



Wiscasset, ME

# Waterfront Boardwalk Preliminary Design Report

Date: October, 2014

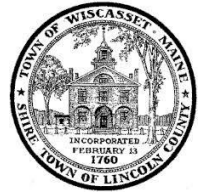
WP # 11370G

**WRIGHT-PIERCE**   
Engineering a Better Environment

# Waterfront Boardwalk - Preliminary Design Report

## Introduction

The Wiscasset Waterfront Boardwalk Preliminary Design Report was developed for the Town of Wiscasset by Wright-Pierce. Guidance and plan development assistance came from Town Staff, the Town's attorney, the Maine Department of Transportation (MaineDOT), the Maine Department of Environmental Protection (MaineDEP), the United States Army Corps of Engineers (ACOE) and the Lincoln County Regional Planning Commission (LCRPC).



Special thanks go to the citizens and local business owners of Wiscasset who participated in the public outreach effort and provided their concerns, values and visions.

Financial support for the preliminary property title research and preliminary design of the boardwalk was provided by the Town through local matching funds and the Maine Department of Agriculture, Conservation and Forestry's Shore and Harbor Technical Assistance Grant program, as administered by the Maine Coastal Program.



## Background

The community of Wiscasset has been closely tied to the Sheepscot Riverfront since incorporation over 250 years ago. Since then, the Town has experienced a continuum of waterfront activities, both supporting and supported by the surrounding village area. While initial waterfront activities primarily focused on fishing and shipbuilding, the community experienced significant changes in the 1800's along the river, particularly in terms of public access, limited when the development of the Maine Central Railroad and Wiscasset, Waterville and Farmington (WWF) narrow gauge rail lines were built on fill and or pilings along the entire village shorefront. Both railroad interests continued to serve the village in terms of transport of fish catch, lumber and coal, however village residents who were not affiliated with these industries found themselves physically separated from the Sheepscot River.



*"Steam on the Wiscasset Waterfront"*  
- by David Tutwiler



*Wiscasset waterfront as of March, 2014*

## Waterfront Boardwalk - Preliminary Design Report

With the advent of highway transit and subsequent upgrades to U.S. Route 1, the latter part of the 20<sup>th</sup> century saw rail service activities decline. The WWF railway was abandoned and remnants of this line are only evidenced by the remaining support pilings.

The former Maine Central Railroad is now owned by the State of Maine and is operated for seasonal passenger rail excursion trips between Brunswick and Rockland by Maine Eastern Railroad (MERR).

Over the past two decades, the Town has engaged in several public planning initiatives with key components focused on revitalization of the waterfront to improve access, both physically and visually, to the Sheepscot River for residents, fishermen, recreational boaters and in support of tourism activities. Plans of note which identified the need for greater access to the waterfront included the:

- 1990 Riverfront Study
- 2002 Recommendations for Economic Development of Wiscasset's Waterfront
- 2009 Railroad Ave Professional Engineering Report
- 2010 Bicycle / Pedestrian Plan

In addition to these planning initiatives, the Town has made several recent capital investments in waterfront infrastructure improvement projects at the Main Street, Recreational and Commercial Piers. Maine DOT and private investment has also supported these efforts, as evidenced by improvements to Maine Eastern Railroad rail station service along Railroad Ave.

In an effort to continue the community revitalization goals identified in the course of these planning initiatives within Wiscasset's historic village waterfront district, the Town hopes to create a riverfront boardwalk from the Recreational and Commercial Piers to Route 1 along the Sheepscot River. The project will provide continuous pedestrian (and potentially bicycle) linkage between all waterfront access points in the village, while also expanding opportunities for sustainable tourism through greater access to the coastline.



*Dedication ceremony of the Commercial Pier replacement effort in 2011*



*MERR rail station relocated in 2014 to Railroad Avenue*

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# Waterfront Boardwalk - Preliminary Design Report

## Design Considerations

The Town initiated the design process by seeking general public input to: ascertain desired community goals for boardwalk access to the waterfront; and confirm past planning efforts in support of such an endeavor.

The next step in the design process included working with legal counsel to perform title research in order to better understand the municipality's ownership rights within the project area.

The third step in better defining the "big picture" design parameters for the boardwalk was to discuss the project with local state and federal regulatory agencies.

Lastly, initial draft plan and illustration materials were made available to potential abutting project stakeholders, municipal staff including the director of public works and the harbormaster, and the Wiscasset Waterfront Committee for their review and comment.

Based on these due diligence initiatives, Wright-Pierce worked with the Town to develop design plans and construction cost estimates that consider the wide range of factors, from the technical to the environmental and social, which are likely to shape the development of the project. The following report section provides context regarding how the boardwalk project is anticipated to be influenced by each of these factors, so that the Town has a sound understanding of the range of parameters that will guide the local decision making process in selection of a boardwalk alignment and typical section, to assist in implementation of a boardwalk provides maximum value to the community for a given investment.

There are several key factors to be considered in the assessment of design opportunities and constraints that will guide implementation of a boardwalk along Wiscasset's Waterfront including:

### Public Input

As stated above, one of the key components sought early on in the design effort included public input. A general public presentation of the project background and anticipated design process was held on March 13, 2014 at the Wiscasset Town Office. The goal of the meeting was to solicit public input and confirm continued support of past planning initiatives and to identify new community supported goals for waterfront access. Some of the key areas of consensus from that meeting included:

- Consider access needs to either pedestrians and or bicyclists
- Important that the project strengthen the overall village goal of providing reasons for vehicular traffic to stop and visit the area
- Be considerate of abutter impacts
- Address shoreline erosion

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## Waterfront Boardwalk - Preliminary Design Report

- Consider other means of enhancing the waterfront besides bike/ped access. Wide enough to accommodate businesses along the boardwalk, wayfinding signage, hand carry boat access, fishing, etc. "Think big".
- Minimize visual obstructions to the river (fencing, lighting, etc.)
- Represent Wiscasset's waterfront history.

*(See Appendix C for all meeting notes recorded by Wright-Pierce)*

Additional public input was also provided from several of the project stakeholders as noted above. Some of the key input from these groups included:

- Concerns with visual impacts of an elevated structure on abutting residences and businesses, and reduced visibility from these abutting properties to the river.
- The facility should be easy to maintain.

### Americans with Disabilities Act (ADA) Guidelines and Standards

With respect to ADA standards and guidelines, there are a few directions that the project may follow in terms of:

- Applying current ADA accessibility standards for site development, for Title II public projects;
- Local, state and or federal regulatory/funding agency requirements; and/or
- Consideration of current guidelines for Public Right's of Way which have been proposed at the federal level for adoption as updated ADA standards.

For purposes of this preliminary design effort, we are recommending that the project consider the final federal draft proposed public right of way guidelines. We are assuming that whether the boardwalk is located over the former WWF pile supported rail line or adjacent to the Maine Central Railway along the shoreline, that purchase of a permanent easement or property by the Town will be a likely outcome of any boardwalk development, making it a municipally-owned facility.

The guidelines for pedestrian facilities in public right of ways require a minimum 5 foot wide accessway for pedestrians and in areas where this may not be feasible, allow for a minimum 3 foot wide accessway with 5 foot by 5 foot minimum passing areas at 125 minimum intervals.

At each end of the project area the finish floor elevation of the Main Street Pier and Recreational Pier structures is approximately 11 feet. ADA standards require that access ramps of significant length (estimated between 60 - 100 feet) due to the location of portions, or all of the boardwalk, over the Sheepscot River. *(See the following Regulations section for further information regarding regulatory requirements for such an elevated structure)*

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## Waterfront Boardwalk - Preliminary Design Report

### Visual and Physical Access to the River and Impacts

Opportunities to maintain and or improve both visual and physical access to the Sheepscot River have been identified as community goals in during this project and in past planning efforts. A boardwalk, in and of itself, whether located along the shoreline or over the river, will provide significant improvement to pedestrian and bicycle accessibility to the village waterfront, however it will have significant visual impact to the abutting properties and in terms of limiting their views of the river. The following renderings represent boardwalk development along the shoreline accommodating access for both bicyclists and pedestrians. Alternate boardwalk accommodations (pedestrians only with 6 foot width for winter maintenance needs), alignemtns at-grade walkway, or for a boardwalk located over the former WWF narrow gauge rail line, would also provide physical access to the river while still posing varying levels of visual impacts to and from abutting properties. Such structures and/or ancillary components such as railings, signage, lighting and fencing would require being set at considerable levels (6 to 20 feet) above the existing shoreline grade for a variety of reasons noted further below in the report.



*(See also full scale illustrative sections provided in the appendices of this report):*

## Waterfront Boardwalk - Preliminary Design Report

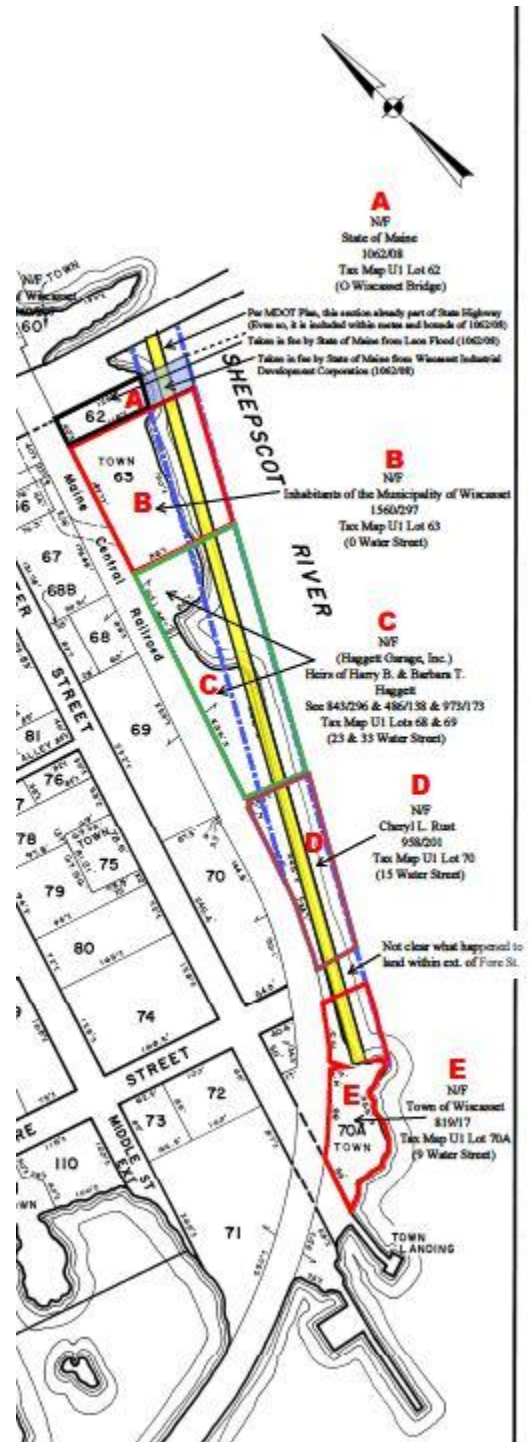
### Right of Way, Private Ownership and Easements

As part of this project, the Town has obtained preliminary title research to better understand the ownership of properties between town-owned Main Street Pier and the Recreational / Commercial Piers. (See Appendix B for Full-Size Town Tax Map U-1 with Project Area Parcels Labeled A – E)

Portions of the boardwalk, whether aligned along the shoreline and immediately adjacent to the Maine Eastern Rail Road tracks, or elevated above the Sheepscot River in the location of the former Wiscasset, Waterville & Farmington Railway (WWF), is proposed on lands not currently owned by the Town of Wiscasset.

The State of Maine owns Parcel "A" adjacent to Main Street (U.S. Route 1) and control's the Right of Way over Maine Central Railroad to continue operating rail service. The Town of Wiscasset owns Parcels "B" and "E" on either end of the project, and Parcel's "C" and "D" are owned by other private interests. The former WWF railway was subsequently acquired by the Wiscasset Industrial Development Corporation (WIDCO) in 1964 and this right of way was then transferred to the town of Wiscasset in 1996.

If the boardwalk is located along the shoreline, the Town will need to obtain easements from the abutting private property owners and the State for construction and permanent maintenance of the boardwalk. If the project is located within a portion of the Maine Central Railroad right of way and or the former WWF right of way, the results of the preliminary title research indicate some uncertainty as to whether WIDCO owned all rights within the former right of way. Additionally, any rights were previously contingent upon use of the right of way for rail activities may have ultimately reverted back to the original owners. Further title research may indicate otherwise, however it seems likely that the boardwalk project, regardless of alignment along the shoreline or over the Sheepscot, will require cooperation by grant of right of way or easement over lands not currently owned by the Town.



## Waterfront Boardwalk - Preliminary Design Report

### Sea Level Rise

With regard to potential impacts of global climate changes and increased extreme storm events, both in terms of frequency and magnitude, coastal communities in particular are paying closer attention to rehabilitation, repair and adaptive design changes that are aimed to strengthen the resiliency of waterfront infrastructure. The Federal Emergency Management Agency (FEMA) has the most significant regulatory role in terms of development opportunities along Wiscasset's waterfront, and in particular for this project area, as the entire project site is within the current identified 100 year flood elevation zone. FEMA is in the process of updating and presenting updated flood mapping in Wiscasset, Maine and the rest of the United States and all indicates so far are that they are estimating that the flood zone is likely to increase and a project such as this one will still likely have to address potential impacts due to flood and storm surge events.



*Illustration of estimated sea-level rise 6 feet above the HAT line along Wiscasset's waterfront*

Lincoln County Regional Planning Commission (LCRPC), with support from Maine Geological Survey and Maine Coastal Program conducted a recent study of potential impacts for all 450 miles of the county's tidal shoreline in relation to predicted sea level rises of 1 foot, 2 feet, 3.3 feet and 6 feet above the HAT line as well as the storm of record (February 1978 storm equal to FEMA's current 100 year flood zone). A full record of this report is available for review at: <http://lcrpc.org/municipal-and-county-planning/coastal-projects-planning> This is an useful tool for the Town to utilize as it weighs options for various predicted sea-level rise scenarios and the potential impact to the boardwalk project above and beyond the current regulatory standards.

## Waterfront Boardwalk - Preliminary Design Report

### Access Beyond the Main Street Pier and the Commercial / Recreational Piers

While the project has the potential to provide safe, pedestrian access between the Main Street Pier and the Recreational / Commercial Piers, improvements at these terminal access points to the boardwalk are needed for the project to provide greater benefit to the surrounding village district. Wiscasset has a variety of valuable assets located throughout the village that are physically separated and challenging to access by means other than personal vehicle from the proposed boardwalk location. The majority of the Town's physical access (Commercial and Recreational Piers, the Yacht Club and the public boat ramp) to the Sheepscot River is located at the end of Water Street and has no safe means of access to the rest of the surround village other than be vehicle. Water Street is narrow and provides limited pedestrian access from Main Street to Fore Street, stopping short of these waterfront access facilities. Access to the Boardwalk from Main Street is separated by parking, and access drives serving the adjacent Main Street pier. The MERR rail station on Railroad Avenue across Main Street from the Main Street pier area has no current pedestrian access connecting the station to Main Street. Access to other surrounding water front village destinations including immediate downtown commercial and residential areas via Main Street and Water Street on either project end where existing sidewalks and on-street parking is available would also be well served by improved connections to the Main Street Pier and Commercial / Recreational Piers.

### Lighting (Aesthetics, safety and impacts to abutters)

Some level of lighting should be considered in order to provide a safe night-time environment for visitors to the site, especially those that park and either leave or return to their vehicles during early morning or late evening hours while visiting or working within the downtown area. Light levels can be relatively low in level of intensity and more in keeping with natural surrounds if white light luminaire with full cutoff fixtures that provide a greater level of uniformity and distribution of light to focused on the board are utilized. Light fixtures can also include controls for dimming during off peak hours or they can utility timers for operation solely during intended hours of operation. Given the historic, waterfront village setting, black colored historic period style luminaires and poles should be considered to fit in with the surrounding village aesthetics. To give a greater sense of connectivity to the downtown area, the fixtures should be in keeping with similar lighting schemes supported elsewhere in the village.



*There are a variety of lighting options that may be deemed appropriate for Wiscasset's boardwalk project, including maritime style lighting like the example photo above from Rockland's waterfront Boardwalk, or lower level bollard lighting, which is less visually obstructive to abutters but may be subject to a higher level of vandalism.*

## Waterfront Boardwalk - Preliminary Design Report

### Accommodating Bicycles

For multi-use pathways designed to allow for pedestrian and bicycle shared access, design standards suggest a preferred sectional width of 12 feet (minimum width of 10 feet if necessary) with an additional two feet of clearance on each side of the pathway where fixed structures such as lighting, signage, railings and fencing are present. The additional width of the boardwalk to accommodate both bicycle and pedestrian activities has a significant impact on the overall width of the structure and ultimately the height of the structure where located above the Sheepscot River (*as described in the Regulations section below, in particular in terms of NRPA permitting requirements*) With that said, Water Street does not have adequate width to accommodate dedicated bike lanes along with current sidewalks, on-street parking and travelways. If Water Street is determined to be the best option for bicycle access between Main Street and the waterfront pier and boat launch facilities, then the Town would need to consider shared travel way options for bicycles and vehicles, with improved signage and pavement markings along that route.



*Water Street accommodates two-way vehicular traffic and on-street parking and cannot accommodate a dedicated bike lane, typically 4 feet in width*



*Example of a Sharrow paint marking on Congress Avenue in Portland where bicyclists and vehicles share the same travel lane*

### Regulations

Given the proximity of the project area, either immediately adjacent to, or over the Sheepscot River and within the 100 year Federal Emergency Management Agency (FEMA) Floodplain, the implementation of a boardwalk will be subject to local, state and federal environmental regulations including:

- **Local Regulations:** Village Waterfront District Ordinances
- **State:** Maine Natural Resource Protection Act (NRPA) (MaineDEP)
- **Federal:** Section 404 of the Clean Water Act

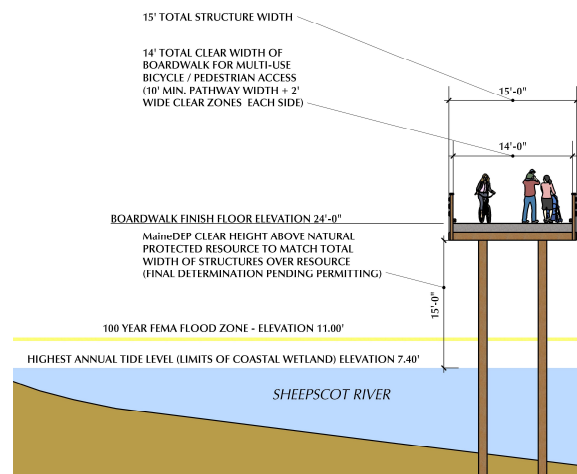
An on-site meeting was held on March 18, 2014 with Town Staff, representatives of MaineDEP and ACOE and Wright-Pierce to review potential boardwalk alignments and concepts. Project

## Waterfront Boardwalk - Preliminary Design Report

specific comments are included after the descriptions of applicable regulations in the sections below. (See Appendix D for all meeting notes recorded by Wright-Pierce)

Particular regulatory requirements and reference elevations likely to have the greatest impact on implementation of a boardwalk are summarized below, with greater details regarding each of the local, state and federal regulation expanded on in further detail below:

- In terms of physical access to and from the Sheepscot River from the boardwalk might be challenging to demonstrate need from an alternatives analysis standpoint given the nearby Recreational and Commercial Piers, as well as the boat launch with currently provide such access.
- Current state regulations for access routes immediately adjacent to a naturally protected resource (the Sheepscot River) only allow for a 4 foot maximum path width.
- Local regulations only allow for a 6 foot maximum width path width.
- Fill is no longer allowed in federally navigable waterways.
- The highest annual tide line (HAT) defining the coastal wetland (Natural Protected Resource) under regulation by MaineDEP and limits of the federally navigable waterway as regulated by ACOE is 7.40' in reference to the NGVD29 vertical datum.
- The FEMA base flood elevation is 11.00' in reference to the NGVD29 vertical datum.
- The mean low-low water level is -5.05' in reference to the NGVD vertical datum. The Maine Department of Agriculture, Conservation and Forestry's Bureau of Parks and Lands oversees submerged lands lease requirements for all structures location between this level and the HAT line.



*This boardwalk option illustrates a scenario where the structure is elevated significantly above the HAT line to accommodate appropriate width of the boardwalk for bicycle and pedestrian uses while meeting local, state and federal regulatory requirements*

### L OCAL REGULATIONS

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## Waterfront Boardwalk - Preliminary Design Report

### Town Ordinance – Village Waterfront District

The project area is located within the Town's Village Waterfront District. Boardwalks are an allowable use within this as defined under Public facilities and are subject to Planning Board review and approval. The following General Land Use Standards within this district are stated below with items pertinent to the boardwalk identified in **bold text**: *(Page 93 to 95 - last revised 11/2012 - Article VI - Zoning)*

#### D.5.0.0 General Land Use Standards

All land use activities in the Village Waterfront District shall conform to the following standards, if applicable.

- a) **The lowest floor elevation or openings of all buildings and structures including basements constructed after the effective date of this ordinance shall be elevated at least one foot above the elevation of the 100-year flood, the flood of record, or in the absence of these, the flood as defined by soil types identified as recent flood plain soils.**
- b) No structures shall be constructed on slopes greater than 20% within seventy-five (75) feet from the upland edge of a water body unless they are permissible functionally water-dependent uses or structures or their accessories.
- c) **Notwithstanding the requirements stated above, ramps, stairways, or similar structures may be allowed to provide shoreline access in areas of steep slopes or unstable soils provided:**
  1. The structure is limited to the maximum width necessary for proposed use, not to exceed six (6) feet in width;
  2. The structure does not extend below or over the upland edge of a coastal wetland (unless permitted by the Department of Environmental Protection pursuant to the Natural Resources Protection Act, Title 38, Section 480- C), and;
  3. The property owner demonstrates that no reasonable alternative exists on the property within 150 feet of the desired point of access.

#### D.5.1.0 Piers, Docks, Wharves, Bridges and Other Structures and Uses Extending Over or Beyond the Upland Edge of a Coastal Wetland or Within a Wetland.

- a) **Access from shore shall be developed on soils appropriate for such use and constructed to control erosion.**
- b) The location shall not interfere with existing developed natural beach areas.
- c) **The facility shall be located to minimize adverse effects on fisheries.**
- d) **The facility shall be no larger in dimension than necessary to carry on permitted land use activities as determined by the municipal permitting authority.**
- e) **No new structure shall be built on, over or abutting a pier, wharf, dock or other structure extending beyond the upland edge of a coastal wetland or within a wetland unless the structure requires direct access to the water as an operational necessity, or is a functionally water-dependent use or an accessory to a functionally water-dependent use.**

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## Waterfront Boardwalk - Preliminary Design Report

- f) No existing structures built on, over or abutting a pier, dock, wharf or other structure extending beyond the upland edge of a coastal wetland of a water body or within a wetland shall be converted to residential dwelling units.

### Town Ordinance – Floodplain

The project area is located within the Town's flood hazard zone as identified on the most recent version of the Town of Wiscasset Flood Insurance Rate Maps. In addition to all applicable Federal Emergency Management Agency regulations, the Town's Floodplain Ordinance also requires the following Standard be met, with items pertinent to the boardwalk identified in **bold text**: *(Page 230 to 234 - last revised 11/2012 - Article X - Miscellaneous)*

#### 4.7 DEVELOPMENT STANDARDS

All developments in areas of special flood hazard shall meet the following applicable standards:

##### 4.7.1 New construction or substantial improvement of any structure shall:

- a) **be designed or modified and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;**
- b) **use construction materials that are resistant to flood damage;**
- c) **use construction methods and practices that will minimize flood damage; and,**
- d) **use electrical, heating, ventilation, plumbing, and air conditioning equipment, and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during flooding conditions.**

4.7.2 All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems.

4.7.3 All new and replacement sanitary sewage systems shall be designed and located to minimize or eliminate infiltration of flood waters into the system and discharges from the systems into flood waters.

4.7.4 On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during floods.

4.7.5 All development shall be constructed and maintained in such a manner that no reduction occurs in the flood carrying capacity of any watercourse.

##### 4.7.7 New construction or substantial improvement of any nonresidential structure located within:

- a) Zone AE, shall have the lowest floor (including basement) elevated to one foot above the base flood elevation, or together with attendant utility and sanitary facilities shall:
  - \* **be floodproofed to at least one foot above the base flood level so that below that elevation the structure is watertight with walls substantially impermeable to passage of water;**
  - \* **have structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy; and,**

- \* be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this section. Such certification shall be provided with the application for a Flood Hazard Development Permit, as required by Section 4.4.10 and shall include a record of the elevation above mean sea level of the lowest floor including basement.
- b) Zones AO and AH shall have adequate drainage paths around structures on slopes, to guide floodwater away from them.
- c) Zone AO shall have the lowest floor (including basement) elevated above the highest adjacent grade:
  - \* at least one foot higher than the depth specified in feet on the community's Flood Insurance Rate Map; or,
  - \* at least three feet if no depth number is specified; or,
  - \* together with attendant utility and sanitary facilities be floodproofed to meet the elevation requirements of this section and floodproofing standards of Section 4.7.7.a. [6-91]
- d) Zone A shall have the lowest floor (including basement) elevated to at least one foot above the base flood elevation utilizing information obtained pursuant to Section 4.4.7.a; Section 4.6.2; or Section 4.9.4.

### 4.7.9 Floodways

- a) In Zones A1-30 and AE riverine areas, for which no regulatory floodway is designated, encroachments, including fill, new construction, substantial improvement, and other development shall not be permitted unless a technical evaluation certified by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing development and anticipated development will not increase the water surface elevation of the base flood more than one foot at any point within the community; and,
- b) In Zone A riverine areas, in which the regulatory floodway is determined to be the channel of the river or other water course and the adjacent land areas to a distance of one-half the width of the floodplain as measured from the normal high water mark to the upland limit of the floodplain, encroachments, including fill, new construction, substantial improvement, and other development shall not be permitted unless a technical evaluation certified by a registered professional engineer is provided meeting the requirements of Section 4.7.9.a.

4.7.10 New construction or substantial improvement of any structure in Zones A and AE that meets the development standards of Section 4.7, including the elevation requirements of Section 4.7.6, 4.7.7 or 4.7.8 and is elevated on posts, columns, piers, piles, "stilts," or crawl spaces less than three feet in height may be closed below the elevation requirements provided all the following criteria are met or exceeded:

- a) Walls, with the exception of crawl spaces less than three feet in height, shall not be part of the structural support of the building; and,

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## Waterfront Boardwalk - Preliminary Design Report

- b) Enclosed areas are not "basements" as defined in the Glossary; and,
- c) Enclosed areas shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood water. Designs for meeting this requirement must either:
  - \* be certified by a registered professional engineer or architect; or meet or exceed the following minimum criteria:
  - \* a minimum of two openings having a total net area of not less than one square inch for every square foot of the enclosed area;
  - \* the bottom of all openings shall be no higher than one foot above the lowest grade; and,
  - \* openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the entry and exit of floodwaters automatically without any external influence or control such as human intervention, electrical controls, and other non-automatic mechanical means; and,
- d) The enclosed area shall not be used for human habitation; and,
- e) The enclosed area may be used for building maintenance, access, parking vehicles, or storing of articles

### STATE REGULATIONS

#### Natural Resources Protection Act (NRPA)

Maine DEP's Chapter 310 Wetlands and Water Body Protection applies to the alteration of a coastal wetland. Under the act, all coastal wetlands are considered Wetlands of Special Significance. Activities within 75 feet of a protected natural resource, including Wetlands of Special Significance, are regulated under NRPA. In the project area, the coastal wetland is the HAT level of the Sheepscot River (7.40 feet relative to vertical datum NGVD29).



Since the boardwalk is anticipated to be located either over or immediate adjacent to the shoreline it is not anticipated to qualify for a NRPA Permit-by-Rule (PBR) and therefore it is assumed that MaineDEP permitting for this project will fall under a full NRPA permit. Some key considerations under this law which are likely to be applied to the boardwalk project include:

- Under "General Standards", for an activity proposed in, on, or over wetlands, a practicable alternative that is less damaging to the environment is considered to exist, unless the activity falls under certain categories, which include water dependent uses and walkways. For these uses, an analysis of alternatives is required.
- For all proposed activities, "the amount of wetland altered must be kept to the minimum amount necessary." 500 square feet of total impact is the threshold which would trigger financial compensation, if such impacts allowed under the permitting process.
- For projects in, on, or over wetlands of special significance containing threatened or endangered species, the applicant must demonstrate that the wetland alteration will not

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## Waterfront Boardwalk - Preliminary Design Report

disturb the threatened or endangered species and that the overall project will not affect the continued habitation or use of the site by the threatened or endangered species. Past recent NRPA permitting efforts for adjacent Recreational and Commercial Pier activities have not found essential habitats in the vicinity of those projects. While it is anticipated that the same situation may occur in the boardwalk project area, the permitting process will require a basic survey of the current habitat conditions and may trigger additional evaluations by a qualified consultant ecologist/biologist as MaineDEP deems appropriate.

### Submerged Lands Lease

The Bureau of Parks and Lands requires that the project obtain a submerged lands lease permit for all within or over the Sheepscot River, between the HAT line and the MLLW level. This permit would be required for portions of either boardwalk alignment option.

### FEDERAL REGULATIONS

#### State Program General Permit

ACOE permit would be required for any structure seaward of the mean high water line or any fill placed seaward of the high tide line. Either proposed boardwalk alignment is anticipated to require a Category II General Permit. ACOE prefers pile supported or cantilevered structures to fill situations, unless the fill is required for minor repairs related to shoreline stabilization efforts.

Their agency also coordinates permitting efforts with U.S. Fish and Wildlife which has identified the Sheepscot River as an essential migratory habitat for federally protected Atlantic Salmon and Atlantic Sturgeon. While projects such as the proposed boardwalk are allowed within this protected habitat, there are likely to be timing restrictions limited to construction activities commencing between November and April of any given year to minimize impacts to seasonal spawning activities of these endangered species.



Based on past recent similar waterfront construction activities at the Commercial and Recreational Piers, as well as preliminary on-site discussions with MaineDEP and ACOE it is anticipated that the following environmental regulatory permits will be required under local State and federal regulations:

- Wiscasset Planning Board approval
- Maine DEP Full Natural Resources Protection Act Permit
- Maine Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands Submerged Lands Lease
- ACOE Category II State Program General Permit

## Waterfront Boardwalk - Preliminary Design Report

### Railway Service

Currently much of the planning area is immediately adjacent to MaineDOT's rail line which primarily services MERR for excursion rail service between Brunswick and Rockland. There are a couple of key considerations for location of pedestrian and or bicycle activities adjacent to the active rail line.

1. The first is in terms of setback requirements from the physical rail lines. State and federal guidelines suggest a minimum setback of 10 feet and 6 inches from the outermost rail to the proposed boardwalk, with the installation of a barrier between the boardwalk and the rail. The barrier could range from a low level guardrail to a taller fencing (6 feet or greater). Setting the boardwalk back at a distance of 15 feet removes this barrier requirement.
2. The second is in terms of rail crossings. The general preference by state and federal agencies as is to minimize the amount of crossings. There are currently adequate pedestrian and vehicular crossings in the vicinity of Main Street and vehicular crossings at Water Street. As long as the boardwalk stays on the shoreland side of the tracks, these access points should be adequate for maintenance/delivery vehicles and for pedestrian and bicycle use.



*This photo is of a section of the Kennebec River Rail Trail in Hallowell, Maine. It is immediately adjacent to MaineDOT's rail lines and as the trail comes within less than 15 feet of the nearest rail, a safety barrier was required to be installed (this one was constructed with black chainlink fencing).*

Ongoing dialog with MERR and MaineDOT is recommended to ensure that site improvements, which may not be initially related to potential passenger rail service, do not preclude such a project from developing in the future.

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## Waterfront Boardwalk - Preliminary Design Report

### Operations and Maintenance

In addition to capital expenses for planning, design, permitting and construction, a well supported public infrastructure project also needs to take into account current capacity to maintain and operate the facility. The Town needs to identify if additional financial resources, staff and operations equipment for activities such as snow removal, trash/pet waste disposal, etc... are needed. The design should also consider accessibility and maintenance equipment sizing, such as typical sidewalk plow width between 5 feet 6 inches and 6 feet for example.

### Capital Costs

No matter how the boardwalk project is implemented through construction, there is likely to be a significant amount of funding required by the community to complete the permitting and bidding plans and specifications phases and subsequent construction effort. A variety of local, state and federal funding sources to defray some of these capital expenses are suggested at the end of the report. These programs are often very competitive and it is important that the community show strong endorsement from the community through documented public input process, and by dedication of local capital monies to assist in funding final implementation of the project.

### Findings and Recommendations

The resulting project design options included two basic alignments, either on-shore or over the former WWF pile supported railway as illustrated below following



In addition to these options, the on-shore alignment was further evaluated in terms of an at-grade paved walkway versus an elevated boardwalk structure. Based on public input and support for the various scenarios, both elevated options assume adequate width to accommodate both

## Waterfront Boardwalk - Preliminary Design Report

pedestrians and bicyclists given the communities desire to “build it right” if going through the effort and significant capital expenses, recognizing that greater access to the water front will have significant visual impacts to the abutters. For the at-grade option, a minimal maintainable width by the Town’s snow plowing equipment is proposed, recognizing that an alternate path with minimal visual impacts to the project abutters may best accomplish the communities overall project goals.

A summary table of the pros and cons of each option relative to the other follow based on community project goals, regulatory requirements, technical design and constructability requirements and long term maintenance and operations is as follows:

Design Considerations	15' Wide Boardwalk On-Shore	15' Wide Boardwalk Over River	6' Wide Paved Walkway At-Grade
General Public Input / Support	High	Moderate	Low
Stakeholder Input / Support	Low	Moderate	Moderate
Visual Impacts to Abutters	High	High	Moderate
Visual Access to the Waterfront (From Boardwalk)	High	High	Moderate
Right of Way Acquisition Needs	High	Moderate	High
Pedestrian Accessibility	Moderate	Moderate	High
Bicycle Accessibility	High	Moderate	Low
Permitting (Local, State and Federal)	High	High	Moderate
Railway Coordination	High	Low	High
Potential Impacts from Flooding and / or Sea Level Rise	Low	Low	High
Maintenance and Operations	High	High	Low
Construction Costs Per Linear Foot / Total Costs - 800 Linear Feet)	\$1,000 / \$800,000	\$850 / \$680,000	\$150 / \$120,000

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## Waterfront Boardwalk - Preliminary Design Report

### Construction Cost Estimates

- Total construction costs are estimated to range from between **\$175,000** for 600 linear feet of 8 FT wide aggregate path in combination with 200 linear feet of 8 FT wide boardwalk vs **\$350,000** for 300 linear feet of 15 FT wide paved path in combination with 500 linear feet of 15 FT wide boardwalk (concrete or wood)
- Detailed unit price item estimates are as follows:
  - 8 FT wide aggregate path unit cost of \$35 / LF
  - 15 FT wide aggregate path unit cost of \$70 / LF
  - 8 FT wide paved path unit cost of \$55 / LF
  - 15 FT wide paved path unit cost of \$100 / LF
  - 6 FT wide boardwalk with railings and fencing (concrete or wood) \$350 / LF
  - 15 FT wide boardwalk with railings and fencing (concrete or wood) \$750 / LF
  - Site lighting (50 FT spacing) of \$65,000 LS
  - Site amenities (benches, signage) of \$20,000 LS

### Project Construction Costs

Detailed construction cost estimates have been developed for the preferred boardwalk option, along with supporting preliminary design plans. (To be submitted with final preliminary design plan after final public presentation)

The following cost estimate reflects the cost of final contract design documents, permitting, bidding, construction labor and materials, and construction administration to complete the project based on the range of alignment and typical section options considered. Wright-Pierce recognizes that market prices for construction can fluctuate from year to year and we have carried a contingency of approximately 10%.

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## Waterfront Boardwalk - Preliminary Design Report

### Potential Funding Sources

All of Maine's municipalities struggle with the realities of the costs associated with investing in public improvements. For trail and recreation efforts, there are a number of traditional approaches to funding that many Maine communities have employed to see their plans through to implementation.

Most of the funding programs traditionally used to fund trails originate from federal sources and are administered by the State. These funding sources in recent years are also subject to fluctuation in the level of funding provided from year to year. The information provided here on various programs is the most current available, but program details such as availability, deadlines, and requirements may change, and communities should contact the appropriate agencies to ensure they have the best information about a funding program.

The following is a partial list of potential funding sources for this boardwalk project:

#### **Town Funds (TIF, CIP budget, discretionary, in-kind, etc.):**

The primary need for local funding will come from the need to provide match funds for most grant sources. Many grants allow for a certain amount of in-kind match such as the use of city labor or resources or other donated services from within the community. However, the Town should consider the strategic use of local funds such as from TIF or CIP budgets to construct smaller projects or take advantage of public-private partnerships that can result in trail implementation.

As many of the grants used by Maine communities to develop pedestrian infrastructure experience shortages in funding, while also seeing increased applicant competition, many communities look to dedicating funds such as from impact fees or other development fees to secure funding.

Also, while local bonds can be less favorable politically, they could be a practical and financially feasible opportunity to fund recreation and conservation efforts. The Commercial Pier replacement project was recently funded by such an effort.

#### **Maine Department of Transportation (MaineDOT):**

Funded through the federal Transportation Alternatives Program (TAP), formerly known as Transportation Enhancement (TE), MaineDOT's Quality Community Program is reduced from previous years and may no longer be a reliable source of funding for sidewalk and trail projects. Projects with complex ownership and permitting needs are less likely to receive funding priority than simple projects within the public right-of-way. In addition, Maine's program has been unable to guarantee funding for project's submitted within the last funding cycle.

The Quality Community Program typically requires separate applications for the design and the construction phases. Projects must have their design phase complete and approved by MaineDOT before applying for construction funds. There is no stated limit to the funds for each project, however, MaineDOT typically has approximately \$8 million each funding round, and

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## Waterfront Boardwalk - Preliminary Design Report

project awards typically vary from \$200,000 to \$1 million. The Town should monitor the program and coordinate with the MaineDOT Bicycle, Pedestrian, and Quality Community Program Manager for questions or to coordinate potential applications.

For more information: <http://www.maine.gov/mdot/pqa/qcp>

Small Harbor Improvement Program funds are another Quality Community Program source as administered by MaineDOT. The Town is familiar with these project funds having recently used them for final design and permitting of the Commercial Pier Project. They require a 50/50 local match and are now available on a first come, first serve basis annually, as available funding is available.

For more information: <http://www.maine.gov/mdot/pqa/qcp>

The Transportation, Community, and System Preservation (TCSP) program has largely been overlooked as a source for pedestrian/bicycle facilities funding, but may be a possible funding source. This is an annually funded federal program. For more information, the Town should contact MaineDOT.

Web sources for the TCCP Program: <http://www.fhwa.dot.gov/tcsp/>

and <http://www.fhwa.dot.gov/discretionary/tcsp2012info.htm>

In addition to this program, the Town may wish to explore other MaineDOT funding, such as discretionary grants and federal programs, or funding through the Biennial Capital Work Plan, however, however, the need for MaineDOT funding for other city road and transportation projects may push many trail projects down on the list of funding priorities.

<http://www.maine.gov/mdot/planningdocs/bcwp2012-2013>

### **Maine Department of Conservation (DOC):**

Funding through the Maine Department of Conservation offers another potential pool of funds for trail and park facility-related implementation, including Maine Coastal Program Shore and Harbor grants (**of which this preliminary design effort is funded**), the Recreational Trails Program, and the Land & Water Conservation Fund.

The Recreational Trails Program (RTP) program funding is on an 80%/20% basis. The federal share of a project may be up to 80% of a project's total cost or the maximum grant amount of \$35,000 for non-motorized trails and \$5,000 for education. All of the trails in this project would potentially be eligible for funding. Education could include signage related to environmental protection with regard to trail use. The sponsor's match may consist of cash or the value of donated services and/or materials. The program is administered through the Bureau of Parks and Lands.

In general, with regard to the RTP grant, eligible projects include:

- Development and rehabilitation of trailside and trailhead facilities and linkages for recreational trails;

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## Waterfront Boardwalk - Preliminary Design Report

- Construction of new recreation trails;
- Acquisition of easements and fee simple title to property for trail purposes from a willing landowner/seller;
- Funding of educational programs to promote safety and environmental education and protection as they relate to the use of recreational trails.

Projects not eligible include:

- Feasibility Studies;
- Law Enforcement – Routine law enforcement is not permitted in the RTP legislation;
- Planning – Trail planning is not a permissible use of RTP funds;
- Road construction, sidewalks, gardening/landscaping, parks or park equipment, sprinklers or campgrounds;
- Routine trail maintenance;
- Construction/improvements within a federal, state, county, or town road right-of-way;
- Funding of staff/intern positions not related to a specific RTP-funded project/program.

For more information: <http://www.state.me.us/doc/parks/programs/community/trailsfund.html>

The Land and Water Conservation Fund funds the development of public outdoor recreation facilities. Projects must be in accordance with the current (2009-2014) State Comprehensive Outdoor Recreation Plan (SCORP).

<http://www.maine.gov/doc/parks/programs/SCORP/index.html>

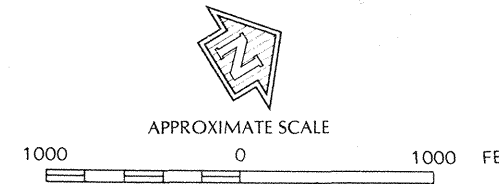
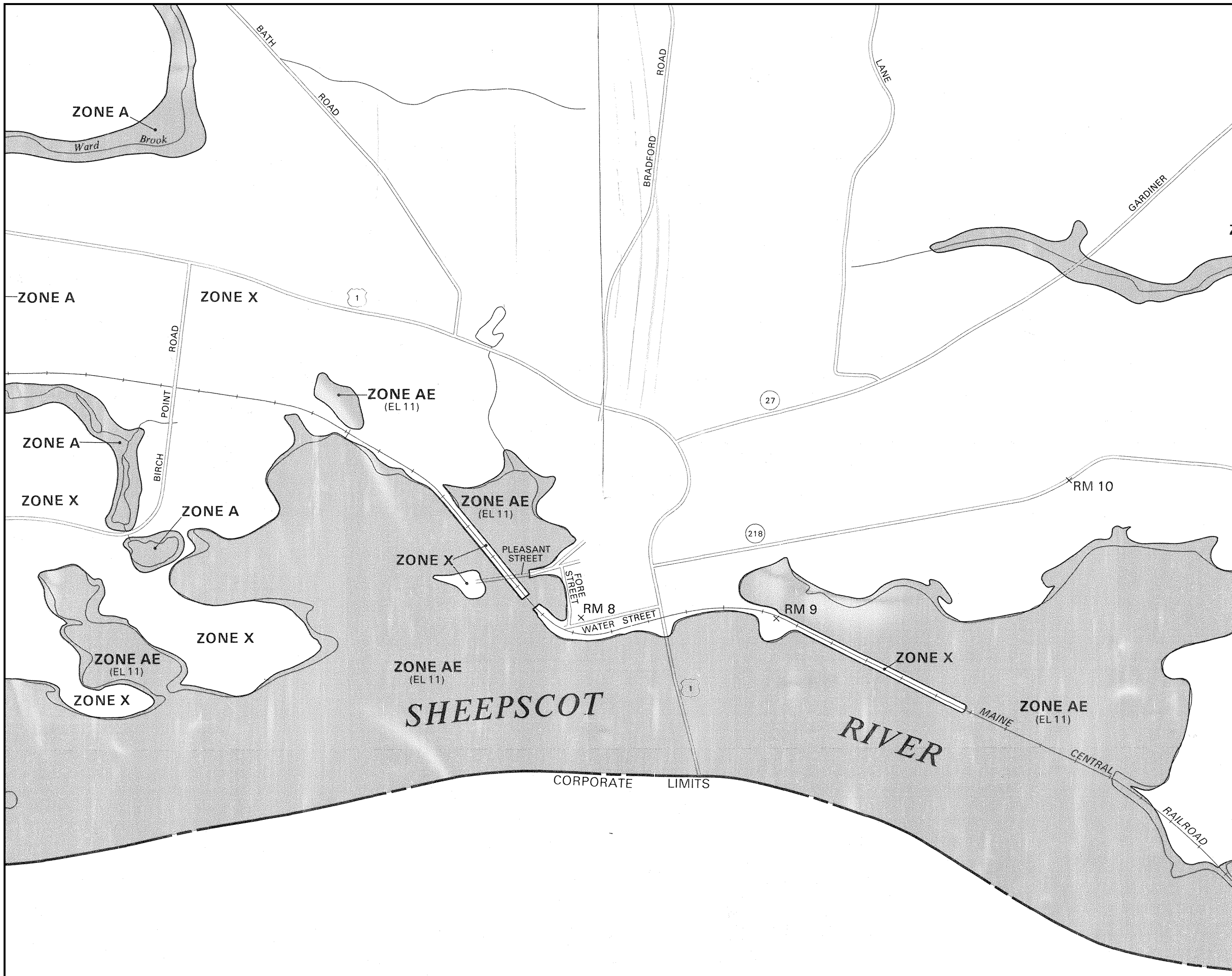
Projects should have significant impact to a community, region or the State of Maine in general, including but not limited to:

- Acquisition of property to prevent loss of an existing public outdoor recreation facility;
- Acquisition of land to protect critical natural areas and/or wetlands;
- Development of public outdoor recreation facilities to meet established, documented needs in a community or region;
- Development of public outdoor recreation facilities that serve a broad range of users including special needs populations;
- Renovation of existing public outdoor recreation facilities that serve an established, documented need.

The program is administered through the Bureau of Parks and Lands. A 50% cash or in-kind match is required, with up to \$200,000 for eligible acquisition and/or development projects. A pre-application inspection/meeting must be scheduled with BPL staff.

For more information: <http://www.maine.gov/doc/parks/programs/community/lwgrants.html>



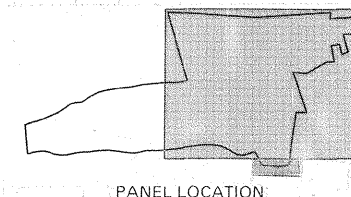


**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM  
FLOOD INSURANCE RATE MAP**

**TOWN OF  
WISCASSET, MAINE  
LINCOLN COUNTY**

**PANEL 10 OF 10**  
(SEE MAP INDEX FOR PANELS NOT PRINTED)



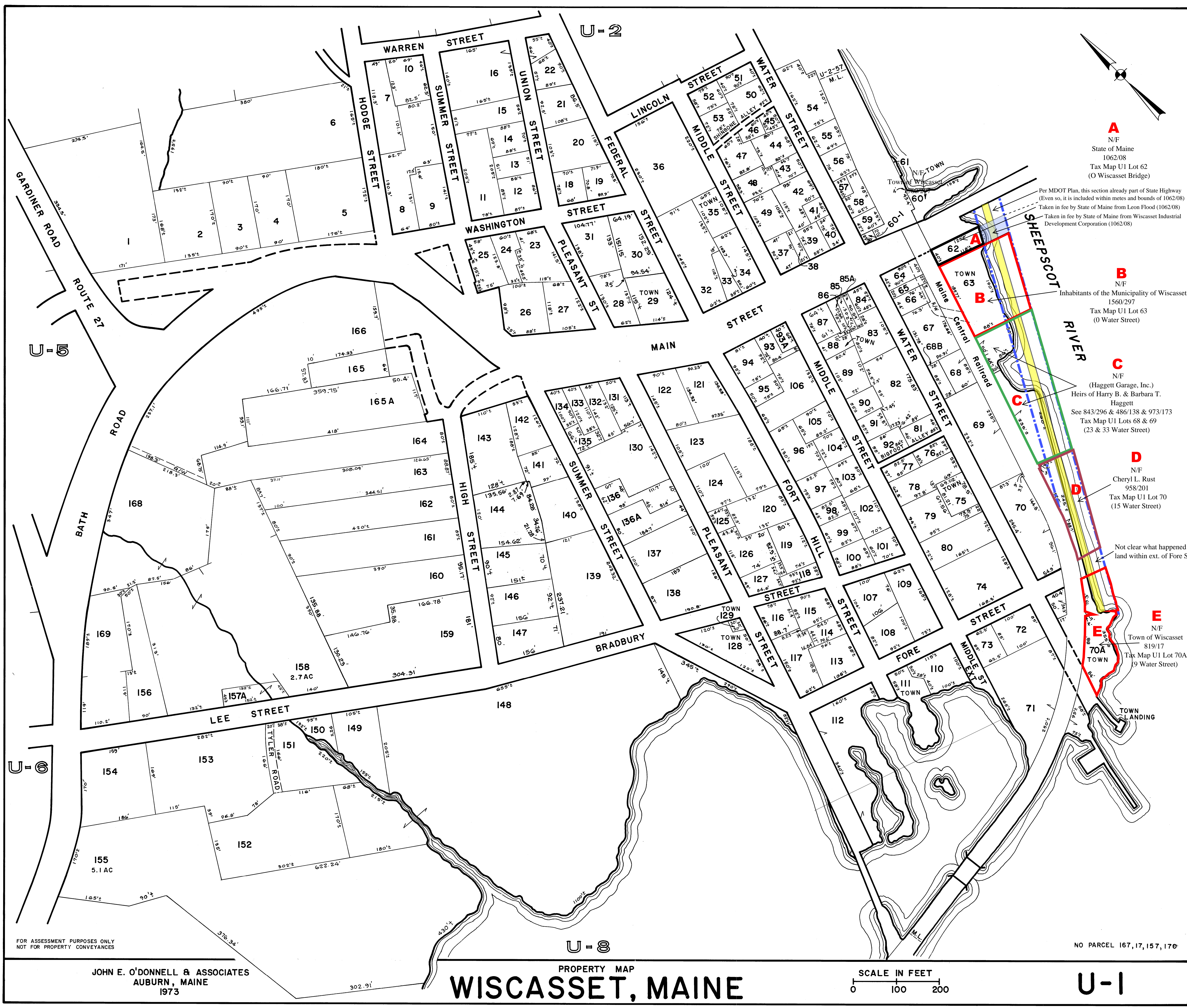
**COMMUNITY-PANEL NUMBER**  
230223 0010 B

**EFFECTIVE DATE:**  
APRIL 16, 1991



**Federal Emergency Management Agency**

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)



**A**  
N/F  
State of Maine  
1062/08  
Tax Map U1 Lot 62  
(O Wiscasset Bridge)

**B**  
N/F  
Inhabitants of the Municipality of Wiscasset  
1560/297  
Tax Map U1 Lot 63  
(O Water Street)

**C**  
N/F  
(Haggett Garage, Inc.)  
Heirs of Harry B. & Barbara T. Haggett  
See 843/296 & 486/138 & 973/173  
Tax Map U1 Lots 68 & 69  
(23 & 33 Water Street)

**D**  
N/F  
Cheryl L. Rust  
958/201  
Tax Map U1 Lot 70  
(15 Water Street)

Not clear what happened to  
land within ext. of Fore St.

**E**  
N/F  
Town of Wiscasset  
819/17  
Tax Map U1 Lot 70A  
(9 Water Street)

FOR ASSESSMENT PURPOSES ONLY  
NOT FOR PROPERTY CONVEYANCES

JOHN E. O'DONNELL & ASSOCIATES  
AUBURN, MAINE  
1973

U-8  
PROPERTY MAP  
**WISCASSET, MAINE**

SCALE IN FEET  
0 100 200

U-1

NO PARCEL 167, 17, 157, 170

MEMORANDUM

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TO:	Misty Parker, Town Planner	DATE:	March 14, 2014
FROM:	Travis Pryor - WP	PROJECT NO.:	11370G
SUBJECT:	Waterfront Boardwalk Preliminary Design Project March 13, 2014 Public Presentation – Meeting Notes		

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The following is a summary of the items discussed with regards to the subject project at a public presentation held in Wiscasset at 6:00 PM, March 13<sup>th</sup>, 2014 at the Town Office.

Attendees:

Town: Misty Parker, Town Planner  
Dan Bradford, Harbor Master  
Todd Souza, Parks and Recreation Director

Wright-Pierce: Travis Pryor

General Public: Approximately 21 members of the general public including representatives of the Wiscasset Waterfront Committee, Wiscasset Select Board, owners and abutters of property within the project area, MaineDOT, and local commercial and residential property owners.

General Discussion:

- What are the fencing requirements?
- Consider value versus cost of the project to the community.
- Should the boardwalk accommodate bicycles, pedestrians, or both?
- Allow vendors on the boardwalk.
- Security lighting along boardwalk is needed, but it should not be intrusive to abutters and the overall waterfront aesthetics.
- Consider pet use and waste disposal needs (Include signage and disposal containers).
- Funding for construction? Provide linear foot cost estimates.
- Directional signage to public restrooms in village area.
- Shoreline consists of gravel fill over wood cribwork which is eroding.
- Historic industrial / rail uses.
- Consider an esplanade and restore eroded shoreline.
- Assistance from local schools? Construct benches for example.
- Important for folks to get out of their cars and stay in the village.
- Consider width to allow for bikes and pedestrians, with bike access along Water Street as an alternate option.
- Cantilevered boardwalk from shoreline.

- Wide enough for business use on the boardwalk.
- Project should enhance the waterfront for the Town.
- Incorporate Wiscasset, Wateville and Farmington Roadroad rail cars into the project.
- The Town currently has a high tax burden and the project might increase the mil rate.
- The project should enhance the quality of life for Wiscasset residents and businesses.
- Project should accommodate hand carry boat access.
- Think “big” and “outside the box” to make the project more enticing to potential interested funding and user groups.
- Make sure the project materials are ADA accessible.
- Minimize fencing.
- What liabilities will the Town have for a project adjacent to the active rail line.
- Port Townsend, Washington has a nice boardwalk that incorporates historic markers.
- Is lighting for night time use necessary? Keep minimal and set low along boardwalk and provide more lighting on the adjacent piers.
- Lighting should be focused on meeting security purposes.
- Special consideration of accommodations for handicapped.
- Spots for fishing and hand carry boat access.
- Locate the boardwalk further out from the shore.
- Family friendly.
- Need more diversity of things to do in town.
- Support elderly population.
- Project could be the start of future bike / ped extensions from Main Street (U.S. Route 1) to Castle Tucker and Railroad Avenue.
- Walkability is a high priority in Wiscasset in general.
- Handcarry access is provided at current commercial / recreational pier facilities adjacent to the boardwalk.
- Project should consider availability of vehicular parking.
- Consider waterfront celebration events and waterfront history.
- This project is likely the beginning of more to come for the waterfront.
- Accommodate large gatherings.
- Show history of ship building.

# MEMORANDUM

TO: Misty Parker, Town Planner DATE: March 19, 2014

FROM: Travis Pryor - WP PROJECT NO.: 11370G

SUBJECT: Waterfront Boardwalk Preliminary Design Project  
March 18, 2014 Environmental Regulatory Agency Site Visit – Meeting Notes

The following is a summary of the items discussed with regards to the subject project at a site visit with environmental regulatory agencies at 2:00 PM, March 18<sup>th</sup>, 2014 held at the Recreational Pier facility, adjacent to the project area.

Attendees:

Town: Misty Parker, Town Planner  
 Dan Bradford, Harbor Master  
 Douglas Fowler, Director of Public Works

Wright-Pierce: Travis Pryor

Maine Department of Environmental Protection: Andrea LaPointe

U.S. Army Corps of Engineers: Peter Tischbien

ACOE Discussion:

- Fill below the highest annual tide level is their primary jurisdictional concern.
- All other environmental impacts are evaluated below the mean tide level.
- Fill is a consideration, however the Town needs to provide justification for fill versus pile supported or cantilevered options.
- Pile supported structures would be seen as the first priority option.
- Financial costs of fill versus piles or cantilevered support systems are not an acceptable justification.
- New storm damaged shoreline replacement going forward is acceptable.
- Some localized shoreline erosion repair is acceptable.
- This project would not likely be a candidate for fill in lieu of financial compensation.
- Cantilevered support system might be the preferred option to pile supported structure along the shoreline

### MaineDEP Discussion:

- Avoidance of impacts to the naturally protected resources (Sheepscot River) is the top priority. Need to demonstrate while no practical alternative exists.

Memo to: Town of Wiscasset – Waterfront Boardwalk Preliminary Design Project  
March 19, 2014  
Page 2

- If the project results in over 500 square feet of disturbance within the coastal wetland (HAT level or below) then financial compensation is required.
- For every foot of structural width over the coastal wetland, the structure is required to be elevated in equal footage above the coastal wetland to allow for light trespass below the structure for aquatic ecosystem benefit.
- Pedestrian access projects within twenty-five feet of the HAT level are regulated at 4 foot width.
- Construction is preferred to take place between November 15<sup>th</sup> and April 15<sup>th</sup> of any given year.

