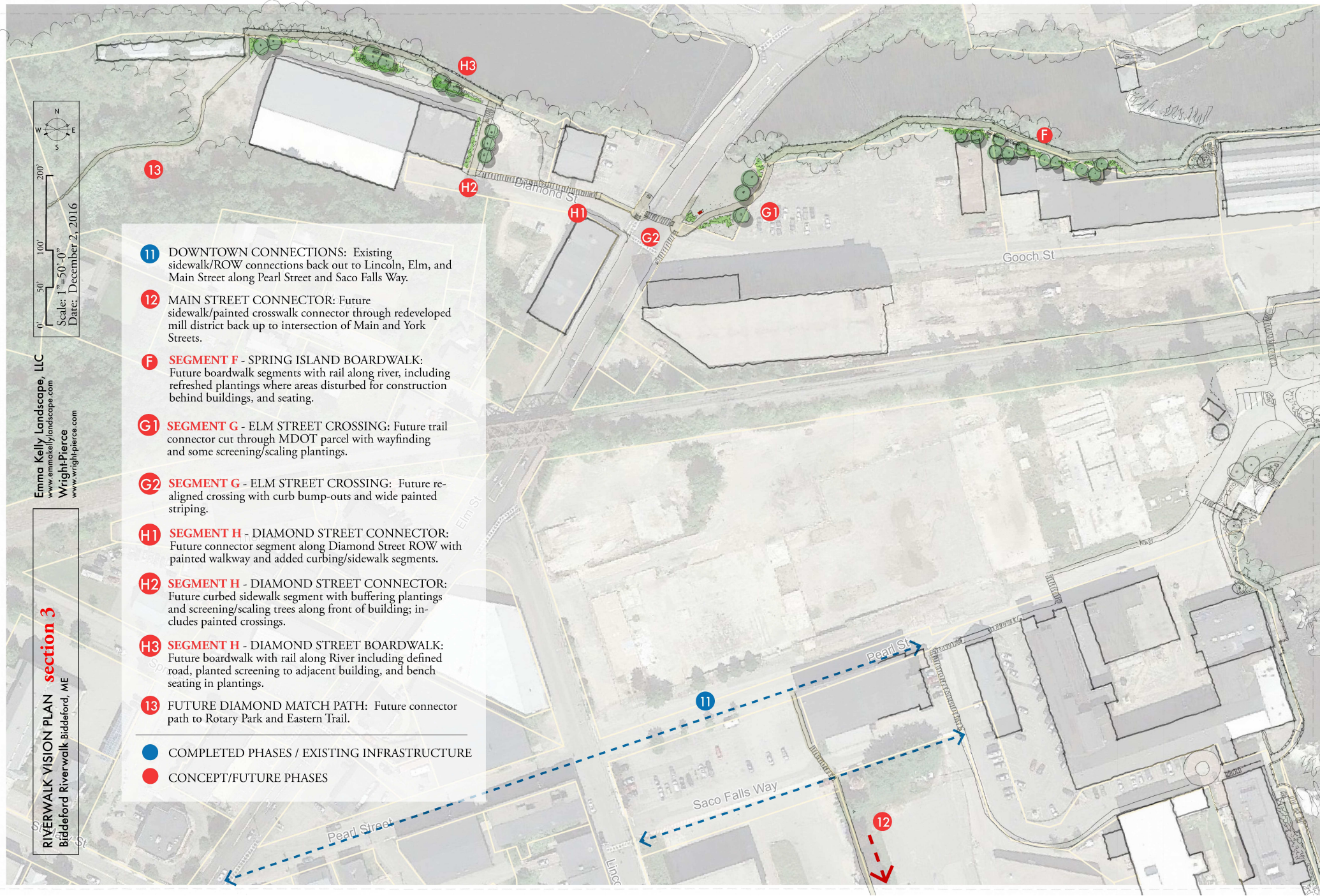
F3 SEGMENT F - SPRING ISLAND BOARDWALK/SCREENING: Future boardwalk segment with replanted vegetative screening/scaling in area to be disturbed by construction; includes seating.

F4 SEGMENT F - SPRING ISLAND BOARDWALK: Future boardwalk and rail tight to building within minimal setback from River.

F5 SEGMENT F - SPRING ISLAND PLAZA: Future small overlook overhang to view old stone trestle; provide area for interpretation/wayfinding.

● CONCEPT/FUTURE PHASES

- 11** DOWNTOWN CONNECTIONS: Existing sidewalk/ROW connections back out to Lincoln, Elm, and Main Street along Pearl Street and Saco Falls Way.
 - 12** MAIN STREET CONNECTOR: Future sidewalk/painted crosswalk connector through redeveloped mill district back up to intersection of Main and York Streets.
 - F** **SEGMENT F** - SPRING ISLAND BOARDWALK: Future boardwalk segments with rail along river, including refreshed plantings where areas disturbed for construction behind buildings, and seating.
 - G1** **SEGMENT G** - ELM STREET CROSSING: Future trail connector cut through MDOT parcel with wayfinding and some screening/scaling plantings.
 - G2** **SEGMENT G** - ELM STREET CROSSING: Future re-aligned crossing with curb bump-outs and wide painted striping.
 - H1** **SEGMENT H** - DIAMOND STREET CONNECTOR: Future connector segment along Diamond Street ROW with painted walkway and added curbing/sidewalk segments.
 - H2** **SEGMENT H** - DIAMOND STREET CONNECTOR: Future curbed sidewalk segment with buffering plantings and screening/scaling trees along front of building; includes painted crossings.
 - H3** **SEGMENT H** - DIAMOND STREET BOARDWALK: Future boardwalk with rail along River including defined road, planted screening to adjacent building, and bench seating in plantings.
 - 13** FUTURE DIAMOND MATCH PATH: Future connector path to Rotary Park and Eastern Trail.
- COMPLETED PHASES / EXISTING INFRASTRUCTURE
 - CONCEPT/FUTURE PHASES



Planning Level (Pre-Design) Cost Estimates

2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment B - Saco Falls Boardwalk

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COSTS
1	Mobilize/Demobilize	LS	1	\$25,000	\$25,000
2	Erosion and Sediment Control	LS	1	\$5,000	\$5,000
	Retaining Wall Rehabilitation (see note 5)	LS	1	\$75,000	\$75,000
3	Cantilevered Boardwalk				
	Boardwalk (surface and Structural Supports)	SF	3,800	\$50	\$190,000
	Boardwalk Railing	LF	250	\$175	\$43,750
	Stairway Access	LS	1	\$10,000	\$10,000
	RipRap Protection	CY	250	\$50	\$12,500
4	Landscaping				
	Shade Trees	EA	6	\$1,200	\$7,200
	Perennial Beds	SF	200	\$20	\$4,000
	Loam and Seed	SY	350	\$15	\$5,250
5	Site Furnishing				
	8-ft Bench Seats	EA	2	\$4,500	\$9,000
	Plainwell Trash Containers	EA	2	\$2,400	\$4,800
6	Site Lighting				
	Poles and Bases	EA	3	\$1,500	\$4,500
	Conduit	LF	250	\$40	\$10,000
	Service and Controls	LS	1	\$10,000	\$10,000
7	Wayfinding Signage	LS	1	\$15,000	\$15,000
Subtotal					\$431,000
Contingency (20/)					\$86,200
Design, Engineering and Bidding (12/)					\$51,720
PRE-DESIGN BUDGET ESTIMATE					\$568,920

Notes:

- 1) This cost estimate reflects a likely cost of construction of the improves identified above. In general, details and unit prices should be considered pre-design/planning level estimates.
- 2) This estimate has been prepared prior to receiving permits. There is the potential that permitting authorities may impose unforeseen restrictions that may alter this estimate.
- 3) A 12/ contingency has been added to the overall cost of the project to include typical costs for design and engineering, permitting, bidding phase services and limited construction administration.
- 4) The Planning Level Estimate reflects the likely cost of construction based on 2016 Unit Prices for similar projects bid in Maine. It is important to recognize construction costs may fluctuate due to material price changes and/or economy as well as bidding timeframes and schedules.
- 5) A placeholder has been included for retaining wall rehabilitation. Final cost will be based on further design details.

2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment C - Falls Plaza

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COSTS
1	Mobilize/Demobilize	LS	1	\$10,000	\$10,000
2	Erosion and Sediment Control	LS	1	\$2,500	\$2,500
3	Demolition and Site Excavation	LS	1	\$50,000	\$50,000
4	Hardscape Plaza (4,500 s.f.)				
	<i>Hardscape Materials</i>	<i>SY</i>	<i>500</i>	<i>\$150</i>	<i>\$75,000</i>
	<i>Aggregate Base and Subbase (18" depth)</i>	<i>CY</i>	<i>250</i>	<i>\$25</i>	<i>\$6,250</i>
5	Upgrade Sidewalk				
	<i>Concrete Sidewalk</i>	<i>SY</i>	<i>100</i>	<i>\$150</i>	<i>\$15,000</i>
	<i>Aggregate Base and Subbase (18" depth)</i>	<i>CY</i>	<i>35</i>	<i>\$25</i>	<i>\$875</i>
	<i>Remove and Reset Existing Graite Curbing</i>	<i>LF</i>	<i>180</i>	<i>\$40</i>	<i>\$7,200</i>
6	Landscaping				
	<i>Shade Trees</i>	<i>EA</i>	<i>5</i>	<i>\$1,200</i>	<i>\$6,000</i>
	<i>Shrubs/Grasses</i>	<i>EA</i>	<i>45</i>	<i>\$75</i>	<i>\$3,375</i>
7	Site Furnishing				
	<i>Railings</i>	<i>LF</i>	<i>100</i>	<i>\$250</i>	<i>\$25,000</i>
	<i>8-ft Bench Seats</i>	<i>EA</i>	<i>3</i>	<i>\$4,500</i>	
	<i>Plainwell Trash Containers</i>	<i>EA</i>	<i>2</i>	<i>\$2,400</i>	<i>\$4,800</i>
8	Site Lighting				
	<i>Poles and Bases</i>	<i>EA</i>	<i>4</i>	<i>\$1,500</i>	<i>\$6,000</i>
	<i>Conduit</i>	<i>LF</i>	<i>150</i>	<i>\$40</i>	<i>\$6,000</i>
	<i>Service and Controls</i>	<i>LS</i>	<i>1</i>	<i>\$10,000</i>	<i>\$10,000</i>
9	Wayfinding Signage	LS	1	\$15,000	\$15,000
Subtotal					\$243,000
Pre-Design Budget Estimate					\$48,600
Design, Engineering and Bidding (12/)					\$29,160
PRE-DESIGN BUDGET ESTIMATE					\$320,760

Notes:

- 1) This cost estimate reflects a likely cost of construction of the improves identified above. In general, details and unit prices should be considered pre-design/planning level estimates.
- 2) This estimate has been prepared prior to receiving permits. There is the potential that permitting authorities may impose unforeseen restrictions that may alter this estimate.
- 3) A 12/ contingency has been added to the overall cost of the project to include typical costs for design and engineering, permitting, bidding phase services and limited construction administration.
- 4) The Planning Level Estimate reflects the likely cost of construction based on 2016 Unit Prices for similar projects bid in Maine. It is important to recognize construction costs may fluctuate due to material price changes and/or economy as well as bidding timeframes and schedules.

2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment D - RiverDam Boardwalk

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COSTS
1	Mobilize/Demobilize	LS	1	\$25,000	\$25,000
2	Erosion and Sediment Control	LS	1	\$5,000	\$5,000
3	Retaining Wall Rehabilitation	LS	1	\$50,000	\$50,000
3	Cantilevered Boardwalk				
	<i>Boardwalk (surface and Structural Supports)</i>	<i>SF</i>	<i>3,000</i>	<i>\$75</i>	<i>\$225,000</i>
	<i>Boardwalk Railing</i>	<i>LF</i>	<i>300</i>	<i>\$175</i>	<i>\$52,500</i>
	<i>Stairway Access</i>	<i>LS</i>	<i>1</i>	<i>\$15,000</i>	<i>\$15,000</i>
6	Site Lighting				
	<i>Poles and Bases</i>	<i>EA</i>	<i>3</i>	<i>\$1,500</i>	<i>\$4,500</i>
	<i>Conduit</i>	<i>LF</i>	<i>250</i>	<i>\$40</i>	<i>\$10,000</i>
	<i>Service and Controls</i>	<i>LS</i>	<i>1</i>	<i>\$10,000</i>	<i>\$10,000</i>
7	Wayfinding Signage	LS	1	\$15,000	\$15,000
Subtotal					\$412,000
Contingency (20/)					\$82,400
Design, Engineering and Bidding (12/)					\$49,440
PRE-DESIGN BUDGET ESTIMATE					\$543,840

Notes:

- 1) This cost estimate reflects a likely cost of construction of the improves identified above. In general, details and unit prices should be considered pre-design/planning level estimates.
- 2) This estimate has been prepared prior to receiving permits. There is the potential that permitting authorities may impose unforeseen restrictions that may alter this estimate.
- 3) A 12/ contingency has been added to the overall cost of the project to include typical costs for design and engineering, permitting, bidding phase services and limited construction administration.
- 4) The Planning Level Estimate reflects the likely cost of construction based on 2016 Unit Prices for similar projects bid in Maine. It is important to recognize construction costs may fluctuate due to material price changes and/or economy as well as bidding timeframes and schedules.

2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment D2 - RiverDam Connector

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COSTS
1	Mobilize/Demobilize	LS	1	\$10,000	\$10,000
2	Erosion and Sediment Control	LS	1	\$2,500	\$2,500
3	Sidewalk and Curbing				
	<i>Site Excavation and Clearing</i>	<i>LS</i>	<i>1</i>	<i>\$15,000</i>	<i>\$15,000</i>
	<i>Concrete Sidewalk and Aggregate Base</i>	<i>SY</i>	<i>1100</i>	<i>\$70</i>	<i>\$77,000</i>
	<i>Granite Curbing</i>	<i>LF</i>	<i>850</i>	<i>\$55</i>	<i>\$46,750</i>
	<i>Painting/Crosswalks</i>				
4	Landscaping				
	<i>Shade Trees</i>	<i>EA</i>	<i>11</i>	<i>\$1,200</i>	<i>\$13,200</i>
	<i>Loam and Seed</i>	<i>SY</i>	<i>450</i>	<i>\$15</i>	<i>\$6,750</i>
5	Site Furnishing				
	<i>8-ft Bench Seats</i>	<i>EA</i>	<i>4</i>	<i>\$4,500</i>	<i>\$18,000</i>
	<i>Plainwell Trash Containers</i>	<i>EA</i>	<i>2</i>	<i>\$2,400</i>	<i>\$4,800</i>
6	Storm Drainage Improvements	LS	1	\$15,000	\$15,000
7	Site Lighting				
	<i>Poles and Bases</i>	<i>EA</i>	<i>8</i>	<i>\$1,500</i>	<i>\$12,000</i>
	<i>Conduit</i>	<i>LF</i>	<i>950</i>	<i>\$40</i>	<i>\$38,000</i>
	<i>Service and Controls</i>	<i>LS</i>	<i>1</i>	<i>\$10,000</i>	<i>\$10,000</i>
8	Wayfinding Signage	LS	1	\$20,000	\$20,000
Subtotal					\$289,000
Contingency (20/)					\$57,800
Design, Engineering and Bidding (12/)					\$34,680
PROJECT TOTAL					\$381,480

Notes:

- 1) This cost estimate reflects a likely cost of construction of the improves identified above. In general, details and unit prices
- 2) This estimate has been prepared prior to receiving permits. There is the potential that permitting authorities may impose unforeseen restrictions that may alter this estimate.
- 1) This cost estimate reflects a likely cost of construction of the improves identified above. In general, details and unit prices should be considered pre-design/planning level estimates.
- 4) The Planning Level Estimate reflects the likely cost of construction based on 2016 Unit Prices for similar projects bid in Maine. It is important to recognize construction costs may fluctuate due to material price changes and/or economy as well as bidding timeframes and schedules.

2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment E - Pearl Plaza

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	SUB-TOTAL COSTS	TOTAL COST
1	Mobilize/Demobilize	LS	1	\$10,000	\$10,000	\$10,000
2	Erosion and Sediment Control	LS	1	\$5,000	\$5,000	\$5,000
3	Access Driveway and Parking Area	LS	1		\$52,600	\$52,600
	Common Excavation	CY	305	\$10	\$3,050	
	Installation of Aggregate Base Material	CY	255	\$20	\$5,100	
	3-inch HMA Pavement	TON	250	\$130	\$32,500	
	Striping (linear)	LF	60	\$5	\$300	
	Striping (area)	SF	160	\$3	\$400	
	Curbing	LF	250	\$45	\$11,250	
4	Flush Paver Plaza	LS	1		\$2,050	\$2,050
	Excavation and Installation of Aggregate Base Material	CY	10	\$30	\$300	
	Plaza Paver	SY	35	\$50	\$1,750	
5	Stone Dust Trail	LS	1		\$12,200	\$12,200
	Common Excavation	CY	180	\$10	\$1,800	
	Installation of Aggregate Base Material (10-inch)	CY	130	\$20	\$2,600	
	4-inch Stone Dust Surface	CY	60	\$130	\$7,800	
6	8-foot Wide Concrete Walkway					
	Common Excavation	CY	45	\$20	\$900	
	Installation of Aggregate Base Material (10-inch)	CY	30	\$25	\$750	
	4-inch Stone Dust Surface	SY	85	\$55	\$4,675	
7	Stairway (Pre-cast)	EA	2	\$1,500	\$3,000	\$3,000
8	Raised Plater/Seating Areas	SF	270	\$25	\$6,750	\$6,750
9	Concrete Infill Areas/Ramps	SY	180	\$125	\$22,500	\$22,500
10	42-inch Black Metal Railing	LF	450	\$150	\$67,500	\$67,500
11	Loam and Seed	SY	3300	\$10	\$33,000	\$33,000
12	Landscaping (Allowance)	ALLOW	1	\$15,000	\$15,000	\$15,000
13	Cantilevered Shade Structure (Allowance)	ALLOW	1	\$5,000	\$5,000	\$5,000
14	Site Amenities (Allowance)	ALLOW	1	\$20,000.00	\$20,000	\$20,000
					SUBTOTAL	\$254,600
					Contingency (20/)	\$50,920
					PRE-DESIGN BUDGET ESTIMATE	\$305,520

Notes:

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- 3) A 12/ contingency has been added to the overall cost of the project to include typical costs for design and engineering, permitting, bidding phase services and limited construction administration.
- 4) The Planning Level Estimate reflects the likely cost of construction based on 2016 Unit Prices for similar projects bid in Maine. It is important to recognize construction costs may fluctuate due to material price changes and/or economy as well as bidding timeframes and schedules.

2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment F - Spring Island Boardwalk and Connector

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COSTS
1	Mobilize/Demobilize	LS	1	\$25,000	\$25,000
2	Erosion and Sediment Control	LS	1	\$5,000	\$5,000
3	Cantilevered Boardwalk				
	Site Clearing and Preparation	LF	550	\$55	\$30,250
	Boardwalk (surface and Structural Supports)	SF	5,500	\$50	\$275,000
	Boardwalk Railing	LF	550	\$175	\$96,250
	Access Gates	EA	2	\$7,500	\$15,000
4	Sidewalk and Curbing				
	Concrete Sidewalk and Aggregate Base	SY	1200	\$70	\$84,000
	Granite Curbing	LF	1700	\$55	\$93,500
	Restore Pavement	TON	75	\$150	\$11,250
5	Site Lighting				
	Poles and Bases	EA	5	\$1,500	\$7,500
	Conduit	LF	1200	\$40	\$48,000
	Service and Controls	LS	1	\$10,000	\$10,000
6	Wayfinding Signage	LS	1	\$15,000	\$15,000
Subtotal					\$715,750
Contingency (20/)					\$143,150
Design, Engineering and Bidding (12/)					\$85,890
PRE-DESIGN BUDGET ESTIMATE					\$944,790

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2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment G - Elm Street Crossing

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COSTS
1	Mobilize/Demobilize	LS	1	\$10,000	\$10,000
2	Erosion and Sediment Control	LS	1	\$1,000	\$1,000
3	Crosswalk	LS	1	\$50,000	\$50,000
	<i>Aggregate Base and Subbase</i>	<i>CY</i>	<i>10</i>	<i>\$30</i>	<i>\$300</i>
	<i>Unit Paver Crosswalk</i>	<i>SY</i>	<i>30</i>	<i>\$125</i>	<i>\$3,750</i>
	<i>Detectable Warning Devices (installed)</i>	<i>EA</i>	<i>2</i>	<i>\$1,500</i>	<i>\$3,000</i>
	<i>Crosswalk Flashers</i>	<i>LS</i>	<i>1</i>	<i>\$7,500</i>	<i>\$7,500</i>
3	Sidewalk Connection				
	<i>Concrete Sidewalk and Aggregate Base</i>	<i>SY</i>	<i>90</i>	<i>\$70</i>	<i>\$6,300</i>
	<i>Granite Curbing</i>	<i>LF</i>	<i>80</i>	<i>\$55</i>	<i>\$4,400</i>
4	Landscaping				
	<i>Shade Trees</i>	<i>EA</i>	<i>4</i>	<i>\$1,200</i>	<i>\$4,800</i>
	<i>Loam and Seed</i>	<i>SY</i>	<i>100</i>	<i>\$15</i>	<i>\$1,500</i>
7	Wayfinding Signage	LS	1	\$15,000	\$15,000
Subtotal					\$107,550
Contingency (20/)					\$21,510
Design, Engineering and Bidding (12/)					\$12,906
PRE-DESIGN BUDGET ESTIMATE					\$141,966

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2016 Biddeford RiverWalk Master Plan Update
Biddeford, Maine
PLANNING LEVEL (PRE-DESIGN) COST ESTIMATE - NOVEMBER 2016
Segment H - Diamond Street Connector

NO.	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COSTS
1	Mobilize/Demobilize	LS	1	\$15,000	\$15,000
2	Erosion and Sediment Control	LS	1	\$5,000	\$5,000
3	Sidewalk and Curbing				
	<i>Site Excavation and Clearing</i>	<i>LS</i>	<i>1</i>	<i>\$25,000</i>	<i>\$25,000</i>
	<i>Concrete Sidewalk and Aggregate Base</i>	<i>SY</i>	<i>1520</i>	<i>\$70</i>	<i>\$106,400</i>
	<i>Granite Curbing</i>	<i>LF</i>	<i>1200</i>	<i>\$55</i>	<i>\$66,000</i>
	<i>Restore Pavement</i>	<i>TON</i>	<i>50</i>	<i>\$150</i>	<i>\$7,500</i>
	<i>Railing</i>	<i>LF</i>	<i>350</i>	<i>\$175</i>	<i>\$61,250</i>
	<i>Gates</i>	<i>EA</i>	<i>2</i>	<i>\$7,500</i>	<i>\$15,000</i>
4	Landscaping				
	<i>Shade Trees</i>	<i>EA</i>	<i>14</i>	<i>\$1,200</i>	<i>\$16,800</i>
	<i>Loam and Seed</i>	<i>SY</i>	<i>200</i>	<i>\$15</i>	<i>\$3,000</i>
5	Site Furnishing				
	<i>Plainwell Trash Containers</i>	<i>EA</i>	<i>2</i>	<i>\$2,400</i>	<i>\$4,800</i>
7	Site Lighting				
	<i>Poles and Bases</i>	<i>EA</i>	<i>9</i>	<i>\$1,500</i>	<i>\$13,500</i>
	<i>Conduit</i>	<i>LF</i>	<i>1050</i>	<i>\$40</i>	<i>\$42,000</i>
	<i>Service and Controls</i>	<i>LS</i>	<i>1</i>	<i>\$15,000</i>	<i>\$15,000</i>
8	Wayfinding Signage	LS	1	\$25,000	\$25,000
Subtotal					\$421,250
Contingency (20/)					\$84,250
Design, Engineering and Bidding (12/)					\$50,550
PRE-DESIGN BUDGET ESTIMATE					\$556,050

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- 1) This cost estimate reflects a likely cost of construction of the improves identified above. In general, details and unit prices should be considered pre-design/planning level estimates.