Written Waiver Requests for Waterfront Redevelopment Project – Phase II

Waiver request: 10,D),2),e),(ii) Internal Vehicular Circulation - 10' access drive setback from the lot line. Due to the constraints of the site, a 10' setback of the access drive from the northwest property boundary would cause the proposed road to encroach further onto the shoreland zoning setback from the river. The location of the proposed road is an improvement from the existing road, which is not entirely within the project property boundary. Where the proposed access drive would be inside the property boundary, and where the abutting land is occupied by the railroad, a commercial transportation use, no undue adverse impacts are anticipated from the proposed waiver.

Waiver request: 10,D),6),d) Lighting - that illumination must not exceed 0.5 footcandles at the lot line. The photometric plan indicates the lighting will exceed the performance standard of .5 foot candles at the lot line, in the area where the driveway intersects with Route 24. This is to allow for safe traffic movement in and out of the site and will not have an adverse impact upon any nearby residence or the riverfront, as the area exceeding the standard does not extend outside of the roadway.

Waiver requested: 10,D),8: Building design standards. Only the general size and location of buildings is proposed at this time. Design of the buildings is not proposed at this time, and the applicant will seek approval from the Planning Board by an amendment when designs are available.

Waiver requested: 10,D),13,A: The development must be provided with a method of disposing of sewage which is in compliance with the State Plumbing Code and the Subsurface Wastewater Disposal Rules. The applicant does not have a sewage disposal system design at this time. The applicant intends to submit a site plan amendment application when designs are available and is amenable to conditions of approval to that effect.

Evidence of the applicant's financial capacity to complete it. This evidence should be in the form of a letter from a bank or other source of financing indicating the name of the project, amount of financing proposed or available, and individual's or institution's interest in financing the project or in the form of a letter from a certified accountant or annual report indicating that the applicant has adequate cash flow to cover anticipated costs.

The Town of Bowdoinham has the capacity to carry out the proposed project in phases. We expect the project to start later and extend longer than the timelines described in the Land Use Ordinance, as construction will be depended on grant funding. The Town is applying to grants to fund various phases of the project including design and construction. The Town has two sources of funding to match construction grants:

- The CMP/Riverfront TIF (please refer to the development program attached)
- The Rideout Memorial Fund (please refer to the attached balance and Probate Court Order)

The Town could also bring the development of the park to Town Meeting for funding in the future.

Evidence of the applicant's technical capability to carry out the project as proposed.

The Town of Bowdoinham has completed the following projects:

• In 2012, the Town applied for and received a $10,000 Shore & Harbor Planning Grant to conduct a planning study on the development of restroom facilities and a boat pump-out sanitary facility at Mailly Waterfront Park with Wright-Pierce.

• In 2014, the Town hired Pine Tree Engineering to design and permit a restroom facility at Mailly Waterfront Park. The Town completed construction on a new restroom facility and dump station at Mailly Waterfront Park in 2015.

• In 2013-14, JT Lockman, Catalysis Adaptation Partners, LLC, created a Sea-Level Rise & Climate Change chapter in the Comprehensive Plan for the Town of Bowdoinham through a grant from the Maine Coastal Program, funding provided by National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Peter Slovinsky, Marine Geologist for Maine Geological Survey, Department of Agriculture, Conservation and Forestry created the data and maps showing the potential effects of sea level rise in Bowdoinham.

• In 2017, after fifteen years of fundraising and planning, the Town completed construction of the Matthew Townsend Parker Skate Park, located next to Mailly Waterfront Park.

• In 2014, the Town hired Wilder-by-Design to create a Signage Plan for the village, then in 2015 the implemented the Signage Plan.

• In 2019, the Town hired Wright-Pierce to conduct a Village Wastewater Feasibility Study. From this study the Town determined that a village wastewater system was not possible at this time.

• In 2019, the Town released an RFP for the clean-up of the former public works property, to have the old buildings and debris removed from the site. In the spring of 2020, the clean-up was completed by Tourtelotte Excavation.

• In 2008, the Town applied for and received a $500,000 grant to construct sidewalks throughout the village area. In 2011-12, over 8,000 feet of sidewalks were designed and constructed on six streets in village (River Rd, Main St, School St, Cemetery Rd, Ridge Rd, Center St) connecting Mailly Waterfront Park, Bowdoinham Community School, Bowdoinham Town Office & Public Library and village businesses.

• In 2019, the Town constructed a new public works facility at 121 Pond Road.

• In 2019, the Town received a ConnectME grant to get our unserved residents connected to the internet. The project was completed in 2020.

a healthy and diverse tax base and local economy. To this end, the Town seeks to leverage the Developer's Project investment through the designation of a Tax Increment Financing District and the adoption of a Development Program to meet its economic development objectives.

The Town contemplates the designation of a two-tract district that would first encompass land owned by the Developer, on which the Project will occur, and then three municipally-owned parcels that are situated along the river in the Town's village, which is the commercial and cultural center of town.

The Town also contemplates the adoption of a Development Program that would provide funding to several municipal capital investments (see Table 1, next section) that would go to address existing deficiencies in public infrastructure and the potential commercial re-use of land that is presently publicly-owned. Further, the proposed Program would also provide funding for a number of community-wide municipal investments, including costs of the Town's ED program, events, marketing, workforce training initiatives, and local share of the regional "Merrymeeting Trail" project.

The Town of Bowdoinham now proposes to designate a municipal development and tax increment financing district known as the **"CMP/Waterfront Municipal Tax Increment Financing District"** (the "District") in furtherance of such legislatively approved and authorized goals, under the terms specified in this Development Program.

Development Program

a. **Description of public facilities, improvements or programs to be financed in whole or in part by the development program.**

The Town intends to use its share of the TIF Revenues from the District to finance some or all of the costs of the Public Improvements, such costs being authorized as project costs as defined under §5225 of Chapter 206. The specific Public Improvements to be financed will be approved by action of the Town of Bowdoinham Select Board. The Town finds that the public improvements either will directly or indirectly provide, induce, or encourage new employment opportunities within the Town, will encourage and promote economic development that will broaden the Town's tax base, and will provide economic development to the benefit of the residents of the Town and will improve the general economy of the Town. These projects either are related to this Development Program or are otherwise qualifying projects under Chapter 206.

TABLE 1 – MUNICIPAL INVESTMENT PROGRAM	Eligibility Under Title 30-A	Estimated Cost
Costs of Improvements Made Within District		
Costs of funding capital improvements. TIF revenues may be applied to a wastewater disposal system to serve the Village, the town's central commercial district. Retention, expansion and attraction of businesses in this area have been inhibited by lack of sufficient public infrastructure to serve increased	§5225 (1) (A) (1) (a-d)	$25,000 (project cost)

development. Activities may include but not be limited to a system feasibility study ($5,000) and system design ($20,000).		
Costs of funding capital improvements. TIF revenues may be applied to the transitioning the present site of the Town's Public Works facility so that it can be redeveloped as a commercial site. The site is located on the town's riverfront and is underutilized given the area's potential for recreation-based economic development. Activities may include but not be limited to site cleanup and preparation and the demolition/alteration of existing buildings and structures.	§5225 (1) (A) (1) (a-d)	$75,000 (project cost)
Costs of funding capital improvements. TIF revenues may be applied to the construction of public facilities at Mailly Waterfront Park. The waterfront park is the site of several events developed by the municipality for economic and community development purposes. This has increased commercial activity along the waterfront and the adjacent Village. However, further growth of the waterfront park as a focal point for economic development is inhibited by the lack of certain public facilities. Activities may include but not be limited to the design and construction of public restrooms to serve the waterfront.	§5225 (1) (A) (1) (a-d)	$160,000 (project cost)
Costs of Improvements Made Outside, but related to, District		
None	n/a	n/a
Community-Wide Municipal Investments		
Costs of funding economic development programs developed by the municipality. TIF revenues may be applied to the annual operating costs of the Town's Community & Economic Development Department.	§5225 (1) (C) (1)	$400,000 ($20,000 per yr. for 20 yrs.)
Costs of funding economic development events developed by the municipality. TIF revenues may be applied to the annual operating costs associated with several community events that promote the town and critical segments of its local economy, including but not limited to agriculture and the arts. Annual events may include but not be limited to the Celebrate Bowdoinham festival, Harvest Festival, Open Farm Day, Holiday Festival and Ice-Smelt Festival.	§5225 (1) (C) (1)	$300,000 ($15,000 a yr. for 20 yrs.)
Costs of funding the marketing of the municipality as a business location. TIF revenues may be applied to ongoing marketing costs, including but not limited to newsletters, brochures, advertising, and business and directional signage.	§5225 (1) (C) (1)	$100,000 ($5,000 per yr. for 20 yrs.)
Costs of services and equipment to provide skills development and training for jobs created and/or retained within the municipality. TIF revenues may be applied to funding general business workshops and/or training programs specific to a particular industry or business. Priority will be given to	§5225 (1) (C) (4)	$20,000 ($1,000 per yr. for 20 yrs.)

programming that supports retention and expansion of agriculture, arts, creative economy and home-based businesses.		
Costs associated with the development and/or maintenance of new or existing recreational trails with significant potential to promote economic development. TIF revenues may be applied to the design, construction and ongoing maintenance of the Bowdoinham portion of the proposed Merrymeeting Trail, a regional bicycle/pedestrian trail that would link the communities and local economies of Topsham, Bowdoinham, Richmond and Gardiner.	§5225 (1) (C) (6)	$1,000,000 (project cost)
Costs associated with providing local match to federal, state, regional and foundation grants that support any of the purposes of Title 30-A, Chapter 206, Subchapter 1 (Development Districts for Municipalities and Plantations). TIF revenues may be applied as local match to grants deemed by the town to have significant potential for economic development, including but not limited to public infrastructure associated with the Merrymeeting Trail, Mailly Waterfront Park, the Village (central commercial district), and the expansion of access to high-speed Internet in underserved or unserved rural areas.	30-A §5230	$1,500,000 (project cost)
Total Municipal TIF Investment Plan Costs		**$3,580,000**

b. Description of commercial facilities, arts districts, improvements or projects to be financed in whole or in part by the development program.

No commercial facilities, arts districts, improvements or projects will be financed in whole or in part by this development program. The projects envisioned by this development program are municipally-based.

c. Duration of the program.

The District shall be for a term of twenty (20) years commencing tax year 2014-2015 through tax year 2033-2034, provided the District is approved by DECD. The District shall become effective upon DECD approval.

d. Certification of original assessed value of the taxable property in the TIF district.

The original assessed value of taxable property (land, buildings and equipment) within the District boundaries is $1,160,551 as of March 31, 2013. TIF revenues associated with this proposed District and Development Program will be generated by real property improvements made within the district boundaries. A certification by the municipal assessor of the Town of Bowdoinham that the original assessed value established represents the taxable property within the District's physical description, as delineated on the attached map, is attached as EXHIBIT A.

STATE OF MAINE

PROBATE COURT
SAGADAHOC COUNTY

Bath, Maine
Docket Number 2020-010

H. M. Payson & Co., Trustee of the Miriam B. and Linwood B. Rideout Memorial Trust,	)	
Plaintiff	)	ORDER FOR TERMINATION OF CHARITABLE TRUST
v.	)	
Second Baptist Church in Bowdoinham	)	
and	)	
Bowdoinham Historical Society	)	
and	)	
Town of Bowdoinham	)	
and	)	
Aaron M. Frey, Attorney General,	)	
Defendants	)	
and	)	
Towns of Bowdoin, Topsham, Brunswick, Bath, Woolwich, Dresden, Pittston, and Richmond,	)	
Parties in Interest	)	

On January 15, 2020, a Complaint was filed by H.M. Payson & Co., Trustee of the Miriam B. and Linwood B. Rideout Memorial Trust (the "Rideout Memorial Trust"), together with the consents of the Second Baptist Church in Bowdoinham, the Bowdoinham Historical

Society, the Town of Bowdoinham, and the Maine Attorney General. The Complaint seeks to terminate the Rideout Memorial Trust and distribute its assets to the Second Baptist Church in Bowdoinham, the Bowdoinham Historical Society, and the Town of Bowdoinham. After the Complaint was filed and at the request of the Court, counsel for the Rideout Memorial Trust served a copy of the Complaint, a Trust Account Statement and a Summons to the eight parties in interest. All eight signed an acceptance of service. The last party to acknowledge service was the Town of Richmond on May 28, 2020. No responsive pleading has been filed by any party. Accordingly, all eight parties in interest are defaulted. See M.R. Prob. 55. Therefore, it is ORDERED:

That the Rideout Memorial Trust is hereby terminated and the Trustee is directed to distribute the trust assets, after paying or providing for any liabilities of the trust, to the Second Baptist Church in Bowdoinham, the Bowdoinham Historical Society, and the Town of Bowdoinham, in equal shares, each such share to be held by its recipient in a fund (but not necessarily a permanent endowment fund) to be known as the Miriam B. and Linwood B. Rideout Fund (the "Rideout Fund"), which shall be used only for worthy projects and undertakings, as determined by its governing board, and not for normal operating expenses.

In addition, the Town of Bowdoinham shall use its Rideout Fund, to the extent feasible, for the development, administration, and implementation of a management plan for Merrymeeting Bay, the elements of which may include (i) shoreline stabilization, (ii) a canoe and kayak boat launch, (iii) pedestrian trails and a parking area at the trail head, (iv) boardwalks and observation platforms, and (v) generally improved access to Merrymeeting Bay with a view to fostering awareness and appreciation of the Bay as a natural resource.

This Order is incorporated into the docket by reference at the specific direction of the Court.

Dated: 7/22/2020

John Wm. Voorhees, Judge
Sagadahoc County Probate Court

Current Account Status

G 1-5180-23 GENERAL / RIDEOUT2020

0.00 = Beg Bal	-375,987.04 = YTD Net	-375,987.04 = Balance
0.00 = Adjust	0.00 = YTD Enc	

Per	Jrnl	Check	Date	Vendor---------	Description--------	RCB / Type		Debits	Credits
11	0203		11/03/20		11/03/2020 C/R & RIDEOUT	R	CR	0.00	373,709.59
01	0325		01/11/21		01/11/2021 C/R	R	CR	0.00	2,277.45
						Totals-		**0.00**	**375,987.04**

Monthly Summary

	--Regular Entries--		--Balance Entries--	
Month	Debits	Credits	Debits	Credits
November	0.00	373,709.59	0.00	0.00
January	0.00	2,277.45	0.00	0.00
Totals	**0.00**	**375,987.04**	**0.00**	**0.00**

Date Received:

Application No. _____

APPLICATION FOR DRIVEWAY/ENTRANCE PERMIT
MAINE DEPARTMENT OF TRANSPORTATION

98 Statehouse Station
Augusta, ME 04330
(207)-624-8200 FAX: (207)-287-4753 E-mail: Region2Permits@maine.gov

Application is hereby made to construct, change location, grade or use served by a driveway or entrance to property in accordance with Title 23 M.R.S.A. § 704 and §705.

Section A Property Owner Information

1. Land Owner's Name: Town of Bowdoinham Phone# (207) 666-5531
2. Land Owner's Mailing Address: 13 School Street Bowdoinham, ME 04008
   (Address / Town/City / State / Zip Code)
3. Applicant or Agent's Name: Mitchell & Associates Phone # _____
4. Applicant/Agent Mailing Address: 70 Center Street Portland, ME 04101
   (Address / Town/City / State / Zip Code)
5. E-mail Address : Bdrypolcher@mitchell&associates. Work (207) _____ Cell (603) 496-8020

Section B Property Location Information

6. Directions to property: Get on I-95 S/Maine Turnpike-Take I-295 S to ME-125 N/ME-138 N in Bowdoinha exit 37 from I-295 S Continue on ME-125 N. Drive to Railroad Ave-Turn left onto ME-125 N/ME-138 -Continue to follow ME-125 N 1.3 mi. Turn right onto Back Hill Rd 0.1 mi. - Continue onto ME-24 S 259 ft
7. Route No. _____ Road Name: _____
8. ◯ North ◯ South ◯ East ◉ West – side of highway
9. City/Town: Bowdoinham County: Sagadahoc Copunty
10. Distance from nearest intersection: Name of Intersection:
11. Nearest Utility Pole #: 2 Attach Survey Data *(if available)*
12. Map and Lot number U01-001 Lot prior to May 25,2002? ☑ Yes ☐ No

☑ **A copy of tax map provided** ☐ **Proposed Location of Driveway/Entrance staked and flagged by applicant.**

Section C Driveway/ Entrance Information

13. Desired width of Driveway/Entrance: 22' (feet) Type of Surface: Asphalt (gravel, pavement, etc.)
14. Will the development associated with this driveway/entrance have more than 10,000 square feet of impervious surface draining towards the highway? YES ☐ NO ☑ "Impervious surfaces" are the footprint of buildings, pavement, gravel, or other low-permeability or compacted surfaces, not including natural or man-made water bodies.
15. Does your property have an existing access? ☑ yes ☐ no (If no go to line 18)
16. If this is an existing access and you are changing its use, please describe Old DPW Building location Will now be the location of a Hand carry boat launch and public park Go to Section D.
17. If this is an existing access and you are physically modifying, please describe: reducing width add stop sign _____ Go to Section D.
18. Proposed Driveway/Entrance Purpose: ◯ Single Family ◯ Home Business ◯ Commercial/Industrial Subdivision or Development ◯ Multi-family with 5 or less units ◯ Multifamily with more than 5 units Retail ◯ Office ◯ School ◯ Business Park ◯ Mall ◉ Other (explain) Public Park

employees/day na #customer/day 120 Busiest time of day Dusk-Dav # of Lots na

Section D Construction Information

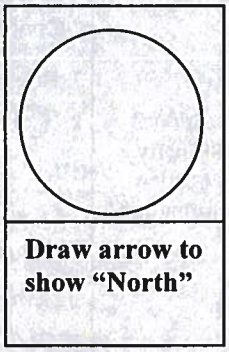
19. Construction expected to begin on TBD (date) and be completed on TBD (date)
20. Person/Company constructing entrance TBD
21. Construction contacts name TBD Phone _____

Site Sketch or attach Site Plan

Please see attached topographic survey and site plan.

THE OWNER HEREBY AGREES

1) Provide, erect and maintain all necessary barricades, lights, warning signs and other devices to direct traffic safely while the work is in progress.
2) **At no time cause the highway to be closed to traffic.**
3) Where the drive/entrance is located within a curb, curb and gutter, and/or sidewalk section, completely remove the existing curb, curb and gutter, and/or sidewalk as may be required to create the drive/entrance and restore drainage. All driveways/entrances abutting sidewalk sections shall meet the requirements set forth in the Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12132 et seq.
4) Obtain, deliver to site and install any culverts and/or drainage structures necessary for drainage; the size, type and length of such culverts or structures shall be as specified in the permit pursuant to 23 M.R.S.A. § 705. **All culverts and/or drainage structures shall be new.**
5) Complete construction of proposed driveway/entrance within twelve months of commencement of construction.
6) **COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND ORDINANCES.**
7) Not alter, without the express written consent of the MDOT, any culverts, drainage patterns or swales within MDOT right-of-way.
8) File a copy of the approved driveway/entrance permit with the affected municipality or LURC, as appropriate, within 5 business days of receiving the MDOT approval.
9) Shall construct and maintain the entrance side slopes to be no steeper than the adjacent roadway side slopes, but in no case to be steeper than 3 horizontal to 1 vertical, unless the side slope is behind existing roadway guardrail, in which case it shall be no steeper than 2 horizontal to 1 vertical.
10) Notify the MeDOT(in writing) of a proposed change to use served by driveway/entrance when increase in traffic flow is expected to occur. This does not exempt the need for obtaining a Traffic Movement Permit (TMP) if trip generation meets or exceeds 100 passenger car equivalents (pce) during the peak hour of the day.



FURTHER CONDITION OF THE PERMIT:

The owner shall assume the defense of, and pay all damages, fines, and penalties for which he/she shall become liable, and shall indemnify and safe harmless said Department, its representatives, agents and employees from liability, actions against all suite, claims, damages for wrongful death, personal injuries or property damage suffered by any person or association which results from the willful or negligent action or inaction of the owner/applicant/agent and in proceedings of every kind arising out of the construction and maintenance of said entrance(s), including snow removal. Nothing herein shall, nor is intended to, waive and defense, immunity or limitation of liability which may be available to the MDOT, their officers, agents or employees under the Maine Tort Claims Act or any other privileges and/or immunities provided by law.

The submission of false or misleading statements on or with this application, or the omission of information necessary to prevent statements submitted herein or herewith from being misleading, is a crime punishable under Chapter 19 of the Maine Criminal Code, and any permit issued in reliance thereon will be considered null and void without notice or further action by the Department.

Date Filed: 5/17/21

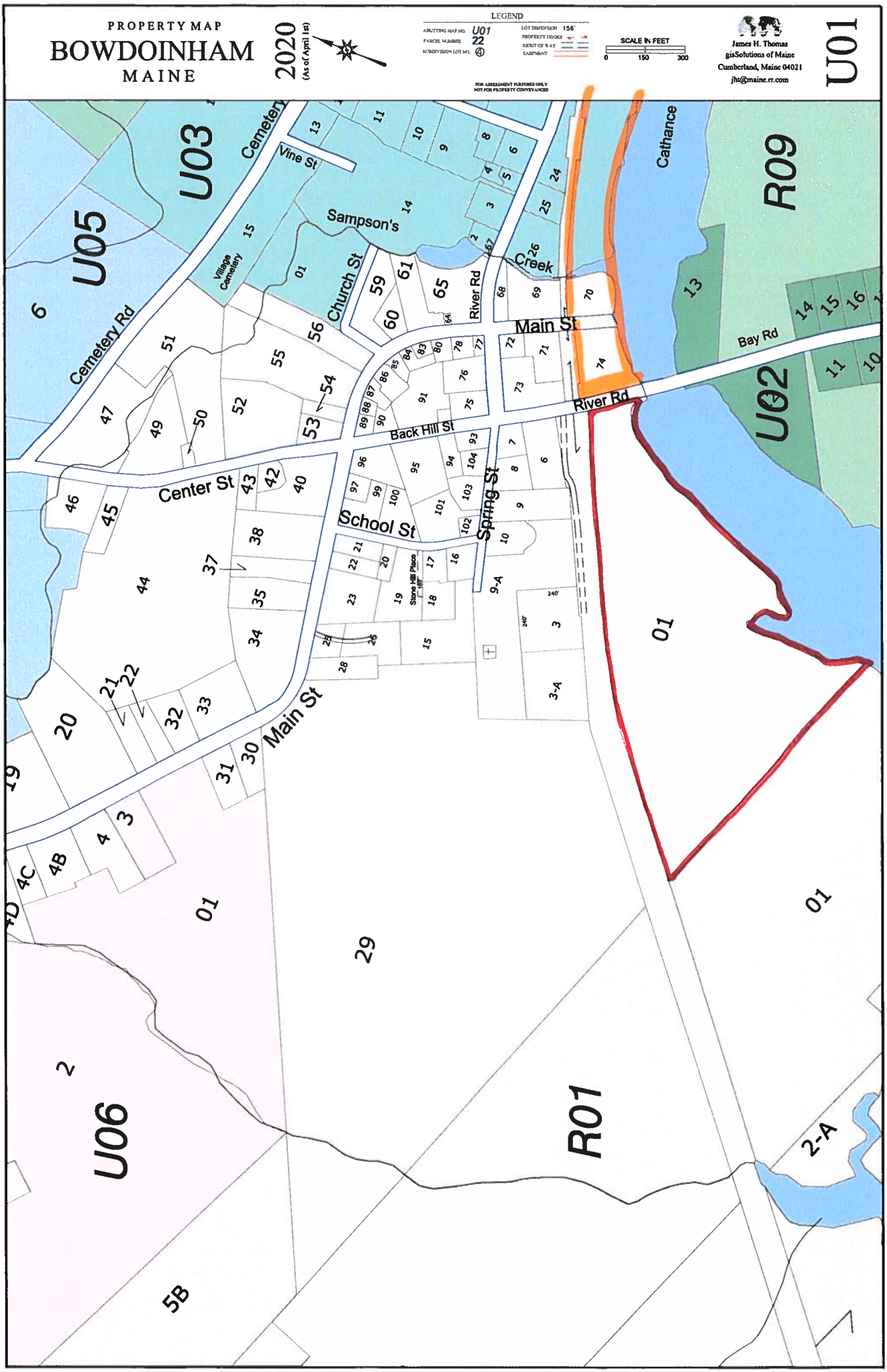
Jody Carter (on behalf of Nicole Briand)
Signature of Owner

Signature of Applicant

☑ **By signing and checking this box I hereby certify that I have been granted permission from the property owner to act in their behalf.**

Abutters within 500ft

Owner	#	LOCATION	MAP-LOT	Mailing Address	Town	State	Zip
BENJAMIN, RAY	17	RAILROAD AVE	U01-003	17 RAILROAD AVENUE	Bowdoinham	Maine	04008
SULLIVAN, JESSICA	19	RAILROAD AVE	U01-003-A	19 RAILROAD AVE	BOWDOINHAM	ME	04008
THOMPSON, PATRICK (JT)	18	RIVER RD	U01-006	18 RIVER RD	BOWDOINHAM	ME	04008 9602
PENNELL, STEVEN	24	RIVER RD	U01-007	24 RIVER ROAD	BOWDOINHAM	ME	04008
COMPTON, DAVID G	10	SPRING ST	U01-008	10 SPRING STREET	BOWDOINHAM	ME	04008
READ, CHRISTOPHER A	14	SPRING ST	U01-009	14 SPRING STREET	BOWDOINHAM	ME	04008
TEMPLE, CALVIN W	28	SPRING ST	U01-009-A	28 SPRING ST	BOWDOINHAM	ME	04008
TEMPLE, CALVIN W	25	SPRING ST	U01-015	28 SPRING ST	BOWDOINHAM	ME	04008
JOYCE, DANIEL B	21	SCHOOL ST	U01-016	21 SCHOOL STREET	BOWDOINHAM	ME	04008
VILLAGE LODGE OF MASONS #26	13	MAIN ST	U01-068	PO BOX 265	BOWDOINHAM	ME	04008
FHC, INC.	9	MAIN ST	U01-069	1201 MAIN ST	BOWDOIN	ME	04287
TOWN OF BOWDOINHAM		MAIN ST	U01-070	13 SCHOOL STREET	BOWDOINHAM	ME	04008
FHC, INC.	6	MAIN ST	U01-071	1201 MAIN ST	BOWDOIN	ME	04287
MCINTIRE, SCOTT R	12	MAIN ST	U01-072	P.O. BOX 22	ALNA	ME	04535
CARLSON, MARC F	21	RIVER RD	U01-073	21 RIVER RD	BOWDOINHAM	ME	04008
TOWN OF BOWDOINHAM		MAIN ST	U01-074	13 SCHOOL STREET	BOWDOINHAM	ME	04008
TAYLOR, WILLIAM J	24	BACK HILL	U01-075	24 BACK HILL	BOWDOINHAM	ME	04008
MCLAUGHLIN, CHRISTOPHER G	30	RIVER RD	U01-076	30 RIVER ROAD	BOWDOINHAM	ME	04008
TOWN OF BOWDOINHAM		MAIN ST	U01-077	13 SCHOOL STREET	BOWDOINHAM	ME	04008
KENNEBEC LODGE 42	18	MAIN ST	U01-078	PO BOX 205	BOWDOINHAM	ME	04008 0205
RIGBY, SIMON	3	SPRING ST	U01-093	3 SPRING ST	BOWDOINHAM	ME	04008
PEASE, REBECCA E	15	BACK HILL	U01-094	PO BOX 373	BOWDOINHAM	ME	04008
STAPLER, SARAH ANN	16	SCHOOL ST	U01-101	PO BOX 48	BOWDOINHAM	ME	04008 0048
LUDWIG, DONALD K	17	SPRING ST	U01-102	17 SPRING STREET	BOWDOINHAM	ME	04008
COLBY, MICHELLE D	13	SPRING ST	U01-103	13 SPRING STREET	BOWDOINHAM	ME	04008
LEE, PUAY W	5	SPRING ST	U01-104	114 SUMMER STREET	LISBON FALLS	ME	04252
Graviett, Terry & Elaine			R01-001	PO Box 59	BOWDOINHAM	ME	04008
Caouette, Roger & Judith			R01-009	592 Foreside Rd	Topsham	ME	04086
Burroughs, Franklin & Susan			R09-052	2 Black Cherry Ln	Topsham	ME	04086
State of State, MIF&W			R09-055-F	41 State House Station	Augusta	ME	04333-0041
Robert, Shawn			U02-011	561 Bay Rd	BOWDOINHAM	ME	04008
McPherson, James			U02-012	167 Wildes Rd	BOWDOINHAM	ME	04008
McPherson, James			U02-013	167 Wildes Rd	BOWDOINHAM	ME	04008
Rice, Harvey & Linda			U02-014	22 Bay Rd	BOWDOINHAM	ME	04008


PROPERTY MAP
BOWDOINHAM
MAINE
2020
(As of April 1st)
LEGEND
ABUTTING MAP NO. U01
PARCEL NUMBER 22
SUBDIVISION LOT NO. 4
LOT DIVISION 156'
PROPERTY LINES
EXTENT OF % AT
EASEMENT
SCALE IN FEET
0 150 300
FOR ASSESSMENT PURPOSES ONLY
NOT FOR PROPERTY CONVEYANCES
James H. Thomas
gisSolutions of Maine
Cumberland, Maine 04021
jht@maine.rr.com
U01
U03
U05
U06
U02
R09
R01
Cemetery
Vine St
Sampson's
Village Cemetery
Church St
Cemetery Rd
River Rd
Creek
Cathance
Main St
Bay Rd
Back Hill St
Center St
School St
Spring St
Stone Hill Place
01
29
2
2-A
5B

PROPERTY MAP
BOWDOINHAM
MAINE

2020 (As of April 1st)

LEGEND

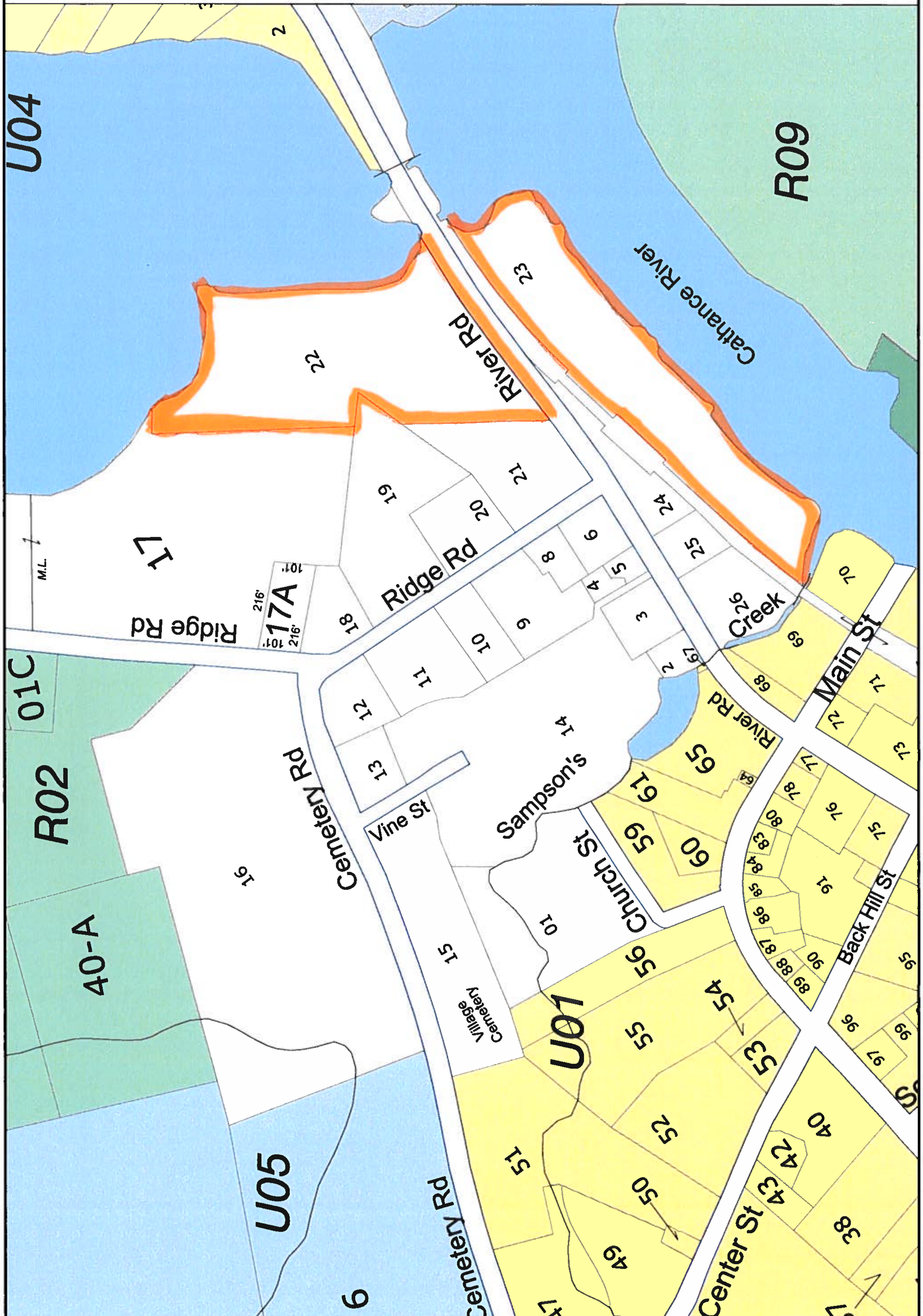
ABUTTING MAP NO. U01
PARCEL NUMBER 22
SUBDIVISION LOT NO. ④
LOT DIMENSION 156'
PROPERTY BOOKS
RIGHT OF WAY
EASEMENT

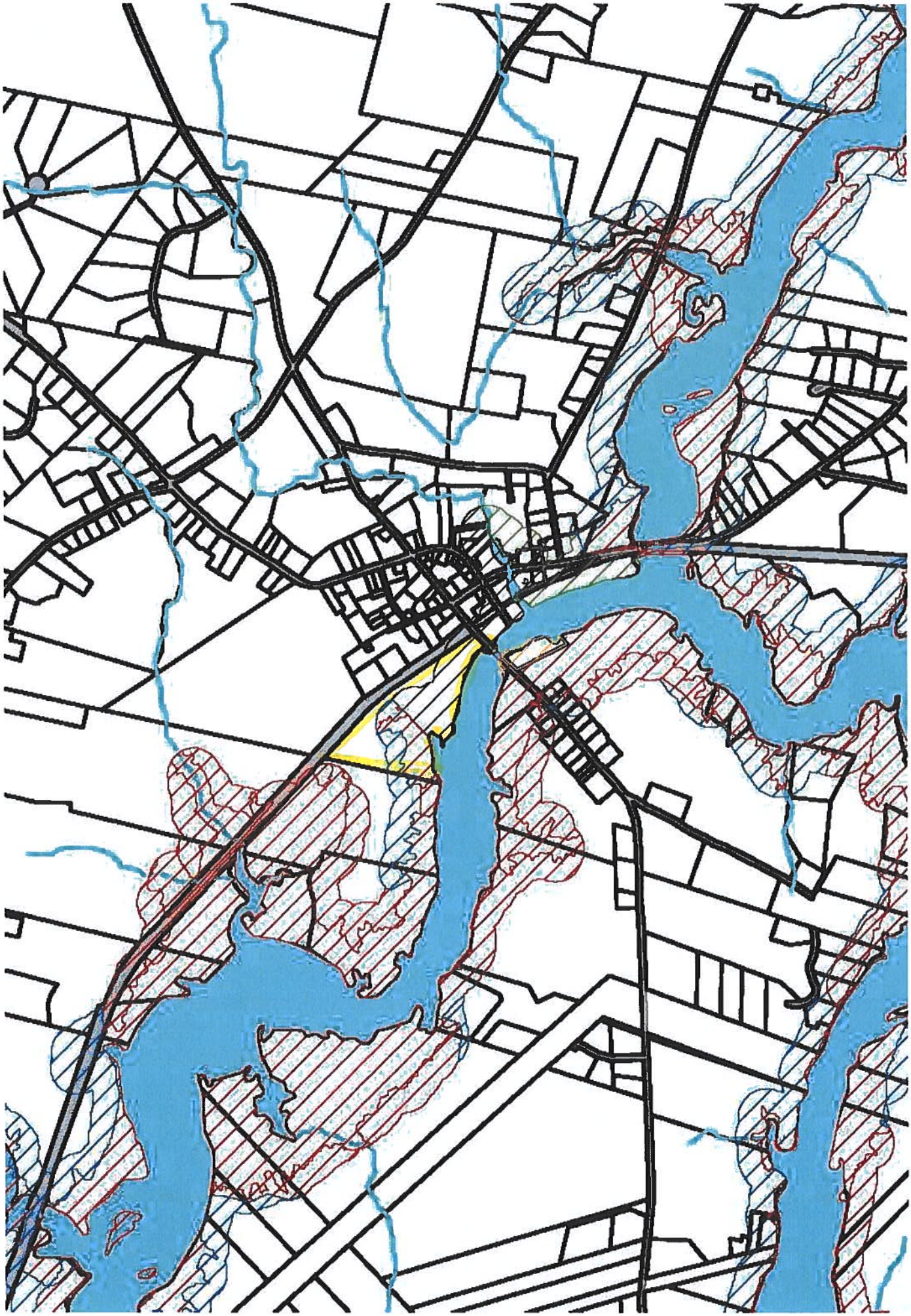
SCALE IN FEET
0 100 200

FOR ASSESSMENT PURPOSES ONLY
NOT FOR PROPERTY CONVEYANCES

James H. Thomas
gisSolutions of Maine
Cumberland, Maine 04021
jht@maine.rr.com

U03





RELEASE OF RESERVATION OF RIGHTS

KNOW ALL PERSONS BY THESE PRESENTS that the **STATE OF MAINE**, acting by and through its **DEPARTMENT OF TRANSPORTATION**, having a mailing address of 16 State House Station, Augusta, Maine 04333-0016, holder of certain excepted and reserved rights affecting a portion of the real property now owned by the **TOWN OF BOWDOINHAM** pursuant to a Governor's Deed (the "Deed") recorded at the Sagadahoc County Registry of Deeds in Book1649, Page 157 (the "Town Property"), does hereby release to the **TOWN OF BOWDOINHAM**, a Maine municipal corporation having a mailing address of 13 School Street, Bowdoinham, Maine 04008, the rights excepted and reserved in the Deed pertaining to the railroad tracks located on the Town Property at the time of the conveyance and the perpetual right to operate trains for the movement of goods and/or people (the "Reserved Rights") .

It is the intention of the State of Maine, acting by and through its Department of Transportation, that the Town of Bowdoinham own the Town Property free and clear of the Reserved Rights, which are hereby terminated.

IN WITNESS WHEREOF, the State of Maine acting by and through its Department of Transportation has caused this instrument to be signed and sealed by Bruce Van Note, its Commissioner, thereunto duly authorized this ____ day of _____, 2021.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

_____ By: _____
WITNESS: Bruce Van Note
Its: Commissioner

STATE OF MAINE
COUNTY OF KENNEBEC, ss. _____, 2021

Personally appeared before me the above-named Bruce Van Note, Commissioner of the Department of Transportation, acting on behalf of the State of Maine, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of the Department of Transportation, and State of Maine.

_____
Notary Public
Print Name: _____
My commission expires: _____

May 18, 2021

R. A. Webber and Sons, Inc.

P.O. Box 539

Harpswell, ME 04079

RE: 8 River Road

Bowdoinham, ME 04008

To whom it may concern,

On May 3, 2021 our technician, Dan Bly determined that the tank on 8 River Road, Bowdoinham, ME was a holding tank with the capacity of 1000 gallons.

If I can be of further assistance, please feel free to contact our office.

Best regards,

Penny

Penelope J. Wilson

R. A. Webber and Sons, Inc.

P.O. Box 539

Harpswell, ME 04079

207-725-7727

Town of Bowdoinham

13 School St • Bowdoinham, ME 04008
Phone 666-5531 • Fax 666-5532
www.bowdoinham.com

Memorandum

To:	Town Officials – Board of Selectmen Town Manager Fire Chief Road Commissioner Public Works Director Solid Waste Manager Recreation Director Community & Economic Development Director	**Date:**	05-14-2021
From:	Darren Carey	**Reference:**	**Redevelopment of Waterfront**
Phone	207-666-5531	**cc:**	

RE: **Notice of Site Plan Review and Shoreland Zoning Application**

The Town of Bowdoinham Planning Board has received a Site Plan Review and Shoreland Zoning Application from the Town of Bowdoinham for Phase II of the re-development of the former public works property to a public park, at 8 River Road. The application is to develop active and passive recreation uses, pavilion, natural play area, sports courts, picnic areas and associated parking.

As part of the Planning Board's review of this application they must determine that "the development will not have an unreasonable adverse impact on municipal services, including municipal road systems, fire department, solid waste program, schools, open spaces, recreational programs and facilities, and other municipal services and facilities." Please let the Planning Board know whether or not you have any concerns and how those concerns may be addressed by completing the attached form and returning it to me.

Thank you.

Municipal Services Impact Statement

Site Plan Review and Shoreland Zoning Application
Property: U01-001
Located at 8 River Road
Applicant: Town of Bowdoinham
Owner: Town of Bowdoinham
Project Description: The re-development of the former public works property to a public park.

☐ I have no concern. The proposed project will not have an unreasonable adverse impact on Fire & Rescue.

☐ I have the following concern(s):

☒ I recommend the following:

Addition of dry hydrant, with access for FD vehicles

Signed: [signature]

BOWDOINHAM FIRE & RESCUE

57 Post Road Bowdoinham, Maine
Telephone (207) 666-3505 / Fax (207) 666-5961

Fire Chief Arthur Frizzle
Deputy Chief Jeremy Moeller
Deputy Chief Aaron Temple

May 17, 2021

To:
Jenn Curtis
Director of Planning and Development
Town of Bowdoinham

Thank you for the updated information on the waterfront redevelopment. As we discussed on Thursday, the Bowdoinham Water District has 2 wet hydrants located across the street from the proposed park. One is located on the corner in front of 21 River Road and the other is located across the bridge in front of 22 Bay Road. In addition, there are 2 dry hydrants previously installed by the Town. The first is located at the boat launch at Mailly Waterfront Park and the second is located next to the Town owned building on the new waterfront redevelopment site.

Based on the plans, the Fire Department is requesting the addition of a dry hydrant located further upstream on the Cathance River at or near the proposed hand carry launch. The area around the hydrant should have sufficient access and the ability to bear the weight for a fire department vehicle to park and operate.

Please feel free to contact me at any time if you need additional information or clarification.

Sincerely,

Arthur Frizzle, Fire Chief

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

IN THE MATTER OF

TOWN OF BOWDOINHAM	) NATURAL RESOURCES PROTECTION ACT
Bowdoinham, Sagadahoc County	) STREAM ALTERATIONS
SHORELINE STABILIZATION	) SIGNIFICANT WILDLIFE HABITAT
L-23928-4D-C-N (approval)	)
L-23928-IW-D-N (approval)	) WATER QUALITY CERTIFICATION
L-23928-TA-D-N (approval)	) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S. §§ 480-A–480-JJ, Section 401 of the Federal Water Pollution Control Act (33 U.S.C. § 1341), and Chapters 310, 315, and 335 of Department rules, the Department of Environmental Protection has considered the application of TOWN OF BOWDOINHAM with the supportive data, agency review comments, public comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. History of Project: In Department Order L23928-2G-B-N, dated January 16, 2008, The Department approved the relocation of 30 linear feet of the Cathance River Trail to remain on Town owned property that resulted in 100 square feet of wetland impacts. This project was located within mapped Inland Wading Bird and Waterfowl Habitat (IWWH), which are wetlands of special significance.

B. Summary: The applicant proposes to repurpose Town property and create a hand carry boat launch and pedestrian access way to the Cathance River, a tidal river. The site previously contained the Town's Public Works Facility, which is proposed to be torn down and converted into mowed area and an area with naturalized vegetation. The applicant proposes to stabilize 530 linear feet of shoreline using a variety of treatments in and adjacent to the river. Freshwater tidal wetlands restoration includes removal of historic fill material, re-grading the embankment and replanting new intertidal area with wetlands plantings to mimic the nearby wetlands of special significance located further upstream on the property. The applicant is proposing the use of vegetated retaining wall systems to be installed around existing vegetated shoreline where mature trees and shrubs are present at the shoreline and the embankment is scoured underneath. The applicant is also proposing the removal of historic fill and adding a riprap extension adjacent to the existing riprap along River Road where there is increased energy due to restriction at the Route 24 bridge, as well as at the ends of the proposed pedestrian path spurs. Additional stabilization measures include the installation of tree root wads as a living shorelines demonstration project to promote enhancement of aquatic habitat immediately adjacent to the shoreline. The tree roots will result in approximately 115 square feet of temporary fill material placed below the Highest Annual Tide (HAT) line. To treat stormwater, the applicant is proposing to install gabion baskets filled with oyster shells to improve stormwater quality, treating the stormwater conveyed across the site and from the site

upland areas via a subsurface piped system with an outfall in a ditch connected directly to the Cathance River. The baskets will filter the stormwater and promote increased stability for new aquatic vegetation upstream of the baskets for additional enhancement of stormwater treatment. These gabion baskets will result in approximately 150 square feet of fill material placed below the HAT line. Upland areas within 25 to 75 feet of the HAT line will be converted from lawn area to naturalized vegetative communities including a mixture of perennials, shrubs, and trees. A four-foot wide meandering pedestrian path will be located in the upland buffer area with a few spurs providing limited access to the shoreline. Beyond the 75-foot HAT line setback, a mowed freshwater wetland area of approximately 1,065 square feet will be filled and re-seeded as mowed lawn with several spurs that allow access to the shoreline located throughout the site. The proposed direct impacts to the coastal wetlands are 150 square feet and 1,065 square feet of freshwater impacts. After reviewing the information in the file and conducting a site visit, the Department determined that the portion of the project located in the mowed freshwater wetland will not negatively affect the freshwater wetland of special significance or other protected natural resources; therefore, the proposed project is eligible for Tier 1 review. The proposed project can be seen on a set of plans, the first entitled "Town of Bowdoinham – Waterfront Plans – Phase 1," prepared by Baker Design Consultants, dated April 2020. The project site is located on the River Road in the Town of Bowdoinham.

The applicant also submitted Permit by Rule Notification Form (PBR #69881) pursuant to Chapter 305 Permit by Rule Standards Section 15 (06-096 Ch. 305, §15, last amended June 8, 2012) for a hand carry boat launch which was accepted by the Department on May 11, 2020.

C. Current Use of the Site: The site is currently the site of the old Public Works facility and associated buildings. The parcel is identified as Lot 01 on Map U01 of the Town of Bowdoinham's tax maps.

2. EXISTING SCENIC, AESTHETIC, RECREATIONAL OR NAVIGATIONAL USES:

The NRPA, in 38 M.R.S. § 480-D(1), requires the applicant to demonstrate that the proposed project will not unreasonably interfere with existing scenic, aesthetic, recreational and navigational uses.

In accordance with Chapter 315, *Assessing and Mitigating Impacts to Scenic and Aesthetic Uses* (06-096 C.M.R. ch. 315, effective June 29, 2003), the applicant submitted a copy of the Department's Visual Evaluation Field Survey Checklist as Appendix A to the application along with a description of the property and the proposed project. The applicant also submitted several photographs of the proposed project site and surroundings. The Department conducted a site visit on June 4, 2020.

The proposed project is located in the Cathance River which is a scenic resource visited by the general public, in part, for the use, observation, enjoyment and appreciation of its natural and cultural visual qualities. The applicant states that the shoreline stabilization

will not interfere with the natural flow of tidal waters ebbing and flowing along the Cathance River and will reduce introduced flows concentrated via upland subsurface storm drainage systems discharged into an eroded swale system prior to entering the Cathance River. The applicant states that the eroded shoreline will incorporate plantings that mimic existing vegetation and the upland areas will be converted from lawn, gravel, and former structures into naturalized vegetation colonies.

The Department staff utilized the Department's Visual Impact Assessment Matrix in its evaluation of the proposed project and the Matrix showed an acceptable potential visual impact rating for the proposed project. Based on the information submitted in the application, the visual impact rating, and the site visit, the Department determined that the location and scale of the proposed activity is compatible with the existing visual quality and landscape characteristics found within the viewshed of the scenic resource in the project area.

The Department of Marine Resources (DMR) reviewed the project and stated that the proposed project should not cause any significant adverse impact to navigation or recreation based on the nature of the project and its location.

The Department finds that the proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses of the river provided that the applicant monitors and maintains the plantings as described above.

3. SOIL EROSION:

The NRPA, in 38 M.R.S. § 480-D(2), requires the applicant to demonstrate that the proposed project will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

The applicants stated that sediment barriers and temporary erosion controls will be used in accordance with the Maine Erosion and Sediment Control Best Management Practices Field Guide for Contractors. Construction equipment will access the site from the existing public works gravel access areas and across existing mowed lawns. The shoreline will also be accessed by barge for shoreline stabilization work in front of existing vegetation to remain in place. Barge equipment and materials will be launched from the adjacent public boat ramp at the Town's Philip-Mailly Waterfront Park across River Road. As construction progresses, areas disturbed will be required to be stabilized at the end of each workday and between daily tide cycles. Materials and equipment accessing the site from onshore will be stored on the existing gravel areas that served the former Public Works facility, outside of the 75-foot setback from the HAT line. Removal of historic fill material, enhancing stormwater quality treatment at the outfall pipe, re-establishing the eroded shoreline, replanting the shoreline and upland buffer area with a mix of native shrubs, perennials and groundcovers will minimize further shoreline erosion. The plan includes monitoring and maintaining the disturbed areas until they achieve 85% vegetative cover.

The Department finds that the activity will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

4. HABITAT CONSIDERATIONS:

The NRPA, in 38 M.R.S. § 480-D(3), requires the applicant to demonstrate that the proposed project will not unreasonably harm significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.

The project site is a seven-foot tall slope vegetated with lawn and sparse trees. In the immediate area of the project, the intertidal area and subtidal area consist of mudflat. The remainder of the intertidal area and subtidal area contains a mix of ledge outcrops and mud flats.

According to the Department's Geographic Information System (GIS) database there is mapped IWWH located at the site.

In its review, the DMR stated that the project as proposed would not cause any significant adverse impact to marine resources.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) reviewed the proposed project and stated that minimal impacts to wildlife are anticipated for this project.

The Department finds that the activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.

5. WATER QUALITY CONSIDERATIONS:

As discussed in Finding 3, the applicant proposes to use erosion and sediment control during construction to minimize impacts to water quality from siltation.

The Department does not anticipate that the proposed project will violate any state water quality law, including those governing the classification of the State's waters.

6. WETLANDS AND WATERBODIES PROTECTION RULES:

The applicant proposes to directly alter 150 square feet of coastal wetland and 1,065 square feet of freshwater wetlands to stabilize a portion of the eroding shoreline of the Cathance River. Coastal wetlands are wetlands of special significance.

The *Wetlands and Waterbodies Protection Rules*, 06-096 C.M.R. ch. 310 (last amended November 11, 2018), interpret and elaborate on the Natural Resources Protection Act (NRPA) criteria for obtaining a permit. The rules guide the Department in its determination of whether a project's impacts would be unreasonable. A proposed project would generally be found to be unreasonable if it would cause a loss in wetland area, functions and values and there is a practicable alternative to the project that would be less damaging to the environment. Each application for a NRPA permit that involves a coastal wetland or a freshwater wetland alteration must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist.

A. Avoidance. An applicant must submit an analysis of whether there is a practicable alternative to the project that would be less damaging to the environment and this analysis is considered by the Department in its assessment of the reasonableness of any impacts. Additionally, for activities proposed in, on, or over wetlands of special significance the activity must be among the types listed in Chapter 310, § 5(A) or a practicable alternative less damaging to the environment is considered to exist and the impact is unreasonable. Shoreline stabilization and its proposed construction is among the activities specifically provided for in Chapter 310, § 5(A)(1)(h). In addition, projects for the restoration or enhancement of the functions and values of the wetlands of special significance are also specifically provided for in Chapter 310, § 5(A)(1)(g). The applicant submitted an alternatives analysis for the proposed project completed by Baker Design Consultants and dated April 1, 2020. The fundamental purpose of the project is to stabilize the shoreline, utilizing a variety of treatment measures to provide demonstration measures regarding living shoreline techniques of particular interest to the Town of Bowdoinham, the Maine Coastal Program, and the Maine Geological Survey. The secondary purpose of the project is to enhance the coastal riverine environment by improving stormwater treatment, re-establishing natural vegetative communities, improving upland buffer and aquatic habitat, removing historic fill and to provide improved recreational and educational experience for visitors to the Town's new public park space. Prior to the selected Preferred Alternative, the Town facilitated and extensive public input process to develop an overall master plan for reuse of the former Public Works facility. The applicant considered taking no action but determined that the shoreline would continue to erode and would provide no opportunities for flood resiliency improvements to the site and abutting properties. Doing nothing would leave the site, while no longer actively used for industrial or public work's needs, as a largely undervalued shoreline setting with little ecological diversity or water quality treatment. The applicants considered armoring the shoreline entirely with riprap and replanting disturbed areas immediately upland of the armoring. This would result in the need to replace existing mature vegetation immediately along the shoreline and would minimize removal of historic fill material adjacent to the shoreline. Stormwater flows would continue to impact the water quality of the Cathance River and aquatic habitat adjacent to the shoreline would not significantly benefit from the stabilization. Flood resiliency of the site and adjacent properties would be minimally improved. The applicant is also proposing to fill 1,065 square feet of freshwater wetland that is being enhanced as part of the restoration efforts for this site. It is currently mowed outside of the 75-foot setback and within to the edge of the river. The majority of this wetland will be enhanced with

replanting of the mowed area with native perennials, shrubs, and trees inside the 75-foot setback to improve the upland vegetative buffer adjacent to the river. The remainder of the wetland outside of the 75-foot setback will continue to be mowed, however it will be regraded to improve drainage for recreational park space. The alternative considered was to do nothing and maintain it all as a wet mowed lawn space. The applicant states that the improvements to the vegetated buffer within the 75-foot setback were proposed as an overall benefit to the river environment while the park space outside of the 75-foot setback was improved drainage-wise for passive outdoor recreational use. The preferred alternative optimizes environmental enhancement opportunities and passive recreation activities for the public and was selected because it meets the applicant's needs.

B. Minimal Alteration. In support of an application and to address the analysis of the reasonableness of any impacts of a proposed project, an applicant must demonstrate that the amount of coastal and freshwater wetland to be altered will be kept to the minimum amount necessary for meeting the overall purpose of the project. Removing lawn and industrial fill materials promotes environmental improvements of flora and fauna systems by rehabilitating the shoreline with a variety of stabilization treatments to promote ecosystem and water quality improvements along the Cathance through creation of approximately 4,000 square feet of fresh water coastal wetlands, which are of high value to the state, installation of diverse vegetated shorelines and upland native landscape buffers, and introduction of tree root wads at the river's edge which will be of temporary impact to the river as fill, while improving aquatic habitat immediately and overtime as living plant material replaces the root systems. The applicant stated that the proposed project minimizes impacts to the wetlands to the greatest extent practicable.

C. Compensation. In accordance with Chapter 310, § 5(C)(6)(b), compensation may be required to achieve the goal of no net loss of coastal wetland functions and values. This project will not result in over 500 square feet of fill in the coastal wetland or 15,000 square feet of fill in the freshwater wetland, which are the thresholds over which compensation is generally required. Further, the proposed project will not have an adverse impact on marine resources or wildlife habitat as determined by DMR and MDIFW. For these reasons, the Department determined that compensation is not required.

The Department finds that the applicant has avoided and minimized coastal and freshwater wetland impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project.

7. OTHER CONSIDERATIONS:

The Department finds, based on the design, proposed construction methods, and location, the proposed project will not inhibit the natural transfer of soil from the terrestrial to the marine environment, will not interfere with the natural flow of any surface or subsurface waters, and will not cause or increase flooding. The proposed project is not located in a

coastal sand dune system, is not a crossing of an outstanding river segment, and does not involve dredge spoils disposal or the transport of dredge spoils by water.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S. §§ 480-A–480-JJ and Section 401 of the Federal Water Pollution Control Act (33 U.S.C. § 1341):

A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses provided that the applicant monitors and maintains vegetation as described in Finding 2.

B. The proposed activity will not cause unreasonable erosion of soil or sediment.

C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life

E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.

F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.

G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.

H. The proposed activity is not on or adjacent to a sand dune.

I. The proposed activity is not on an outstanding river segment as noted in 38 M.R.S. § 480-P.

THEREFORE, the Department APPROVES the above noted application of THE TOWN OF BOWDOINHAM to stabilize the shoreline, enhance natural environmental communities immediately adjacent to the Cathance River, and to improve recreation pedestrian access as described in Finding 1, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

1. Standard Conditions of Approval, a copy attached.

2. The applicant shall take all necessary measures to ensure that its activities or those of its agents do not result in measurable erosion of soil on the site during the construction of the project covered by this approval.

3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

4. The applicant shall monitor and maintain all disturbed wetland areas until they achieve 85% vegetative cover.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED IN AUGUSTA, MAINE, THIS 18TH DAY OF JUNE, 2020.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
For: Gerald D. Reid, Commissioner

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES.

HB/L23928CNDNDN/ATS#86066/86076/86192

FILED
June 19, 2020
State of Maine
Board of Environmental Protection

Natural Resources Protection Act (NRPA)
Standard Conditions

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCES PROTECTION ACT, 38 M.R.S. §§ 480-A ET SEQ., UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

A. Approval of Variations From Plans. The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.

B. Compliance With All Applicable Laws. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.

C. Erosion Control. The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.

D. Compliance With Conditions. Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.

E. Time frame for approvals. If construction or operation of the activity is not begun within four years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.

F. No Construction Equipment Below High Water. No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.

G. Permit Included In Contract Bids. A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.

H. Permit Shown To Contractor. Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION, AUGUSTA, MAINE 04333

Erosion Control for Homeowners

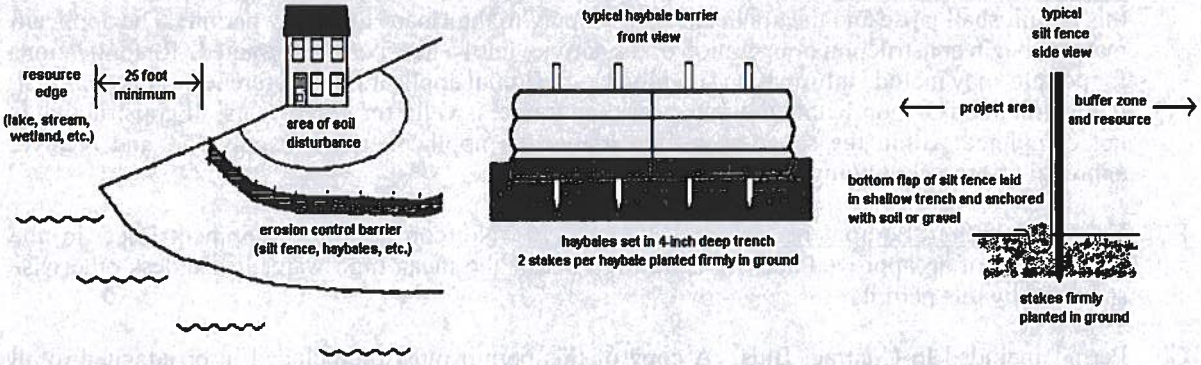
Before Construction

1. If you have hired a contractor, make sure you discuss your permit with them. Talk about what measures they plan to take to control erosion. Everybody involved should understand what the resource is, and where it is located. Most people can identify the edge of a lake or river. However, the edges of wetlands are often not so obvious. Your contractor may be the person actually pushing dirt around, but you are both responsible for complying with the permit.

2. Call around to find where erosion control materials are available. Chances are your contractor has these materials already on hand. You probably will need silt fence, hay bales, wooden stakes, grass seed (or conservation mix), and perhaps filter fabric. Places to check for these items include farm & feed supply stores, garden & lawn suppliers, and landscaping companies. It is not always easy to find hay or straw during late winter and early spring. It also may be more expensive during those times of year. Plan ahead -- buy a supply early and keep it under a tarp.

3. Before any soil is disturbed, make sure an erosion control barrier has been installed. The barrier can be either a silt fence, a row of staked hay bales, or both. Use the drawings below as a guide for correct installation and placement. The barrier should be placed as close as possible to the soil-disturbance activity.

4. If a contractor is installing the erosion control barrier, double check it as a precaution. Erosion control barriers should be installed "on the contour", meaning at the same level or elevation across the land slope, whenever possible. This keeps stormwater from flowing to the lowest point along the barrier where it can build up and overflow or destroy the barrier.



During Construction

1. Use lots of hay or straw mulch on disturbed soil. The idea behind mulch is to prevent rain from striking the soil directly. It is the force of raindrops hitting the bare ground that makes the soil begin to move downslope with the runoff water, and cause erosion. More than 90% of erosion is prevented by keeping the soil covered.

2. Inspect your erosion control barriers frequently. This is especially important after a rainfall. If there is muddy water leaving the project site, then your erosion controls are not working as intended. You or your contractor then need to figure out what can be done to prevent more soil from getting past the barrier.

3. Keep your erosion control barrier up and maintained until you get a good and healthy growth of grass and the area is permanently stabilized.

After Construction

1. After your project is finished, seed the area. Note that all ground covers are not equal. For example, a mix of creeping red fescue and Kentucky bluegrass is a good choice for lawns and other high-maintenance areas. But this same seed mix is a poor selection for stabilizing a road shoulder or a cut bank that you don't intend to mow. Your contractor may have experience with different seed mixes, or you might contact a seed supplier for advice.

2. Do not spread grass seed after September 15. There is the likelihood that germinating seedlings could be killed by a frost before they have a chance to become established. Instead, mulch the area with a thick layer of hay or straw. In the spring, rake off the mulch and then seed the area. Don't forget to mulch again to hold in moisture and prevent the seed from washing away or being eaten by birds or other animals.

3. Keep your erosion control barrier up and maintained until you get a good and healthy growth of grass and the area is permanently stabilized.

Why Control Erosion?

To Protect Water Quality

When soil erodes into protected resources such as streams, rivers, wetlands, and lakes, it has many bad effects. Eroding soil particles carry phosphorus to the water. An excess of phosphorus can lead to explosions of algae growth in lakes and ponds called blooms. The water will look green and can have green slime in it. If you are near a lake or pond, this is not pleasant for swimming, and when the soil settles out on the bottom, it smothers fish eggs and small animals eaten by fish. There many other effects as well, which are all bad.

To Protect the Soil

It has taken thousands of years for our soil to develop. It usefulness is evident all around us, from sustaining forests and growing our garden vegetables, to even treating our septic wastewater! We cannot afford to waste this valuable resource.

To Save Money ($$)

Replacing topsoil or gravel washed off your property can be expensive. You end up paying twice because State and local governments wind up spending your tax dollars to dig out ditches and storm drains that have become choked with sediment from soil erosion.

DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018 **Contact: (207) 287-2452**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status.* The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

Town of Bowdoinham

13 School St • Bowdoinham, ME 04008
Phone 666-5531 • Fax 666-5532
www.bowdoinham.com

Nicole Briand, Interim Town Manager

RECEIVED
JUL 29 2019
By 1061-19

July 24, 2019

Kirk F. Mohney
Director, Maine Historic Preservation Commission
55 Capitol Street, 65 State House Station,
Augusta, ME, 04333-0065

Request for Project Review

Dear Mr. Mohney,

The Town of Bowdoinham is working to redevelopment its former Public Works Property along the Cathance River. Please find enclosed our Site Master Plan, Boating Fund Grant application, project location map and photographs for the subject project.

The Town of Topsham is applying for funding assistance from the Maine Bureau of Parks and Lands Boating Facilities Fund program in support of installation of a new hand carry boat launch system and parking on the Cathance River in Bowdoinham, Maine. MaineDACF funding for this program requires that you be informed of the proposed project and given the opportunity to provide comment on historic or archeological impacts.

Please reply with any comments directly to me.

Sincerely,

Nicole Briand

Nicole Briand
Director of Planning & Development
Town of Bowdoinham
nbriand@bowdoinham.com
207-666-5531

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney
Kirk F. Mohney,
State Historic Preservation Officer
Maine Historic Preservation Commission

8/19/19
Date

Enclosed – Location Map, Project Boundary Survey, Boating Fund Grant Application, Site Master Plan, Photographs

Bowdoinham Living Shoreline Project
Cathance River, Bowdoinham

Site Visit Summary
Maine Natural Areas Program, 2019

MNAP Ecologist Kristen Puryear walked the area proposed for living shoreline and redevelopment within the Bowdoinham public works property along the Cathance River on November 6, 2019. The primary focus of the survey was to evaluate current vegetation and site conditions in order to provide recommendations on appropriate plantings or vegetation management that may be included as part of the waterfront and living shoreline design.

From North to South along the shoreline, overall vegetation communities are described within each of the drafted management or stabilization zones as per the July 2019 Shoreline Stabilization Plan. Note the survey was done after the first frost, significantly limiting identifiable vegetation on site.

Zone 1: "Option 4: Armored Slope": The shoreline is eroded and scoured out at the base of the bridge footing. In the intertidal area, dominant plants include soft-stemmed bulrush (*Schoenoplectus tabernaemontani*), wild rice (*Zizania palustris* or *aquatica*), northern water-plantain (*Alisma triviale*), and pickerelweed (*Pontedaria cordata*). These species are typical of Freshwater Tidal Marsh, and are found all along the public works property shoreline, ranging from pockets and thin margins against the bank to a more broad, contiguous, and diverse natural community (such as the area mapped by MNAP just to the south of the Public Works garage). Plants along the bank above the intertidal area are typical of the rest of the site and include ruderal species such as hawkweeds, asters, plantain, clovers, and dandelion. Notably, a wrack line from higher tides/flooding was evident several feet in from the edge of the existing bank.

Zone 2: "Option 3: Vegetated Retaining Wall": This is a larger area and includes a wider variety of vegetation as well as trees and shrubs. Although generally open, there are a couple of trees surrounded by tight clusters of shrubs. Species include black willow (*Salix nigra*) as well as non-native invasive multiflora rose (*Rosa multiflora*), Morrow's honeysuckle (*Lonicera morrowii*), and Norway maple (*Acer platanoides*). Notable native species include meadowsweet (*Spiraea latifolia*), silky dogwood (*Cornus amomum*) sensitive fern (*Onoclea sensibilis*), and again asters and other herbs (both native and non-native).

Zone 3: "Option 2: Rootwad Stabilization": This zone includes a wetland swale area (mapped as PEM by Stantec) close to the shoreline. Common herbs here include Canada bluejoint (*Calamagrostis canadensis*), sensitive fern, a sedge (*Carex cf lacustris*), northern water-horehound (*Lycopus uniflorus*), and tall meadowrue (*Thalictrum pubescens*). Other species include low shrubs such as maple-leaved viburnum (*Viburnum acerifolium*) and meadowsweet.

It was also noted within this region that a high wrack line has been deposited as much as 20' in from the existing stream bank, and the wrack includes fragments of Japanese knotweed (*Fallopia japonica*) which has become established in stands nearby though not within the project area. Plant fragments from multiple species of invasives can become established when transported either by water or soil disturbance (such as excavation). Caution should be used when any ground disturbance is done along the shore, as plants and propagules of very invasive plants like Japanese knotweed could take advantage of any freshly disturbed soil and become very difficult to manage.

Recommendations

Based on this field survey, the Maine Natural Areas Program does not have any concerns about disturbance to rare plants or rare natural communities within the area depicted within the shoreline stabilization plan.

Species that may be considered for planting or as part of the project design include those native plants currently found on site, such as meadowsweet, silky dogwood, tall meadow-rue, sensitive fern, and various asters such as calico aster. Other species appropriate for the site (depending on soils, hydrology, flooding potential, and aesthetic needs) may include choke cherry (*Prunus virginiana*), nannyberry (*Viburnum lentago*), red maple (*Acer rubrum*), native shrub willows, speckled alder (*Alnus incana*), witch-hazel (*Hamamelis virginiana*), and herbs such as spotted touch-me-not (*Impatiens capensis*), cinnamon fern (*Osmunda cinnamomea*), interrupted fern (*Osmunda claytoniana*), and others. A list of native species can be found via various resources such as the University of Maine Cooperative Extension Publication #2502, Native Plants: A Maine Source List. Plants appropriate for the intertidal zone include those currently found there to include soft-stemmed bulrush, wild rice, northern water-plantain, three-square bulrush (*Schoenoplectus pungens*) and pickerelweed.

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

October 17, 2019

Nicole Briand
Town of Bowdoinham
13 School Street
Bowdoinham, ME 04008

RE: Information Request - Living Shoreline Stabilization, Bowdoinham

Dear Nicole:

Per your request received October 08, 2019, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Living Shoreline Stabilization Project* in Bowdoinham.

Our information indicates no locations of Endangered, Threatened, or Special Concern species within the project area that would be affected by your project. Additionally, our Department has not mapped any Essential Habitats that would be directly affected by your project.

Significant Wildlife Habitat

Inland Waterfowl and Wading Bird Habitats

This project intersects with Inland Waterfowl and Wading Bird Habitat (IWWH), which are considered Significant Wildlife Habitat under Maine's Natural Resources Protection Act. These habitats provide important breeding, feeding, migration, staging, and wintering habitat for waterfowl and wading bird species. High and moderate value IWWHs within the study area includes both the wetland complex and a 250-foot upland zone. We recommend that these resources be avoided, including no additional clearing within the 250-foot upland zone from the wetland edge. To minimize impacts to breeding waterfowl, we recommend that shoreline stabilization activities not occur between April 1 and July 15.

Fisheries Habitat

Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

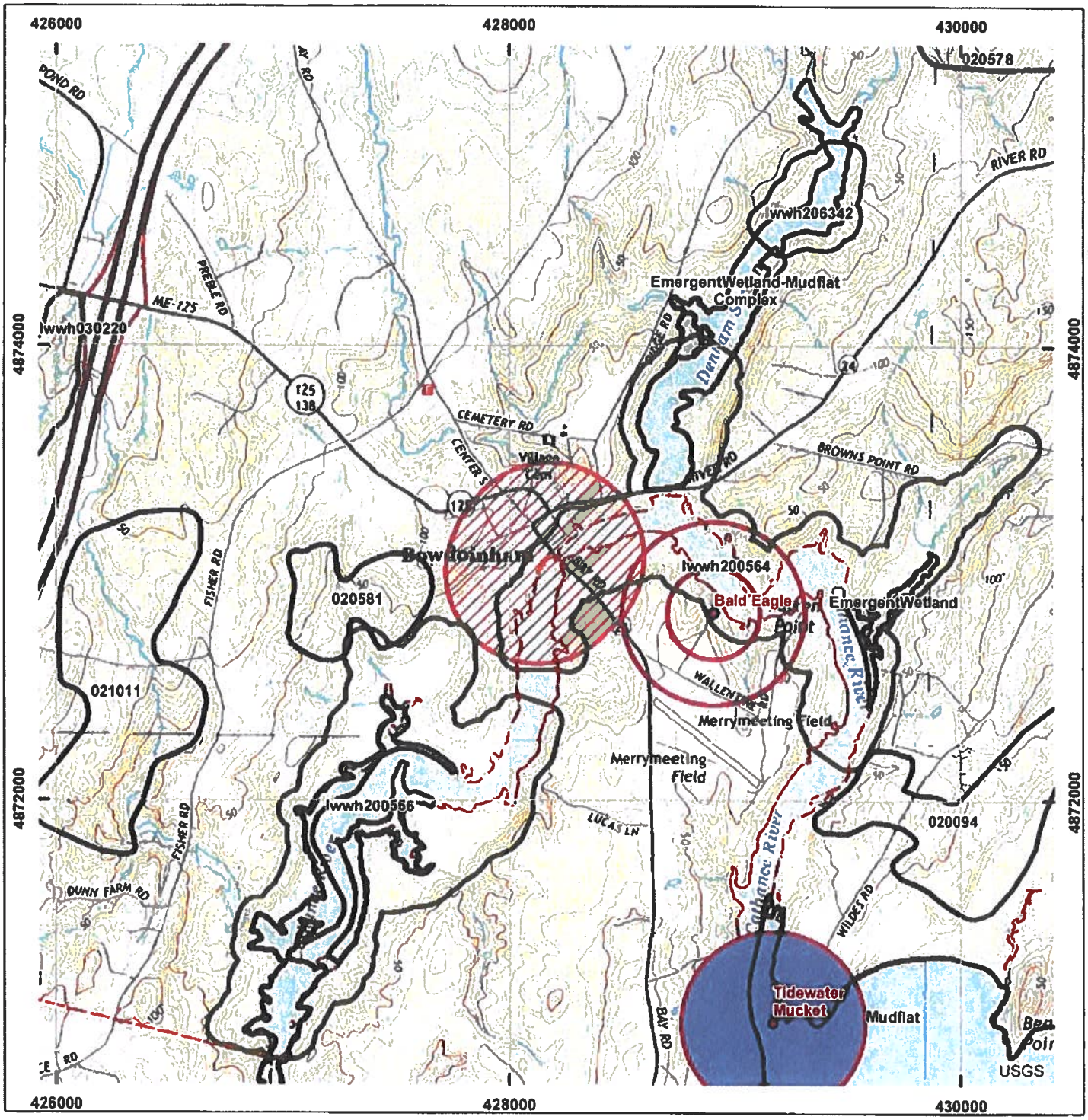
This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that

may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

Becca Settele
Wildlife Biologist



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Bowdoinham, Living Shoreline Stabilization (Version 1)

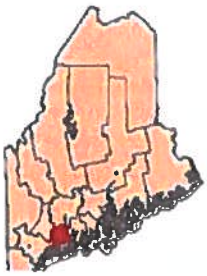
Maine Department of Inland Fisheries and Wildlife

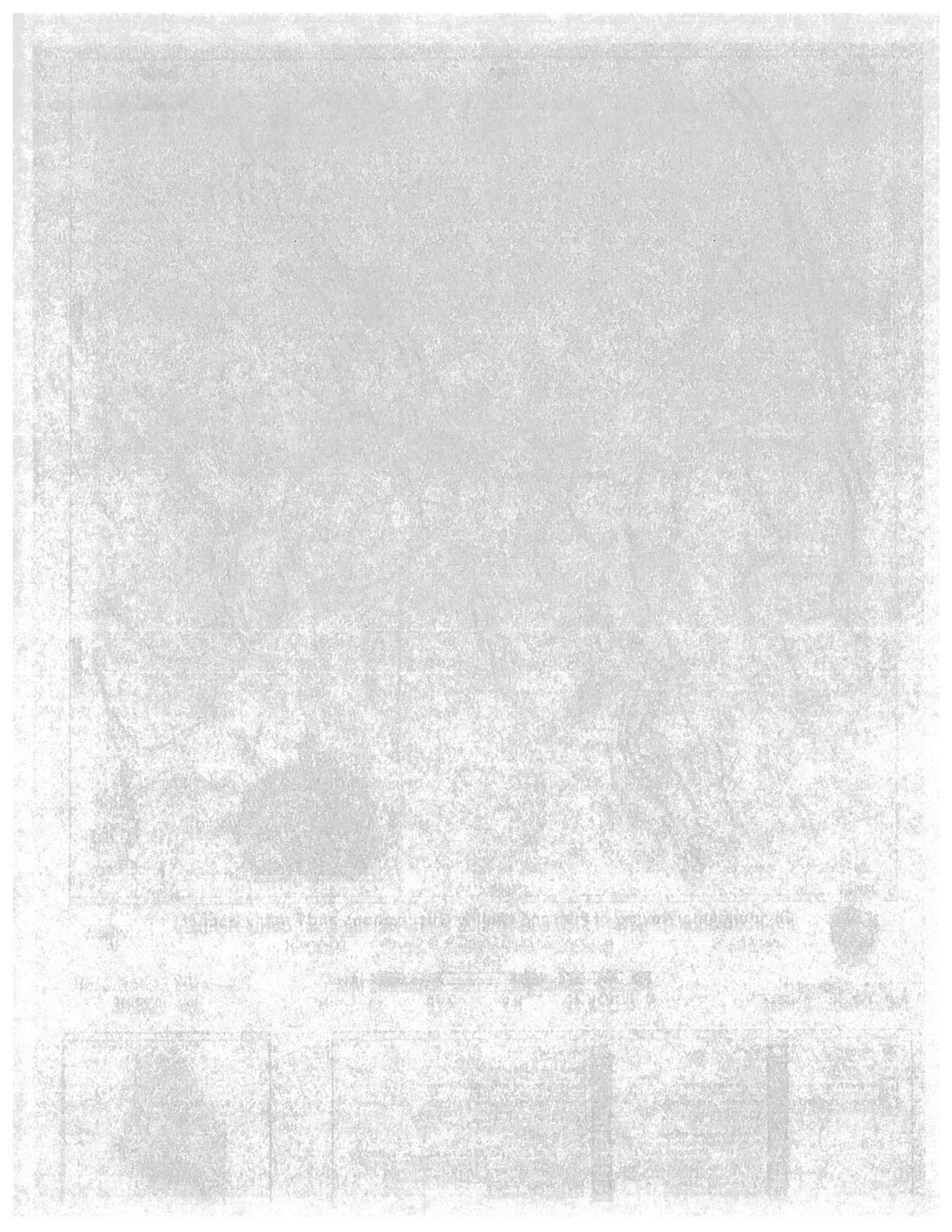
0 0.125 0.25 0.5 0.75 1 Miles

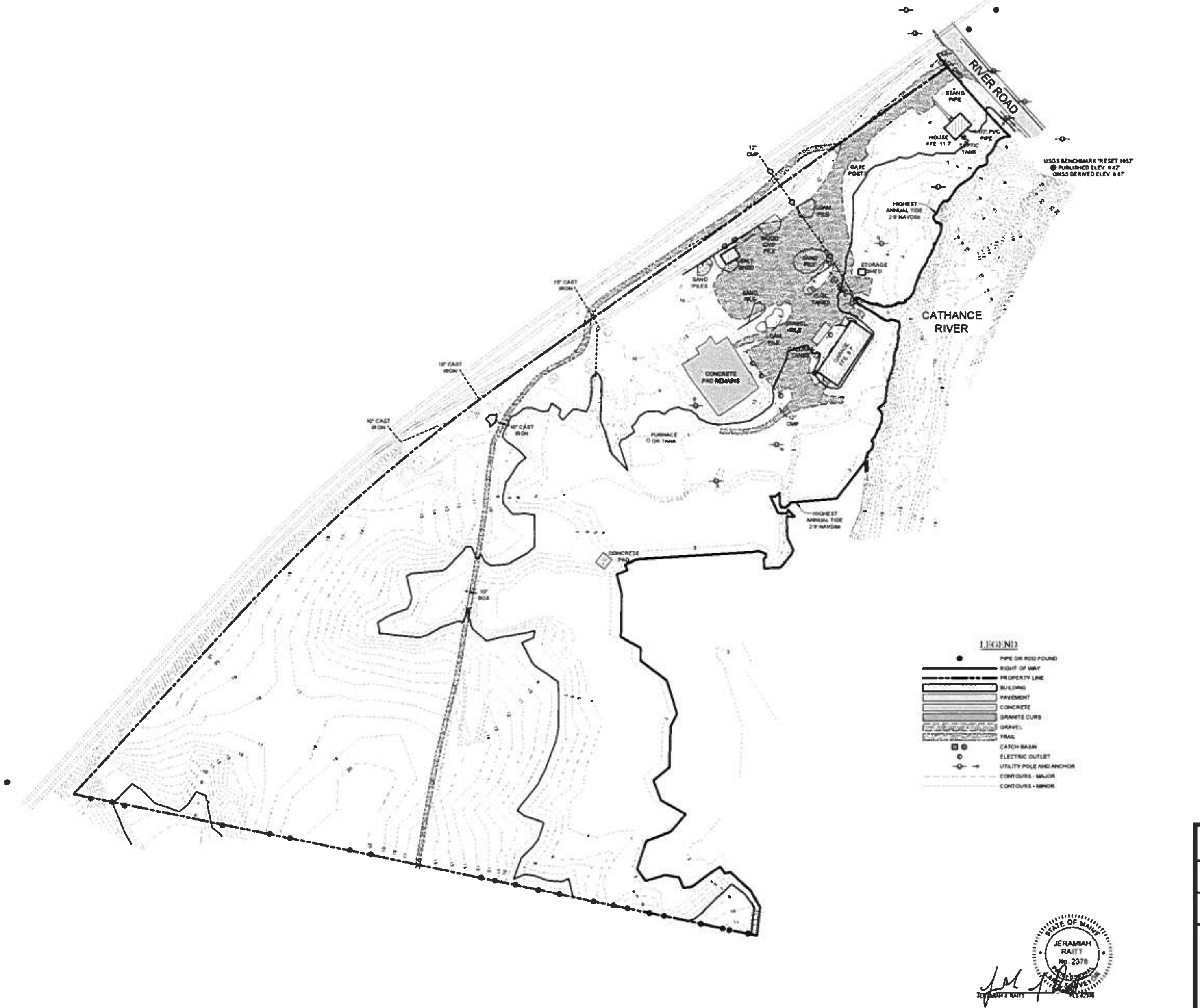
Projection: UTM, NAD83, Zone 19N

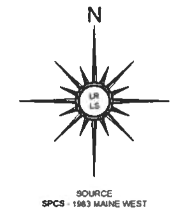
Date: 10/9/2019

- ProjectPoints
- ProjectLines
- ProjectPolys
- ProjectSearchAreas
- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 lwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Spedal Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats









SOURCE
SPCS - 1983 MAINE WEST

NOTES

1) RECORD OWNERS: INHABITANTS OF THE TOWN OF BOWDOINHAM
REFERENCE DOCUMENTS: DEED BOOK 1619, PAGE 321 DATED SEPTEMBER 2, 1998
DEED BOOK 1640, PAGE 167 DATED DECEMBER 14, 1998
SEE ALSO "STANDARD BOUNDARY SURVEY & TOPOGRAPHIC PLAN" FOR CENTRAL CHEMICAL CORPORATION DATED APRIL 24, 1998 BY HARTY LAND SURVEYING RECORDED IN PLAN BOOK 34 PAGE 25

2) PROPERTY LINES AND A SIGNIFICANT PORTION OF THE AREA OUTSIDE OF THE DEFINED SCOPE OF WORK OF THIS PROJECT ARE DEPICTED ON THE HARTY PLAN CITED ABOVE. VARIOUS STORM WATER DRAINAGE STRUCTURES NOT OBSERVED BY THIS SURVEYOR DURING THE COURSE OF THE FIELD WORK CONDUCTED IN 2019 HAVE BEEN SHOWN AS DEPICTED ON THE HARTY PLAN. THE CURRENT STATUS OF SAID STRUCTURES IS UNKNOWN

3) BEARINGS ARE REFERENCED TO THE STATE PLANE COORDINATE SYSTEM OF 1983, MAINE WEST ZONE, AS DETERMINED BY REAL TIME KINEMATIC GNSS TECHNIQUES WITH CORRECTIONS APPLIED BY THE MAINE DOT VRS NETWORK

4) ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS DETERMINED BY REAL TIME KINEMATIC GNSS TECHNIQUES WITH CORRECTIONS APPLIED BY THE MAINE DOT VRS NETWORK

5) THE HIGHEST ANNUAL TIDE (HAT) ELEVATION OF 2.9 FEET (NAVD88) IS LISTED IN A TABLE PUBLISHED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION AVAILABLE ONLINE. THE DATA FOR THE "BOWDOINHAM, CATHANCE RIVER" LOCATION IS DEPICTED HEREON

6) A PORTION OF THE PROJECT AREA IS SHOWN IN A SPECIAL FLOOD HAZARD AREA, ZONE AE (AREAS OF 100 YEAR FLOOD WITH BASE FLOOD ELEVATIONS DETERMINED) AS DEPICTED ON THE FLOOD INSURANCE RATE MAP FOR SAGADAHOC COUNTY WITH MAP NUMBER 23023C0084F AND AN EFFECTIVE DATE OF JULY 16, 2015. THE BASE FLOOD ELEVATION OF 8 FEET (NAVD88) IS DEPICTED HEREON

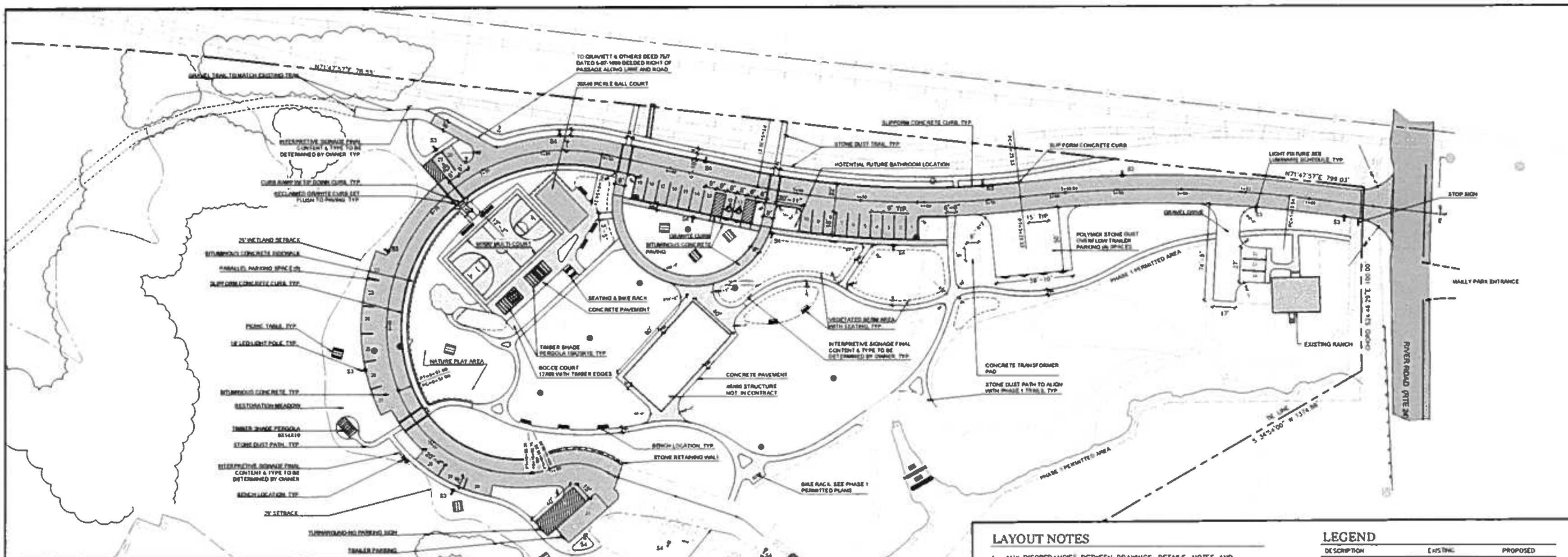
TOPOGRAPHIC SURVEY

FOR: TOWN OF BOWDOINHAM
8 RIVER ROAD, BOWDOINHAM, MAINE

SITE: 8 RIVER ROAD
BOWDOINHAM, MAINE

LITTLE RIVER
LAND SURVEYING, INC.
ME PLS #2378 NH LLS #957
PO BOX 332, LISBON FALLS MAINE 04252
(207) 841-0056

DATE JUNE 28, 2019
SCALE 1" = 80'
PROJECT #19-025
DRAWING #19-025
DRAWN BY TJC
CHECKED BY JJR



GENERAL NOTES

1 SITE AREA: 20.1 ACRES
2 PROJECT SITE AREA 5.27 ACRES

3 APPLICANT & OWNER TOWN OF BOWDOINHAM
12 SCHOOL STREET
BOWDOINHAM, MAINE 04096

4 ZONING DISTRICT VILLAGE DISTRICT I & SHORELAND ZONE GENERAL DEVELOPMENT DISTRICT I
a) MIN LOT SIZE = 20,000 SQ FT
b) MIN. LOT SIZE FOR SUBDIVISION WITH COMMUNITY SUBSURFACE WASTEWATER = 10,000 SQ FT
c) MAXIMUM RESIDENTIAL DENSITY = 20,000 SQ. FT
d) MINIMUM ROAD FRONTAGE = 75 FEET
e) MINIMUM SETBACKS FOR BUILDINGS–
(i) FRONT YARD = 20 FEET
(ii) SIDE YARD = 10 FEET
(iii) REAR YARD = 10 FEET
f) MAX. BUILDING HEIGHT = 35 FEET
g) STRUCTURES SHALL NOT COVER MORE THAN 30% OF ANY LOT. LOTS LEGALLY NON-CONFORMING DUE TO LOT SIZE MAY HAVE UP TO 50% STRUCTURE COVERAGE

5 RECORD OWNERS. INHABITANTS OF THE TOWN OF BOWDOINHAM REFERENCE DOCUMENTS: DEED BOOK 1615, PAGE 321 DATED SEPTEMBER, 1998 DEED BOOK 1649, PAGE 157 DATED DECEMBER 14, 1998 SEE ALSO "STANDARD BOUNDARY SURVEY & TOPOGRAPHIC PLAN" FOR CENTRAL CHEMICAL CORPORATION DATED APRIL 24, 1998 BY HARTY LAND SURVEYING RECORDED IN PLAN BOOK 34, PAGE 25.

6 BEARINGS ARE REFERENCED TO THE STATE PLANE COORDINATE SYSTEM OF 1983, MAINE WEST ZONE, AS DETERMINED BY REAL TIME KINEMATIC GNSS TECHNIQUES WITH CORRECTIONS APPLIED BY THE MAINE DOT VRS NETWORK

7 ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS DETERMINED BY REAL TIME KINEMATIC GNSS TECHNIQUES WITH CORRECTIONS APPLIED BY THE MAINE DOT VRS NETWORK

8 THE HIGHEST ANNUAL TIDE (HAT) ELEVATION OF 2.9 FEET (NAVD88) IS LISTED IN A TABLE PUBLISHED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION AVAILABLE ONLINE. THE DATA FOR THE "BOWDOINHAM, CATHANCE RIVER" LOCATION IS DEPICTED HEREON

9 A PORTION OF THE PROJECT AREA IS SHOWN IN A SPECIAL FLOOD HAZARD AREA, ZONE AE (AREAS OF 100 YEAR FLOOD WITH BASE FLOOD ELEVATIONS DETERMINED) AS DEPICTED ON THE FLOOD INSURANCE RATE MAP FOR SAGADAHOC COUNTY WITH MAP NUMBER 23023C0094F AND AN EFFECTIVE DATE OF JULY 18, 2015. THE BASE FLOOD

10 ELEVATION OF 8 FEET (NAVD88) IS DEPICTED HEREON.

11 BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY HARTY LAND SURVEYING 535 BAY ROAD BOWDOINHAM, ME 04008 TE (207)729-4501

12 TOPOGRAPHIC SURVEY PREPARED BY LITTLE RIVER SURVEY. ME PLS #2376 NH LLS #957 PO BOX 332, LISBON FALLS MAINE 04252 (207) 841-0056 ON JUNE 28, 2019

NOTE: This drawing is PRELIMINARY ONLY. It is NOT intended for use as a construction document.

PLANNING BOARD SIGNATURE BLOCK

DATE:

Chair:

Board Members:

LAYOUT NOTES

1 ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, NOTES AND SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT FOR FURTHER DIRECTION AND RESOLUTION BEFORE ADDITIONAL WORK PROCEEDS

2 CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT FOR DIRECTION AND RESOLUTION PRIOR TO ANY FURTHER WORK

3 CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITH THE APPROPRIATE UTILITY COMPANIES PRIOR TO EXCAVATION OF OR INSTALLATION OF ANY PART OF THIS WORK. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

4 CONTRACTOR SHALL NOTIFY DIG SAFE (1-888-344-7233) PRIOR TO EXCAVATION

5 CONTRACTOR SHALL AVOID ALL AREAS NOT REQUIRING GRADING. CONTRACTOR SHALL NOT DISTURB THESE AREAS AND SHALL PRESERVE EXISTING VEGETATION.

6 CONTRACTOR SHALL LOAM AND SEED ALL GRADED AND DISTURBED AREAS NOT OTHERWISE IMPROVED

7 ALL WORK ASSOCIATED WITH THE PROPOSED WATER SERVICE MUST ADHERE TO BOWDOINHAM WATER DISTRICT STANDARDS

8. THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR UNDERTAKING THE WORK IN A SAFE AND EFFICIENT MANNER, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY REGULATIONS. ALL WORK AREAS SHALL BE DELINEATED CLEARLY AND FENCED AS APPROPRIATE TO PREVENT UNAUTHORIZED ACCESS. THE SITE SHALL BE LEFT IN A SAFE, ORDERLY AND TIDY MANNER AT THE END OF EACH WORK DAY

9 THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND PERFORM ALL WORK NECESSARY TO REGULATE TRAFFIC IN THE AREA OF THE SITE, AND SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO AND FROM PUBLIC AND PRIVATE PROPERTIES AND RIGHTS OF WAY DURING CONSTRUCTION.

10. LIGHTING FIXTURE AND AESTHETIC BASED ON PLANNING BOARD APPROVAL. TO BE DETERMINED

LUMINAIRE SCHEDULE

Luminaire Schedule					
Tag	Qty	Watts	Lumens	LLF	Description
S4	7	57	5783	0.900	URB-XXXX-21-34L-55-3K7-4W-U
S3	8	57	5744	0.900	URB-XXXX-21-34L-55-3K7-3-U

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
SETBACK		
CAPPED IRON ROD FOUND		
CONTOUR		
VEGETATION		
STONEWALL		
EDGE OF GRAVEL		
EDGE OF PAVEMENT		
CURB		
GRANITE CURB		
PAINT		
SIGN		
HAT LINE 2.9'		
HYDRANT		
OVERHEAD UTILITY		
UTILITY POLE		
LIGHTING		
25' WETLAND SETBACK		
CATCH BASIN		
DRAINAGE MANHOLE		

Prepared For:

Applicant:
TOWN OF BOWDOINHAM
8 RIVER ROAD
Bowdoinham, Maine 04008
Tel. (207) 666-5531

Prepared By:

MITCHELL & ASSOCIATES
Landscape Architects
The Staples School, 70 Center Street
Portland, Maine 04101
Tel. (207) 774-4427

ACORN ENGINEERING INC.
PO BOX 3372, Portland, Maine 04104
Tel: (207) 775-2655

Site Plan Phase II
Redevelopment of Waterfront Property
8 River Road — Bowdoinham, Maine

Date: APRIL 12, 2021

Issued For: PERMIT LEVEL

Revisions: REVISION 1 05.27.21

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Title: SITE PLAN

Scale: 1"=40'

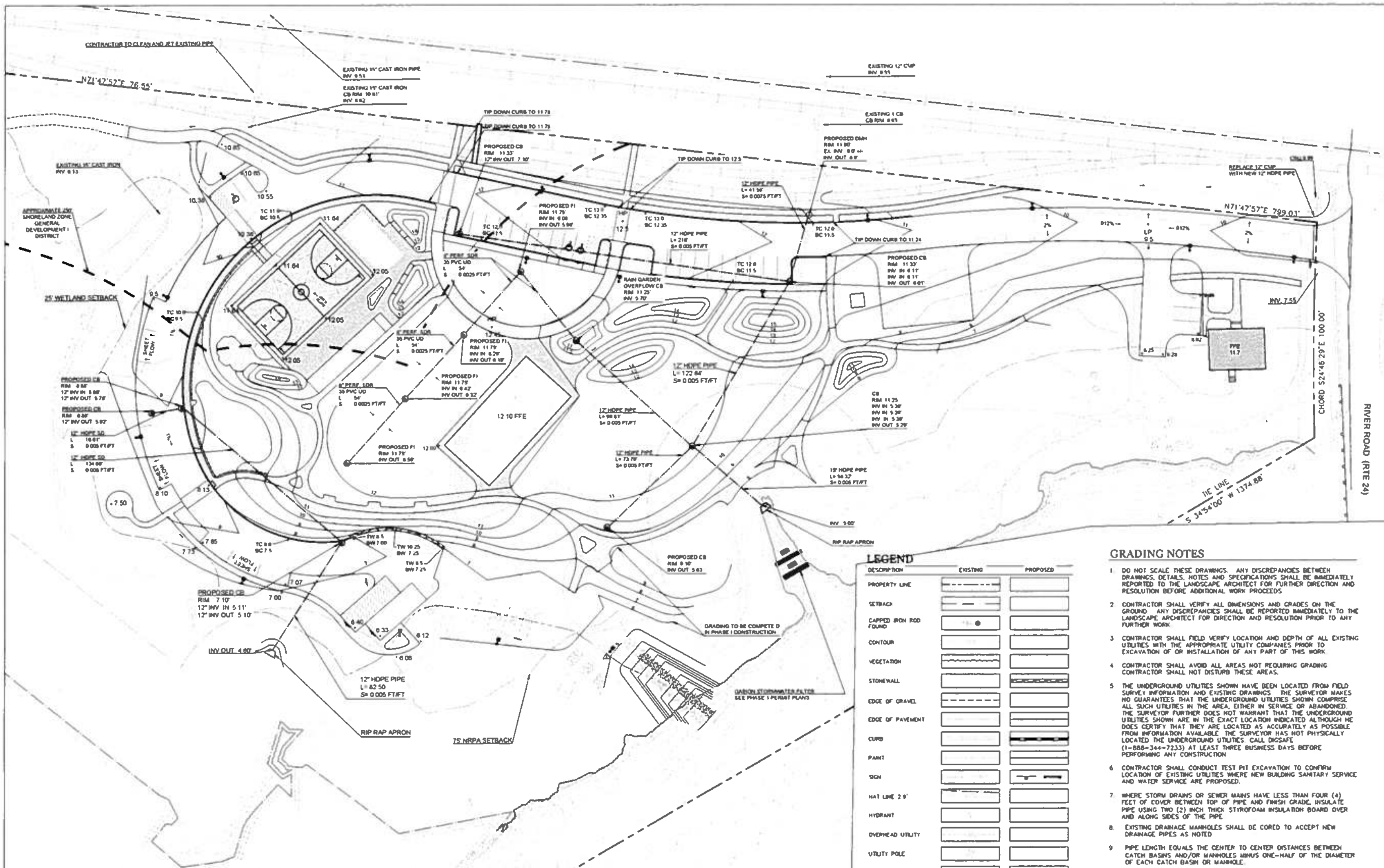
0 10 20 40 80 FT

North

Sheet No. L2

STATE OF MAINE — REGISTERED LANDSCAPE ARCHITECT — ROBERT METCALF — No. RLA 1415

STATE OF MAINE — WILLIAM H. SAVAGE — 11619 — LICENSED PROFESSIONAL ENGINEER



LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
SETBACK		
CAPPED IRON ROD FOUND		
CONTOUR		
VEGETATION		
STONEWALL		
EDGE OF GRAVEL		
EDGE OF PAVEMENT		
CURB		
PAINT		
SIGN		
HAT LINE 2.9'		
HYDRANT		
OVERHEAD UTILITY		
UTILITY POLE		
LIGHTING		
EXISTING CONTOURS		
PROPOSED CONTOURS		
STORMDRAIN PIPE		
250' SHORELAND ZONE GENERAL DEVELOPMENT DISTRICT I		
25' WETLAND SETBACK		
CATCH BASIN		
DRAINAGE MANHOLE		

GRADING NOTES

1. DO NOT SCALE THESE DRAWINGS. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, NOTES AND SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT FOR FURTHER DIRECTION AND RESOLUTION BEFORE ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT FOR DIRECTION AND RESOLUTION PRIOR TO ANY FURTHER WORK.
3. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITH THE APPROPRIATE UTILITY COMPANIES PRIOR TO EXCAVATION OF OR INSTALLATION OF ANY PART OF THIS WORK.
4. CONTRACTOR SHALL AVOID ALL AREAS NOT REQUIRING GRADING. CONTRACTOR SHALL NOT DISTURB THESE AREAS.
5. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL DIGSAFE (1-888-344-7233) AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION.
6. CONTRACTOR SHALL CONDUCT TEST PIT EXCAVATION TO CONFIRM LOCATION OF EXISTING UTILITIES WHERE NEW BUILDING SANITARY SERVICE AND WATER SERVICE ARE PROPOSED.
7. WHERE STORM DRAINS OR SEWER MAINS HAVE LESS THAN FOUR (4) FEET OF COVER BETWEEN TOP OF PIPE AND FINISH GRADE, INSULATE PIPE USING TWO (2) INCH THICK STYROFOAM INSULATION BOARD OVER AND ALONG SIDES OF THE PIPE.
8. EXISTING DRAINAGE MANHOLES SHALL BE CORED TO ACCEPT NEW DRAINAGE PIPES AS NOTED.
9. PIPE LENGTH EQUALS THE CENTER TO CENTER DISTANCES BETWEEN CATCH BASINS AND/OR MANHOLES MINUS ONE-HALF OF THE DIAMETER OF EACH CATCH BASIN OR MANHOLE.
10. ROOF DRAIN CONNECTIONS SHALL BE CONFIRMED WITH FINAL BUILDING PLANS.
11. ALL UTILITIES SHALL BE INSTALLED IN CONFORMANCE WITH INDIVIDUAL UTILITY DISTRICT REQUIREMENTS; CONTRACTOR SHALL COORDINATE INSTALLATION WITH APPROPRIATE UTILITY DISTRICT BEFORE INSTALLATION.
12. ALL WORK WITHIN THE ROAD RIGHT-OF-WAY AND ALL UTILITIES CONNECTING TO INFRASTRUCTURE WITHIN THE ROAD SHALL MEET TOWN OF BOWDOINHAM STANDARDS.
13. GRADING FOR THE A.D.A. COMPLIANT PARKING SPACES TO THE A.D.A. BUILDING ENTRANCES SHALL COMPLY WITH ACCESSIBILITY REQUIREMENTS INCLUDING MAXIMUM 2% SLOPE IN ANY DIRECTION AND SURFACE TREATMENT. ANY REPAIRS TO ACHIEVE COMPLIANCE SHALL BE COMPLETED AT NO EXTRA EXPENSE TO THE OWNER.

NOTE: This drawing is PRELIMINARY ONLY. It is NOT intended for use as a construction document.

Prepared For:
Applicant:
TOWN OF BOWDOINHAM
8 RIVER ROAD
Bowdoinham, Maine 04008
Tel. (207) 666-5531

Prepared By:
MITCHELL & ASSOCIATES
Landscape Architects
The Staples School, 70 Center Street
Portland, Maine 04101
Tel: (207) 774-4427

ACORN ENGINEERING INC.
PO BOX 3372, Portland, Maine 04104
Tel: (207) 775-2866

Site Plan Phase II

Redevelopment of Waterfront Property

8 River Road — Bowdoinham, Maine

Date: APRIL 12, 2021

Issued For: PERMIT LEVEL

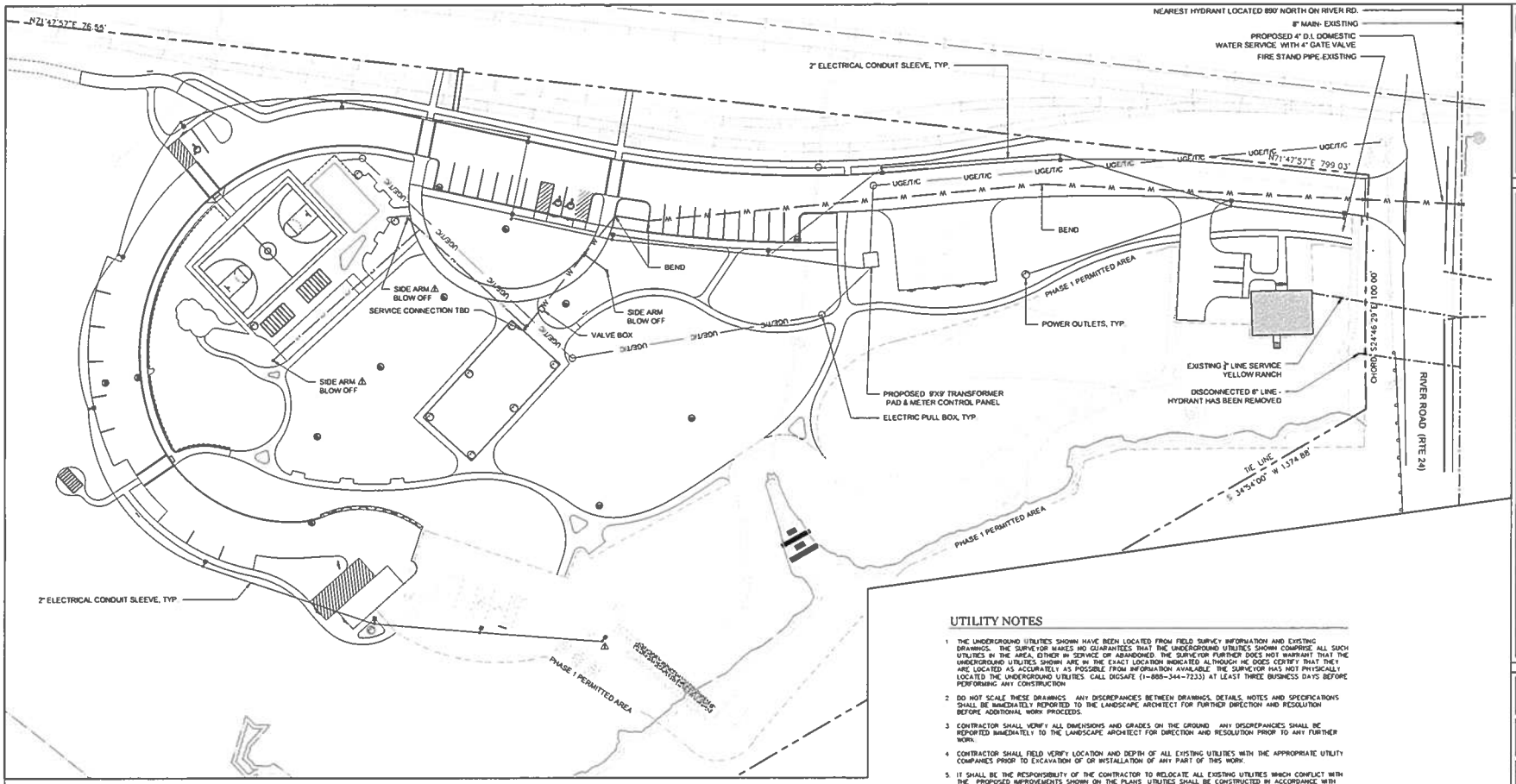
Revisions: REVISION △ 05.17.2021

Title: GRADING & DRAINAGE PLAN

Scale: 1"=30'

North:

Sheet No.: L3



UTILITY NOTES

1. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL DIGSAFE (1-888-344-7233) AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION
2. DO NOT SCALE THESE DRAWINGS. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, NOTES AND SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT FOR FURTHER DIRECTION AND RESOLUTION BEFORE ADDITIONAL WORK PROCEEDS.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT FOR DIRECTION AND RESOLUTION PRIOR TO ANY FURTHER WORK.
4. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITH THE APPROPRIATE UTILITY COMPANIES PRIOR TO EXCAVATION OF OR INSTALLATION OF ANY PART OF THIS WORK.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. UTILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE STANDARDS OF THE TOWN OF BOWDOINHAM AND AFFECTED UTILITY OWNERS. ALL UTILITIES SHALL BE INSTALLED IN CONFORMANCE WITH INDIVIDUAL UTILITY DISTRICT REQUIREMENTS. CONTRACTOR SHALL COORDINATE INSTALLATION WITH APPROPRIATE UTILITY DISTRICT BEFORE INSTALLATION
6. LOCATION OF UTILITY STRUCTURES AND INVERTS OF PIPED UTILITIES MAY BE ADJUSTED TO MEET FIELD CONDITIONS ONLY AFTER PRIOR APPROVAL OF THE OWNER, THE AFFECTED UTILITY COMPANY, AND THE TOWN OF BOWDOINHAM
7. WHERE STORM DRAINS HAVE LESS THAN FOUR (4) FEET OF COVER BETWEEN THE TOP OF PIPE AND FINISH GRADE, INSULATE PIPE USING TWO (2) INCH THICK STYROFOAM INSULATION BOARD OVER AND ALONG SIDES OF THE PIPE. ALL REQUIRED UTILITIES SERVING THE DEVELOPMENT SHALL BE COORDINATED AND CONSTRUCTED TO WITHIN 5 FEET OF THE BUILDINGS, AT A LOCATION COORDINATED WITH THE CONTRACTOR AND THE BUILDING PLANS. ALL REQUIRED CONNECTION FEES SHALL BE PAID BY CONTRACTOR
8. PIPE LENGTH EQUALS THE CENTER TO CENTER DISTANCES BETWEEN CATCH BASINS AND/OR MANHOLES MINUS ONE-HALF OF THE DIAMETER OF EACH CATCH BASIN OR MANHOLE.
9. ROOF DRAIN CONNECTIONS SHALL BE CONFIRMED WITH FINAL BUILDING PLANS
10. THRUST BLOCKS OR LOCKING RETAINER GLANDS SHALL BE PLACED ON THE WATER DISTRIBUTION LINES AT ALL BENDS, TEES, FIRE HYDRANTS, VALVES, CHANGES IN DIRECTION, ETC. THE THRUST BLOCKS OR LOCKING RETAINER GLANDS SHALL MEET THE REQUIREMENTS OF THE BOWDOINHAM WATER DISTRICT
11. FINAL UTILITY LOCATIONS TO BE FINALIZED DURING CONSTRUCTION DOCUMENTATION

LEGEND

	EXISTING	PROPOSED
CATCHBASIN		
MANHOLE		
HYDRANT		
UTILITY POLE		
CURB		
WATER MAIN		W
WATER LINE		1.5"W
WATER SHUT-OFF VALVE		WV
FROST HYDRANT		
ELECTRIC PULL BOX		
POWER OUTLET		

REGISTERED LANDSCAPE ARCHITECT — ROBERT METCALF — No.RLA 1913 — STATE OF MAINE

STATE OF MAINE — WILLIAM M. SAVAGE — 13478 — LICENSED PROFESSIONAL ENGINEER

NOTE: This drawing is PRELIMINARY ONLY. It is NOT intended for use as a construction document.

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Site Plan Phase II
Redevelopment of Waterfront Property
8 River Road — Bowdoinham, Maine

Date: APRIL 12, 2021

Issued For: PERMIT LEVEL

Revisions:

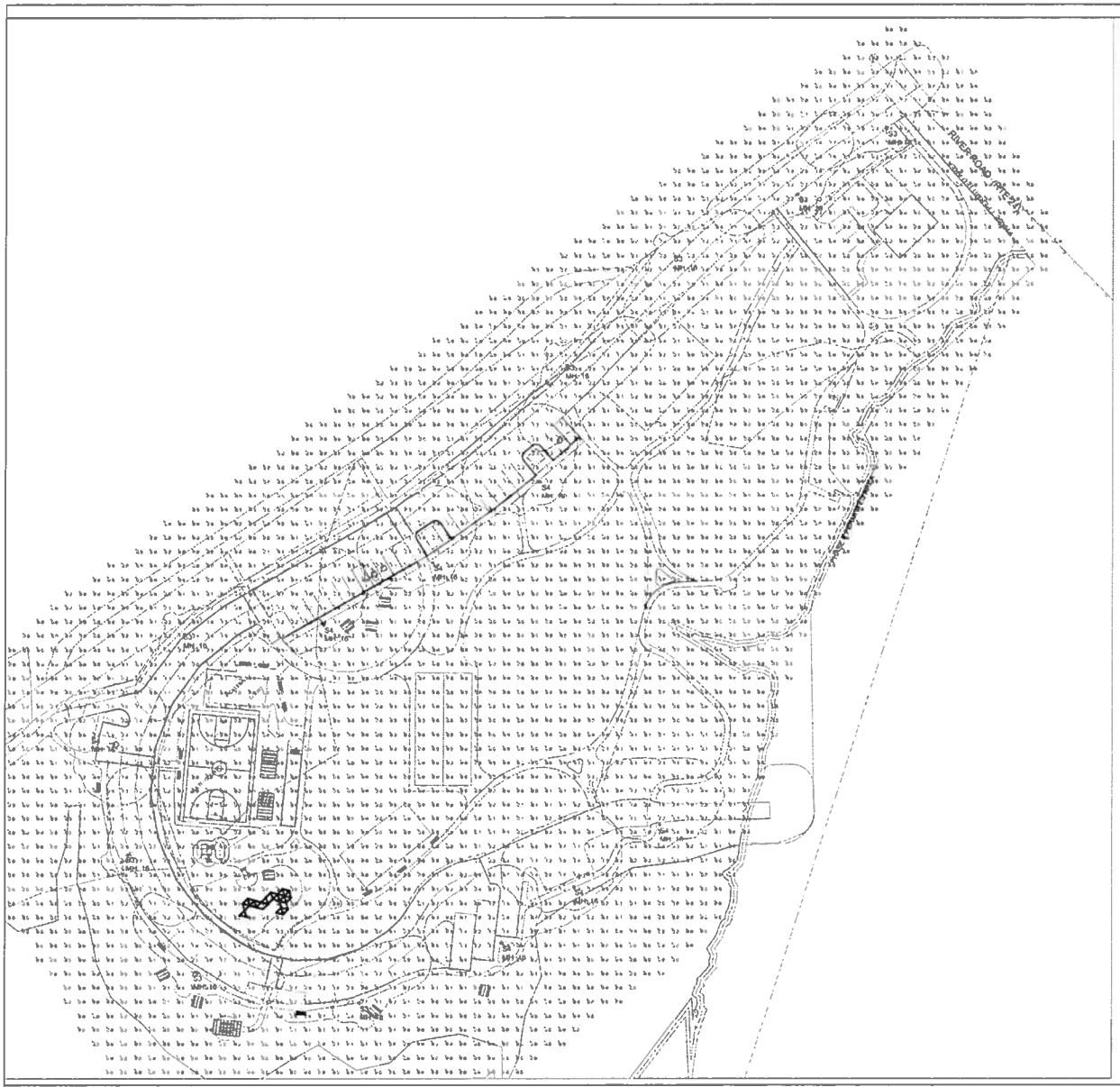
Title: UTILITIES PLAN

Scale: 1"=30'

0 15 30 60 FT

North:

Sheet No.: L4



NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2) CALCULATIONS MAY or MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
SITE	0.24	4.3	0.0	N.A.	N.A.

Luminaire Schedule (note fixture catalogue numbers are not complete)

Type	Qty	Lum. Lumens	LLF	Lum. Watts	Description
S4	7	5703	0.900	57	URB-XXXX-21-24L-55-3K7-4W-U
S3	8	5744	0.900	57	URB-XXXX-21-24L-55-3K7-3-U

NOTE: This drawing is PRELIMINARY ONLY. It is NOT intended for use as a construction document.

Prepared For:
Applicant:
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Site Plan Phase II
Redevelopment of Waterfront Property
8 River Road — Bowdoinham, Maine

Date: APRIL 12, 2021

Issued For: PERMIT LEVEL

Revisions:
⚠ REVISION 1 05.27.21

Title: PHOTOMETRIC PLAN

Scale: AS NOTED

North:

Sheet No.: L7

ACORN
ENGINEERING, INC.

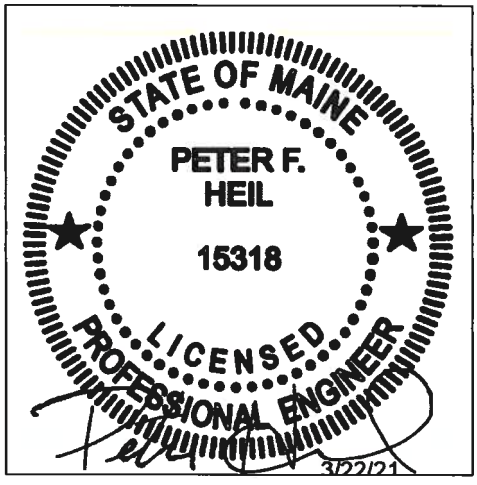
EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

Town of Bowdoinham
13 School Street
Bowdoinham, Maine 04103

Prepared By:

Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101



April 2021

INTRODUCTION

Acorn Engineering, Inc. has been retained by Mitchell & Associates to provide civil engineering support services for the proposed redevelopment located at 8 River Road, Bowdoinham, Maine (previously occupied by public works). The proposed project includes redevelopment of the parcel into a river front park, shoreland stabilization, non-motorized boat access, and site restoration.

The following Erosion and Sedimentation Control Report was developed in accordance with the Town of Bowdoinham Land Use Regulations, Article IV: Performance Standards, Section C: Erosion and Sedimentation Control Amended July 14, 2020, and the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1), Amended August 12, 2015. This narrative also meets the standards required in the Maine DEP's Erosion & Sediment Control BMP's Manual, revised in 2016.

1.0 EXISTING CONDITIONS

The proposed project site is located at 8 River Road, Bowdoinham, Maine and is adjacent to the Cathance River. A topographic survey has been prepared by Little River Land Surveying, Inc. dated June 26th, 2019

Abutting Uses:

- North N/A — Residential
- East MSRD3 — Cathance River
- South MSRD3 — Cathance River
- West MSRD3 — Undeveloped

With the site location being the Former Public Works Department, there are existing structures, remnants of former structures, former fuel tanks, and existing utilities on site. The existing grades on site are relatively flat, with slopes to the east toward the Cathance River.

1.1 Existing Soils

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Androscoggin & Sagadahoc County

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value

Soils Type	Subsurface	Substratum
BuB2	0.37	0.37
BuC2	0.37	0.37
Tn	-	-
W	-	-

The soil "K" values for the soils, listed above, show a low to moderate susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the proximity of the site to the Saco River.

1.2 Existing Erosion Problems

Acorn is unaware of any signs of erosion.

1.3 Critical Areas

Portions of the site are mapped within the AE Flood Zone per FEMA FIRM mapping, dated 7/16/2015.

1.4 Protected Natural Resource

The site is located near the adjacent to the Cathance River, which is a Protected Natural Resource. The project is not located within a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

Acorn is unaware of any construction activity in the last 5 years.

1.6 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past five years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of the site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures

The following temporary erosion and sedimentation control measures are planned for the project's construction period:

2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:

- Stone size shall be 2-3 inches or reclaimed or recycled concrete equivalent.
- The thickness of the entrance stone layer shall be no less than 6 inches.
- The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
- Geotextile fabric (woven or non-woven) shall be placed over the entire entrance area.
- The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public roadways.

2.1.2 Erosion control berm mix with hay bale reinforcement shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.

2.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

2.1.5 River Street shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.

2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.

2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.

2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached ½ the design height.

2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.

2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.

2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.

2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4" of loam, limed, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed, and tributary areas stabilized prior receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Erosion and Sedimentation Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

5.2 Mulching

All areas shall be considered to be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of October 15th and April 1st, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs./1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 15th. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following action shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a "storm event". A "storm event" shall consist 0.5 inches of rain within a 24-hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes

of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, and catch basins need to be operating effectively and free of debris.

6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information, contact:

Contact: Peter F. Heil, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #15318
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #7071
- Maine DEP – Certified Third-Party Inspector
- Maine DEP – Certification in Inspection and Maintenance of Stormwater BMPs

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.

7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter erosion control berm with hay bale reinforcement
3. Install all other erosion control devices as necessary throughout the remainder of this schedule.
4. Commence earthwork operations, associated with the roadway construction.
5. Commence installation of any utility work.
6. Continue earthwork and grading to subgrade as necessary for construction.
7. Complete installation of utilities.
8. Complete remaining earthwork operations.
9. Install sub-base and base gravels in paved areas.
10. Install paving, curbing and brickwork.
11. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
12. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete, remove all temporary erosion control measures.
13. Touch up areas without a vigorous catch of grass with loam and seed.
14. Complete site signage and striping.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan

TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.

PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.

ACORN
ENGINEERING, INC.

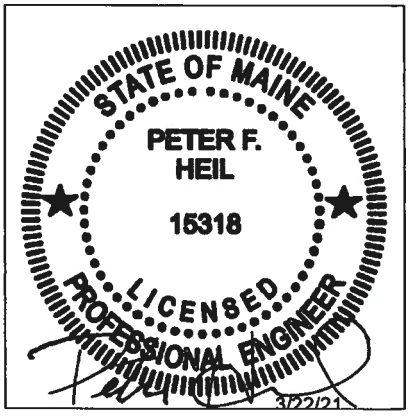
STORMWATER MANAGEMENT MEMO

Prepared For:

Town of Bowdoinham
13 School Street
Bowdoinham, Maine 04103

Prepared By:

Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101



April 2021

INTRODUCTION

Acorn Engineering, Inc. has been retained by Mitchell & Associates to provide civil engineering support services for the proposed redevelopment located at 8 River Road, Bowdoinham Maine (previously occupied by public works). The proposed project includes redevelopment of the parcel into a river front park, shoreland stabilization, non-motorized boat access, and site restoration.

EXISTING CONDITIONS

The proposed project site is located at 8 River Road Bowdoinham, Maine and Adjacent to the Cathance River. A Topographic Survey has been prepared by Little River Land Surveying, Inc. dated June 26th, 2019

With the site location being the Former Public Works Department, there are existing structures, remnants of former structures, driveways, parking areas, gravel laydown areas and existing utilities on site. The existing grades on site are relatively flat, with minor slopes to the east toward the Cathance River.

The project is located adjacent to the Cathance River and has mapped wetlands located along the shoreline and within the parcel. The project is not within an urban impaired stream watershed. The existing watershed on site is approximately 20 acres and flows into the Cathance River.

PROPOSED DEVELOPMENT

As part of the site restoration a significant amount of gravel area and former foundation remnants will be removed, and redeveloped with passive and active recreation areas, non-motorized boat access to the Cathance River, and associated parking. The proposed project anticipates 2.31 ac. of impervious area, which is a reduction of impervious area by 10,332 sf (0.28 ac.). Stormwater and Erosion Control Best Management Practices will be implemented during construction.

BASIC STANDARDS – EROSION & SEDIMENT CONTROL

The project proposes measures to meet the basic standards requirements as outlined in Chapter 500. Please refer to Section 1: Erosion & Sedimentation Control Report

GENERAL STANDARDS - WATER QUALITY

Given the site's existing developed area, the project will be required to meet the DEP Chapter 500 General Standards, specifically the redevelopment standards. It is anticipated due to the reduction of impervious coverage and redevelopment pollutant impact ranking calculations; no water quality treatment will be required as outlined in Chapter 500. Although not anticipated to be required per the DEP standards, the project is proposing to install rain gardens to provide water quality treatment for some portions of the stormwater runoff prior to discharging into the Cathance River. Please refer to the plan set for additional information.

SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Androscoggin & Sagadahoc County

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value		
Soils Type	**Subsurface**	**Substratum**
BuB2	0.37	0.37
BuC2	0.37	0.37
Tn	-	-
W	-	-

The soil "K" values for the soils, listed above, show a low to moderate susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the proximity of the site to the Saco River.

PHOSPHOROUS STANDARD

As the project is not located in a watershed of a lake most-at-risk, or a proposing development of any other lake watershed, the Phosphorous Standard does not apply to this project.

URBAN IMPAIRED STREAM STANDARD

As the project is not located in an urban impaired stream watershed, the Urban Impaired Stream Standard does not apply to this project.

FLOODING STANDARD

The parcel will be redeveloped with the overall intensity of the land use decreasing, amount of impervious area decreasing and large expanses of lawn areas breaking up the overall impervious area. As such the proposed stormwater peak flow rates will remain at or below the predevelopment levels.

Furthermore, the project does not propose three acres or more of impervious coverage, or 20 acre or more of developed area, as such the MaineDEP Flooding Standard does not apply to this project. Lastly the project stormwater runoff discharges directly to a major river segment

(Cathance River) and would be eligible for a waiver from the Flooding Standard should a waiver had been required.

CONCLUSION

The project as designed shall not create erosion, drainage, or runoff problems for the development, the Town, or abutting properties. Please let us know if you have any questions or comments.

ATTACHMENTS

Attachment 1: Soils Map

Sincerely,

William H. Savage, P.E.
Principal
Acorn Engineering, Inc.

Peter Heil, P.E.
Project Manager
Acorn Engineering, Inc.

BEACON
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DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

URBAN SERIES

URBAN LUMINAIRE

FEATURES

- Decorative transitional style lighting fixture series is suitable for walkway lighting and wall mounting
- Two unique shade and style options
- LED turtle-friendly option available
- Integral Surge and Thermal Protection

Shown with arm

Shown with SiteSync™

C US

*3000K and warmer CCTs only

CONTROL TECHNOLOGY

SiteSync LIGHTING CONTROL energent

RELATED PRODUCTS

Matrix MAA Brighton La Jolla

SPECIFICATIONS

CONSTRUCTION

- The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray
- The lower shade shall be made from a one-piece aluminum spinning
- The housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts

ELECTRICAL

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input
- Power factor is ≥0.90 at full load
- Dimming drivers are standard with connections for external dimming equipment available upon request
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher
- Plug disconnects are listed by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only
- Fixture electrical compartment shall contain all LED driver components
- Button photocell available
- Ambient operating temperature -40°C to 40°C

ELECTRICAL (CONTINUED)

- Surge protection - 20KA
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.)

CONTROLS

- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night visit: www.beaconproducts.com/products/energeni
- Urban can be specified with SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/products/sitesync/

FINISH

- IFS polyester powder-coat electrostatically applied and thermocured
- IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish

FINISH (CONTINUED)

- The finish meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds

CERTIFICATIONS

- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- • NRTL Certified, UL8750, UL 1598 and CSA22.2#250. 13-14 for wet locations
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at http://www.beaconproducts.com/products/urban

WARRANTY

- 5 year warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	3,300–11,600
Wattage Range	55–136
Efficacy Range (LPW)	61–87

HUBBELL Lighting

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URBAN SERIES

URBAN LUMINAIRE

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

ORDERING GUIDE

Example: URB–CAP-21–36L-80–5K7–UNV–4–SWP–NRNW–BLT

CATALOG # _____

Model		Lens Option		Engine–Watts		CCT/CRI[7]		Voltage		Optics[2]		Electrical Options	
URB	Urban	CAP-21	21" Capitol	24L-27	27W, LED array	3K7	3000K, 70 CRI	UNV	120-277V	FR	Type I	PCU	Button Photocell, Universal
		MRDS-21	21" Miramar deep shade	24L-55	55W, LED array	4K7	4000K, 70 CRI	347	347V	2	Type II		
		MAR-21	21" Maritas	36L-80	85W, LED array	5K7	5000K, 70 CRI	480	480V	3	Type III		
		CAP-26	26" Capitol	48L-110	110W, LED array[1]					4	Type IV		
		MRSS-26	26" Miramar shallow shade	60L-136	136W, LED array[1]					4W	Type IV wide		
		MRDS-26	26" Miramar deep shade							5R	Type V rectangular		
		MAR-26	26" Maritas							5QM	Type V square medium		
										5W	Type V round wide		
										BC	Backshield (available for FR, 2, 3, 4, 4W Opctics)		

Control Options		Mounting Style		Style		Sensor Option		Finish	
GENI-XX	Energeni[5]	PM	Pendant mount	NRNW	No rings	MOB	Motion sensor 33% or 50% dimming[4,6,8]	BLT	Black Matte Textured
SWP	SiteSync Wireless Pre-Commission[3,4]	SM	Side mount	3RNW	Three rings			BLS	Black Gloss Smooth
		YM	Yoke mount					DBT	Dark Bronze Matte Textured
								DBS	Dark Bronze Gloss Smooth
								GTT	Graphite Matte Textured
								LGS	Light Grey Gloss Smooth
								PSS	Platinum Silver Smooth
								WHT	White Matte Textured
								WHS	White Gloss Smooth
								VGT	Verde Green Textured
								Color Option	
								CC	Custom Color

Accessories

- ☐ **SWUSB** SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node*
- ☐ **SWTAB** Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node*
- ☐ **SWBRG** SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested+

Notes:

* When ordering SiteSync at least one of these two interface options must be ordered per project

\+ If needed, an additional Bridge Node can be ordered

Notes:

1. 26° only
2. To rotate optics left or right 90 degrees, specify L or R after the optical distribution example: 4L
3. Must specify group and zone information at time of order. For further details, see www.hubbell-automation.com/products/sitesync/
4. Not available with other control or sensor options
5. When ordering Energeni, specify the routine setting code (Example GENI-04). See Energeni brochure and Energeni instructions for setting table and options. Not available with sensor options
6. Specify time delay; dimming level and mounting height
7. This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at http://cdn.beaconproducts.com/content/products/specs/specs_files/Urban_LED_spec_sheet_turtle.pdf
8. Only available on 24L and 36L configurations

CONTROLS

SiteSync — Precommissioned Ordering Information:

When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit the SiteSync family page on our website or contact Hubbell Lighting tech support at 864-678-1000.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: URBCAP-26/60L-136/3K7/UNV/5QM/SWP/NRNW/BLT SiteSync only

URBCAP-26/60L-136/3K7/UNV/5QM/SWPM-20F/NRNW/BLT SiteSync with Motion Control

SiteSync

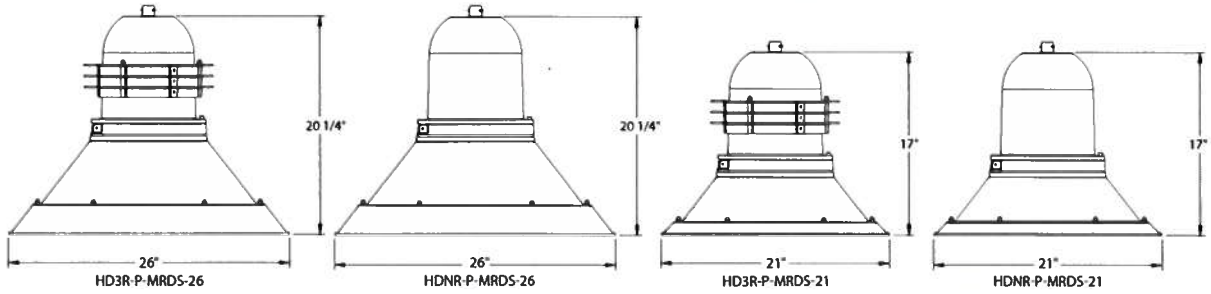
SiteSync

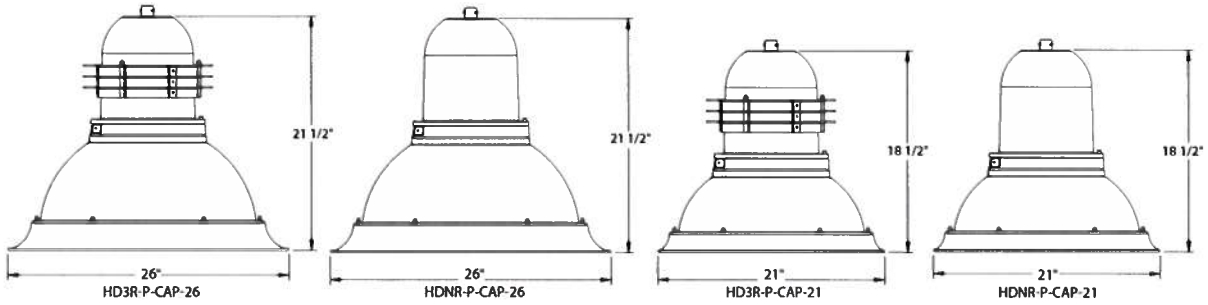
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.678.1000 / Website www.beaconproducts.com

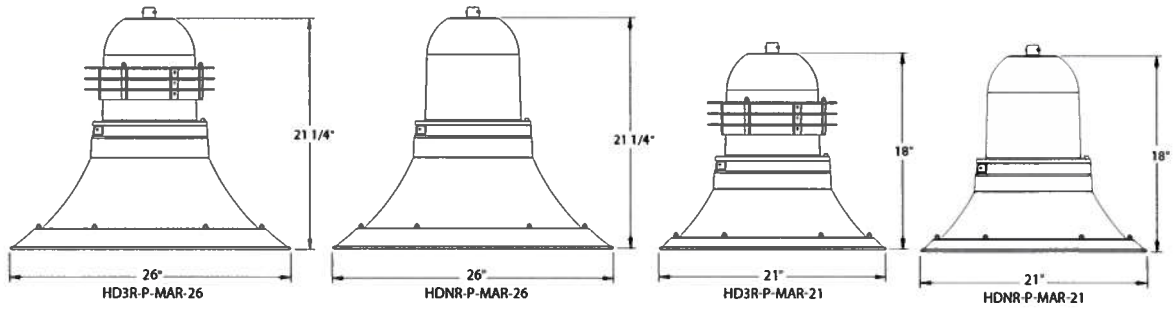
HUBBELL Lighting

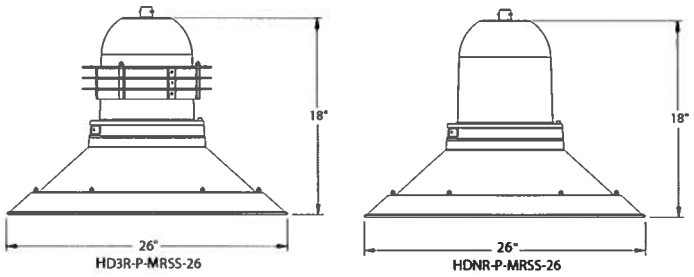
URBAN SERIES

URBAN LUMINAIRE









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URBAN SERIES

URBAN LUMINAIRE

DELIVERED LUMENS

# of LEDs	DRIVE CURRENT (mA)	SYSTEM WATTS	DISTRIBUTION TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
				LUMENS	LPW	B	U	G	LUMENS	LPW	B	U	G	LUMENS	LPW	B	U	G
24	350mA	27W	FR	3871	138	1	0	0	3990	143	1	0	0	3667	131	0	0	0
			2	3750	134	2	0	0	3838	137	1	0	1	3528	126	1	0	1
			3	3638	130	1	0	1	3750	134	1	0	1	3446	123	1	0	1
			4	3680	131	0	0	1	3794	135	0	0	1	3486	129	0	0	1
			4W	3612	129	1	0	1	3723	133	1	0	1	3422	122	1	0	1
			5QM	3750	134	2	0	0	3866	138	2	0	0	3553	127	2	0	0
			5R	3763	134	2	0	2	3879	139	2	0	2	3565	127	2	0	2
			5W	3556	127	2	0	1	3666	131	3	0	1	3369	120	2	0	1
24	700mA	55W	FR	6451	113	1	0	1	6650	117	1	0	1	6112	107	1	0	1
			2	6251	110	3	0	1	6397	112	1	0	2	5879	103	1	0	1
			3	6063	106	1	0	2	6250	110	1	0	2	5744	101	1	0	2
			4	6133	108	1	0	2	6323	111	1	0	2	5811	102	1	0	2
			4W	6020	106	1	0	2	6206	109	1	0	2	5703	100	1	0	2
			5QM	6251	110	3	0	1	6444	113	3	0	1	5922	104	2	0	1
			5R	6272	110	3	0	3	6466	113	3	0	3	5942	104	3	0	3
			5W	6926	104	3	0	1	6110	107	3	0	1	5615	99	3	0	1
36	700mA	85W	FR	9672	113	1	0	1	9970	117	1	0	1	9173	107	1	0	1
			2	9303	109	1	0	2	9591	112	1	0	2	8823	103	1	0	2
			3	9089	107	1	0	2	9370	110	1	0	2	8621	101	1	0	2
			4	9195	108	1	0	2	9479	111	1	0	2	8721	102	1	0	2
			4W	9025	106	1	0	2	9304	109	1	0	2	8559	100	1	0	2
			5QM	9371	110	3	0	1	9661	113	3	0	1	8888	104	3	0	1
			5R	9403	110	3	0	3	9694	114	3	0	3	8918	105	3	0	3
			5W	8885	105	3	0	2	9160	108	4	0	2	8427	100	3	0	2
48*	700mA	110W*	FR	12895	116	1	0	1	13294	120	1	0	1	12230	110	1	0	1
			2	12404	112	2	0	2	12788	115	2	0	2	11765	106	2	0	2
			3	12119	109	1	0	3	12494	113	1	0	3	11494	104	1	0	2
			4	12260	110	1	0	3	12639	114	1	0	3	11628	105	1	0	3
			4W	12033	108	2	0	3	12405	112	2	0	3	11413	103	2	0	2
			5QM	12494	113	3	0	2	12881	116	3	0	2	11850	107	3	0	2
			5R	12537	113	3	0	3	12925	116	4	0	4	11891	107	3	0	3
			5W	11847	107	4	0	2	12213	110	4	0	2	11236	101	4	0	2
60*	700mA	136W*	FR	16119	117	1	0	2	16618	121	2	0	2	15288	112	1	0	2
			2	15505	113	2	0	2	15985	117	2	0	2	14706	107	2	0	2
			3	15149	111	2	0	3	15617	114	2	0	3	14368	105	2	0	3
			4	15324	112	1	0	3	15798	115	1	0	3	14534	106	1	0	3
			4W	15041	110	2	0	3	15506	113	2	0	3	14266	104	2	0	3
			5QM	15618	114	4	0	2	16101	118	4	0	2	14813	108	3	0	2
			5R	15671	114	4	0	4	16156	118	4	0	4	14864	108	4	0	4
			5W	14809	108	4	0	2	15267	111	4	0	2	14046	103	4	0	2

Notes:

1 Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

* Available in the 26" Urban only

HUBBELL Lighting

URBAN SERIES

URBAN LUMINAIRE

ELECTRICAL DATA

# OF LEDS	Number of Drivers	Drive Current (mA)	Input Voltage (V)	System Power (Watts)	Oper. Current (Amps)
24	1	350mA	120	27	0.27
			277		0.12
			347		0.09
			480		0.07
24	2	700 mA	120	55	0.55
			277		0.24
			347		0.19
			480		0.14
36	1	700 mA	120	80	0.80
			277		0.35
			347		0.28
			480		0.20
48	1	700 mA	120	110	1.1
			277		0.43
			347		0.38
			480		0.28
60	1	700 mA	120	136	1.4
			277		0.59
			347		0.47
			480		0.34

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

Ambient Temperature		Lumen Multiplier
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	0.98
40° C	104° F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

PROJECTED LUMEN MAINTENANCE

Ambient Temperature	OPERATING HOURS					
	0	25,000	50,000	*TM-21-11 L90 60,000	100,000	L70 (Hours)
25°C / 77°F	1.00	0.97	0.95	0.95	0.86	>470,000

Notes:

* Projected per IESNA TM-21-11. Data references the extrapolated performance projections for thebase model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

EPA

EPA: X.XX sqft		PM	SM	YM
CAP	21	1.04	1.14	1.39
	26	1.39	1.49	1.79
MAR	21	1.00	1.10	1.35
	26	1.25	1.35	1.65
MRDS	21	1.00	1.10	1.35
	26	1.25	1.35	1.65
MRSS	26	1.17	1.27	1.57

FOR ALL CONFIGURATIONS LINE DRAWINGS PLEASE SEE:

URB-HD-P.PDF
URB-HD-S.PDF
URB-HD-YM.PDF

USE OF TRADEMARKS AND TRADE NAMES

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Wetland and Watercourse Delineation and Ecological Assessment Report

Public Works Site Redevelopment
Bowdoinham, Maine

June 27, 2019

Prepared for:

Baker Design Consultants
7 Spruce Road
Freeport, Maine 04032

Prepared by:

Stantec Consulting Services Inc.
30 Park Drive
Topsham, Maine 04086

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LIST OF APPENDICES

1.0 INTRODUCTION

Baker Design Consultants (BDC) contracted Stantec Consulting Services Inc. (Stantec) to conduct wetland and watercourse delineations and an ecological and shoreline assessment of the Bowdoinham Public Works property, an approximately 20-acre site in Bowdoinham, Maine. The survey area (Site) is located west of River Road, between the Maine Central Railroad and the Cathance River (Appendix A, Figure 1). The Site consists of freshwater wetlands, forested and open-field uplands, and developed area associated with the public works facility. The following report summarizes the June 14, 2019 field surveys conducted by Stantec.

2.0 PROJECT AREA DESCRIPTION

The Site is located west of River Road between the Maine Central Railroad (west) and the Cathance River (east) in Bowdoinham, broadly within the Midcoast Level IV Ecoregion[1]. This region is characterized by an indented shoreline type of coast, or "drowned coast," with long, narrow, rocky peninsulas and intervening deep, narrow estuaries. Eroding bluffs of glaciomarine clay provide sediments in the sheltered embayments to form extensive mud flats and salt marshes. The Site and the Cathance River are connected to Merrymeeting Bay to the south, the largest freshwater tidal bay north of the Chesapeake in the eastern United States. Development within the site consists of several buildings used by the Bowdoinham Public Works, a large gravel lot with several remnant concrete slabs, and a residence in the northeast corner of the Site adjacent to River Road.

The U.S. Department of Agriculture Soil Survey of Sagadahoc County, Maine[2] has mapped three primary soil types within the site: Buxton silt loam (marine terraces/backslopes, moderately well drained), Lamoine-Buxton complex (marine terraces/backslopes, somewhat poorly drained), and Pemaquid-Todds Point-Damariscotta soils (tidal marshes, very poorly drained).

3.0 METHODS

3.1 WETLAND AND WATERCOURSE DELINEATIONS

Stantec conducted wetland and watercourse delineations within the Site on June 14, 2019. On-site wetlands and watercourses were identified in accordance with the definitions detailed in Maine's Natural Resource Protection Act (NRPA), 38 M.R.S.A. §§ 480-B. Wetland boundaries under federal and state jurisdiction were determined using the technical criteria described in the U.S. Army Corps of Engineers

[1] Bailey, R.G., P.E. Avers,T. King, T., and W.H. McNab, eds. 1994. Ecoregions and subregions of the United States (map) (supplementary table of map unit descriptions compiled and edited by McNab, W.H., and R.G. Bailey): Washington, D.C., U.S. Department of Agriculture–Forest Service, scale 1:7,500,000.
[2] Web Soil Survey, Natural Resources Conservation Service, United States Department of Agriculture. Available at: http://websoilsurvey.nrcs.usda.gov/ [accessed April 2019].

(Corps) Wetlands Delineation Manual (Corps, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regional Supplement, Version 2.0 (Corps, 2012). Data were collected on dominant vegetation, evidence of wetland hydrology, and hydric soil criteria. Wetland communities were classified according to the *Classification of wetlands and deepwater habitats of the United States* (FGDC, 2013). Representative photographs were taken as appropriate.

Concurrent with the wetland delineation, streams and other potential Waters of the United States (WoTUS) were identified using the regulatory criteria established by the Maine Department of Environmental Protection (MDEP, 2018), the Corps (2005), and the Federal Clean Water Act (USEPA, 2015). Data were recorded on apparent flow regime, substrate, bankfull widths, ordinary high-water mark widths, water depths, and presence of aquatic organisms and vegetation. Representative photographs were taken as appropriate.

Wetland boundaries and streams were located using a Global Positioning System (GPS) receiver with a stated accuracy of within one meter but were not marked in the field with any flagging.

MDEP jurisdictional streams and Wetlands of Special Significance (WoSS) determinations made during the wetland and waterbody resource delineations were based on the criteria in the NRPA and limited to observable conditions at the time of the survey.

Full identification of WoSS involves contacting natural resource agencies such as the Maine Natural Areas Program (MNAP), the Maine Department of Inland Fisheries and Wildlife, and the U.S. Fish and Wildlife Service (USFWS) to determine if there are any documented occurrences of rare, threatened, or endangered species and communities within or in the vicinity of the project area. Stantec initiated contact with these agencies. Results received to date are included in Appendix C.

3.2 POTENTIAL VERNAL POOL IDENTIFICATION

Formal vernal pool surveys must be completed during the spring (e.g., April and early May) when obligate vernal pool indicator species, such as wood frogs (*Lithobates sylvaticus*) or spotted salamanders (*Ambystoma maculatum*) may be present and breeding at the vernal pools. A vernal pool is a temporary to semi-permanent body of water occurring in a shallow depression that typically fills with water during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish.

Because the wetland delineation was conducted outside of the appropriate spring survey period to identify vernal pools, Stantec surveyed for and identified potential vernal pools (PVPs) as they were encountered during the wetland delineation. Evaluation of site features as PVPs was conducted according to the Maine Association of Wetland Scientists (MAWS) Vernal Pool Survey Protocol (MAWS, 2014). Stantec identified PVPs regulated by MDEP and the Corps based on definitions provided in Chapter 335, Significant Wildlife Habitat, of the Maine NRPA and the Corps' Maine General Permit, respectively. PVPs were identified based on physical and biological characteristics that are typical of vernal pools, including evidence of standing water, topographic position in the landscape, presence (or absence) of aquatic organisms, and vegetation type.

3.3 ECOLOGICAL AND SHORELINE ASSESSMENT

During the wetland delineation, Stantec performed a general assessment of habitats and unique natural features on the Site. This assessment did not include a specific survey for any rare or exemplary natural communities or habitats, or any rare, threatened, and endangered (RTE) species. Observations were limited to those that occurred while traversing the site during the wetland delineations.

Stantec also performed a general assessment of the condition of the Cathance River shoreline along the eastern boundary of the site. The purpose of the assessment was to identify segments of the riverbank that could be locations for shoreline restoration, for BDC to consider when developing a master plan of the site. Stantec recorded general observations of the current state of the riverbank including vegetative cover, signs of erosion, and obvious areas of past disturbance or alteration. Stantec identified shoreline areas with natural/native vegetative cover versus areas with invasive plant species, and documented areas of natural riverbank versus areas with wood and/or rock material that is not endemic to this section of the Cathance River riparian corridor. The assessment was performed at high tide and observations were limited to shoreline areas that were adjacent to uplands or not inundated portions of wetlands in the northeast and southeast portions of the site.

4.0 RESULTS

4.1 WETLAND AND WATERCOURSE DELINEATIONS

Wetland and watercourse delineations were conducted at the Site on June 14, 2019. As a result of the delineations, portions of seven wetlands were identified within the Site. (Appendix A, Figure 1). Three WoSS were identified within the Site, including one wetland that contains a potentially significant vernal pool (PSVP) and two wetlands that are connected to the Cathance River. Other than the Cathance River, no other streams were identified within the project area. Table 1 summarizes the delineated wetland characteristics. Representative photographs of the delineated resources are included in Appendix B (Photos 1–10). Completed Corps Wetland Determination Data Forms are included in Appendix D for representative wetlands.

Results

Table 1. Summary of Delineated Wetlands

Wetland Identifier	Wetland Classification[1]	Dominant and Characteristic Vegetation	Hydric Soil Criteria	Evidence of Hydrology	Wetland of Special Significance	Additional Comments
W-01TTA	PEM	Trees: none Saplings / shrubs: none Herbs: bluejoint (*Calamagrostis canadensis*), sensitive fern (*Onoclea sensibilis*), king-of-the-meadow (*Thalictrum pubescens*), sweet-scented joe-pye-weed (*Eutrochium purpureum*), woodland horsetail (*Equisetum sylvaticum*)	Histic epipedon	Soil saturation	Yes – within 250-feet of Cathance River, within 100-year floodplain	Occasionally mowed.
W-01TTB	PEM/PSS	Trees: black willow (*Salix nigra*), red maple (*Acer rubrum*) Saplings / Shrubs: black willow, Morrow's honeysuckle (*Lonicera morrowii*), gray willow (*Salix bebbiana*), rambler rose (*Rosa multiflora*), silky dogwood (*Cornus amomum*) Herbs: broad-leaf cat-tail (*Typha latifolia*), sensitive fern, spotted touch-me-not (*Impatiens capensis*), nodding sedge (*Carex gynandra*), cottongrass bulrush (*Scirpus cyperinus*), bluejoint, cinnamon fern (*Osmundastrum cinnamomeum*), interrupted fern (*Osmunda claytoniana*), eastern poison ivy (*Toxicodendron radicans*)	Histic epipedon, Histosol	Surface water, High water table, Surface Water	Yes – within 250-feet of Cathance River, greater than 20,000 square feet of emergent marsh wetland, Contains S2 natural community, within 100-year floodplain, Tidal Wetland	Portions of the wetland are Freshwater Tidal Marsh along the Cathance River.
W-01TTC	PEM	Trees: none Saplings / Shrubs: none Herbs: sensitive fern, broad-leaf meadowsweet (*Spiraea latifolia*), bluejoint, common timothy (*Phleum pratense*)	Depleted matrix	Soil saturation, High water table, Surface water	No	
W-01TTD	PFO/PEM	Trees: red maple, green ash (*Fraxinus pennsylvanica*) Saplings / Shrubs: American witch-hazel (*Hamamelis viginiana*), southern arrow-wood (*Viburnum dentatum*) Herbs: sensitive fern, spotted touch-me-not, woodland horsetail, cinnamon fern	Depleted matrix	Soil saturation, Water stained leaves, Drainage patterns	No	
W-01TTE	PEM	Trees: none Saplings / Shrubs: speckled alder (*Alnus incana*), broad-leaf meadowsweet, gray willow Herbs: cottongrass bulrush, sensitive fern, bluejoint, lamp rush (*Juncus effusus*), broad-leaf cat-tail, king-of-the-meadow	Depleted matrix	Soil saturation, Surface water	Yes – Contains potential significant wildlife habitat PSVP-01TT, within 100-year floodplain	Significant vernal pool status based on observable conditions at the time of the delineation, subject to formal vernal survey during appropriate spring amphibian breeding season.
W-01TTF	PSS	Trees: none Saplings / Shrubs: broad-leaf meadowsweet, Morrow's honeysuckle, silky dogwood, rambler rose, pussy willow (*Salix discolor*) Herbs: sensitive fern, black-girdle bulrush (*Scirpus atrocinctus*), spotted touch-me-not	Depleted matrix	Soil saturation, Surface water, Drainage patterns, Water stained leaves	No	
W-01TTG	PSS	Trees: none Saplings / Shrubs: speckled alder, gray birch (*Betula populifolia*), broad-leaf meadowsweet, rambler rose Herbs: bluejoint, sensitive fern, woodland horsetail	Depleted matrix	Soil saturation, Surface water, Drainage patterns, Water stained leaves	No	

[1] Wetland classification follows FGDC (2013):

PFO = Palustrine Forested

PEM = Palustrine Emergent

PSS = Palustrine Scrub-shrub

4.2 POTENTIAL VERNAL POOL IDENTIFICATION

Stantec identified one PSVP within the Site during the wetland delineation (Appendix B, Photos 11–12). PSVP-01TT is a natural-modified vernal pool feature within wetland W-01TTE. The pool is an approximately 30-foot by 30-foot natural depression within the wetland that may be slightly impounded by the trail adjacent to the east side of the wetland. Surface water, approximately 8–12 inches deep was observed at the time of the delineation. Wood frog tadpoles were observed swimming throughout the pool. Based on this information, the PSVP-01TT could be regulated as an SVP under the NRPA. A formal vernal pool survey conducted in mid-April to early-May during the appropriate amphibian breeding season would be necessary to determine whether or not the pool is an SVP.

4.3 ECOLOGICAL AND SHORELINE ASSESSMENT RESULTS

Stantec identified one unique natural feature within the Site, a portion of wetland W-01TTB is also a Freshwater Tidal Marsh which is considered a rare wetland type in Maine according to the MNAP. Close observation of this portion of wetland W-01TTB was limited during the wetland delineation due to the high tide. MNAP's response to Stantec's request for information on the Site also confirmed the presence of the Freshwater Tidal Marsh, which has a state rarity ranking of S2. The USFWS Information, Planning, and Consultation (IPaC) tool identified two other RTE) species that may be present within the Site, the Northern Long-eared Bat (*Myotis septentrionalis*) and Atlantic Salmon (*Salmo salar*). The site is also located within Atlantic Salmon critical habitat. No other RTE species or habitats were observed during the wetland delineation but several state-listed rare plant species commonly associated with Freshwater Tidal Marshes may be present. Targeted field surveys conducted in mid to late summer would be necessary to confirm their occurrence.

Stantec also performed a general assessment of the Cathance River shoreline on the eastern boundary of the site (Appendix B, Photos 13–20). Where accessible during the high tide, Stantec made observations along the top of bank of the Cathance River to document the presence or absence of erosion, invasive species, and areas of past disturbances or shoreline alteration. Based on the observations made at the time of the visit to the Site, the shoreline in the southern half of the Site is relatively undisturbed and in its natural state. Starting near the northern boundary of wetland W-01TTB and extending to the southern delineation limit, the riverbank is generally stable and dominated by native emergent and shrub vegetation. A few scattered black willow trees are growing along the bank. Larger white pine (*Pinus strobus*) and eastern hemlock (*Tsuga canadensis*) trees are located within the upland at the southeastern corner of the Site. The shoreline in the northern half of the site shows evidence of historic disturbance and alteration but has naturalized and is currently stable. Rip-rap and larger rocks are present in the northeast corner of the Site along the shoreline immediately adjacent to River Road where a colony of Japanese knotweed (*Reynoutria japonica*) is present. Continuing south along the shoreline, exposed ends of timber cribbing were observed protruding from the bank, in and adjacent to wetland W-01TTB. Just north of the largest public works building, a trench dug into the bank extends northwest towards the center of the public works lot for approximately 75-feet. An 8- to 10-inch metal pipe outlet is located at the top of the trench to convey water to the river. The inlet location of the pipe and origin of the water are unknown. This segment of shoreline described above, as shown in yellow on Figure 1, could provide potential locations for shoreline restoration techniques to restore the riverbank to a more natural state, similar to the undisturbed portions in the southern half of the Site.

5.0 REGULATORY DISCUSSION

5.1 WETLANDS AND WATERCOURSES

The Corps, MDEP, and Town of Bowdoinham regulate the wetlands and waterbodies (e.g., streams) identified within the Project area. Under the provisions of Section 404 of the Clean Water Act, the Corps regulates dredging or filling within WoTUS, which include navigable waters and all their tributaries, adjacent wetlands, and other waters or wetlands where degradation or destruction could affect interstate or foreign commerce. The Corps has issued a General Permit (GP) for the State of Maine that merges the federal and state permit review process for many applications.

In Maine, wetlands and waterbodies, as well as other protected natural resources, are regulated under 38 M.R.S.A. §§ 480-A – 480-JJ, the NRPA. Activities that do not impact a wetland or that impact less than 4,300 square feet of wetland are usually exempt from NRPA Tier permitting requirements. This exemption does not apply if the impact is:

1. in, on, or over a coastal wetland, great pond, river, stream, or brook;
2. within 25 feet of those resources identified above, or is more than 25 feet and no erosion control is used;
3. in a shoreland zone or a wetland protected by the shoreland zone;
4. part of a wetland with more than 20,000 square feet of open water or emergent vegetation, except artificial impoundments;
5. in a peatland;
6. part of a larger project; or
7. in Significant Wildlife Habitat.

Typically, projects with cumulative impacts to freshwater wetlands between 4,300 but less 15,000 square feet are eligible for review under the Tier 1 process. The Tier 2 review process applies to alterations that affect between 15,000 and 43,560 square feet (one acre) of freshwater wetlands. Cumulative freshwater wetland impacts that exceed one acre typically require a Tier 3 review. Impacts to WoSS, rivers, streams and brooks, great ponds, and Significant Wildlife Habitat typically require an Individual Permit.

Based on Stantec's 2019 delineation, portions of 3 (W-01TTA, W-01TTB, W-01TTE) of the seven wetlands within the Project area meet the characteristics to be considered WoSS. These include portions of wetlands within 250 feet of a coastal wetland (i.e., Cathance River), wetlands within the 100-year floodplain as mapped by the Federal Emergency Management Agency, and wetlands containing potential Significant Wildlife Habitat including PSVPs. Wetland W-01TTB would also be considered a WoSS because it contains greater than 20,000 square feet of emergent vegetation and contains an imperiled (S2) natural community, a freshwater tidal marsh, as defined by MNAP.

The Town of Bowdoinham regulates activities with the Shoreland Zone, which is defined as:

1. All areas within 250 feet, horizontal distance, of the:
    1. normal high water line of any river
    2. upland edge of a coastal wetland, including all areas affected by tidal action
    3. upland edge of freshwater wetlands, which are
        1. Of ten or more contiguous acres; or of less than 10 contiguous acres and adjacent to a surface water body, excluding any river, stream or brook, such that in a natural state, the combined surface area is in excess of 10 acres; and
        2. Inundated or saturated by surface or ground water at a frequency and for a duration sufficient to support, and which under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soils.
        3. Freshwater wetlands may contain small stream channels or inclusions of land that do not conform to the criteria of this definition.
2. All land areas within 75 feet, horizontal distance, of the normal high-water line of tributary streams.
3. The Shoreland Zone includes any structure built on, over or abutting a dock, wharf or pier, or other structure extending or located below the normal high-water line of a water body or within a freshwater or coastal wetland.

Because portions of the Site are located within the 100-year floodplain, a Flood Plain Hazard Development permit may also be required by the Town of Bowdoinham. Stantec recommends consulting with the town's code enforcement officer regarding the local ordinances and permits that may be required for development at the Site.

5.2 VERNAL POOLS

Maine NRPA Chapter 335, Significant Wildlife Habitat, regulates SVPs as Significant Wildlife Habitat. Chapter 335 details specific definitions and standards regarding characterization and protection of SVPs in Maine.

Certain development projects in Maine may also be regulated under Chapter 375, Site Location of Development (Site Law). Under Site Law, MDEP may regulate vernal pools that are ecologically significant on a landscape level but do not meet the definition of an SVP. Under some circumstances, MDEP will review and possibly limit development within or beyond 250 feet of these high-functioning vernal pools.

The Corps may regulate impacts to these vernal pools if the project triggers Corps jurisdiction by filling or excavating wetlands or other WoTUS (e.g., streams). The Corps GP states that a Vernal Pool Management Area (VPMA) applies to all vernal pools identified within the Project area. The VPMA includes the vernal pool depression, the Vernal Pool Envelope (within 100 feet of the edge of the vernal pool depression), and the Critical Terrestrial Habitat (area within 100–750 feet of the edge of the vernal pool depression). Activities within 750 feet of a vernal pool may be regulated by the Corps and may require compensatory mitigation for unavoidable impacts. The amount of compensatory mitigation that

may be required typically depends on the overall pool characteristics and an assessment of its habitat and landscape value.

Based on Stantec's survey, PSVP-01TT could be considered an SVP under the NRPA based on its physical characteristics and origin. Stantec recommends a seasonally appropriate vernal pool survey to determine the status of the PSVP or to treat the pool as an SVP if the project schedule and permitting move forward before the Spring vernal pool survey window.

6.0 REFERENCES

Bailey, R.G., P.E. Avers, T. King, and W.H. McNab. 1994. *Ecoregions and subregions of the United States* (map and supplementary table). U.S. Department of Agriculture – Forest Service, Washington, D.C.

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U.S. Army Corps of Engineers (Corps). 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Environmental Protection Agency (USEPA). 2015. *Clean Water Rule: Definition of Waters of the United States; Final Rule. (80 FR 37054).* US Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington DC.

Appendix A FIGURES

Legend

- PSVP Potential Significant Vernal Pool Center Point
- 250' PSVP Critical Habitat
- Delineated Wetland
- Area of Potential Shoreline Restoration
- Delineation Limits/Parcel Boundary
- Tax Parcel

0 300 Feet

(At original document size of 8.5x11)
1:3,600

N

Stantec

Project Location
Bowdoinham, Maine

Prepared by REM on 2019-06-17
TR by KWH on 2019-06-00
IR Review by TT on 2019-06-00

Client/Project
195601765
Baker Design Consultants
Public Works Site Development
Bowdoinham, ME

Figure No
1

Title
Wetland and Watercourse Delineation Results Map

Notes

1. Wetland boundaries delineated in accordance with the USACE Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regional Supplement (Version 2.0).
2. Wetland boundaries were located utilizing a Trimble GeoExplorer Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
3. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1802 Feet
4. Data Sources: Base features obtained from MEGIS.
5. Background: Aerial imagery provided by ArcGIS Online World Imagery Mapping Service (http://server.arcgisonline.com/arcgis/services/World_Imagery/MapServer).

Appendix B REPRESENTATIVE PHOTOGRAPHS

Appendix B Representative Photographs

Photo 1. (PEM) wetland W-01TTA. Stantec. June 14, 2019.

Photo 2. Northern (PSS) portion of wetland W-01TTB. Stantec. June 14, 2019.

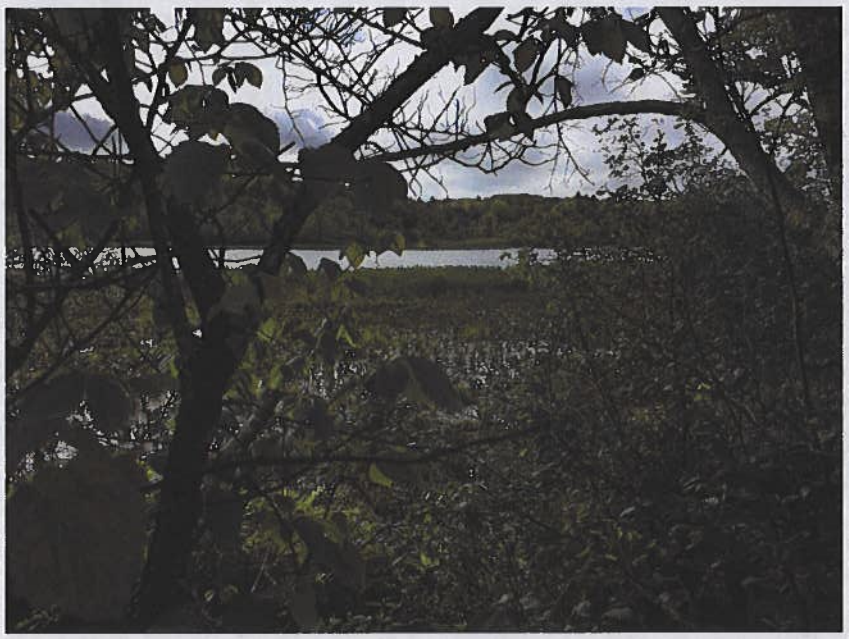


Photo 3. Freshwater tidal marsh portion of wetland W-01TTB. Stantec. June 14, 2019.

Photo 4. Interior PEM portion of wetland W-01TTB. Stantec. June 14, 2019.

Appendix B Representative Photographs

Photo 5. Southern portion of wetland W-01TTB. Stantec. June 14, 2019.

Photo 6. PEM wetland W-01TTC. Stantec. June 14, 2019.

Photo 7. PFO portion of wetland W-01TTD. Stantec. June 14, 2019.

Photo 8. PEM wetland W-01TTE. Stantec. June 14, 2019.

Photo 9. PSS wetland W-01TTF. Stantec. June 14, 2019.

Photo 10. PSS wetland W-01TTG. Stantec. June 14, 2019.

Photo 11. PSVP-01TT in wetland W-01TTE. Stantec. June 14, 2019.

Photo 12. PSVP-01TT in wetland W-01TTE. Stantec. June 14, 2019.

Photo 13. Natural, undisturbed Cathance River shoreline in the southern half of the Site. Stantec. June 14, 2019.

Photo 14. Upland area and trail sign at the southeast corner of the Site. Stantec. June 14, 2019.

Appendix B Representative Photographs

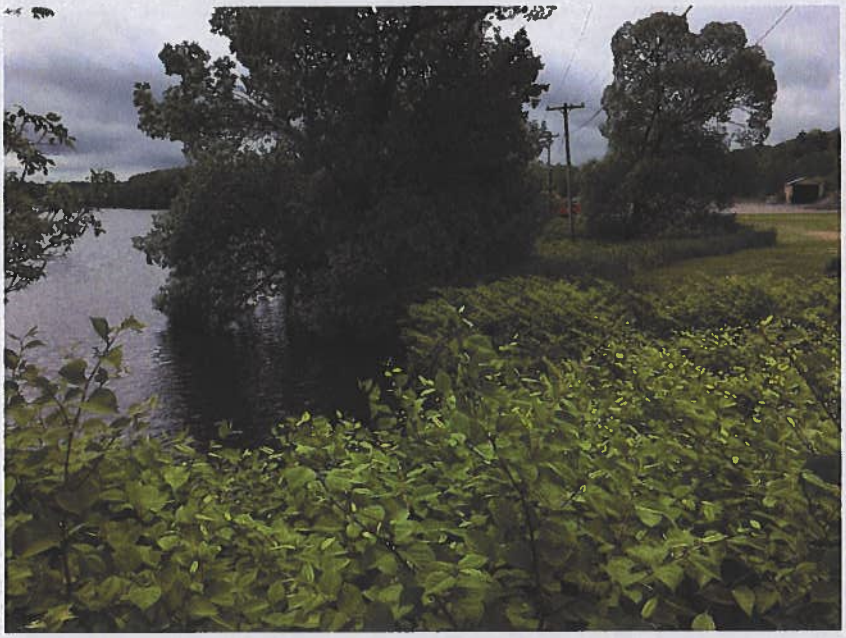


Photo 15. Japanese knotweed stand over altered, rocky shoreline in the northeast corner of the Site. Stantec. June 14, 2019.

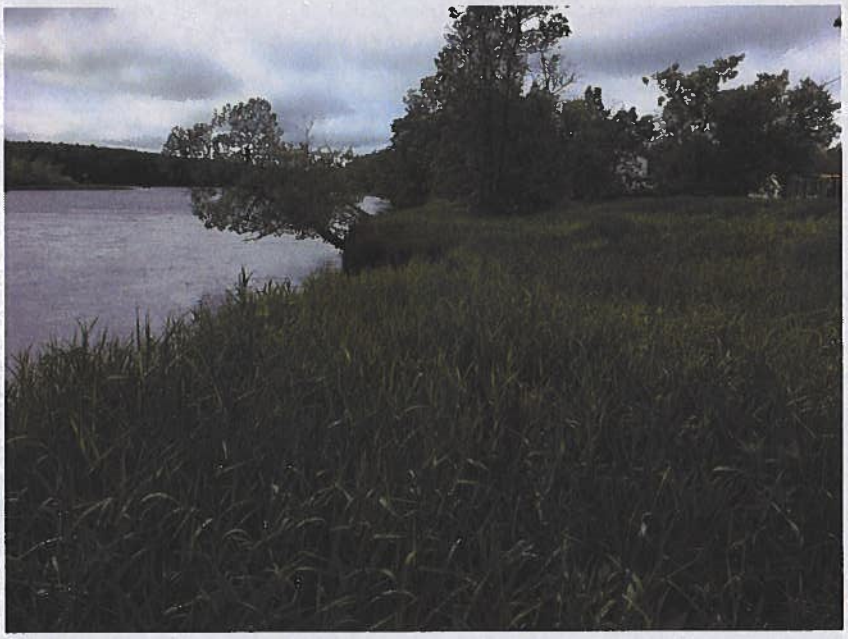


Photo 16. Cathance River shoreline facing south from wetland W-01TTA. Stantec. June 14, 2019.

Photo 17. Exposed end of timber cribbing extending from shoreline, just south of wetland W-01TTA. Stantec. June 14, 2019.

Photo 18. Trench located just north of the public works building. Stantec. June 14, 2019.

Photo 19. Small metal pipe draining into the trench/Cathance River. Stantec. June 14, 2019.

Photo 20. View south from behind the public works building towards the more natural portions of the shoreline. Stantec. June 14, 2019.

Appendix C AGENCY RESPONSES

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

June 13, 2019

Tom Tetreau
Stantec
30 Park Drive
Topsham, ME 04086

Via email: tom.tetreau@stantec.com

Re: Rare and exemplary botanical features in proximity to: Public Works Project, Map U1 Lot 1, Bowdoinham, Maine

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received June 11, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Bowdoinham, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, the project area includes a portion of Freshwater Tidal Marsh, a rare wetland type in Maine. Large, high quality examples of this open wetland type are rare in Maine and provide important habitat for a wide variety of plants and animals. MNAP recommends leaving an intact forested buffer around the wetlands associated with this Freshwater Tidal Marsh. If any disturbance is planned for these areas, please contact MNAP for further recommendations. Please refer to the table below, attached map, and attached factsheet for more information about this rare wetland type in Maine.

Feature	State Status	State Rank	Global Rank	Occurrence Rank	Site
Freshwater Tidal Marsh	N/A	S2	G4?	AB Excellent-Good	Cathance River

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
90 BLOSSOM LANE, DEERING BUILDING

maine DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-8044
WWW.MAINE.GOV/DACF/MNAP

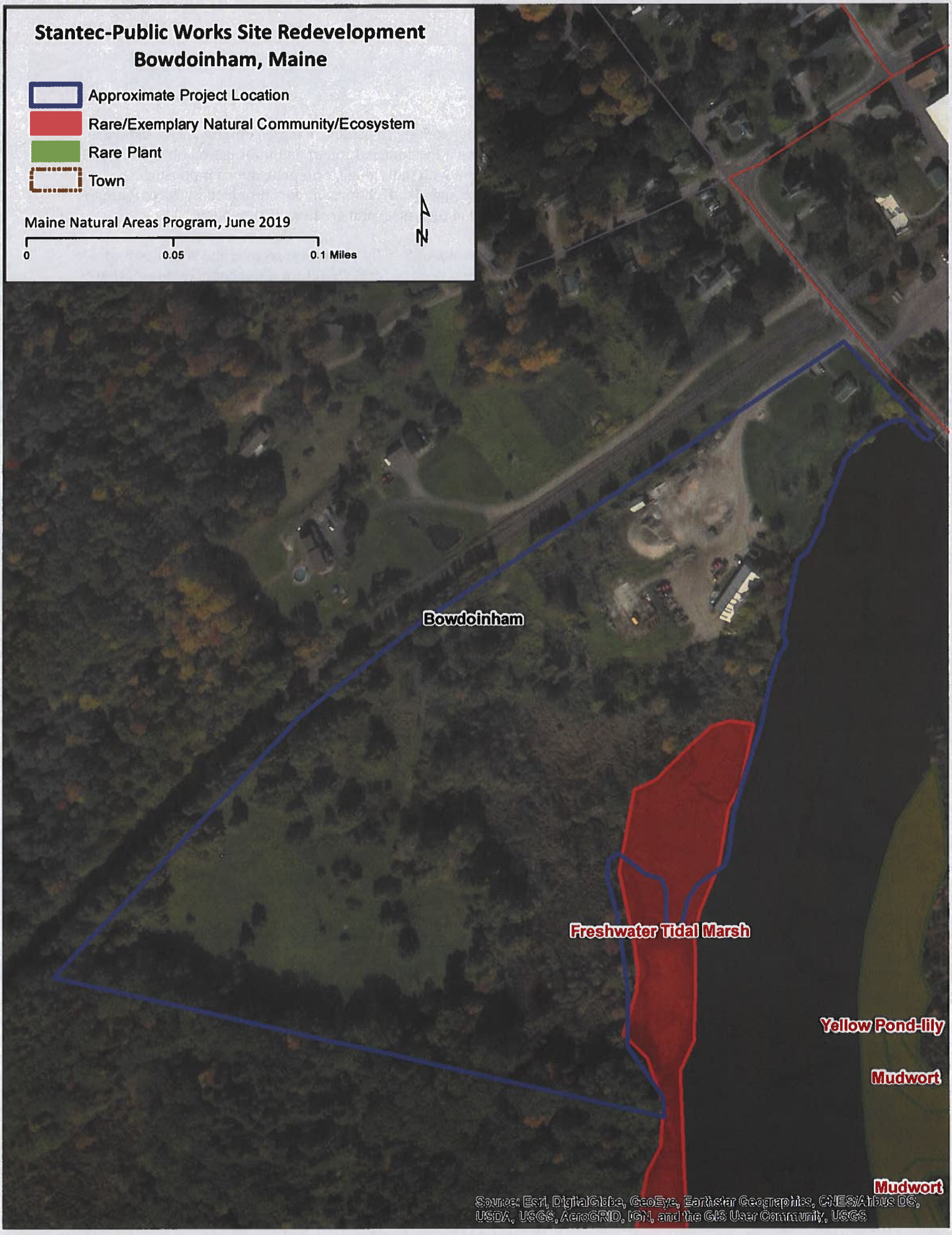
The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $225.00 for three hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov


Stantec-Public Works Site Redevelopment
Bowdoinham, Maine
Approximate Project Location
Rare/Exemplary Natural Community/Ecosystem
Rare Plant
Town
Maine Natural Areas Program, June 2019
0
0.05
0.1 Miles
N
Bowdoinham
Freshwater Tidal Marsh
Yellow Pond-lily
Mudwort
Mudwort
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, USGS

Freshwater Tidal Marsh

State Rank S2

Community Description

These tidal marshes are dominated by patchy stout herbs, typically a mixture of wild rice, softstem bulrush, and pickerelweed, often covering extensive areas. Mixed in with the tall herbs are lower forbs including several rare species. Some marshes may have mudflats dominated by forbs and low vegetation in patches among the graminoids; many have a very narrow band of low forbs near the high tide/upland interface. Brackish marsh species, such as chair-maker's rush, may be in these marshes as well, but at least some obligate freshwater plants such as pickerelweed, common arrowhead, sweet flag, and northern water-plantain will also be present. Bryophytes are essentially absent.

Soil and Site Characteristics

Freshwater tidal marshes are associated with major rivers, in low-gradient areas of the mid to upper tidal reaches. Freshwater inputs lower the salinity to <1 ppt. Substrate is usually mud, or mud mixed with gravel. The tidal regime affects substrate and plant zonation.

Torrey's Bulrush

Diagnostics

These graminoid dominated marshes occur along tidal rivers, with patches of forbs locally abundant. Obligate freshwater species are present, such as sweetflag, yellow water-lily, large yellow pond-lily, or pickerelweed.

Similar Types

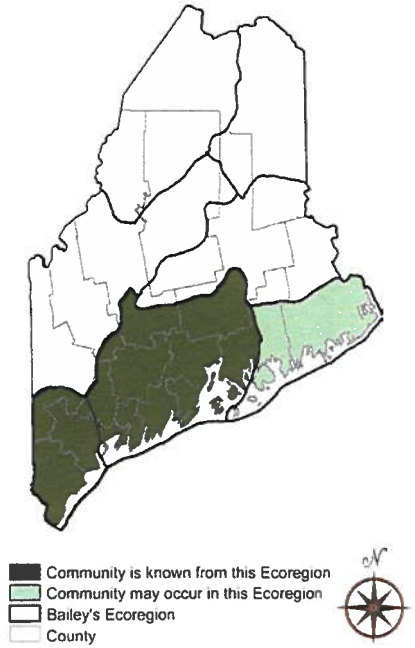
Brackish Tidal Marshes are most similar and grade into this type as salinity decreases. Mixed Graminoid Shrub Marshes and Pickerelweed - Macrophyte Aquatic Bed types can contain several of the same species, but do not occur in tidal settings.

Conservation, Wildlife, and Management Considerations

Tidal marshes provide valuable wildlife habitat and have received considerable conservation attention. Heavy metals, sewage overflows, and other pollutants have degraded the substrate in many areas, but some have recovered as water quality has improved over the past decades. Many occur on or adjacent to public lands or private conservation lands. Some have been managed for waterfowl by planting wild rice. With development of the uplands that border these marshes, maintenance of appropriate wetland buffers can help reduce degradation that could result from adjacent land uses. Invasive species such as Japanese knotweed and purple loosestrife have invaded the upper reaches at some sites. The prospect of sea level rise may also put these systems at greater risk in the future.

The tidal marshes of Maine's larger estuaries, especially Merrymeeting Bay, are important pre-migration staging habitat for thousands of waterfowl and wading birds. The rare New England siltsnail inhabits coastal marshes and small tidal rivers where the water ranges from fresh to upper brackish.

Location Map



Distribution

Upper tidal reaches of major rivers: most well known from the Kennebec and Penobscot Rivers (Laurentian Mixed Forest Province).

Landscape Pattern: Large Patch, often linear.

Freshwater Tidal Marsh

Characteristic Plants

These plants are frequently found in this community type. Those with an asterisk are often diagnostic of this community.

Herb

Chair-maker's rush*
Common arrowhead
Eaton's bur-marigold
Nodding beggar ticks
Northern water-plantain
Parker's pipewort
Pickerelweed*
Softstem bulrush*
Tidal arrowhead
Wild rice*

Associated Rare Plants

Beaked spikerush
Eaton's bur-marigold
Long's bitter-cress
Parker's pipewort
Pygmyweed
Spongy arrowhead
Stiff arrowhead
Water-pimpernel

Associated Rare Animals

American oystercatcher
Black-crowned night-heron
Least bittern
Short-eared owl

Examples on Conservation Lands You Can Visit

- Merrymeeting Bay Wildlife Management Area – Sagadahoc Co.
- Muddy River Wildlife Management Area – Sagadahoc Co.
- Swan Island Wildlife Management Area – Sagadahoc Co.

Maine Natural Areas Program

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To:
Consultation Code: 05E1ME00-2019-SLI-0840
Event Code: 05E1ME00-2019-E-02081
Project Name: Bowdoinham Public Works Redevelopment

June 11, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2019-SLI-0840

Event Code: 05E1ME00-2019-E-02081

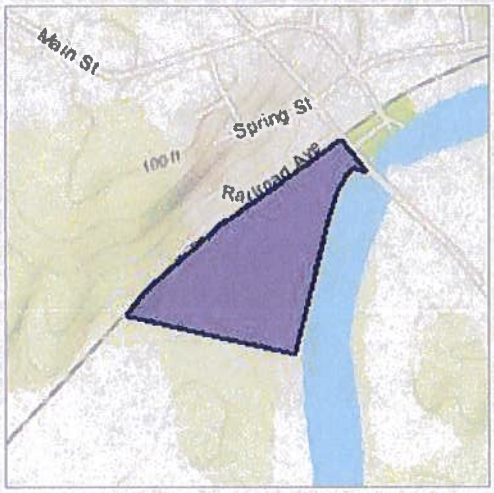
Project Name: Bowdoinham Public Works Redevelopment

Project Type: SHORELINE USAGE FACILITIES / DEVELOPMENT

Project Description: Potential redevelopment (public use - parking, walking trails, water access) of existing ~20-acre public works parcel.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.00587292471877N69.89835986747991W



Counties: Sagadahoc, ME

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Atlantic Salmon *Salmo salar* Population: Gulf of Maine DPS There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2097	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Atlantic Salmon *Salmo salar* https://ecos.fws.gov/ecp/species/2097#crithab	Final

Appendix D CORPS WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Bowdoinham Public Works City/County: Bowdoinham/Sagadahoc Sampling Date: 6/14/2019

Applicant/Owner: Baker Design Consultants State: ME Sampling Point: Wetland

Investigator(s): Tom Tetreau Section, Township, Range:

Landform (hillslope, terrace,etc.): Floodplain Local relief (concave, convex, none): None Slope (%) 0 - 0

Subregion (LRR or MLRA): LRR R Lat: 44.005804 Long: -69.897911 Datum: NAD83

Soil Map Unit Name: NWI Classification: PEM

Are climatic / hyrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	if yes, optional Wetland Site ID: 01TTB
Wetland Hydrology Present?	Yes X	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

____ Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
X High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
X Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible in Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsley Vegetated Concave Surface (B8)		____ Microtopographic Relief (D4)
		____ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Surface Water Present?	Yes ____	No X Depth (inches) ____
Water Table Present?	Yes X	No ____ Depth (inches) 0
Saturation Present?	Yes X	No ____ Depth (inches) 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants Sampling Point: **Wetland**

Tree Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Salix nigra	10	X	OBL
	10	= Total Cover	

Shrub Stratum (Plot Size: 15'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Salix nigra	10	X	OBL
	10	= Total Cover	

Herb Stratum (Plot Size: 5'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Typha latifolia	80	X	OBL
Onoclea sensibilis	15		FACW
Impatiens capensis	10		FACW
Carex gynandra	10		OBL
Calamagrostis canadensis	10		OBL
	125	= Total Cover	

Woody Vine Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
	= Total Cover		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

OBL species	120	x 1	120	
FACW species	25	x 2	50	
FAC species	0	x 3	0	
FACU species	0	x 4	0	
UPL species	0	x 5	0	
Column Totals	145	(A)	170	(B)

Prevalence Index = B/A = 1.17

Hydrophytic Vegetation Indicators:

X 1- Rapid Test For Hydrophytic Vegetation

X 2- Dominance Test is => 50%

X 3- Prevalence Index is =< 3.0

4- Morphological Adaptations

5- Problematic Hydrophytic Vegetation

Definitions of Vegetation Strata:

Tree- Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub- Woody plants less than 3 in. DBH and greater than or equal to 3.28ft (1m) tall.

Herb- All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28ft tall.

Woody Vines- All woody vines greater than 3.28ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: **Wetland**

Depth (inches	Matrix Color	%	Redox Features Color	%	Type	Loc	Texture	Remarks
0-12	10YR 2/1	100					Muck	
12-18	10YR 5/1	75	10YR 4/4	25	C	M	Silt	

Hydric Soil Indicators:

- ___ Histosol (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (B15)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matric (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Soils:

- ___ 2 cm Muck (A10)
- ___ Coast Prarie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Piedmont Floodplain Soils (F19)
- ___ Mesic Spodic (TA6)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: Dense

Depth (inches): 18

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Bowdoinham Public Works City/County: Bowdoinham/Sagadahoc Sampling Date: 6/14/2019

Applicant/Owner: Baker Design Consultants State: ME Sampling Point: Upland

Investigator(s): Tom Tetreau Section, Township, Range:

Landform (hillslope, terrace,etc.): Shoulder Local relief (concave, convex, none): Convex Slope (%) 3 - 5

Subregion (LRR or MLRA): LRR R Lat: 44.005825 Long: -69.897941 Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hyrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	Yes	No X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X	if yes, optional Wetland Site ID:	01TTB	

Remarks: (Explain alternative procedures here or in a separate report.)

Appears to be an area of old fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsley Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible in Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Surface Water Present?	Yes	No X	Depth (inches)		Wetland Hydrology Present?	Yes ____ No X
Water Table Present?	Yes	No X	Depth (inches)			
Saturation Present?	Yes	No X	Depth (inches)			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants Sampling Point: **Upland**

Tree Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Fraxinus americana	15	X	FACU
	15	= Total Cover	

Shrub Stratum (Plot Size: 15'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Cornus amomum	5	X	FACW
	5	= Total Cover	

Herb Stratum (Plot Size: 5'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Phleum pratense	40	X	FACU
Rubus idaeus	40	X	FACU
	80	= Total Cover	

Woody Vine Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Parthenocissus quinquefolia	20	X	FACU
	20	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index Worksheet:

OBL species	0	x 1	0	
FACW species	5	x 2	10	
FAC species	0	x 3	0	
FACU species	115	x 4	460	
UPL species	0	x 5	0	
Column Totals	120	(A)	470	(B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test For Hydrophytic Vegetation

____ 2- Dominance Test is => 50%

____ 3- Prevalence Index is =< 3.0

____ 4- Morphological Adaptations

____ 5- Problematic Hydrophytic Vegetation

Definitions of Vegetation Strata:

Tree- Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub- Woody plants less than 3 in. DBH and greater than or equal to 3.28ft (1m) tall.

Herb- All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28ft tall.

Woody Vines- All woody vines greater than 3.28ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: **Upland**

Depth (inches	Matrix Color	%	Redox Features Color	%	Type	Loc	Texture	Remarks
0-2	10YR 2/1	100					Loam	
2-6	10YR 3/2	100					Sandy Loam	

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (B15)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matric (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Soils:

- ___ 2 cm Muck (A10)
- ___ Coast Prarie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Piedmont Floodplain Soils (F19)
- ___ Mesic Spodic (TA6)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: Gravel Fill

Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Bowdoinham Public Works City/County: Bowdoinham/Sagadahoc Sampling Date: 6/14/2019

Applicant/Owner: Baker Design Consultants State: ME Sampling Point: Wetland

Investigator(s): Tom Tetreau Section, Township, Range:

Landform (hillslope, terrace,etc.): Terrace Local relief (concave, convex, none): Concave Slope (%) 0 - 0

Subregion (LRR or MLRA): LRR R Lat: 44.004370 Long: -69.899653 Datum: NAD83

Soil Map Unit Name: NWI Classification: PEM

Are climatic / hyrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks.)

Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____	if yes, optional Wetland Site ID:	01TTC

Remarks: (Explain alternative procedures here or in a separate report.)

Occasionally mowed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

X Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
X High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
X Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible in Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsley Vegetated Concave Surface (B8)		____ Microtopographic Relief (D4)
		____ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Surface Water Present?	Yes X No ____	Depth (inches) 0.5
Water Table Present?	Yes X No ____	Depth (inches) 0
Saturation Present?	Yes X No ____	Depth (inches) 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants Sampling Point: **Wetland**

Tree Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
		= Total Cover	

Shrub Stratum (Plot Size: 15'radius)	Absolute % Cover	Dominant Species?	Indicator Status
		= Total Cover	

Herb Stratum (Plot Size: 5'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Onoclea sensibilis	50	X	FACW
Phleum pratense	40	X	FACU
Spiraea latifolia	20		FACW
	110	= Total Cover	

Woody Vine Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

OBL species	0	x 1	0	
FACW species	70	x 2	140	
FAC species	0	x 3	0	
FACU species	40	x 4	160	
UPL species	0	x 5	0	
Column Totals	110	(A)	300	(B)

Prevalence Index = B/A = 2.73

Hydrophytic Vegetation Indicators:

- ___ 1- Rapid Test For Hydrophytic Vegetation
- X 2- Dominance Test is => 50%
- X 3- Prevalence Index is =< 3.0
- ___ 4- Morphological Adaptations
- ___ 5- Problematic Hydrophytic Vegetation

Definitions of Vegetation Strata:

Tree- Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub- Woody plants less than 3 in. DBH and greater than or equal to 3.28ft (1m) tall.

Herb- All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28ft tall.

Woody Vines- All woody vines greater than 3.28ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: **Wetland**

Depth (inches	Matrix Color	%	Redox Features Color	%	Type	Loc	Texture	Remarks
0-1	10R 3/1	100					Muck	
1-9	10YR 4/2	80	10YR 4/6	20	C	M	Silt Loam	
9-19	10YR 4/1	75	10YR 4/6	25	C	M	Silt Loam	

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (B15)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matric (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Soils:

- ___ 2 cm Muck (A10)
- ___ Coast Prarie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Piedmont Floodplain Soils (F19)
- ___ Mesic Spodic (TA6)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: Dense

Depth (inches): 19

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Bowdoinham Public Works City/County: Bowdoinham/Sagadahoc Sampling Date: 6/14/2019

Applicant/Owner: Baker Design Consultants State: ME Sampling Point: Upland

Investigator(s): Tom Tetreau Section, Township, Range:

Landform (hillslope, terrace,etc.): Shoulder Local relief (concave, convex, none): Convex Slope (%) 1 - 3

Subregion (LRR or MLRA): LRR R Lat: 44.004481 Long: -69.899655 Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hyrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks.)

Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	Yes	No X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X	if yes, optional Wetland Site ID:	01TTC	

Remarks: (Explain alternative procedures here or in a separate report.)

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HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsley Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible in Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Surface Water Present?	Yes	No X	Depth (inches)		
Water Table Present?	Yes	No X	Depth (inches)		
Saturation Present?	Yes	No X	Depth (inches)		

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: **Upland**

Tree Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
	= Total Cover		

Shrub Stratum (Plot Size: 15'radius)	Absolute % Cover	Dominant Species?	Indicator Status
	= Total Cover		

Herb Stratum (Plot Size: 5'radius)	Absolute % Cover	Dominant Species?	Indicator Status
Phleum pratense	90	X	FACU
Solidago rugosa	5		FAC
	95 = Total Cover		

Woody Vine Stratum (Plot Size: 30'radius)	Absolute % Cover	Dominant Species?	Indicator Status
	= Total Cover		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

OBL species	0	x 1	0	
FACW species	0	x 2	0	
FAC species	5	x 3	15	
FACU species	90	x 4	360	
UPL species	0	x 5	0	
Column Totals	95	(A)	375	(B)
Prevalence Index = B/A =			3.95	

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test For Hydrophytic Vegetation

____ 2- Dominance Test is => 50%

____ 3- Prevalence Index is =< 3.0

____ 4- Morphological Adaptations

____ 5- Problematic Hydrophytic Vegetation

Definitions of Vegetation Strata:

Tree- Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub- Woody plants less than 3 in. DBH and greater than or equal to 3.28ft (1m) tall.

Herb- All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28ft tall.

Woody Vines- All woody vines greater than 3.28ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: **Upland**

Depth (inches	Matrix Color	%	Redox Features Color	%	Type	Loc	Texture	Remarks
0-12	10YR 4/3	100					Silt Loam	
12-18	10YR 4/2	100					Silt Loam	

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (B15)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matric (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Soils:

- ___ 2 cm Muck (A10)
- ___ Coast Prarie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Iron-Manganese Masses (F12)
- ___ Piedmont Floodplain Soils (F19)
- ___ Mesic Spodic (TA6)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: Dense

Depth (inches): 18

Hydric Soil Present? Yes ___ No X

Remarks: