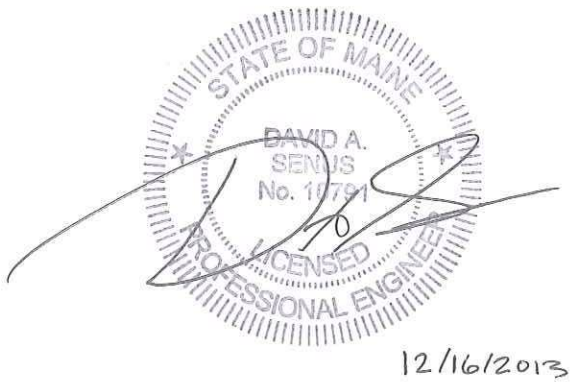
WOODARD &CURRAN

LEVEL III PRELIMINARY SITE PLAN DEVELOPMENT REVIEW APPLICATION

Capisic Pond Enhancement



12/16/2013

225672.77
City of Portland
December 2013

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COMMITMENT & INTEGRITY DRIVE RESULTS

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1. APPLICATION FORM

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level II: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

The Land Use Code (including Article V), the Technical Manual, and the Design Manual are available on the City's web site at http://www.portlandmaine.gov/planning/default.asp

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8721 or 874-8719

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

Updated: August 15, 2013

PROJECT NAME: Capisic Pond Enhancement

PROPOSED DEVELOPMENT ADDRESS:

Capisic Pond Park, on the north side of Capisic Street, west of Stevens Avenue, in the Rosemont Neighborhood.

PROJECT DESCRIPTION:

Remove cattails and sediments from historically open water areas via mechanical excavation to provide stratigraphic and habitat diversity for the pond; to enhance the aesthetic, recreational, and education opportunities of the park; and to allow the pond to remain classified as a moderate value Inland Waterbird and Waterfowl Habitat by the Maine Department of Inland Fisheries and Wildlife.

CHART/BLOCK/LOT: 224 X001, 192 C001, & 224AX001

PRELIMINARY PLAN 12-11-13 (date)
FINAL PLAN _____ (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Doug Roncarati, Stormwater Program Coordinator Business Name, if applicable: City of Portland Department of Public Services, Engineering Address: 55 Portland Street City/State : Portland/ME Zip Code: 04101	**Applicant Contact Information** Work # 207-874-8848 Home# Cell # Fax# e-mail: dar@portlandmaine.gov
Owner – (if different from Applicant) Name: Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Agent/ Representative Name: Woodard & Curran, c/o David Senus, PE Address: 41 Hutchins Drive City/State : Portland/ME Zip Code: 04102	**Agent/Representative Contact information** Work # 207-774-2112 Cell # e-mail: dsenus@woodardcurran.com
Billing Information (Same as Applicant) Name: Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

Engineer Name: **Woodard & Curran, c/o David Senus, PE** Address: **41 Hutchins Drive** City/State : **Portland/ME** Zip Code: **04102**	**Engineer Contact Information** Work # **207-774-2112** Cell # Fax# e-mail: **dsenus@woodardcurran.com**
Surveyor Name: **City of Portland, Department of Public Services** Address: **55 Portland Street** City/State : **Portland/ME** Zip Code: **04101**	**Surveyor Contact Information** Work # Cell # Fax# e-mail:
Architect Name: Address: City/State : Zip Code:	**Architect Contact Information** Work # Cell # Fax# e-mail:
Attorney Name: Address: City/State : Zip Code:	**Attorney Contact Information** Work # Cell # Fax# e-mail:

APPLICATION FEES:

Check all reviews that apply. (Payment may be made by Cash or Check payable to the City of Portland.)

Level III Development (check applicable reviews) ___ Less than 50,000 sq. ft. ($500.00) ___ 50,000 - 100,000 sq. ft. ($1,000) ___ 100,000 – 200,000 sq. ft. ($2,000) _X_ 200,000 – 300,000 sq. ft. ($3,000) **(Fee Waived for City Project)** ___ over $300,00 sq. ft. ($5,000) ___ Parking lots over 11 spaces ($1,000) ___ After-the-fact Review ($1,000.00 plus applicable application fee) **Plan Amendments (check applicable reviews)** ___ Planning Staff Review ($250) ___ Planning Board Review ($500) _____ The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($40.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	**Other Reviews (check applicable reviews)** ___ Traffic Movement ($1,000) ___ Stormwater Quality ($250) ___ Subdivisions ($500 + $25/lot) # of Lots ___ x $25/lot = _____ ___ Site Location ($3,000, except for residential projects which shall be $200/lot) # of Lots ___ x $200/lot = _____ ___ Other _____ ___ Change of Use _X_ Flood Plain _X_ Shoreland ___ Design Review ___ Housing Replacement ___ Historic Preservation

APPLICATION SUBMISSION:

1. **All site plans and written application materials must be submitted electronically on a CD or DVD with each plan submitted as separate files, with individual file names (see submittal requirements document attached).**
2. **In addition, one (1) paper set of the plans (full size), one (1) paper set of plans (11 x 17), paper copy of written materials, and the application fee must be submitted to the Planning Division Office to start the review process.**

The application must be complete, including but not limited to the contact information, project data, application checklists, wastewater capacity, plan for fire department review, and applicant signature. The submissions shall include one (1) paper packet with folded plans containing the following materials:

1. **One (1) full size site plans** that must be **folded.**
2. One (1) copy of all written materials or as follows, unless otherwise noted:
   a. Application form that is completed and signed.
   b. Cover letter stating the nature of the project.
   c. All Written Submittals (Sec. 14-525 2. (c), including evidence of right, title and interest.
3. A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet.
4. Plans and maps based upon the boundary survey and containing the information found in the attached sample plan checklist.
5. One (1) set of plans reduced to 11 x 17.

Refer to the application checklist for a detailed list of submission requirements.
Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), which includes the Subdivision Ordinance (Section 14-491) and the Site Plan Ordinance (Section 14-521). Portland's Land Use Code is on the City's web site http://www.portlandmaine.gov/citycode/chapter014.pdf

APPLICANT SIGNATURE:

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level II Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	**Date:**
(Agent on behalf of the City of Portland)	12/16/2013

PROJECT DATA

The following information is required where applicable, in order to complete the application.

Total Area of Site	**784,080** sq. ft.
Proposed Total Disturbed Area of the Site	**357,300** sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland	
Impervious Surface Area	**N/A**
Impervious Area (Total Existing)	sq. ft.
Impervious Area (Total Proposed)	sq. ft.
Building Ground Floor Area and Total Floor Area	**N/A**
Building Footprint (Total Existing)	sq. ft.
Building Footprint (Total Proposed)	sq. ft.
Building Floor Area (Total Existing)	sq. ft.
Building Floor Area (Total Proposed)	sq. ft.
Zoning	
Existing	**ROS, Shoreland Overlay & Stream Protection**
Proposed, if applicable	**N/A**
Land Use	
Existing	**Capisic Pond Park**
Proposed	**N/A**
Residential, If applicable	**N/A**
# of Residential Units (Total Existing)	
# of Residential Units (Total Proposed)	
# of Lots (Total Proposed)	
# of Affordable Housing Units (Total Proposed)	
Proposed Bedroom Mix	**N/A**
# of Efficiency Units (Total Proposed)	
# of One-Bedroom Units (Total Proposed)	
# of Two-Bedroom Units (Total Proposed)	
# of Three-Bedroom Units (Total Proposed)	
Parking Spaces	**N/A**
# of Parking Spaces (Total Existing)	
# of Parking Spaces (Total Proposed)	
# of Handicapped Spaces (Total Proposed)	
Bicycle Parking Spaces	**N/A**
# of Bicycle Spaces (Total Existing)	
# of Bicycle Spaces (Total Proposed)	
Estimated Cost of Project	**$2,090,000**

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
✔		1	Completed Application form
N/A		1	Application fees
✔		1	Written description of project
✔		1	Evidence of right, title and interest
✔		1	Evidence of state and/or federal approvals, if applicable
✔		1	Written assessment of proposed project's compliance with applicable zoning requirements
✔		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
N/A		1	Written requests for waivers from site plan or technical standards, if applicable.
✔		1	Evidence of financial and technical capacity
N/A		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
✔		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
✔		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
✔		Proposed grading and contours;	
✔		Existing structures with distances from property line;	
✔		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
N/A		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
N/A		Preliminary infrastructure improvements;	
✔		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
✔		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
✔		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
✔		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
N/A		Exterior building elevations.	

2. PROJECT DESCRIPTION

2.1 PROJECT SITE & BACKGROUND

Capisic Pond, which is located in Capisic Pond Park on the north side of Capisic Street, west of Stevens Avenue in the Rosemont neighborhood of Portland, lies in the lowest portion of the Capisic Brook watershed, and drains south to the tidal Fore River. The Capisic Pond is the City of Portland's largest freshwater water body and the adjacent Park is a favorite destination for area residents and bird watchers.

The pond was created by a manmade impoundment on the Capisic Brook, which began when the first dam was installed in the 1600s, for the purpose of running a gristmill. Since then, the dam and weirs have maintained the pond as an open water wetland habitat. Modifications to the dam's overflow weir were made in the late 1990s and early 2000s to manage upstream flooding, which consequently increased the overflow capacity, accommodating the passage of more water without raising the Pond's water level. The weir modifications may have increased the likelihood of cattails and other vegetation to colonize in near-shore pond sediments.

The pond was last dredged in the early 1950s. Since the last dredging, open water in Capisic Pond has been reduced from approximately 7.7 acres to approximately two acres; the rate of open water reduction has accelerated over the last ten years, and the wetlands around Capisic Pond have become dominated by cattails. The following photographs show the extent of cattail encroachment:

Figure 2-1: Photographs of Cattail-Dominated Wetlands Surrounding Capisic Pond

2.2 PROJECT NEED

Over the past 15 years, the City has made significant investment in improving the Capisic Brook watershed through combined sewer overflow abatement and stormwater management and planning. With recent Capisic Pond Park habitat enhancements through the West Side Interceptor Sewer Separation project and planned improvements to watershed quality under the Capisic Brook Watershed Management Plan, a Capisic Pond enhancement project will allow the community to realize the full benefits of this resource.

As development has increased over the past 50-years in the Capisic Brook watershed, runoff into Capisic Pond has presumably increased, and sediments have built up in Capisic Pond. The shallow, slow-moving, and nutrient-rich water favors the growth of cattails (Typha spp.).

Cattails are aggressive colonizers when they take hold and are often able to out-compete most other wetland plant species and form large monocultures (i.e. stands of a single plant species). The cattail stands can be very dense and slow surface water, causing additional sediments to settle, furthering the

sedimentation of the pond and favoring additional cattail growth. While emergent marsh habitat (including cattails) is utilized by a variety of waterfowl species, a monoculture is not the most beneficial scenario, as it does not provide habitat for as wide of a variety of species as a diverse wetland habitat. Additionally, as the cattails expand, the percentage of the wetland system that is dominated by open water begins to shrink, as demonstrated by the figure below, and so does the pond's rating for wading bird and waterfowl habitat.

Figure 2-2: 2001 Aerial Imagery (Top) VS 2009 Aerial Imagery (Bottom)

The Maine Department of Inland Fisheries and Wildlife (MDIFW) rates Inland Waterbird and Waterfowl Habitats (IWWHs) based on five categories. For each potential habitat, points are assessed in the following categories: dominant wetland class, wetland diversity, size of the wetland, interspersion of different wetland types, and percentage of open water. All points are tallied, and a score is given to the habitat to determine its ranking as a low-, moderate-, or high-value. Capisic Pond is currently ranked as moderate value, but is trending quickly towards a low-value rating. Cattail encroachment is causing a loss of open water habitat, and is slowly leading to a degradation of the IWWH habitat and a reduction of the scenic and recreational aspects of the pond. With cattail encroachment, the pond is losing its ranking points for percent open water.

The proposed Capisic Pond Enhancement project will remove invasive vegetation (cattails) and sediments from historically open water areas. The proposed design will create the optimum open water to wetland radio under the Significant Wildlife Habitat designation. The enhanced wetland areas will provide stratigraphic and habitat diversity for the pond and riparian habitat; will enhance the aesthetic, recreational, and education opportunities of the park; and will allow the pond to remain classified as a moderate value IWWH by the MDIFW.

2.3 PROPOSED PROJECT

The goal of the enhancement project is to improve the existing habitat for the variety of species that currently utilize the pond, maintain the current IWWH habitat as moderate value, and improve the aesthetic quality of the pond, while balancing the concerns of local residents and maintaining the existing character of the park. This will be achieved by sediment removal in portions of the pond to increase pond water depth, removal of the current population of cattails in selected areas and increasing the open water component of the pond. More detail on the proposed natural resource improvements is provided in Section 8.

2.4 LEVEL III SITE PLAN APPLICATION

Due to the size of the proposed land disturbance (greater than three acres, including stripping, grading, grubbing, filling, and excavation), the project requires review under a Level III Site Plan. The following Report is presented in conformance with the requirements of a Preliminary Level III Site Plan Application. Attachments are included throughout the Report in support of various sections. Civil and landscaping plan sheets showing the proposed design of the project have been attached for your reference.

3. EVIDENCE OF RIGHT, TITLE AND INTEREST

Capisic Pond is located in Capisic Pond Park, on the north side of Capisic Street, west of Stevens Avenue. Much of the project is located on public land owned by the City of Portland (parcels located at chart, block, lot 224 C001, 192 C001, & 224AX001); however, the Pond area to the south of Capisic Street is entirely within private property. Any work that is to be conducted on private property, and any land owners that are identified as potentially being impacted by this project, will be notified and appropriate easements from private land owners secured prior to performing work; we will coordinate with the City of Portland Department of Public Services to further review and refine the easement requirements around the park.

3.1 BOUNDARY SURVEY

Enclosed in Appendix B are two plan sheets entitled "Plan of City Property at Capisic Pond" prepared by the City of Portland, Maine Parks and Public Works Department, Engineering Division in September 1993. The City of Portland Department of Public Services is currently working on preparing a new "boundary page" to update and verify the September 1993 plans. The updated boundary page will be forwarded to the Planning staff when it becomes available.

4. EVIDENCE OF STATE AND/OR FEDERAL APPROVALS

Woodard & Curran and the City of Portland have engaged the Maine Department of Environmental Protection (MaineDEP), the U.S. Army Corps of Engineers (USACOE), and the Maine Department of Inland Fisheries and Wildlife (MDIFW) throughout the preliminary design phases of this project. The proposed project will require the following state and federal approvals:

- NRPA Individual Permit – The project is located within Significant Wildlife Habitat and will temporarily disturb a sizable portion of the existing pond area, requiring a Natural Resources Protection Act (NRPA) Individual Permit through the MaineDEP. Based on previous correspondence with Maine DEP, it has been verified that compensation will not be required for the proposed work.
- Army Corps – An Individual Permit for wetland disturbance will also be required through the USACOE, as the project will disturb in excess of 3 acres of existing wetland area. Maine Historic Preservation Commission consultation will be required as part of the USACOE review.
- MCGP & Stormwater PBR – The project will result in the disturbance of greater than one acre of land and will require a Notice of Intent to comply with the Maine Construction General Permit (MCGP) and a Stormwater Permit-by-Rule (PBR) through the MaineDEP.

In addition, to the permits listed above, a Beneficial Reuse Permit may also be required as a part of this project, depending on the location of sediment disposal and/or reuse. Pond sediments were analyzed under an earlier phase of work (Capisic Pond Sediment Sampling memo to Doug Roncarati from W&C dated December 2, 2011) for parameters in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, SW-846, 2nd Edition, 1982" and compared against the MaineDEP limits for beneficial reuse, as described in MaineDEP Chapter 418, Section A. This analysis has indicated that the material to be removed from the Pond is of sufficient quality to meet Beneficial Reuse criteria.

Copies of permits or notification forms will be provided to the City under separate cover as they become available.

5. EVIDENCE OF FINANCIAL AND TECHNICAL CAPACITY

5.1 FINANCIAL CAPACITY

A construction estimate has been completed for the proposed enhancement work. The estimated cost of permitting, design, construction, and construction administration is $2.2 million. The 2014 Capital Improvement Plan includes funding for design and permitting through the General Fund. Funding has not yet been allotted for construction of the proposed project; however, the Department of Public Services has included a request for $2.5 million in funding in the 2015 Capital Improvement Plan budget for consideration and approval by the City Manager and City Council. In addition, The City intends to explore grant sources for additional means of funding the improvements. It is our understanding that Site Plan Approval will be valid for one year, and that an extension of the permit may be granted for up to three years. We will keep the Planning Department informed of the status of funding approval for the project.

5.2 TECHNICAL CAPACITY

On behalf of the City of Portland, Woodard & Curran is preparing this site plan application for the Capisic Pond Enhancement project. Woodard & Curran has extensive experience preparing these types of projects and resumes can be made available upon request. Woodard & Curran is an over 800 person Portland based firm that has provided engineering services to the public sector for more than 30 years, including permitting; civil/site engineering; stormwater; and construction management services.

Woodard & Curran is supported in this project by Regina S. Leonard, R.L.A. for landscape architecture and Boyle Associates Environmental Consultants for wetland biology.

6. ASSESSMENT OF ZONING

The project is located within the City of Portland Recreation and Open Space Zone (R-OS), the Shoreland Overlay Zone, and the Stream Protection Overlay Zone, and will be designed to comply with the standards and intent of Divisions 8.5, 26 and 26.7 of the Land Use regulations, respectively. The proposed maintenance activities will not result in any changes to the site's existing use.

6.1 RECREATION AND OPEN SPACE ZONE (LAND USE CODE DIVISION 8.5)

The project consists of enhancements to an existing municipal park. In accordance with Division 8.5 of the Land Use Code, municipal parks are a permitted use within the R-OS.

6.1.1 Space and Bulk Requirements (Land Use Code Section 14-157)

No building or structure of a permanent nature will be erected, altered, enlarged, rebuilt, or used as part of the proposed project. This section of the Code is not applicable.

6.1.2 Development Standards for Recreation and Open Space Zone (Land Use Code Section 14-158)

The proposed project is not a new development, and no buildings or parking areas will be constructed or modified as part of this project. The work will be enhancement of an existing municipal park through improvements to an existing pond. The project shall comply with the development standards outlined in Section 14-158 of the Land Use Code. Per the City's standards, vegetated areas not left in their natural state will be suitably landscaped, and natural features will be preserved to the greatest possible extent. A landscaping plan for the area has been provided as part of the plan set.

6.1.3 Shoreland and Flood Plain Management Regulations (Land Use Code Section 14-159)

Portions of the proposed project are located in a shoreland zone and a flood hazard zone, and shall comply with the requirements of Division 26 and Division 26.5, as discussed below.

6.2 SHORELAND REGULATIONS (LAND USE CODE DIVISION 26)

The shoreland regulations are applicable to all land areas, uses, structures, and land use activities within 250 feet, horizontal distance, of the normal high water line of any river; within 250 feet, horizontal distance, of the upland edge of wetland; and within 75 feet, horizontal distance, of the normal high water line of a stream (14-447). Proposed work will include the expansion of open water area and enhancement of Capisic Pond.

6.2.1 Land Use Standards (Land Use Code Section 14-449)

6.2.1.1 Principal and Accessory Structures (Land Use Code Section 14-449(a))

No principal and accessory structures are proposed as part of this project.

6.2.1.2 Structures Extending Over the Normal High Water Line (Land Use Code Section 14-449(b))

No structures extending over or below the normal high water line are proposed as part of this project.

6.2.1.3 Other General Standards (Land Use Code Sections 14-449(c)-(o))

The proposed project will include removal of vegetation (14-449(c)). In compliance with City Code, the removal of vegetation will be limited to that which is necessary to enhance the existing municipal park, as previously discussed, which is an existing and authorized use. Tree removal will be necessary for temporary construction access, and specific "tree-save" areas will be coordinated with the City of Portland Arborist, Jeff Tarling.

Appropriate erosion and sediment control measures will be utilized during construction (14-449(d)). Details of the proposed erosion and sediment control are shown on the attached drawings.

The project is not anticipated to have an impact on the following:

- Soils (14-449(e)) – no new uses or structures will be established as part of this project.
- Water quality (14-449(f)) – no new impervious area will be created as part of this project.
- Archaeological sites (14-449(g)) – the project is located within an existing municipal park.
- Installation of public utility service (14-449(h)) – no new public utility service will be installed as part of this project.
- Essential service (14-449(i)) – no new essential services will be installed as part of this project.
- Roads and driveways (14-449(j)) – no new permanent roads or driveways will be installed as part of this project. Temporary construction access areas will be constructed for use during the project. These areas will be re-vegetated at the completion of construction.
- Parking areas (14-449(k)) – no new parking areas will be installed as part of this project.
- Septic waste disposal (14-449(l)) – no new subsurface sewage disposal system will be installed as part of this project.
- Stormwater runoff (14-449(m)) –no new impervious area will be created as part of this project.
- Agriculture (14-449(n)) – the project will not include any agricultural activities.

The project's general site plan features (14-449(o)) shall meet the following standards:

- The project will maintain safe and healthful conditions;
- The project will not result in water pollution and will include required controls for preventing erosion or sedimentation from impacting surface waters;
- The project will adequately provide for disposal of all wastewater;
- The project will have a temporary impact on spawning grounds, fish, aquatic life, bird or other wildlife habitat for the long term benefit of habitat enhancement. The project team has been directly coordinating with the Department of Inland Fisheries and Wildlife to limit the temporary

impacts on wildlife species that migrate through or live within the pond and park area. The intent of the project is the enhancement of wildlife habitat;

- The project will not negatively impact shore cover or visual as well as actual points of access to inland and coastal waters. The landscaping plan has been designed to provide appropriate viewsheds for visual access to the pond;
- The project will not impact archaeological or historic resources;
- The project will not adversely impact existing commercial fishing or maritime activities;
- The project will avoid problems associated with flood plain development and use.
- The project will be in conformance with all shoreland regulations.

6.3 FLOOD PLAIN MANAGEMENT REGULATIONS (LAND USE CODE DIVISION 26.5)

The project is required to comply with the flood plain management regulations because the proposed work will be taking place within an area of special flood hazard (14-450.3). Areas of special flood hazard are defined as "the land in the flood plain having a one (1) percent or greater chance of flooding in any given year as specifically identified in the Flood Insurance Study" (14-450.5). The attached FEMA FIRM map shows that the project area is located within the AE Zone.

The requirements of a flood hazard area development permit shall be met as required for this project (14-450.6). The project will conform to the following standards of the flood plain management regulations (14-450.8):

- No new development is proposed as part of this project (14-450.8(a)).
- There are no new or existing public water supplies associated with the proposed project (14-450.8(b)).
- There are no new or existing public sanitary sewage systems associated with the proposed project (14-450.8(c)).
- No new on-site waste disposal systems are proposed as part of this project (14-450.8(d)).
- No reduction in the flood carrying capacity of Capisic Brook will occur as a result of this project (14-450.8(e)). The project will result in a net removal of material from Capisic Pond, providing additional flood carrying capacity.
- No residential structures will be constructed as part of this project (14-450.8(f)).
- No non-residential structures will be constructed as part of this project (14-450.8(g)).
- The project will not include any manufactured homes (14-450.8(h)).
- The project will not include any recreational vehicles (14-450.8(i)).
- The project will not include any accessory structures (14-450.8(j)).

- The project will not result in any increase in flood levels within the community during the occurrence of the base flood discharge (14-450.8(k)).
- No structures will be constructed as part of this project (14-450.8(l)).
- No new bridges will be constructed as part of this project (14-450.8(m)).
- No new containment walls will be constructed as part of this project (14-450.8(n)).
- No new wharves, piers, or docks will be constructed as part of this project (14-450.8(o)).
- The project is located within Zone AE, and will conform to all applicable local, state, and federal regulations (14-450.8(p)). Information on the project's other permit applications is included in Section 4.

6.4 STREAM PROTECTION REGULATIONS (LAND USE CODE DIVISION 26.7)

The project is required to comply with the stream protection regulations because the proposed work will be taking place within a stream protection zone (14-452). The stream protection zone includes all land areas within 75 feet, horizontal distance, of the normal high water line of a stream, as shown on the City of Portland Zoning Map.

6.4.1 Development Standards (Land Use Code Section 14-453)

No building or structure of a permanent nature will be erected, altered, enlarged, rebuilt, or used as part of the project (14-453 (a)), and no parking is proposed as part of this project (14-453(c)). Re-grading will take place within the Stream Protection Zone. This permit application fulfills the Site Plan permitting requirements of Section 14-453(b).

7. CONFORMANCE WITH SITE PLAN STANDARDS

Level III Site Plan applications are required to comply with the site plan standards outlined in Section 14-526 of the City of Portland's Land Use Code. The project will comply with the following standards as applicable:

7.1 TRANSPORTATION STANDARDS

In general, there are no proposed changes to transportation systems. Construction access to the site will be managed to minimize impact to local streets and parking. Construction vehicle traffic and travel routes will be addressed further in the Construction Management Plan.

7.1.1 Impact on Surrounding Street Systems

No alterations to vehicular and pedestrian circulation are proposed as part of this project. No permanent impacts to surrounding street systems are anticipated as a result of this project.

7.1.2 Access and Circulation

No changes to site access and circulation are proposed as part of this project.

7.1.3 Public Transit Access

The project is not a residential development, and will not require public transit access. No existing public transit access will be impacted by the project.

7.1.4 Parking

No new parking, or alterations to existing parking, is proposed or required as part of this project.

7.1.5 Transportation Demand Management

The project does not include any development that would require the implementation of a Transportation Demand Management plan.

7.2 ENVIRONMENTAL QUALITY STANDARDS

7.2.1 Preservation of Significant Natural Features

The intent of the project is to provide enhancements to Capisic Pond, and as a result, there will be positive impacts to existing natural features. Further information is provided in Section 8 of this report.

7.2.2 Landscaping and Landscaping Preservation

Disturbance and removal of existing trees shall be limited to the maximum extent practicable, as necessary to provide access to the pond during construction. These disturbed areas will be re-vegetated at the completion of construction. Significant removal of cattails is planned, with extensive wetland plantings specified to replace the cattails with a more diversified group of wetland species. More

information on the proposed cattail removal and wetland plantings is included in Section 8 of this report. A landscaping plan is also included in the plan set to show proposed plantings.

7.2.3 Water Quality, Stormwater Management, and Erosion Control

The proposed project will not alter existing stormwater drainage patterns. No new impervious area will be created as part of this project, and it is not anticipated that there will be an increase in peak stormwater flows at the site. The project will comply with the standards of Section 5 of the City of Portland Technical Manual, as discussed in Section 9 of this Report. Groundwater contamination will not occur as a result of this project.

7.3 PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY STANDARDS

7.3.1 Consistency with City Master Plans

The City has made significant investment over the past 15 years in improving the Capisic Brook watershed through combined sewer overflow abatement and stormwater management and planning. With recent Capisic Pond Park habitat enhancements through the West Side Interceptor Sewer Separation project and planned improvements to watershed quality under the Capisic Brook Watershed Management Plan, the proposed work will ensure that the value and benefit of this work to the Capisic Pond is not diminished.

7.3.2 Public Safety and Fire Prevention

The project does not propose any modifications that would require additional consideration of public safety and fire prevention.

7.3.3 Availability and Adequate Capacity of Public Utilities

No new utilities are proposed as part of this project, and existing utilities that are located on the project site will be protected. At this time, impacts to public and private utilities from the construction of this project are not anticipated. If utility impacts are identified, we will contact the impacted utility company to inform them of the planned work and incorporate any necessary requirements.

7.4 SITE DESIGN STANDARDS

7.4.1 Massing, Ventilation, and Wind Impact

No new buildings or modifications to existing structures are proposed as part of the project.

7.4.2 Shadows

No new buildings or modifications to existing structures are proposed as part of the project.

7.4.3 Snow and Ice Loading

No new buildings or modifications to existing structures are proposed as part of the project.

7.4.4 View Corridors

No new buildings or other structures that may impact view corridors are proposed as part of the project. The wetland landscaping plan has been designed to maintain and enhance viewsheds to Capisic Pond.

7.4.5 Historic Resources

The proposed project will not impact any known archaeological resources or designated landmarks within designated historic districts or historic landscape districts. The project will be submitted to the Maine Historic Preservation Commission for review as part of the Army Corps of Engineers permitting process. If the Commission expresses any concerns, correspondence will be forwarded to the City's Planning Staff.

7.4.6 Exterior Lighting

No lighting is proposed as part of this project.

7.4.7 Noise and Vibration

No new buildings or modifications to existing structures are proposed as part of the project.

7.4.8 Signage and Wayfinding

No new signage is proposed as part of this project.

7.4.9 Zoning Related Design Standards

Narrative regarding how the proposed project will comply with zoning related design standards has been provided in Section 6 of this Report.

8. SIGNIFICANT NATURAL FEATURES

Capisic Pond is the largest fresh water body in the City of Portland, and the pond and surrounding areas make up a significant natural resource. The purpose of the proposed project is to provide enhancement to the pond and surrounding wetlands

8.1 NATURAL RESOURCE IDENTIFICATION

A wetland delineation and functional assessment study was completed for the project area. The delineation and assessment was carried out by Boyle Associates in the summer and fall of 2012, and a final report was completed in September, 2012; this report describes the wetland areas in greater detail and has been attached as Appendix D for your reference.

The wetland delineation identified a number of areas of wetlands throughout the Capisic Park property. Wetlands included a variety of herbaceous and shrub wetland species, as well as areas of open water. Some of these wetland areas are considered Wetlands of Special Significance (WOSS). It was noted in the report that the wetlands on the site all display signs of impacts and degradation due to current and historic development in the pond's watershed. In addition, many of the wetland areas have developed a "monoculture" of cattail plants. These impacts and the lack of diversity have resulted in a reduction of the area's ability to provide habitat and value. The intent of the enhancement project is to help restore value to Capisic Pond and its surrounding wetland areas by diversifying the wetland species, and providing improved habitat area. A more detailed description of what is proposed of the project is provided later in this section.

8.2 WILDLIFE HABITAT

The pond and its surrounding habitat are currently mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) as moderate-value Inland Wading Bird and Waterfowl Habitat (IWWH). Moderate value IWWHs are considered Significant Wildlife Habitat (SWH) under state law. This law provides additional protection for most land within 250-feet of the edge of the pond.

The project team has been working in conjunction with MaineDEP, MDIFW, and ACOE during conceptual design to ensure that wildlife habitat impacts are adequately considered as part of the Capisic Pond Enhancement project.

8.3 PROPOSED IMPACT

The plans depict a "limit of work" boundary around the pond enhancement area. All areas within the limit of work area will be temporarily disturbed. The proposed project will increase the total wetland area on the site, as some upland areas within the limit of work will be replaced with wetland plants. No new impervious surface will be created as part of this project. A summary of upland and wetland areas for the existing condition and proposed condition are listed in the following table:

Table 8-1: Capisic Pond Enhancement Areas

	Existing	Proposed
Wetland		
PEM1 (Herbaceous, Cattail Dominated)	*212,600 SF*	*0 SF*
PEM2 (Herbaceous other than Cattails)	*600 SF*	*115,600 SF*
PSS (Shrub)	*7,100 SF*	
PUB – Open Water	*84,500 SF*	*197,100 SF*
Total	**304,800 SF**	**312,700 SF**
Upland	**52,500 SF**	**44,600 SF**
Total Limit of Work Area	**357,300 SF**	**357,300 SF**

Note: These numbers are preliminary and may be revised pending further advancement of the permit applications.

As indicated in the table above, the cattail dominated wetlands will be eliminated, and the area will be replaced with other wetland plantings as well as additional open water. The plan for accomplishing a diversified wetland with a greater area of open water is described in the following sections.

8.3.1 Cattail Removal

There are several approaches to cattail removal that have been evaluated for Capisic Pond, including mowing, chemical treatment, and flooding. Mowing alone has shown limited success for controlling cattails due to the cattail's ability to rebound utilizing the energy reserves in the underground rhizomes, and cattails' prolific seed producing qualities. Chemical treatment in open water systems can be difficult in part due to difficulties with applications in standing water, permitting, and public perceptions about herbicide use in public spaces. Flooding may help to reduce cattail habitat, but much of the cattail plant would first need to be removed in order to stop the oxygen transfer, and there may be upstream flooding repercussions as a result of an increased pond elevation. While flooding cut stems may control cattail expansion, it may not guarantee the reduction of cattails in shallow water depths less than two feet.

Mechanical excavation will be utilized to achieve a target depth of the enhancement plan of three feet, which will increase the open water component of the pond to approximately 4.5 acres; all of the cattail-dominated wetland areas will be eliminated and replaced with mixed shrub/herbaceous wetlands and open water. Much of the removed sediments will be utilized on-site to create transitional wetland areas suitable for growing shrubs and diversified herbaceous wetland plantings along the former margins of the pond and current cattail marsh. Removed sediments not utilized on-site will be disposed of off-site, and options for beneficial use will be investigated.

It is important to note that, although the plan is to enhance/diversify all cattail dominated wetlands within the limit of work and produce an environment that limits cattail regrowth, we anticipate cattails will continue to emerge to a limited extent and future management will be needed to limit their dominance. Additionally, existing cattail stands located north of the limit of work will remain unaltered, as the cattail wetlands do offer habitat to certain species that live in or migrate through the park.

It should also be noted that the overall enhancement plan for Capisic Pond includes a second project, the Rockland Avenue Outfall; the Level I Site Alteration Application for this work is being submitted concurrently and under separate cover.

8.3.2 Open Water Enhancement Plan

Due to the pervasive nature and tenacious expansion of cattails, removal of both the cattails and the sediments upon which they grow, followed by a few seasons of draining, cutting, and flooding is the

proposed strategy to regain and maintain open water habitat in Capisic Pond. The proposed open water indicated on the plans has been designed to minimize the likelihood of future regrowth by cattails.

The current depths in the open water portion of the pond range from approximately 18-inches on the fringes to 36-inches in a few deeper pockets (with the exception of deeper areas just south of Capisic Street). Pond depths were surveyed through the use of depth measurements and sub-meter accuracy Global Positioning System (GPS) for horizontal location in September 2012. Pond bathymetry was mapped utilizing measured depths in reference to a known benchmark at the Capisic Pond dam weir.

Currently, cattail growth is primarily limited to the shallower reaches of the pond (less than two feet), with sporadic floating-mat populations in the deeper areas. Based on these existing conditions, an average depth of three feet would be an appropriate depth for cattail exclusion; greater depths would make cattail regrowth less likely, but it would also incur more expense and impacts from the removal of additional material. Additionally, managing the depth at approximately three feet is conducive to wading birds and waterfowl habitat; three feet will allow diving ducks to fish from the pond interior, while dabbling ducks and wading birds can still hunt and forage along the pond's edge.

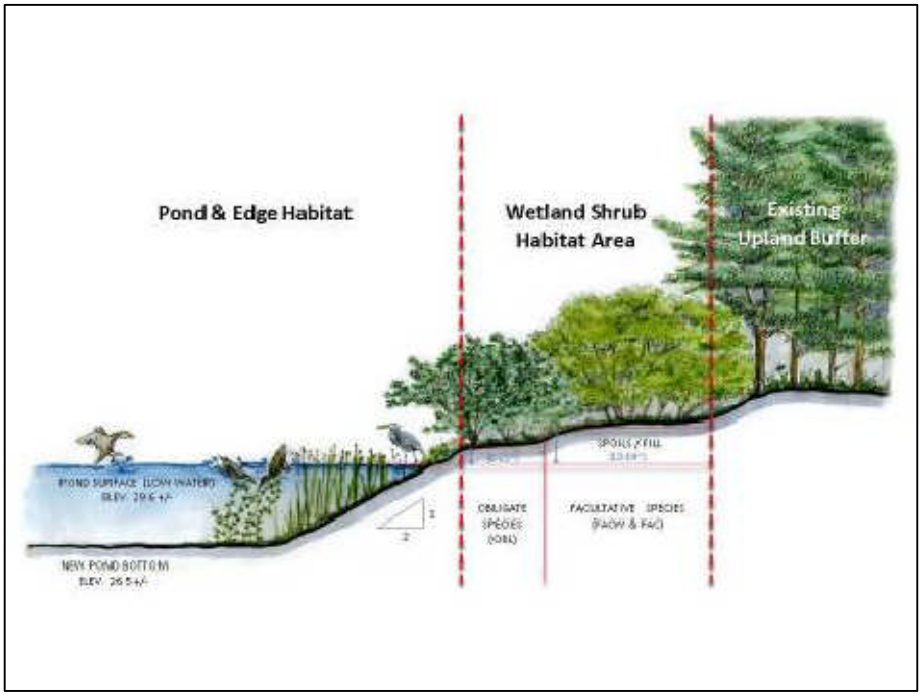
8.3.3 Wetland Diversity and Interspersion Plan

As described earlier, MDIFW rates IWWHs based on five categories. One of the categories, Interspersion, ranks the intermixing of various wetland types surrounding the open water component of the habitat. Another category of the ranking system is diversity of wetland types. While Capisic Pond contains a mix of wetland types, MDIFW rates this wetland as limited to low diversity. It was noted in the wetland delineation report that shrub habitat in particular is limited within this wetland complex. Additionally, due to encroachment of the cattail monoculture, the open water portion of the marsh is largely surrounded by either cattail marsh or upland trees. In order to increase the habitat interspersion and diversity, the proposed project includes the addition of a dense, low-growing, woody transitional wetland zone along the western edge of the pond. An increase in woody plant density and diversity along the pond will help create habitat for feeding, nesting, and refuge for a variety of species.

The western edge of the pond is more isolated from Park use disturbances (i.e. dogs and humans) and will provide a beneficial area to increase shrub habitat surrounding the pond. Additionally, areas have been identified for shrub habitat along the eastern shore of the Pond to complement transition to upland vegetation, and where sediment removal would compromise underlying utility infrastructure (storm drain pipe).

In all cases, these wetland enhancement areas will be sited to minimize visual obstruction from Park viewpoints. Adding woody plants along this riparian area will increase wildlife habitat, improve the aesthetic qualities of the pond, and provide additional shading for the pond and marsh. In order to achieve the appropriate growing medium for shrubs, the cattails currently covering these areas of the pond will be removed, and sediments and substrate from dredged open water areas of the pond will be deposited in order to raise the elevation of the area up to 18-inches above the average elevation of the adjacent pond. This area will be covered with natural weed control mats, and numerous native shrubs will be installed to jumpstart the new riparian habitat.

Figure 8-1: Concept for Wetland Shrub Habitat Areas



In order to achieve a dense cover and to help compete with regenerating cattails, the planting effort proposes an overall density of 800 shrubs per acre in the riparian shrub transition wetland. Native woody plant species have been selected that can tolerate a range of hydrology, are resistant to pollution and wind damage, grow quickly, and that provide habitat (food and shelter) for native birds and animals. Bare root and live stakes are fairly easy to install and cost savings can be realized when ordered from suppliers in large quantities. Table 8-2 provides a list of recommended species that would be appropriate for these areas.

Table 8-2: Plant Species List

Species Common Name	Species Latin Name	Bare Root (BR)/Live Stake (LS)	Wetland Indicator
Buttonbush	Cephalanthus occidentalis	LS	OBL
Red-osier Dogwood	Cornus sericea	LS	FAC
Winterberry	Ilex verticillata	BR	FACW
Pussy Willow	Salix discolor	LS	FACW
Speckled Alder	Alnus incana var. rugosa	BR	FACW
Mountain Holly	Ilex mucronata	BR	OBL
Arrow-wood	Viburnum recognitum	BR	FACW

A mix of bare root nursery stock and live stakes will be installed across the created shrub habitat areas. Wet tolerant species will be planted in lower elevations along the pond, and drier species will be planted along the upper reaches of the slope or in mounded central locations. In areas not completely covered with natural weed control mats, a native applied to loose sediments and lightly raked in once applied.

Straw mulch will be applied over newly seeded areas at a rate of 70-90 pounds (about 2 bales)/ 1,000 square feet

9. STORMWATER MANAGEMENT

The proposed project is being submitted as a Level III Site Plan Application, and as such, per Section 5 of the City of Portland Technical Manual, is required to submit a stormwater management plan pursuant to the regulations of Maine DEP Chapter 500 Stormwater Management Rules.

9.1 EXISTING CONDITIONS

The site is located in the existing Capisic Pond Park. The park consists of open water, open space, and landscaped areas. The existing site runoff flows over the surface of vegetated areas and either infiltrates into the ground or directly to the Pond, and ultimately discharges to the tidal Fore River.

9.2 PROPOSED DEVELOPMENT

The proposed project consists of enhancements to the existing pond, as described in Section 2.3. No new impervious area will be created as part of this project. Site runoff will continue to flow as it does in the existing condition.

In accordance with Section 5 of the City of Portland Technical Manual, the proposed project design addresses Basic, General, Flooding, and Urban Impaired Stream standards, as described in the following sections of this Report.

9.3 STORMWATER STANDARDS

The project will comply with the stormwater standards as outlined in the City of Portland's Technical Manual Section 5 and the Maine DEP's Chapter 500 Stormwater Management Rules.

9.3.1 Basic Standard

In accordance with Section 5 of the City of Portland Technical Standards, the project is required to meet the Basic Standard of the Maine DEP Chapter 500 rules. Erosion and sedimentation control measures will be utilized during construction to ensure that the work will not result in contamination of any natural resources.

Details for all proposed erosion and sedimentation control measures are included in the engineering plan set submitted with this application. The plans will include a narrative describing the plan for all temporary and permanent erosion control techniques to be utilized on this project in accordance with Maine DEP Erosion Control Best Management Practices.

9.4 GENERAL STANDARD

The project will not create any new impervious surface, and is therefore not required to provide stormwater quality treatment in accordance with the General Standard.

9.5 FLOODING STANDARD

The project will not create any new impervious surface, and is therefore not required to provide stormwater management features for stormwater quantity control in accordance with the Flooding Standard.

9.6 URBAN IMPAIRED STREAM STANDARD

The project is located within the watershed of Capisic Brook, which is classified as an urban impaired stream; however, the proposed project will not create any new impervious surfaces or developed areas, and is therefore not required to provide compensation or mitigation in accordance with the Urban Impaired Stream Standard.

10. SOLID WASTE

10.1 MUNICIPAL SOLID WASTE MANAGEMENT

The proposed project will not result in any changes to solid waste management at the park.

10.2 CONSTRUCTION AND DEMOLITION DEBRIS

As with any construction project, the proposed construction will generate construction waste and demolition debris (CDD). The construction contractor(s) will be responsible for hauling the CDD, or contracting with a waste management service to haul the CDD, from the project site. The contractor(s) will be fully responsible for handling, managing, and disposing of all waste generated by construction in accordance with Maine Solid Waste Management Regulations – 06-096 CMR 400-409. The contractor(s) will be bound by contract to dispose of all materials in full accordance with all applicable local state and federal regulations.

It is anticipated that approximately 16,000 cubic yards of material will be removed from Capisic Pond as part of this project. Of this material 7,500 cubic yards of material will be reused on site and 8,500 cubic yards of material will be removed from the site. The contractor will measure the actual waste volumes at the time of construction.

A Beneficial Reuse Permit may be required as a part of this project, depending on the location of sediment disposal and/or reuse. Pond sediments were analyzed under the previous phase of work (Capisic Pond Sediment Sampling memo to Doug Roncarati from W&C dated December 2, 2011) for parameters in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, SW-846, 2nd Edition, 1982" and compared against the MaineDEP limits for beneficial reuse, as described in MaineDEP Chapter 418, Section A. This analysis has indicated that the material to be removed from the Pond is of sufficient quality to meet Beneficial Reuse criteria. The sediment removed from Capisic Pond may be reused as fill in the Pike Industries quarry on outer Brighton Avenue. This option is being considered and will be further evaluated prior to the start of construction.

11. CONSTRUCTION MANAGEMENT PLAN

The Capisic Pond site will be managed during construction to minimize impacts to the surrounding area and natural resources. Security fencing will surround the construction area at all times and will be moved to accommodate the construction activities for the project. Traffic controls will consist of temporary signage to manage pedestrian traffic. The contractor will be required to provide a construction management plan for the project, subject to the review and approval of the City and Engineer.

Intermediate processing to dewater the spoils and/or remove vegetation may be conducted in proximity to the excavation, to produce spoils which are of suitable character for use in transitional wetlands shaping or for transport off-site. The selected processing methods will in part be driven by permit requirements related to turbidity or the sediments discharged during dewatering. A beneficial reuse or a disposal site for the surplus dredge spoils and removed plant matter has not been located at this time. The water and plant matter may or may not have to be separated out prior to reuse and the methods to accomplish it will depend upon the end management location(s) subsequently identified.

Mechanical excavation will be utilized to remove pond sediment. Mechanical dredging equipment includes clamshells, draglines, backhoes or other machinery for excavating bottom sediments. A long reach excavator working from wooden crane mat platforms may be utilized to conduct the dredging and transitional habitat creation. Dump trucks and low ground pressure equipment involvement may also be necessary to support the excavation, removal, and placement of material. Excavated materials may be placed in the adjacent transitional shrub areas for dewatering.

Surplus material and vegetative residuals shall be hauled away in watertight dump trucks. Preliminary estimates show that approximately 8,500 cubic yards of material may need to be removed from the site during the construction process. This volume of material removed will result in a significant amount of construction vehicle traffic. We anticipate working with the City Traffic Engineer during Site Plan review to develop a plan for accepted construction vehicle routes. The contractors' plan for removal and disposal will be a part of the construction management plan reviewed by the City.

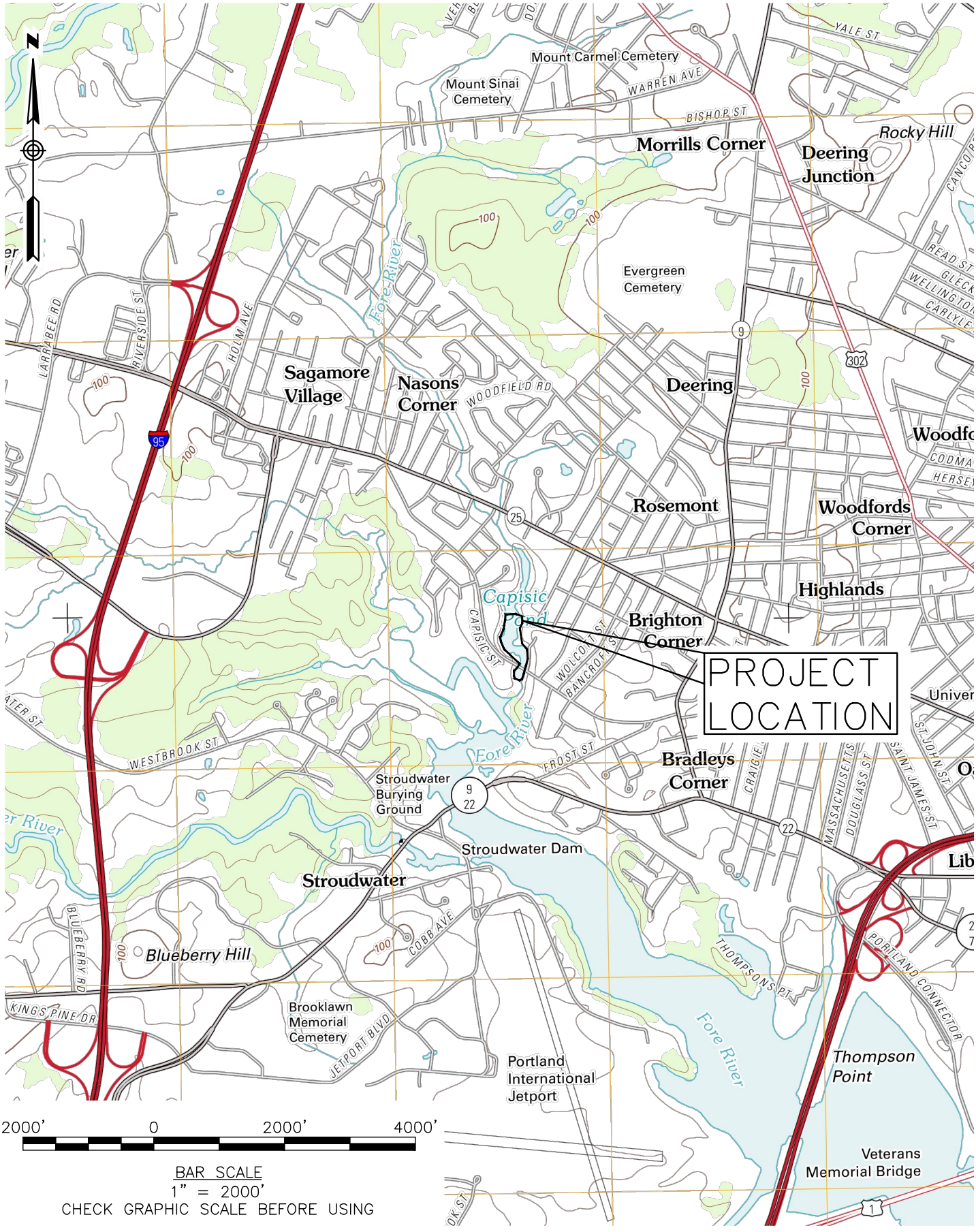
A 24-inch drawdown pipe and valve at the Capisic Pond Dam will be utilized to lower the water level in the pond. All dredging work will be conducted in the dry with the exception of the lowest locations of base flow and any un-drained low points. The base flow from Capisic Brook will likely be accommodated through the existing 120-inch storm drain pipe that runs alongside and under the pond. This pipe has a discharge at the base of Capisic Pond Dam. This existing pipe may not accommodate high flows, and provisions will be made to bypass these flows as necessary.

Temporary erosion and sedimentation control measures will be established prior to the start of construction and removed after construction has been completed and the site has been stabilized. Erosion and sedimentation control measures will include temporary construction access, temporary erosion control matting, and sedimentation barriers. The locations of these erosion and sedimentation control measures will be specified on the construction plans.

12. FIRE DEPARTMENT REVIEW

The project will not result in the construction or modification of any structures, and no fire protection systems or hydrants will be required. We anticipate that review by the Fire Department will not be required for this project.

APPENDIX A: LOCATION MAP



2000' 0 2000' 4000'

BAR SCALE
1" = 2000'
CHECK GRAPHIC SCALE BEFORE USING

WOODARD &CURRAN
41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

PROJECT LOCATION MAP

DESIGNED BY: N/A	CHECKED BY: LJS
DRAWN BY: BCM	225672.77 SITE LOCATION*.dwg

CITY OF PORTLAND
PORTLAND, MAINE

CAPISIC POND ENHANCEMENTS

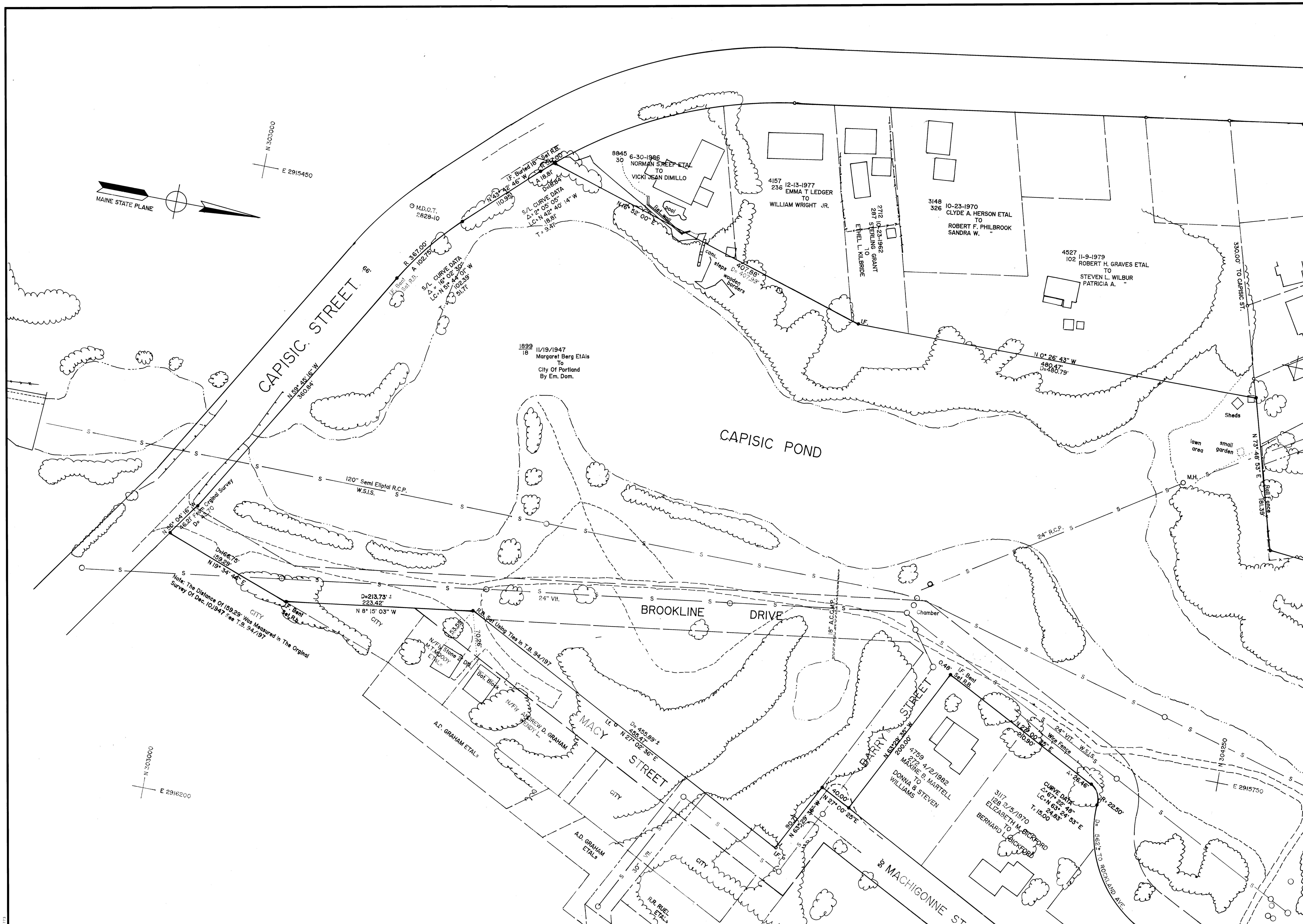
JOB NO: 225672.77
DATE: NOVEMBER 2013
SCALE: 1"=2000'

FIG. 1

APPENDIX B: SURVEY

CITY OF PORTLAND, MAINE
PARKS AND PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
PLAN OF CITY PROPERTY
AT CAPISIC POND
SHEET 1 OF 2
DIRECTOR OF ENGINEERING
APPROVED
PROJECT NO
DESIGNED BY
DRAWN BY
J.M.ROBBINS
CHECKED BY
DATE
SEPT.10,1993
SCALE
AS NOTED 1"=50'
REFERENCES
DESCRIPTION
DATE
Legend
Existing Iron Pipe
Set 5/8" Rebar With Disk
References To Recorded Plans C.C.R.Ds.
Plan Of Brighton Plan Book 11/109 7/25/1908
Greater Brighton Extension Plan Book 11/111 Apr. 1904
Plan Of Brighton Gardens Plan Book 14/56 4/18/1921
Revised Plan Of Brighton Park Plan Book 17/30 11/27/1926
Land Acquired In 1938 By The City Of Portland Plan Book 24/54 9/9/1938
Revised Plan Of Property Of Robert Lannigan Capisic Street Plan Book 38/33 9/22/1951
I hereby Certify to the City Of Portland that this Plat is based on and is the result of an on the ground field survey and that it conforms to the Board Of Licensure For Professional Land Surveyors Standards For a Category 2 Condition II Survey.
Reg. Prof. Surveyor No. 772
Date. 9/10/1993
SCALE: 1" = 50'
MAINE STATE PLANE
SANDY TERRACE
PRESNELL STREET
HARVEY STREET
LUCAS STREET
BRIGHTON AVENUE
BROOKLINE
DRIVE
RIDLEY ST.
EATON DR.
ROCKLAND AVE.
WILBUR ETALS
RALPH PALMER ETALS
7005 12/11/1985 326 EDITH S. DANBY
2127 4/29/1953 170 ROBERT D. LANIGAN TO GEORGE P. ZAIMES BEULAH E. ZAIMES
2143 8/25/1953 404 ROBERT D. LANIGAN TO JAMES F. CARROLL AILEEN M. CARROLL
3430 8/25/1953 17 ANTOINETTE S. TATARCZUK TO GERALD F. MAILMAN FRANCES MAILMAN
3539 3/4/1974 213 FLORA A. RUSSO TO CHARLES E. LANDER ALICE I. LANDER
3999 4/19/1977 195 EDITH A. MILLS TO F. HERBERT WENTWORTH ETALS
6161 5/3/1983 183 P.J. DONAHUE TO PAULINE F. BRIGHAM
2204 9/9/1954 495 ANGELO NEV/CO TO FRED E. CLARK JR. INGRID J. CLARK
2907 7/6/1965 2186 5/24/1954 409 162 JOSEPH A. TARDIFF MARY S. TARDIFF
2517 12/18/1959 463
1899 11/19/1947 18 Margaret Berg EtAls To City Of Portland By Em. Dom.
7719 4/15/1987 109 THE NATHAN COPE TRUST TO JOHN H. DUFFY JANET DUFFY
3869 6/30/1976 174 ROSE GAGGIANO TO JOHN J. ZAPPIA
3173 6/14/1971 704 THE DOCTORS PARK TO MAINE SAVINGS BANK
9306 8/30/1990 THE MINOT CORP. TO DANIEL LILLEY
6535 8/6/1984 303 STUART H. BOWDOIN TO MICHAEL E. KRAMER ETALS
SEWER RIGHT OF WAY 6/28/1955
20' Drainage Easement
S/L CURVE DATA Δ = 10° 47' 42" LC = N 37° 22' 27" E 60.37' T = 30.32'
CURVE DATA Δ = 51° 02' 20" LC = N 20° 48' 30" W T = 35.80'
CURVE DATA Δ = 67° 22' 48" LC = N 63° 24' 53" E 24.83' T = 15.00'
CURVE DATA Δ = 67° 22' 48" LC = N 60° 17' 46" E 155.32' T = 93.33'
CURVE DATA Δ = 53° 08' 00" LC = N 00° 26' 31" E 89.45' T = 50.00'
CURVE DATA Δ = 33° 39' 45" LC = N 9° 17' 37" W 86.87'
N 0° 26' 43" W 480.47' D= 480.79'
N 5° 11' 27" E 341.66'
N 73° 48' 53" E 181.39'
N 45° 51' 32" W 100.00'
N 22° 17' 26" W 161.74'
N 47° 56' 06" W 220.00
854.94' N 46° 59' 52" W
143.76' N 18° 06' 05" W
N 62° 59' 35" W 134.64'
N 27° 00' 38" E 160.00'
N 62° 58' 38" W 100.00'
R = 140.00 A = 164.25
R = 100.00 A = 92.73
A = 88.13 R = 150.00
R = 75.00 A = 66.81
Lawn Area
Stone Dust Path
4" P.V.C. Pipe
24" R.C.P.
60" R.C.P.
30" R.C.P.
24" Vit. PIPE
S.M.H.
N 304500
E 2915250
N 305500
E 2915000
PROFESSIONAL GRAPHICS DPD-30

947.
3


MAINE STATE PLANE
N 303000
E 2915450
CAPISIC STREET
CAPISIC POND
BROOKLINE DRIVE
MACY STREET
BARRY STREET
MACHIGONNE ST.
1899 18 11/19/1947 Margaret Berg EtAls To City Of Portland By Em. Dom.
8845 30 6-30-1986 NORMAN S.REEF ETAL TO VICKI JEAN DIMILLO
4157 236 12-13-1977 EMMA T LEDGER TO WILLIAM WRIGHT JR.
2712 287 10-23-1962 STERLING GRANT TO ETHEL L. KILBRIDE
3148 326 10-23-1970 CLYDE A. HERSON ETAL TO ROBERT F. PHILBROOK SANDRA W.
4527 102 11-9-1979 ROBERT H. GRAVES ETAL TO STEVEN L. WILBUR PATRICIA A.
4759 272 4/2/1982 MAXINE B. MARTELL TO DONNA & STEVEN WILLIAMS
3117 128 2/5/1970 ELIZABETH M. BICKFORD TO BERNARD L. BICKFORD
120" Semi Eliptal R.C.P. W.S.I.S.
24" R.C.P.
24" Vit.
Note: The Distance Of 159.29' Was Measured In The Orginal Survey Of Dec. 10,1947 See T.B. 94/197
A.D. GRAHAM ETAL
N 303000
E 2916200
N 304250
E 2915750
330.00' TO CAPISIC ST.
N 0° 26' 43" W 480.47'
Sheds
M.H.
Chamber
PROFESSIONAL GRAPHICS DPD-3D

REFERENCES	DESCRIPTION	DATE

PROJECT NO	DESIGNED BY
DATE SEPT. 10,1993	DRAWN BY J.M.ROBBINS
SCALE AS NOTED 1"= 50'	CHECKED BY

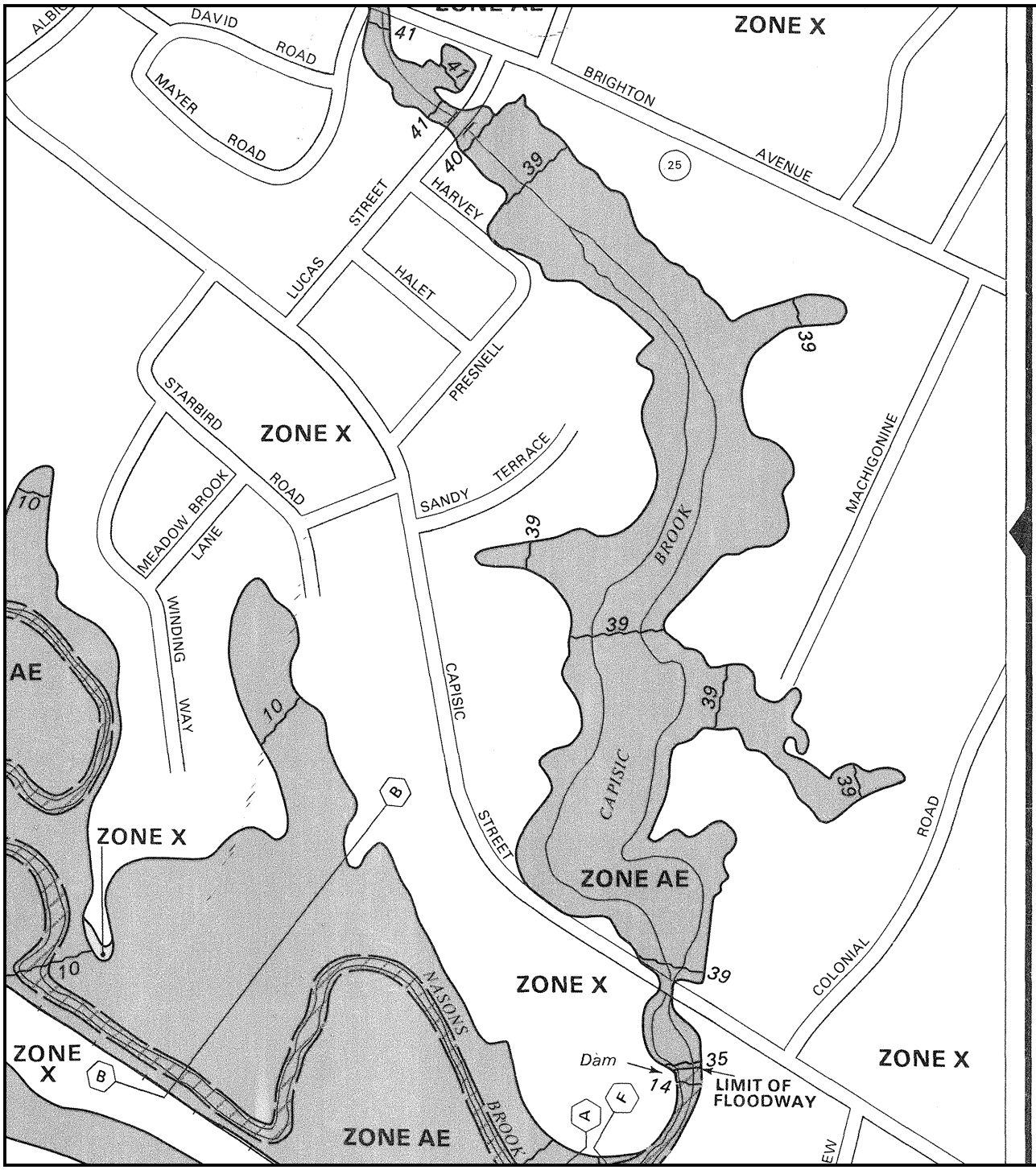
PLAN OF CITY PROPERTY AT CAPISIC POND.

CITY OF PORTLAND, MAINE
PARKS AND PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED
DIRECTOR OF ENGINEERING

SHEET 2 OF 2

APPENDIX C: FEMA FIRMETTE



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 12 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0012 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency

APPENDIX D: WETLAND DELINEATION REPORT & FUNCTIONAL ASSESSMENT

Capisic Pond Park - Portland, Maine
Wetland Delineation Report & Functional Assessment
September 2012

Boyle Associates, Environmental Consultants
Mailing Address: 25 Dundee Road
Gorham, Maine 04038
(207) 591-5220
www.boyleassociates.net

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1. INTRODUCTION

Capisic Pond Park is an approximately 18-acre, city-owned property located in a suburban area of Portland, Maine (Figure 1). Capisic Pond Park is bounded by Capisic Street to the south and west, Lucas Street to the north and Machigonne Street to the east, with several of the property boundaries consisting of residential home lots. The park consists of emergent marsh and mixed forested, shrubby and grassy uplands and wetlands surrounding Capisic Pond. Within the park, a gravel footpath traverses the east side of the pond, generally following over a Portland Water District sewer line. The path runs from a small parking area on the corner of Capisic Street and Macy Street north to a small gravel lot on Lucas Street. There is a small side path that connects to Rockland Avenue. Several mowed trails veer from the main path, allowing access to additional viewpoints of the pond and surrounding habitats. The park is a popular destination for local residents and visitors who use the park primarily for hiking, walking, biking, and nature watching. Uplands within and around the site consist of small areas of woodlands, shrublands and grasslands surrounded by suburban development. Woodlands consist mainly of large tree species such as white pine (*Pinus strobus*) with a shrubby understory of invasive plant species such as honeysuckle (*Lonicera spp.*) and buckthorn (*Frangula* and *Rhamnus spp.*). Residential homes and yards surround most of the site. There are some larger house lots on the western side of the pond. Many areas along the pond are being maintained as lawn up to or very near the edge of the pond.

The park's main visual and habitat feature is Capisic Pond and its surrounding wetlands and riparian habitats. Capisic Pond roughly bisects the property. Fed primarily by Capisic Brook, the pond flows (slowly) from the north to south. Capisic Pond is an approximately 8-acre, manmade freshwater pond. A concrete dam just south of Capisic Street regulates water levels in the pond. Below the dam, Capisic Brook flows south into the Fore River and then to Casco Bay (Figure 2).

Current and past land uses of the park and the upstream and surrounding area have led to significant changes within the pond and its surrounding habitats. The water level in Capisic Pond has decreased due to an increase in sedimentation from upstream sources and to an intentional lowering of the pond to alleviate upgradient stormwater flooding. The lack of depth and increased inflow of nutrients has allowed a flourish of aggressively colonizing cattails (*Typha latifolia* and *T. angustifolia).* The cattails and sediments are changing the pond, making it shallower and reducing the amount of open water habitat. The pond receives inflow from Capisic Brook. Capisic Brook is listed by the Maine Department of Environmental Protection (MDEP) as an Urban-Impaired Stream (Chapter 502 of the Maine Stormwater Management Law). In an effort to improve water quality in Capisic Brook, the City of Portland has initiated several stormwater upgrades, habitat improvements and public outreach campaigns throughout the Capisic Brook watershed. Part of the overall strategy for watershed improvement includes a plan to enhance the wildlife habitats, water quality and land use qualities of Capisic Pond Park. Boyle Associates is working with the City's Engineering and Project Design consultant - Woodard & Curran, to provide wetland and wildlife ecology expertise on portions of the Capisic Pond Park habitat improvement plan. This report provides findings from Boyle Associates investigation of wetland boundaries and functions and values conducted in August, 2012.

1.1 STUDY AREA

The study area includes Capisic Pond Park and a 0.5-acre area south of Capisic Street on which the dam and a portion of the pond are located (see Figures 1 and 2). There is no public access to the portion of the study area south of Capisic Street.

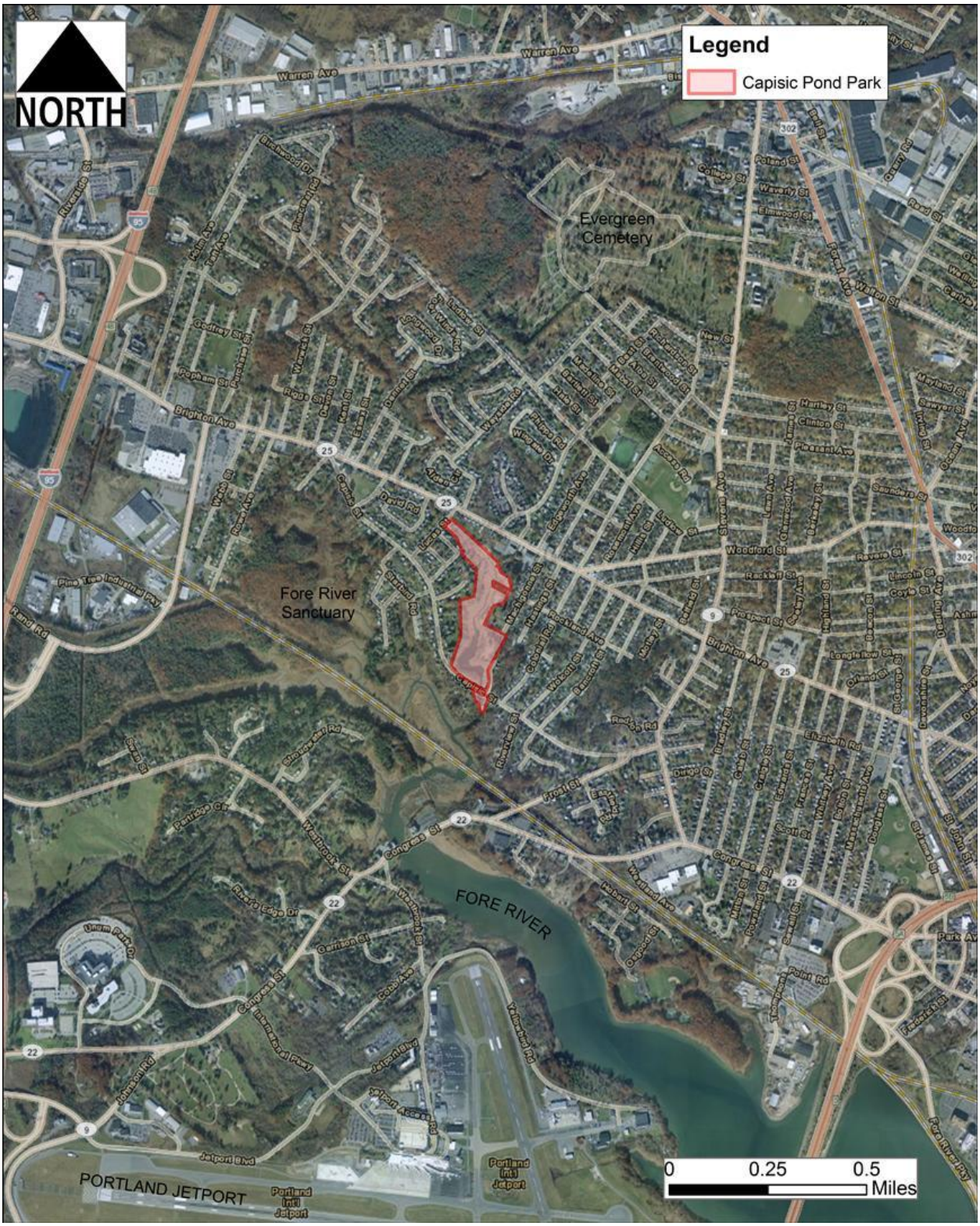

Figure 1. Capisic Pond Park location map (*Oct. 2009 aerial photo – ESRI*).

Figure 2. Capisic Pond Park Wetland Delineation and Functional Assessment Study Area (*Oct. 2009 aerial photo – ESRI*).

2. METHODS

2.1 WETLAND DELINEATION

2.1.1 Selection of Delineation Methodology

Based on current state and United States Army Corps of Engineers (USACE) policy for identifying jurisdictional wetlands, wetland boundaries were determined using the methods described in the *1987 USACE Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineer's Wetland Delineation Manual: Northcentral and Northeast Region, v2.0*. These methods use a three factor approach for identifying wetlands. The three factors are evidence of hydrology, a dominance of hydrophytic vegetation and the presence hydric soils.

2.1.2 Background Research

Prior to conducting fieldwork, Boyle Associates conducted a thorough review of existing site information including the following:

- United States Geologic Survey (USGS) 7.5-minute (24K) series topographic quadrangle map;
- Cumberland County soil survey from the United States Department of Agriculture/Soil Conservation Service (USDA/SCS, 1974) to determine presence and extent of hydric and upland soils;
- National Wetlands Inventory (NWI) 7.5-minute series quadrangle map from the United States Fish and Wildlife Service (USFWS) to determine the presence of mapped, federally-designated wetlands;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) of Cumberland County, Maine; and,
- Historical records, indexes, reports, and maps (aerial and topographic) of the park and surrounding region – (see Section 4.0 for more information).

2.1.3 Onsite Wetland Boundary Determination

Following a review of the background information, Wetland Scientists from Boyle Associates performed systematic field surveys of the study area. The surveys were initiated with a walk-over inspection of the entire site to identify topographic, drainage and vegetation features that would indicate the presence of wetlands. Next, sample plots were analyzed along transects in order to determine the wetland boundary. Specific methods for sampling, characterizing and evaluating the soils, vegetation, and hydrologic indicators were based on the manual mentioned in Section 2.1.1.

2.1.4 Wetland Vegetation Covertype Mapping

Vegetative covertypes within each wetland were mapped using a combination of GPS location, field sketches and aerial photo interpretation. Each wetland covertype was classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (1979) created by the U.S. Fish and Wildlife Service (also known as the *Cowardin Classification System*). This classification "*is intended to describe*

ecological taxa, arrange them in a system useful to resource managers, furnish units for mapping, and provide uniformity of concepts and terms." Systems form the highest level of classification hierarchy; these are Marine, Estuarine, Riverine, Lacustrine, and Palustrine. Each system is then further defined using subsystems and classes based on substrate material, hydrologic regime, and vegetative composition. Several modifiers can also be used to further describe each subsystem or class. For example, a freshwater wetland dominated by a forested or woody overstory with mixed deciduous and evergreen vegetation greater than 20 feet tall and seasonally flooded/saturated would be described under Cowardin as: *PFO 1/4E*. The appropriate classification based upon Cowardin system was determined and assigned for each wetland.

2.2 MAPPING

Data collected on the site were mapped using a mapping-grade Global Positioning System (GPS) unit (Trimble GeoXH). A minimum of 30 epochs were collected at each point and data were differentially corrected against fixed data from a commercial base station to ensure sub-meter accuracy. Data were exported to the following coordinate system and datum: NAD 1983, State Plane, Zone Maine West, 1802.

2.3 WETLAND FUNCTIONAL ASSESSMENT

A wetland functional assessment was performed pursuant to the approach described by the Army Corps Highway Methodology Workbook Supplement: Wetland Functions and Values. In this "Descriptive Approach" to functional assessment, the evaluators first determine if particular functions and values are *present* and why, followed by a determination of what functions and values are *principal* and why. Functions and values can be considered "principal" if they are an important physical component of a wetland ecosystem (function only), and/or are considered of special value to society, from a local, regional, and/or national perspective. When making determinations on the wetland, evaluators are encouraged to determine whether the wetland has the *potential* to serve the functions and values as well.

Functions are self-sustaining properties of a wetland ecosystem that exist in the absence of society and that result from both living and non-living components of a specific wetland resource. These include all processes necessary for the self-maintenance of the wetland ecosystem such as primary productivity and nutrient cycling, among others. Therefore, functions relate to the ecological significance of wetland properties without regard to subjective human values.

Values are benefits that derive from one or more functions and the physical characteristics associated with a wetland. Most wetlands have corresponding societal value. The value of a particular wetland function, or combination of functions, is based on human judgment of the worth, merit, quality or importance attributed to those functions.

Groundwater Recharge/Discharge: This function considers the potential for the wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

Floodwater Alteration (Storage & Desynchronization): This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecosystem or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

Fish and Shellfish Habitat: This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in providing fish and shellfish habitat.

Sediment/Toxicant/Pathogen Retention: This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens in runoff water from surrounding uplands, or upstream erosive wetland areas.

Nutrient Removal/Retention/Transformation: This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.

Production Export: This function evaluates the effectiveness of the wetland to produce food or usable products for man or other living organisms.

Sediment/Shoreline Stabilization: This function considers the effectiveness of the wetland in stabilizing stream banks and shorelines against erosion.

Wildlife Habitat: This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and migrating species are considered.

Recreation: This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting and other active or passive recreational activities.

Educational/Scientific Value: This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

Uniqueness/Heritage: This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values, including archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, or its relative importance as a typical wetland class for the geographic location.

Visual Quality/Aesthetics: This value considers the visual and aesthetic quality or usefulness of the wetland.

Endangered Species Habitat: This value considers suitability of the wetland to support threatened or endangered species.

3. RESULTS

3.1 WATERSHED

The survey area is located within the Presumpscot River and Casco Bay watershed (HUC 8: 01060001) and within the Fore River subwatershed (HUC: 0106000105).

3.2 INVASIVE SPECIES

Invasive species include introduced or non-native species brought to a location by man or some other vector, which adversely affect the natural habitat of a region that they invade economically, environmentally, and/or ecologically. Such species may be either plants or animals and may disrupt ecosystems due to the lack of the natural controls that exist in their native habitats. Typical vectors for invasive species include: water (i.e. seeds or plant fragments floating down a river or stream); wind; animals (either by eating fruits and spreading seeds or by unknowingly transporting seeds on fur and feathers); and transplanting seeds, plant fragments or contaminated soils on equipment, boots, tires, soil, mulch, or other human vectors. Invasive plants may provide some food and habitat value, but they tend to outcompete and crowd out native plants upon which the native animals and insects rely.

Several species and a high-density of invasive plants are found within Capisic Pond Park (see Appendix B for a complete list). Every wetland on the site contains the flowering invasive plant, purple loosestrife (*Lythrum salicaria*). Other invasive plants found within uplands or along wetland boundaries include: bush honeysuckle, glossy buckthorn (*Frangula alnus*), common buckthorn (*Rhamnus cathartica*), multiflora rose (*Rosa multiflora*), Japanese knotweed (*Fallopia japonica*), narrow-leaved cattail (*Typha angustifolia),* and oriental bittersweet (*Celastrus orbiculatus*) – see Appendix B for more information.

Notably absent from the site are the tenacious and common invasive plants common reed (*Phragmites australis*) and autumn olive (*Elaeagnus umbellata*). These plants can be found nearby the site (*e.g*. within the adjacent Fore River Sanctuary and along Capisic Brook), so their absence in the park is surprising. Future planning and work at the site should include provisions and strategies long-term management of these and all invasive species.

3.3 VERNAL POOLS

No areas within our study were identified as meeting the State of Maine Natural Resources Protection Act (NRPA) or Army Corps of Engineer's Maine General Permit (GP) definition of a vernal pool.

3.4 WETLANDS & STREAMS

Six wetlands and two streams were identified within the park. The following section includes wetland classifications and descriptions, and a listing of the functions and values determined for each wetland. Table 1 provides a list of wetlands with a brief description; Table 2 provides a list of the streams identified. While each wetland has the potential to provide a variety of functions and values, it should

be noted that impacts and development, both current and historic, have reduced the area's overall ability to provide habitat and value. All wetlands on the site display some sign of impacts and degradation, including draining, trash (including residential yard debris), grading, filling, excavation, and invasive species. Photographs are included in Appendix A.

Table 1. Wetland Survey Results

ID	Type	Classification[1]	WSS[2]	Brief Description
A	Scrub-shrub/ Emergent	PSS1E, PEM1E	Yes	Wetland complex draining from outside the eastern boundary into the park. Hydrology from the wetland flows to west and into Capisic Pond via a small culvert under the walking trail. The walking trail appears to be partially impounding flow in the wetland.
B	Emergent	PEM2/1E, PFO1E	No	Mostly herbaceous wet meadow adjacent to the trailhead along Macy Street. Flow tends generally to the southwest and into a culvert. The culvert appears to flow toward the pond, but the downslope outlet could not be located.
C	Emergent	PEM2/1E	No	A small, isolated wet meadow located on a knoll on the eastern side of the property. Hydrology within the wetland did not appear to flow in any particular direction. Ponding was evident post rainfall. The wetland appears to be the result of a historic excavation and provides minor functions or values.
D	Emergent / Scrub-shrub	PEM2/1E, PSS1E	Yes	Wetland complex draining from the eastern boundary and flowing to a shallow basin along the walking trail. Disturbance and fill along the walking trail appear to be impounding the lower elevations within the wetland. Ponding is evident within the wetland post rainfall and water can be seen flowing into the walking trail toward the pond.
E	Emergent / Scrub-shrub	PEM2/1E, PSS1E	Yes	Wetland complex along the eastern parcel boundary. Very little of this resource is within the survey area. The wetland drains from northwest and onto the site. Water is being impounded within the lower elevations of the wetland along the walking trail. A culvert was found draining from wetland E into the pond (wetland F).
F	Emergent / Open Water	PEM1J, PUB3	Yes	Large wetland/pond complex fed by Capisic Brook. The pond is impounded by a weir dam on the south side of Capisic Street and contains large areas of open water habitat interspersed with cattail marsh.

[1] Per **Cowardin** *et al*. 1979.
[2] Wetland of Special Significance

Table 2. Stream Survey Results

ID	Stream Type	Width	Depth	Substrate	Comments
1	Perennial	3-15’	18”	Boulder, cobble, gravel, sand, mud	Stream 1 (unnamed) begins at the Rockland Avenue outfall and flows for a short distance before entering Capisic Pond on the west side of the gravel trail. Stream is eroded and receives strong, concentrated stormwater flows post heavy rain events.
2	Perennial	15-20’	12-24”	Cobble, sand, mud	Within the survey area, stream 2 (Capisic Brook) flows south under Lucas Street through shady shrub habitat toward Capisic Pond. Directly south of Lucas Street the brook is shallow, fast moving, and rocky. As the stream approaches the pond, the habitat opens to emergent marsh and becomes deeper and meandering with slower water velocities before becoming open water and emergent marsh (*i.e.* Capisic Pond); the stream reforms as a fast-moving rocky-bottom stream below the dam south of Capisic Street (outside of study area).

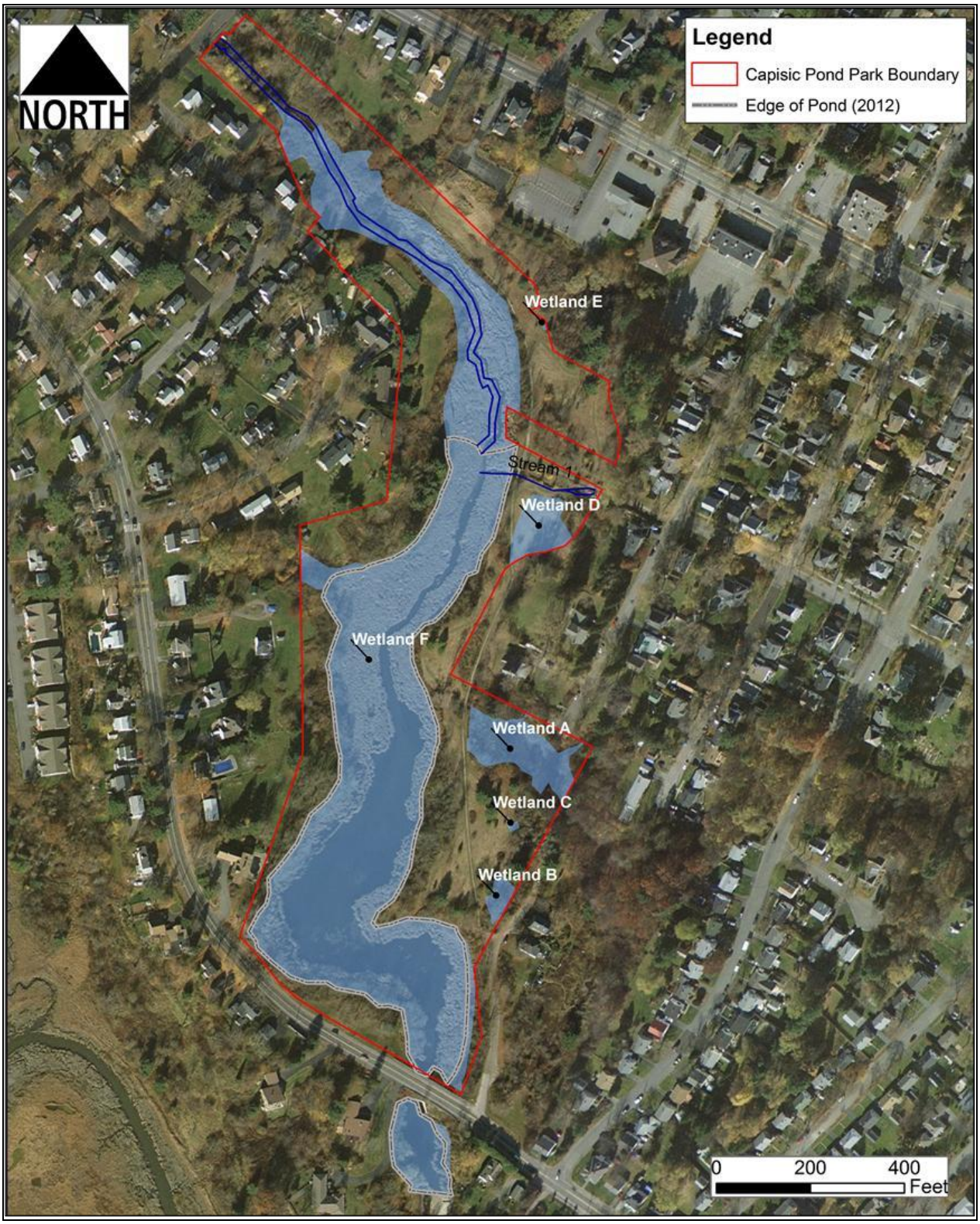

Figure 3. Capisic Pond Park Wetland Map

Figure 4. Wetland Covertypes

3.4.1 Wetland A

Cowardin Classification: Dominant class: PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

Other classes present: PEM1/2E – Palustrine emergent, seasonally saturated/flooded.

General Description: Wetland A is located in a narrow valley between the gravel walking trail and eastern parcel boundary. The margins of the wetland are comprised of a thick shrubby tangle of invasive and native shrubs. Evidence of historic and current filling along the wetland boundary is apparent. Due to the dense shrub growth and past land disturbances, the boundary between wetland and upland has been partially obscured. Hydrology within the wetland flows generally to the west toward Capisic Pond. A culvert located on the downslope side of the wetland along the walking trail appears to channel hydrology from wetland A into Capisic Pond (known herein as wetland F). Water was observed impounded against the fill extensions from the gravel trail.

Dominant Vegetation: Trees: Black willow (*Salix nigra*)

Shrubs: Speckled alder (*Alnus incana var. rugosa*), silky dogwood (*Cornus amomum*), withe-rod (*Viburnum nudum* var. *cassinoides*), and bush honeysuckle.

Herbs: Broadleaf cattail (*Typha latifolia*), woolgrass (*Scirpus cyperinus*), broadleaf arrowhead (*Sagittaria latifolia*), purple loosestrife, and white turtlehead (*Chelone glabra*).

Soils and Hydrology: Indicators of wetland hydrology are ponded surface water (flooded to approximately 6" in August 2012), saturation of the soil to the surface, water-stained leaves within the shrub-dominated portions of the wetland, and drainage patterns throughout the wetland.

Soils within wetland A are lacking an A-horizon (*i.e.* topsoil). This layer may have been removed during dredging or other site work in the past. The B-horizon (subsoil) consists of a gleyed matrix with redoximorphic features. Gleyed matrices are soils with a blue-green color and are indicative of prolonged saturation.

Wetlands of Special Significance: This wetland meets the Maine NRPA definition of a Wetland of Special Significance (WSS) due to the fact that is located entirely within a FEMA 100-year floodzone and contains Significant Wildlife Habitat (IWWH).

Functional Assessment: Wetland A provides or has the potential to provide the following functions and values: groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, sediment and shoreline stabilization and wildlife habitat. The capacity for the resource to provide these functions has been reduced due to its position within a developed landscape.

The principal function served by wetland A is floodflow alteration. Wetland A is found within in a narrow valley, it has a constricted outlet, it has dense shrub and herbaceous vegetation, and it has a broad, flat

topography; these features enable the wetland to store significant amounts of floodwater and runoff from the surrounding landscape. Additionally, much of the surrounding area near wetland A consists of impervious and semi-impervious surfaces (roads, houses, yards, driveways, etc.). During rain events, large amounts of runoff flow into the wetland, both overland and from stormwater outlets. The makeup of wetland A allows it to slow floodwaters, giving them time to infiltrate into the soil.

3.4.2 Wetland B

Cowardin Classification: Dominant class: PEM2/1E (Palustrine emergent, seasonally saturated/flooded).

Other classes present: PFO1E (Palustrine forested, broad-leaved deciduous, seasonally saturated/flooded).

General Description: Wetland B is located along the east side of the trail near the trailhead abutting Macy Street. Flow within the wetland tends to the south toward a culvert. The culvert appears to flow toward the pond, but an outlet could not be found (the culvert may drain into the City's stormwater conveyance system that runs under the park trail).

Dominant Vegetation: Trees: Red maple (*Acer rubrum*).

Shrubs: White meadowsweet (*Spiraea alba var. latifolia*).

Herbs: Flat-top goldentop (*Euthamia graminifolia*), jewelweed (*Impatiens capensis*), woolgrass, multiflora rose (*Rosa multiflora*), sensitive fern (*Onoclea sensibilis*), swamp rose (*Rosa palustris*), parasol whitetop (*Doellingeria umbellata*), and giant goldenrod (*Solidago gigantea*).

Soils and Hydrology: Soils within wetland B consist of a thick, dark, A-horizon underlain by a B-horizon with a depleted matrix within 10 inches of the mineral soil surface. Hydrology observed at the time of delineation was limited, but included water-stained leaves and drainage patterns. An inlet culvert was noted in the lowest portion of the wetland, near the park trailhead. An outlet into the pond could not be found. It is possible that the wetland is being drained into the stormwater system that runs along the park trail.

Wetlands of Special Significance: Based on field observations and office review of existing data, this wetland does meet any of the Maine NRPA criteria to be defined as a WSS.

Functional Assessment: Wetland B provides or has the potential to provide the following functions and values: groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, and wildlife habitat. While the wetland has the capacity to provide the above-listed functions, none of these functions can be considered principal, as the resource's ability to provide these functions is limited by the size of the wetland and by development of the wetland and the surrounding landscape.

3.4.3 Wetland C

Cowardin Classification: Dominant class: PEM2/1E – Palustrine emergent, seasonally saturated/flooded.

General Description: Wetland C is a small, isolated wetland located along a grassy side trail of the park near the eastern property boundary and slightly south of wetland A. Wetland C appears to have been created by disturbance. Over time, the compaction of the soil in the small depression has caused extended periods of surface water ponding, saturating the soil and favoring hydrophytic vegetation to colonize the small basin.

Vegetation: Trees: None observed

Shrubs: None observed

Herbs: Flat-top goldentop (*Euthamia graminifolia*), purple loosestrife, woolgrass, and New York aster (*Symphyotrichum novi-belgii*).

Soils and Hydrology: Soils in wetland C consist of a thick, dark A-horizon with redoximorphic features underlain by a B-horizon with a depleted matrix. The A-horizon was very compact and overlies a dense, impervious layer of silty-clay. Evidence of hydrology consists of standing water (approximately three inches deep at the time of survey) and saturation to the soil surface.

Wetlands of Special Significance: This wetland is a small, isolated and potentially manmade feature, but due to the fact that it is contains Significant Wildlife Habitat (IWWH,) the wetland is considered WSS.

Functional Assessment: Wetland C provides or has the potential to provide the following functions and values: groundwater recharge/discharge and wildlife habitat. However, due to its small size and location next to the trail, no principal functions or values were identified for the resource.

3.4.4 Wetland D

Cowardin Classification: Dominant class: PEM2/1E – Palustrine emergent, seasonally saturated/flooded.

Other classes present: PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

General Description: Wetland D is a mixed herbaceous and shrub wetland located along the eastern boundary of the site, just south of Rockland Avenue. The wetland is located just south of Stream 1, that begins at the Rockland Avenue stormwater discharge site.

Vegetation: Trees: None observed

Shrubs: Silky dogwood, withe-rod and tamarack (*Larix laricina*).

Herbs: Common rush (*Juncus effusus*), giant goldenrod, parasol whitetop, flat-top goldentop, purple loosestrife, woolgrass, and Pennsylvania smartweed (*Polygonum pennsylvanicum*).

Soils and Hydrology: Soils within wetland D have a dark A-horizon made of gravelly fill material. Below the A-horizon, a hardpan, impervious B-horizon with mixed loamy-silty-clay B-horizon was observed. The B-horizon has a depleted matrix and many redoximorphic features.

Water flowing into the wetland from the northwest tends to back up against the Capisic Pond Park trail, adding to the small wetland's hydrology. Hydrologic indicators include periodic standing water in some of the lower areas of the wetland and a generally high water table (presumably perched on the hard silty-clay horizon). Additional indicators of wetness include sediment deposits from previous flooding events and surface soil cracks along the park trail.

Wetlands of Special Significance: Wetland D meets the Maine NRPA definition of WSS due to the fact that is located entirely within a FEMA 100-year floodplain and contains Significant Wildlife Habitat (IWWH).

Functional Assessment: Wetland D provides or has the potential to provide the following functions and values: groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, and sediment and shoreline stabilization. Several of the functions and values are being provided, but the capacity for the resource to provide those functions is limited due to its size, location and the surrounding, developed landscape. While the wetland has the capacity to provide the above-listed functions, the principal function served by wetland D is floodflow alteration.

Wetland D slopes gradually toward Capisic Pond, and slows and holds some stormwater runoff prior to it entering the pond. Additionally, the wetland appears to receive some overflow from the Rockland Avenue outfall during periods of high runoff. During these events, large amounts of runoff flow into the wetland, both overland and from the stormwater outlet. The makeup of wetland A allows it to slow floodwaters, giving them time to infiltrate the topsoil.

3.4.5 Wetland E

Cowardin Classification: Dominant class: PEM1/2E – Palustrine emergent, seasonally saturated/flooded.

Other classes present: PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

General Description: Wetland E is located in a narrow valley on the east side of the trail – only a small portion of the wetland is located within the study area. Wetland E is very similar to Wetland A. Drainage patterns were noted throughout the wetland and water is being impounded along the park trail. A culvert was observed along the trail; the culvert appears to drain floodwater water from wetland E and outlets into the wetland associated with Capisic Pond (Wetland F).

Vegetation: *Trees:* None observed

Shrubs: Black willow

Herbs: Purple loosestrife, jewelweed, swamp rose, common rush, beggar's tick (*Bidens frondosa*), fringed sedge (*Carex crinita*), New York aster, and New England aster (*Symphyotrichum novae-angliae*).

Soils and Hydrology: The topsoil in wetland E consists of a thin, silt-loam A-horizon underlain by a silty-clay B-horizon with a depleted matrix and redoximorphic features. Evidence of hydrology includes surface water and soil saturation to the surface.

Wetlands of Special Significance: Wetland E meets the Maine NRPA definition of a WSS because it is located entirely within a FEMA 100-year floodplain and contains Significant Wildlife Habitat (IWWH).

Functional Assessment: Wetland E provides or has the potential to provide the following functions and values: groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, sediment and shoreline stabilization and wildlife habitat. Several of the functions and values are being provided, but the capacity for the resource to provide those functions is limited due to its small size, its location and its developed surroundings. The principal function served by wetland E is floodflow alteration.

Wetland E is in a similar landscape position as Wetland A. It is has a broad basin located adjacent to the gravel trail. Water is impounded along the trail. The standing water slowly infiltrates the soil, attenuating runoff during periods of heavy storm flows.

3.4.6 Wetland F

Cowardin Classification: Dominant class: PEM1/2E – Palustrine emergent, seasonally saturated/flooded.

Other classes present: PUB – Palustrine unconsolidated bottom; PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

General Description: Wetland F includes Capisic Pond and its associated riparian wetlands. It covers approximately 10 acres of the study area. In general, Wetland F consists of a dammed, freshwater pond immediately bordered by treed uplands and emergent floodplain wetlands. A few shrubby wetland swales drain into the pond from the west. The wetland is bordered by some of the cleared grasslands and trails of the park to the east and suburban homes and lawns to the west. Wetland F is fed by Capisic Brook from the northwest. Capisic Brook has a narrow, mostly herbaceous floodplain near the northwestern end of the park before it drains into the pond.

The original Capisic Pond dam was constructed on Capisic Brook in the 1600s to power a grist and saw mill. Eventually, in the middle of the 20th century, the City of Portland began managing the dam as a component of its combined sewer/stormwater system. The City rebuilt the dam in its current location on the south side of Capisic Street in 1954. The most recent dam reconstructions, in 1996 and again in 2001, lowered the outlet in order to reduce stormwater flooding issues upstream in the Capisic Brook watershed.

Capisic Pond was last dredged in the 1950s. Over the years, as expansion of impervious surface from development has increased runoff into Capisic Brook, sediments have built up in the pond. The sedimentation, combined with the lower water elevation afforded by the dam lowering efforts of 1996 and 2001, has reduced the water level in the pond. The shallow, turbid water favors the growth of cattails, which outcompete most other species in these types of habitats. A review of historic aerial

photographs has shown a decrease in the open water component of the park over the last few decades, with the largest cattail expansion taking place within the last 10-15 years (see Figure 5) .

Figure 5. 2001 aerial imagery (top) compared with a 2009 image (bottom) indicates expansive growth of cattails around the pond margins and interior.

Vegetation: *Trees:* American elm *(Ulmus americana).*

Shrubs: Withe-rod, bush honeysuckle and silky dogwood.

Herbs: broadleaf cattail, narrowleaf cattail (*Typha angustifolia*), jewelweed, common duckweed (*Lemna minor*), broadleaf arrowhead, wild cucumber (*Echinocystis lobata*), variegated yellow pond-lily (*Nuphar lutea*), American white waterlily (*Nymphaea odorata*), pickerelweed (*Pontederia cordata*), floating pondweed (*Potamogeton natans*), and coontail species (*Ceratophyllum sp.*).

Soils and Hydrology: Soil within the open water portion of Wetland F consists of deep mucky silt and clay. Soil within the herbaceous plant-dominated portions of Wetland F consist a thick organic soils (also known as histosols).

Evidence of hydrology in Wetland F include surface water approximately four inches in depth, a high water table, saturation to the soil surface, sediment deposits, drift deposits ("wrack"), water-stained leaves, and drainage patterns.

Wetlands of Special Significance: Wetland F meets the criteria of a WSS due to the fact that is located entirely within a FEMA 100-year floodplain, contains greater than 20,000 square feet of open water or

emergent marsh vegetation, and contains significant wildlife habitat (moderate value IWWH as described in the NRPA). Additionally, all wetlands located within 25-feet of Capisic Brook are considered WSS.

Functional Assessment: Wetland F contains Capisic Brook and Capisic Pond. Historic alteration of the surrounding land has significantly altered the natural stream and surrounding wetland resources (*e.g.* creating the pond, clearing the riparian forests, sedimentation, *etc.*). One recent (*i.e.* within the last decade) but major change has been the growth of a cattail monoculture along the pond margins and into the pond center. The expansion of cattails has affected the functionality of the pond, effectively reducing the open water component and increasing the emergent wetland area. However, Capisic Pond and its surrounding wetland are still large, diverse and unique enough to provide important functions and values within the surrounding watershed. Wetland F provides or has the potential to provide the following functions and values: groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, production export, sediment and shoreline stabilization, wildlife habitat, recreation, educational/scientific value, uniqueness/heritage, and visual quality/aesthetics. Principal functions and values served by wetland F include sediment/toxicant retention, wildlife habitat, recreation, and uniqueness/heritage. These functions and values will be discussed below.

Sediment/Toxicant Retention: Sediment runs to the pond from stormwater outfalls and in runoff from surrounding developed and impervious surfaces. The pond can receive sediment and other pollutants from surface runoff and retain the materials in thick emergent marsh vegetation and allow materials to precipitate in the slow moving water of the pond.

Wildlife Habitat: The pond and its surrounding wetlands provide an important habitat island within an otherwise developed landscape. The wetland provides food, shelter, refugia, and breeding habitat for a variety of wildlife (see Appendix C).

Recreational Value: The pond is bordered on the east by a half-mile hiking trail and is encompassed by city-owned lands designating the area as a park. The trails provide access through the habitats within the park and are used for hiking, biking, bird-watching, dog walking, and “morning strolls”. The trails are included within a large, citywide trail system and are managed by Portland Trails (www.trails.org). Additionally, the pond itself has been traditionally used for ice skating.

Uniqueness/Heritage Value: The pond’s long history and relevance to Portland’s early development is well-documented. Historic use of the pond dates back as far as the late 1600s. The dam site was originally used as a gristmill and sawmill built at the falls of Capisic Brook (near the existing dam structure). Of more recent uniqueness value, Capisic Pond remains the largest freshwater pond in the city.

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APPENDIX A

PHOTOGRAPHIC RECORD

(All photos taken July-August, 2012 by Boyle Associates.)

	**Description:** Looking north-northwest from Capisic Street bridge at Capisic Pond (**Wetland F**).
	**Description**: Looking southeast from park trail at herbaceous-dominated, lower elevations of **Wetland A**.
	**Description**: Looking south across PFO/PEM area of **Wetland B** near trailhead by Macy Street.

	**Description**: Looking east at isolated emergent plant-dominated **Wetland C** from grassy side trail.
	**Description**: Looking east at **Wetland D** from main trail.
	**Description**: Looking southeast at **Wetland D** from main trail near bridge over Rockland Avenue outfall.

	**Description**: Looking east at **Wetland E** from main trail.
	**Description**: Looking northwest at **Wetland F** from southern, open water portion of Capisic Pond.
	**Description**: Looking northeast over cattail-dominated section of **Wetland F** from large blown down white pine on west side of pond.

	**Description**: Looking south across **Wetland F** from blown down pine on west side of pond.
	**Description**: Looking east at Rockland Avenue outfall and start of **Stream 1**.
	**Description**: Looking west at **Stream 1** from timber bridge along gravel trail.

	**Description**: Looking south along Capisic Brook (**Stream 2**) from the north-central portion of **Wetland F**.
	**Description**: Looking northwest at Capisic Brook (**Stream 2**) under Lucas Street.
	**Description**: Looking south at Capisic Brook **(Stream 2)** near Lucas Street.

	**Description**: Look north at the weir dam on the south side of Capisic Street.
	**Description**: Capisic Brook, below the weir dam, spills over granite outcrops and into a deep-walled granite valley.
	**Description**: Concrete diversion chamber below weir dam.

	**Description**: Looking north within former pond area of **Wetland F**. Near complete cattail encroachment has occurred through the central portion of pond.
	**Description**: Capisic Pond Park trailhead.
	**Description**: Young snapping turtle found crossing Macy Street.

APPENDIX B

LIST OF PLANT SPECIES OBSERVED (2012)

Family	Scientific name	Common Name	Noxious or invasive
Aceraceae	*Acer rubrum*	red maple	
Aceraceae	*Acer negundo*	boxelder	
Aceraceae	*Acer saccharinum*	silver maple	
Aceraceae	*Acer platanoides*	Norway maple	X
Adoxaceae	*Sambucus nigra*	black elderberry	
Alismataceae	*Sagittaria latifolia*	common arrowhead	
Anacardiaceae	*Rhus typhina*	staghorn sumac	
Apiaceae	*Daucus carota*	Queen Anne's lace	
Asclepiadaceae	*Asclepias syriaca*	common milkweed	
Asteraceae	*Symphyotrichum novae-angliae*	New England aster	
Asteraceae	*Euthamia graminifolia*	flat-top goldenrod	
Asteraceae	*Solidago gigantea*	giant goldenrod	
Asteraceae	*Solidago rugosa*	wrinkleleaf goldenrod	
Asteraceae	*Doellingeria umbellata*	parasol whitetop	
Asteraceae	*Hieracium sp.*	hawkweed	
Asteraceae	*Achillea millefolium*	yarrow	
Asteraceae	*Arctium sp.*	burdock	
Asteraceae	*Bidens frondosa*	devil's beggartick	
Asteraceae	*Helianthus tuberosa*	Jerusalum artichoke	
Asteraceae	*Ambrosia sp.*	ragweed	
Asteraceae	*Rudbeckia hirta*	blackeyed Susan	
Asteraceae	*Cirsium vulgare*	bull thistle	
Asteraceae	*Cirsium arvense*	Canada thistle	X
Asteraceae	*Taraxacum officinale*	dandelion	
Asteraceae	*Cichorium intybus*	chicory	
Asteraceae	*Centaurea sp.*	knapweed	
Balsaminaceae	*Impatiens capensis*	jewelweed	
Balsaminaceae	*Impatiens glandulifera*	ornamental jewelweed	X
Betulaceae	*Alnus incana var. rugosa*	speckled alder	
Campanulaceae	*Campanula rotundifolia*	bluebell bellflower	
Caprifoliaceae	*Viburnum nudum var. cassinoides*	withe-rod	
Caprifoliaceae	*Viburnum dentatum*	southern arrowwood	
Caprifoliaceae	*Viburnum opulus var. americanum*	highbush cranberry	
Caprifoliaceae	*Lonicera sp.*	honeysuckle	X
Celastraceae	*Celastrus orbiculatus*	Oriental bittersweet	X
Celastraceae	*Euonymus alatus*	burningbush	X
Ceratophyllaceae	*Ceratophyllum demersum*	coon’s tail	
Cornaceae	*Cornus amomum*	silky dogwood	
Cornaceae	*Cornus racemosa*	gray dogwood	

Family	Scientific name	Common Name	Noxious or invasive
Cucurbitaceae	*Echinocystis lobata*	wild cucumber	
Cupressaceae	*Juniperus communis*	common juniper	
Cyperaceae	*Scirpus cyperinus*	woolgrass	
Dryopteridaceae	*Onoclea sensibilis*	sensitive fern	
Fabaceae	*Lupinus sp.*	lupine	
Fabaceae	*Lotus corniculatus*	bird's-foot trefoil	X
Fabaceae	*Robinia pseudoacacia*	black locust	X
Fabaceae	*Vicia cracca*	cow vetch	
Fabaceae	*Securigera varia*	crown vetch	X
Fabaceae	*Trifolium pratense*	red clover	
Fabaceae	*Trifolium repens*	white clover	
Fagaceae	*Quercus rubra*	northern red oak	
Juncaceae	*Juncus effusus*	common rush	
Lamiaceae	*Monarda fistulosa*	wild bergamot	
Liliaceae	*Asparagus officinalis*	asparagus	X
Lythraceae	*Lythrum salicaria*	purple loosestrife	X
Onagraceae	*Oenothera sp.*	evening primrose	
Pinaceae	*Picea pungens*	blue spruce	
Pinaceae	*Pinus sylvestris*	Scots pine	
Pinaceae	*Picea rubens*	red spruce	
Pinaceae	*Pinus strobus*	white pine	
Pinaceae	*Larix laricina*	larch	
Plantaginaceae	*Plantago major*	plantain	
Poaceae	*Digitaria sp.*	crabgrass	
Poaceae	*Panicum virgatum*	switchgrass	
Poaceae	*Dactylis glomeratus*	orchard grass	
Poaceae	*Schizachyrium scoparium*	little bluestem	
Poaceae	*Lolium perenne*	perennial ryegrass	
Poaceae	*Echinochloa sp.*	barnyard grass	
Poaceae	*Phleum pratense*	timothy	
Poaceae	*Elymus viginicus*	Virginia wild rye	
Poaceae	*Dichanthelium clandestinum*	Deertongue grass	
Poaceae	*Phalaris arundinacea*	reedcanary grass	X
Polygonaceae	*Polygonum sagittatum*	arrowleaf tearthumb	
Polygonaceae	*Rumex crispus*	curly dock	
Polygonaceae	*Polygonum cuspidatum*	Japanese knotweed	
Polygonaceae	*Polygonum pennsylvanicum*	Pennsylvania smartweed	
Primulaceae	*Lysimachia terrestris*	swamp candle	
Ranunculaceae	*Ranunculus sp.*	buttercup	

Family	Scientific name	Common Name	Noxious or invasive
Ranunculaceae	*Thalictrum sp.*	meadow-rue	
Rhamnaceae	*Rhamnus cathartica*	common buckthorn	X
Rhamnaceae	*Rhamnus frangula*	glossy buckthorn	X
Rosaceae	*Rosa palustris*	swamp rose	
Rosaceae	*Amelanchier canadensis*	Canadian serviceberry	
Rosaceae	*Photinia melanocarpa*	black chokeberry	
Rosaceae	*Prunus nigra*	Canadian plum	
Rosaceae	*Crataegus sp.*	hawthorn	
Rosaceae	*Rosa multiflora*	multiflora rose	X
Rosaceae	*Rubus hispidus*	bristly dewberry	
Rosaceae	*Rubus allegheniensis*	Allegheny blackberry	
Rosaceae	*Malus sp.*	crabapple	
Rubiaceae	*Cephalanthus occidentalis*	common buttonbush	
Salicaceae	*Salix discolor*	pussy willow	
Salicaceae	*Salix nigra*	black willow	
Salicaceae	*Populus tremuloides*	quaking aspen	
Scrophulariaceae	*Chelone glabra*	white turtlehead	
Tiliaceae	*Tilia americana*	basswood	
Typhaceae	*Typha latifolia*	broadleaf cattail	X
Typhaceae	*Typha angustifolia*	narrowleaf cattail	X
Ulmaceae	*Ulmus americana*	American elm	
Verbenaceae	*Verbena hastata*	Swamp verbena	
Vitaceae	*Vitis sp.*	wild grape vine	

APPENDIX C

ANIMAL SPECIES LIST

BIRDS			
Common name	**Species name**	**Field observed**	**E-bird sighting***
Alder flycatcher	*Empidonax alnorum*		X
American black duck	*Anas rubripes*	X	X
American coot	*Fulica americana*		X
American crow	*Corvus brachyhychos*	X	X
American goldfinch	*Spinus tristis*	X	X
American kestrel	*Falco sparverius*		X
American redstart	*Setophaga ruticilla*	X	X
American robin	*Turdus migratorius*	X	X
American tree sparrow	*Spizella arborea*		X
American wigeon	*Anas americana*		X
American woodcock	*Scolopax minor*	X	X
Baltimore oriole	*Icterus galbula*		X
Bank swallow	*Riparia riparia*		X
Barn swallow	*Hirundo rustica*		X
Belted kingfisher	*Magaceryle alcyon*	X	X
Black-and-white warbler	*Mniotilta varia*		X
Blackburnian warbler	*Dendroica fusca*		X
Black-capped chickadee	*Poecile atricapillus*	X	X
Black-crowned night heron	*Nyticorax nyticorax*	X	X
Blackpoll warbler	*Dendroica striata*		X
Black-throated blue warbler	*Drendroica caerulescens*		X
Black-throated green warbler	*Dendroica virens*		X
Blue Jay	*Cyanocitta cristata*	X	X
Blue-gray gnatcatcher	*Polioptila caerulea*		X
Blue-headed vireo	*Vireo solitarius*		X
Bobolink	*Dolichonyx oryzivorus*		X
Bohemian waxwing	*Bombycilla garrulus*		X
Broad-winged hawk	*Buteo platypterus*	X	X
Brown thrasher	*Toxostoma rufum*		X
Brown-headed cowbird	*Molothrus ater*		X
Canada goose	*Branta canadensis*		X
Canada warbler	*Wilsonia canadensis*		X
Cape May warbler	*Dendroica tigrina*		X
Northern cardinal	*Cardinalis cardinalis*	X	X
Carolina wren	*Thryothorus ludovicianus*		X
Cedar waxwing	*Bombycilla cedrorum*	X	X
Chestnut-sided warbler	*Dendroica pensylvanica*	X	X
Chimney swift	*Chaetura pelagica*		X

BIRDS			
Common name	**Species name**	**Field observed**	**E-bird sighting***
Chipping sparrow	*Spizella passerina*		X
Cliff swallow	*Petrochelidon pyrrhonota*		X
Common grackle	*Quiscalus quiscalus*	X	X
Common loon	*Gavia immer*		X
Common yellowthroat	*Geothlypis trichas*	X	X
Cooper's hawk	*Accipiter cooperii*		X
Dark-eyed junco	*Junco hyemalis*		X
Double-crested cormorant	*Phalacrocorax auritus*	X	X
Downy woodpecker	*Picoides pubescens*		X
Eastern bluebird	*Sialis sialis*		X
Eastern kingbird	*Tyrannus tyrannus*		X
Eastern phoebe	*Sayornis phoebe*		X
Eastern towhee	*Pipilo erythrophthalmus*		X
Eastern wood-pewee	*Contopus virens*		X
European starling	*Sturnus vulgaris*	X	X
Gadwall	*Anas strepera*		X
Gray catbird	*Dumetella carolinensis*	X	X
Great black-backed gull	*Larus marinus*		X
Great blue heron	*Ardea herodias*	X	X
Great crested flycatcher	*Myiarchus crinitus*		X
Great egret	*Ardea alba*	X	X
Greater yellowlegs	*Tringa melanoleuca*		X
Green heron	*Butorides virescens*	X	X
Hairy woodpecker	*Picoides villosus*		X
Hermit thrush	*Catharus guttatus*		X
Herring gull	*Larus argentatus*	X	X
Hooded merganser	*Lophodytes cucullatus*		X
House finch	*Carpodacus mexicanus*	X	X
House sparrow	*Passer domesticus*		X
House wren	*Troglodytes aedon*		X
Lark sparrow	*Chondestes grammacus*		X
Least flycatcher	*Empidonax minimus*		X
Least sandpiper	*Calidris minutilla*		X
Lincoln's sparrow	*Melospiza lincolnii*		X
Magnolia warbler	*Dendroica magnolia*		X
Mallard	*Anas platyrhynchos*	X	X
Merlin	*Falco columbarius*		X
Mourning dove	*Zenaida macroura*	X	X

BIRDS			
Common name	**Species name**	**Field observed**	**E-bird sighting***
Mourning warbler	*Oporornis philadelphia*		X
Nashville warbler	*Oreothlypis ruficapilla*		X
Northern flicker	*Colaptes auratus*		X
Northern mockingbird	*Mimus polyglottos*		X
Northern parula	*Parula americana*	X	X
Northern rough-winged swallow	*Stelgidopteryx serripennis*		X
Northern waterthrush	*Parkesia noveboracensis*		X
Orchard oriole	*Icterus spurius*		X
Osprey	*Pandion haliaetus*		X
Ovenbird	*Seiurus aurocapilla*		X
Palm warbler	*Dendroica palmarum*		X
Pied-billed grebe	*Podilymbus podiceps*		X
Pileated woodpecker	*Dryocopus pileatus*		X
Pine siskin	*Spinus pinus*		X
Pine warbler	*Dendroica pinus*		X
Prairie warbler	*Dendroica discolor*		X
Purple finch	*Carpodacus purpureus*		X
Red-bellied woodpecker	*Melanerpes carolinus*		X
Red-breasted nuthatch	*Sitta canadensis*		X
Red-eyed vireo	*Vireo olivaceus*		X
Redhead	*Aythya americana*		X
Red-tailed hawk	*Buteo jamaicensis*	X	X
Red-winged blackbird	*Agelaius phoeniceus*	X	X
Ring-billed gull	*Larus delawarensis*		X
Ring-necked duck	*Aythya collaris*		X
Rock pigeon	*Columba livia*	X	X
Rose-breasted grosbeak	*Pheucticus ludovicianus*		X
Ruby-crowned kinglet	*Regulus calendula*	X	X
Ruby-throated hummingbird	*Archilochus colubris*	X	X
Ruddy duck	*Oxyura jamaicensis*		X
Rusty blackbird	*Euphagus carolinus*		X
Savannah sparrow	*Passerculus sandwichensis*		X
Scarlet tanager	*Piranga olivacea*		X
Sharp-shinned hawk	*Accipiter striatus*		X
Solitary sandpiper	*Tringa solitaria*	X	X
Song sparrow	*Melospiza melodia*	X	X
Sora	*Porzana carolina*		X
Spotted sandpiper	*Actitis macularius*		X

BIRDS			
Common name	**Species name**	**Field observed**	**E-bird sighting***
Swamp sparrow	*Melospiza georgiana*		X
Tennessee warbler	*Oreothlypis peregrina*		X
Tree swallow	*Tachycineata bicolor*		X
Tufted titmouse	*Baeolophus bicolor*		X
Turkey vulture	*Cathartes aura*	X	X
Veery	*Catharus fuscescens*		X
Virginia rail	*Rallus limicola*		X
Warbling vireo	*Vireo gilvus*		X
White-breasted nuthatch	*Sitta carolinensis*	X	X
White-crowned sparrow	*Zonotrichia leucophrys*		X
White-throated sparrow	*Zonotrichia albicollis*		X
Willow flycatcher	*Empidonax traillii*		X
Wilson's snipe	*Gallinago delicata*		X
Wilson's warbler	*Wilsonia pusilla*		X
Wood duck	*Aix sponsa*	X	X
Wood thrush	*Hylocichla mustelina*		X
Yellow warbler	*Dendroica petechia*		X
Yellow-bellied flycatcher	*Empidonax flaviventris*		X
Yellow-rumped warbler	*Dendroica coronata*		X

*Source: eBird. 2012. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: September 16th, 2012). Search Criteria: first sightings Capisic Pond, 1997-2012

OTHER WILDLIFE	
Common name	**Species name**
American red squirrel	*Tamiasciurus hudsonicus*
Eastern gray squirrel	*Sciurus griseus*
Eastern chipmunk	*Tamias striatus*
White-tailed deer	*Odocoileus virginianus*
Coyote	*Canis latrans*
Common raccoon	*Procyon lotor*
Green frog	*Rana clamitans*
Bull frog	*Rana catasbeiana*
Common snapping turtle	*Chelydra serpentina*
Painted turtle	*Chrysemys picta*
fish	multiple (un-id'ed)
Chinese mystery snail	*Bellamya chinensis*
White-footed mouse	*Peromyscus leucopus*
Common garter snake	*Thamnophis sirtalis*