Town of Wiscasset

November 16, 2020

Subject: **RFP#202008127**

2020 Grants for Stream Crossing Public Infrastructure Improvements

Dear Grant Review Team:

The Town of Wiscasset has enclosed an application and supporting documentation for grant funding under the 2020 Grants for Stream Crossing Public Infrastructure Improvements Program. The submittal, made in accordance with RFP #202008127, proposes improvements to an existing culvert crossing located on Old Ferry Road, which is a municipally owned road, in Wiscasset, ME. A copy of a USGS Map showing the location of the crossing has been provided in the application material.

The existing culvert crossing is an undersized 36" concrete culvert which connects a tidal stream/marsh from Sheepscot Bay to an upstream 3-acre salt marsh which is part of the larger Back River system. The undersized crossing impairs the ability to adequately accommodate the range of tidal flows and provide ecological support to the upstream tidal marsh and highly vulnerable fish species. Over the past several years, the segments of the culvert have shifted, leaving gaps within the culvert for road gravels to pass through. During high rain events or high tides, the Town is required to fix sinkholes that have formed within the roadway or replace material which has been washed away during these events. Furthermore, Old Ferry Road provides the only access to critical infrastructure along with a local boat launch which is used almost exclusively by marine harvesters, all of which have considerable local economic importance.

The crossing has been identified by Maine DMR as "the highest priority stream crossing application DMR has reviewed this fall." This is due in part by the condition of the culvert as well as the size of the culvert. Due to the size of the culvert, the tidal range upstream of the crossing approximately 2'-3' less than the tidal range downstream which limits the delivery of sediment, saline waters, and other materials necessary to maintain marsh health under conditions of accelerated sea level rise. Maine DMR has also identified this area as a velocity barrier to sea-run rainbow smelt, a species of recent heightened concern, which is potentially responsible for the decline in smelt runs over the recent years. The project has also received support from USFWS Gulf of Maine Coastal Program. Connectivity in this area is critical to maintain health of the upstream salt marsh under conditions of accelerated sea level rise, as well as the health of the local sea-run rainbow smelt population.

The Town of Wiscasset has retained Wright-Pierce to provide assessment of the existing crossing and proposed crossing, along with final design plans and specifications to assist the Town with bidding the

crossing that integrates best practices and elements of the CoastWise Approach. The intent is to build a crossing that is safe, cost-effective, climate resilient, and ecologically supportive. Culvert improvements will also incorporate techniques outlined in Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings, by the US Department of Agriculture.

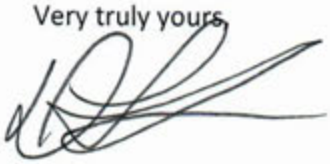
Design of the proposed crossing will also take into consideration any limiting factors associated with the crossing site. Currently, there is a potential constraint associated with an existing 6" ductile iron force main which runs above the existing crossing. The proposed design will consider alternatives to "best fit" the proposed crossing taking into consideration projected sea-level rise, existing condition constraints, and hydraulic and hydrologic conditions. It should be noted for the purposes of this grant that the sizing of the proposed crossing is preliminary. Sizing will be confirmed using H&H analysis as well as projected sea-level rise. Other alternatives to the preliminary design will also be considered to provide the most cost-effective solution as well as provide for habitat and marine connectivity.

Recognizing all of the aforementioned benefits to the local businesses, marine harvesters, and stream ecology, the Town of Wiscasset is seeking to replace the existing undersized 36" diameter concrete culvert with a new bottomless aluminum arch culvert. The new culvert will be approximately 60 feet long, with a span of approximately 25' – 4" and a height of 8'-7". The proposed culvert will be embedded with stream bed material to allow natural sediment migration within the tidal marsh system. Based upon the preliminary site plan layout along with historical data from recent culvert replacement projects, the estimated probable construction costs for these improvements is approximately $600,000. Therefore, the Town of Wiscasset is seeking the full grant award of $125,000.

Construction is anticipated in the Summer of 2021, with completion by September 30, 2021. The Town intends to award a contract once regulatory approvals have been obtained and bidding phase services have been completed.

We are excited about the benefits this project will bring to the community and the stream system, including flooding protection and habitat improvements for valuable fish species, particularly sea-run rainbow smelt. Please do not hesitate to call if you have any further questions concerning the communities need for this funding.

Very truly yours,



Dennis Simmons

Town Manager

207-882-8200 ext. 108

Cc: Ryan T. Wingard, PE, Wright-Pierce

Jaime C. Wallace, PE, Wright-Pierce

Maine Department of Environmental Protection
Request for Proposals for Stream Crossing Public Infrastructure Improvement Projects
Proposal Application Form – 2020R1
RFP# 202008127

I. Applicant Information

Applicant Name Town of Wiscasset, ME, Attn: Dennis Simmons, Town Manager			
Applicant Mailing Address 51 Bath Road	City Wiscasset	State ME	Zip 04578
*Applicant Contact Phone # 207-882-8200	*Contact Email Address manager@wiscasset.org		

**Please note that the applicant contact should be the individual that will be the primary contact for the Department should the project be awarded.*

II. Agent/Consultant Information ☐ Check if not applicable

Agent Name Wright-Pierce, Attn: Jaime Wallace, PE – Wright-Pierce Project Engineer			
Agent Mailing Address 11 Bowdoin Mill Island, Suite 140	City Topsham	State ME	Zip 04086
Agent Phone # 207-798-3744	Agent Email Address jaime.wallace@wright-pierce.com		

III. Applicability

Please indicate the ability to demonstrate the following:

✓ The proposed structure to be upgraded is a culvert located on a municipal road and is not owned by a private or state entity.

✓ The proposed project includes matching funds from local or other sources

IV. Culvert/Stream Crossing Information

1. Site Information

A. Municipality or Unorganized territory where project will take place:	Wiscasset, ME	
B. GPS Location of crossing (Decimal degrees preferred) *Available on Google Maps by clicking the location on the map*	North 43.960653	West -69.697189
C. Culvert/crossing location Name of the road on which the culvert/crossing is located and the nearest intersection.	Old Ferry Rd. Intersection of Route 144 and Ready Point Rd.	
D. Watershed Location: List the HUC12 Watershed, name of the stream, brook, or the water body the culvert is located on, and the downstream waterbodies it drains to.	**i. HUC12 Watershed:**(can be found in Maine Stream Habitat Viewer)	Sheepscot Bay
	ii. Waterbody name at project location *("Project Waterbody ")*:	Back River
	iii. "Project Waterbody" drains to:	Montsweag Bay

2. Existing Crossing Information

Culvert/Crossing Shape	Culvert Material	Stream Bed Material in culvert
☐ Closed bottom Box ☐ Open bottom box ☒ Circular ☐ Open bottom arch ☐ Closed bottom arch (pipe arch) ☐ Oval ☐ Bridge or span	☐ Corrugated Metal Pipe ☐ Smooth Metal Pipe ☒ Concrete ☐ Plastic ☐ Stone ☐ Other (describe): _____	☒ none ☐ Partial ☐ Continuous

Culvert	Width (diameter if round)	Height	Length	Approximate Culvert Age
#1	36”	Round	60’ +/-	50+ Years Old
(#2)				
(#3)				

3. Proposed Crossing Information

Culvert/Crossing Shape		Culvert Material	
☐ Closed bottom Box ☐ Circular ☐ Oval ☐ Closed bottom arch (pipe arch) ☐ Other (describe: _____	☐ Open bottom box ☒ Open bottom arch ☐ Bridge or span	☒ Corrugated Metal Pipe ☐ Concrete ☐ Other (describe): _____	☐ Smooth Metal Pipe ☐ Plastic ☐ Stone

Width (diameter if round)	Height	Length	*If proposing a bridge/span*	
			Clear Span	Total Span
25’ – 4”	8’-7”	60’	**N/A**	**N/A**

13. Will the new crossing be sized to be 1.2 times the bankfull width of the stream?	☒ Yes	☐ No

4. Stream Channel Description

Measured Bankfull Width (beyond culvert influence, min. of 3 upstream and downstream measurements)	Upstream widths	**1.**	**2.**	**3.**	4.	5.	**Average Please see VI.12**	**Average value of upstream & downstream measurements**
	Downstream Widths	**1.**	**2.**	**3.**	4.	5.	**Average**	
		20’					20’	20’

Estimated Bankfull width *(measured average bankfull width values are the most accurate method)*		
	Maine Stream Habitat Viewer http://webapps2.cgis-solutions.com/MaineStreamViewer/	Not listed
	StreamStats https://streamstats.usgs.gov/ss/	5.35 feet
	Other Hydraulic & Hydrologic Analysis (if performed)	N/A

Has a Stream Bed Substrate analysis been performed?	☐ Yes	☒ No
Explain:		

Size of Downstream scour pool ☐ N/A, No scour pool present	Width	Length	Max Depth
	15’ +/-	15’ +/-	1’ - 1.5’ +/-

V. Public Infrastructure Information (25 Points total):

	Yes	No
1. Has the crossing caused flooding or overtopping of the road in the last 10 years?	☐	☒
2. How many times in the last 10 years? (indicate if approximate)	There has been no known overtopping of the road, but after any significant rainstorm, fill is used to replace what has been washed away from around the culvert.	
3. Does this crossing regularly become obstructed by debris or require cleaning?	☒	☐
How often?	The Town clears debris from the openings usually following every significant rain fall or full moon tide.	
4. Has the crossing been damaged by flooding in the last 10 years?	☒	☐
5. Do you have any photos of the flooding or damage? Please provide if available	☒	☐
6. Has the crossing ever partially or fully failed in the last 10 years?	☐	☒
7. List any dates and describe the severity of flooding/damage associated with the crossing. Include the duration of any full or partial road closures.	No road closures have been required to repair damage to the crossing. However, as discussed above, the Town clears debris from the openings usually following every significant rain fall or full moon tide.	
8. Describe any issues with the current condition of the crossing	The current crossing is severely undersized (36" Dia.), which causes a velocity barrier to fish passage, particularly rainbow smelt, which is likely the cause of the noted smelt runs declining. Downstream channel width outside of the immediate zone of hydraulic disturbance/scour near the crossing averages about 20'. The crossing capacity at the inlet is compromised by ejected headwall stones. Upstream and downstream dry-laid stone headwalls are both collapsing. Culvert sections have shifted. Large (several feet deep) sinkholes in the road surface have occurred. The crossing inlet is about 1.7' higher than the outlet.	

9. In how many years from now do you estimate the culvert/crossing would have a complete failure, a complete collapse, or total washout?	**Less than 1 year**	**1-3 years**	**3-5 years**	**5-10 years**	**10+ years**
	☐	☒	☐	☐	☐

10. Would any homes, businesses, or critical infrastructure be <u>completely cut-off from access</u> if the crossing were to completely fail?	**Yes**	**No**
	☒	☐

11. If the culvert/crossing fails, how many businesses, or other critical infrastructure would be completely cut off or require a detour? (Note: see definition of "cut off" in RFP#202008127)	**Homes**		**Businesses**		**Critical Infrastructure**	
	Detour	Cut-off	Detour	Cut-off	Detour	Cut-off
	0	0	0	2	0	1

12. Using the space below, discuss what impacts would occur if the culvert/crossing were to fail.
For instance, are there critical public services (fire or police station, hospital, school, public works facility) located on this road that would be cutoff or required to detour?

Failure of the crossing would cut-off two businesses including Maine Yankee, Rynel (medical supplies manufacturer), as well as one critical infrastructure facility (Central Maine Power). Both Maine Yankee and Rynel have hazardous materials and is essential to maintain access to these areas in the event of an emergency. Rynel gets daily deliveries from UPS, USPS, and Fed Ex. Failure of the crossing would also cut-off a boat launch almost exclusively used by marine harvesters. All of which have considerable local economic importance.

13. Approximately how many vehicles per day travel this road (if known)?	170-210
14. If an alternate route exists, what is the minimum distance to travel from one side of the crossing along a detour to access the other side of the crossing?	No alternate route exists.

15. Using the space below, discuss any other safety concerns about the existing culvert/crossing.

The crossing conveys a 6" ductile iron force main above the culvert. Failure of the culvert would risk potential sewage discharge into the stream.

VI. Environmental Information (50 Points total):

	Yes	No
1. Are fish present in the stream?	☒	☐
Source(s) of Information: ☐ MDIFW ☒ MDMR ☐ Maine Stream Habitat Viewer ☐ Other (describe): _____		
2. Has this crossing been identified by the Maine Stream Habitat Viewer, MDIFW, MDMR, or another qualified entity as a barrier to fish passage?	☒	☐
Provide source of barrier information	Identified as a "Restriction" based on Maine Coastal Program's Tidal Restriction Atlas (ID# 993).	
3. Is the existing culvert/crossing surveyed on Maine Stream Habitat Viewer? http://webapps2.cgis-solutions.com/MaineStreamViewer/	☐	☒
If yes, what is the Maine Stream Habitat Viewer Crossing ID# for the crossing proposed for upgrade?	N/A	

	Upstream Crossing ID#	Downstream Crossing ID#
4. What is the Maine Stream Habitat Viewer Crossing ID# for the crossings upstream and downstream of the proposed upgrade?	None Identified	None Identified
Are these considered to be a barrier to fish passage?	☐ Barrier ☐ Partial/Potential Barrier ☐ Not a Barrier	☐ Barrier ☐ Partial/Potential Barrier ☐ Not a Barrier
5. Distance to the next barrier identified by the Maine Stream Habitat Viewer (miles)?	Upstream None Identified	Downstream None Identified

6. Indicate if any of the following species have been identified above or just below the crossing.

☐ **Wild brook trout** ☐ **Sea-run brook trout** ☒ **Atlantic salmon (sea-run)** ☐ **Atlantic salmon (landlocked)** ☒ **Alewives** ☐ **Blueback herring** ☐ **American eels** ☒ **Sea-run rainbow smelt** ☐ **other diadromous (sea-run) species (list):** _____

7. Have you contacted MDMR regarding this stream and crossing?		☒	☐
If yes, please include any relevant information they provided or attach letter of support	Please see attached letter of support dated November 11, 2020. Maine DMR has identified this area as a velocity barrier to sea-run rainbow smelt, which is potentially possible for the decline in smelt runs.		
8. Have you contacted MDIFW regarding this stream and crossing?		☐	☒
If yes, please include any relevant information they	USFWS has been contacted and provided letter of support. Please see attached letter dated November 9, 2020.		

provided or attach letter of support			
9. Are there any state or federal Threatened or Endangered species (aquatic or terrestrial) according to Beginning with Habitat Map Viewer within 1 mile of this crossing?		☒	☐
If yes, list identified presence or habitat(s):	Atlantic Salmon mapped by USFWS Information for Planning and Consultation (IPaC). Also listed as Beginning with Habitat Focus Area on Maine Stream Habitat Viewer.		
		Yes	**No**
10. Is the project adjacent to other significant resources (e.g. Significant Wildlife Habitat, significant fisheries, "Heritage" waters, alewife ponds, etc.) according to the Maine Stream Habitat Viewer or Beginning with Habitat Map Viewer?		☒	☐
If yes, list identified resource(s):	Kennebec Estuary Focus Area. Tidal/Coastal marsh. Tidal Waterfowl and Wading Bird Habitat.		
11. Have any priority habitats such as spawning areas been identified by the Maine Habitat Stream Viewer, MDIFW, or MDMR?		☒	☐
If yes, List habitats identified and source of information:	Identified by Maine Habitat Stream Viewer: Atlantic Salmon, Alewife, Tidal Marsh Identified by Maine DMR: Sea-Run Rainbow Smelt, Tidal/Coastal Marsh		
12. Is the current crossing undersized?		☒	☐
If yes, how was this determined and what was the metric used?	Channel widths in tidal systems do not provide a useful index of what crossing sizing should be in the way that it does for non-tidal systems. However, for context of this application, the downstream channel width outside of the immediate zone of hydraulic disturbance/scour near the crossing averages about 20'. The size of this culvert has been identified as a velocity barrier to rainbow smelt passage through the crossing. A decline in the number of rainbow smelt over the years have been noted which is likely due to the undersized crossing.		
15. Will the new crossing contain an open bottom?		☒	☐
16. Will the new crossing be embedded below the stream bed?		☒	☐
17. If the new crossing will be embedded, is stream bed backfill proposed?		☒	☐
If yes, how will material used for streambed backfill be determined?	Material for streambed backfill will be local material excavated within the streambed for replacement of the culvert crossing. It is anticipated that with the tidal nature of the culvert, the streambed will naturally deposit sediments both upstream and downstream of the crossing with the changing of each tide.		
18. Will the new crossing contain constructed stream banks within the structure?		☒	☐
19. Will this new crossing meet Maine DOT 100-yr flood criteria?		☒	☐
20. Is the upstream or downstream habitat degraded due to this crossing's orientation, slope, or sizing? (e.g. large scour pool, instability or stream bank erosion, significant downstream sedimentation, etc.)		☒	☐
Describe:	The undersized culvert impairs the resiliency of the upstream 3-acre salt marsh. The crossing limits delivery of sediment, saline waters, and other materials necessary to maintain marsh health under conditions of accelerated sea level rise. Maine DMR has also indicated that the undersized crossing impairs sea-run rainbow smelt passage to spawning habitat in the area which is a		

	species of heightened management concern.

21. Is the crossing located on a stream or reach where other culvert/crossing upgrades have been performed within the last 5 years leading to improved fish passage?	☐	☒

If yes, describe any additional biological, ecological, or cost-saving benefits that could result from the current project:	None identified.

22. Describe any reasons the crossing or the waterbody should be considered a priority for restoration, including any input from Maine DMR or Maine IF&W Biologists:

Old Ferry Road crosses over a tidal marsh/stream that is part of the larger Back River system that links the Kennebec and Sheepscot estuaries. The crossing should be considered a priority for restoration due to the culvert being severely undersized and in poor condition. Failure of the culvert could impair critical habitat for sea-run rainbow smelt which is identified by Maine DMR as a species of heightened management concern. The tidal marsh has also been identified by Maine DMR as a marsh with good migration potential if its health can be supported.

23. Provide other information about the design or importance of the proposed project that benefits fish and/or wildlife such as terrestrial passage, stream banks within the structure, stream simulation design, or other factors:

Design of the crossing will be a multi-team effort which will address issues by developing a replacement crossing design that integrates best practices and elements of the CoastWise Approach. Using CoastWise, the intent of the proposed crossing will be to build a crossing that is safe, cost-effective, climate resilient, and ecologically supportive.

VII. Cost & Budget Information (25 Points total):

1. How much money has been spent on physical repairs within the last 10 years on the culvert/crossing (exclude normal maintenance costs such as painting).	$12,000 (Documented over the last 3 years)
2. Describe the types of expenditures made on repairs	On-going repairs have been occurring at the crossing for approximately the last 4 years after significant rain and/or moon tides. Approximate cost per fix is approximately $500 each visit. The fix typically consists of laying fabric in the washed-out area and backfilling the area with gravel. On average, the Town typically spends around $4,000 per year in repairs to the crossing

	Yes	No
3. Do you have engineered design plans and construction specifications for the replacement culvert/crossing?	☐	☒

A. If yes, identify who designed the plans, and when the plans were completed.	Wright-Pierce has been contracted by the Town of Wiscasset to develop engineered plans and specifications for replacement of the crossing.

B. Will final plans be stamped by a Maine Licensed Engineer?	☒	☐
4. If the new crossing will be over 20 feet in width, are you planning to request that the Maine Department of Transportation (MDOT) take responsibility for the structure?	☐	☒

If yes, have you had the design reviewed by MDOT's Bridge Maintenance Program? (If No, please contact MDOT Bridge Program as soon as possible)	☐	☒

Important NOTE: For all crossings proposed to be 20 feet or greater, please refer to Maine DOT's Bridge Design Guide: https://www.maine.gov/mdot/bdg/ and contact MaineDOT Bridge Program for requirements and limitations.

5. This project will likely require a permit from the Army Corps of Engineers. Have you contacted Army Corps regarding this project?	☐	☒
6. Have you submitted an application to Army Corps of Engineers?	☐	☒
7. Do you already have a permit in-hand from Army Corps of Engineers?	☐	☒

8. What is the anticipated construction duration?	2-months

9. If awarded, when is construction anticipated to begin? (Keep in mind that the typical window for in-water work is July 15-October 1)	**Start Date:** **July 2021**	**Completion Date:** **September 2021**

10. Provide any additional information regarding the efficiency and cost-effectiveness of the project in the space below:

The proposed crossing will be a multi-team effort between the Town, Wright-Pierce, MEDMR, and USFWS GOMP to develop a replacement crossing design that will integrate the best practices and elements of the CoastWise Approach. As part of the design, Wright-Pierce will evaluate different types of structures and guide the Town in selection of an option that is both cost effective and will meet the guidelines for CoastWise and Stream Smart design. The replacement structure intends to provide a safe crossing to ensure access to critical local infrastructure as well as provide for a solution to an at-risk tidal marsh system.

11. Provide any additional information as to why this project should be funded by a public infrastructure grant in the space below:

There are several risk factors associated with this crossing, most of which have been identified above and in the attached material. The crossing provides the only access to critical infrastructure that has local economic importance. Furthermore, the crossing conveys sewer pipes above the culvert which are at risk of discharging into the marsh if road failure occurs. This particular area also has highly vulnerable species located both upstream and downstream of the crossing, and the resiliency of the upstream salt marsh is at risk due to the sizing and vulnerability of the culvert to failure.

State of Maine
Department of Environmental Protection
COST PROPOSAL FORM
RFP# 202008127
2020 Grants for Stream Crossing Public Infrastructure Improvements

Bidder's Organization Name:	**Town of Wiscasset, ME**

Instructions: The cost proposal must include: the total amount of funds requested under this RFP, the total cost of the project to completion, and the amount of local matching funds dedicated to the project.

The cost proposal may not exceed $125,000. Local matching funds must be included. The Department cannot fund 100% of any project.

1. Total Amount of Funds being Requested	**$125,000**
2. Total Matching Funds Committed to Project	**None currently committed. Special Town meeting anticipated**
3. Total Cost to Complete Proposed Project (total of items 1&2 above)	**$600,000 - $630,000**
4. All Sources of Matching Funds (list):	**The Town is currently evaluating fund appropriation for this project based on the above estimate of probable construction costs (line 3). It is anticipated a special Town meeting will be held to appropriate the required funds for the project.**

Budget Items	
5. Total Engineering Costs	**$72,500**
6. Permitting and Bidding	**$11,800**
7. Erosion & sediment controls (including de-watering, stream bypass, cofferdams, temporary and permanent stabilization measures)	**$60,000**
8. All other items (Installation of Culvert)	**$485,700**

State of Maine
Department of Environmental Protection
DEBARMENT, PERFORMANCE and NON-COLLUSION CERTIFICATION
RFP# 202008127
2020 Grants for Stream Crossing Public Infrastructure Improvements

Bidder's Organization Name:	**Town of Wiscasset, ME**

By signing this document, I certify to the best of my knowledge and belief that the aforementioned organization, its principals and any subcontractors named in this proposal:

a. *Are not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from bidding or working on contracts issued by any governmental agency.*
b. *Have not within three years of submitting the proposal for this contract been convicted of or had a civil judgment rendered against them for:*
   i. *Fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government transaction or contract.*
   ii. *Violating Federal or State antitrust statutes or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;*
   iii. *Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and*
   iv. *Have not within a three (3) year period preceding this proposal had one or more federal, state or local government transactions terminated for cause or default.*
c. *Have not entered into a prior understanding, agreement, or connection with any corporation, firm, or person submitting a response for the same materials, supplies, equipment, or services and this proposal is in all respects fair and without collusion or fraud. The above-mentioned entities understand and agree that collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards.*

Failure to provide this certification may result in the disqualification of the Bidder's proposal, at the discretion of the Department.

Name (Print): Dennis L. Simmons	Title: Town Manager
Authorized Signature:	Date: 11/16/2020

WRIGHT-PIERCE
Engineering a Better Environment

Attachment 1
Photo Log

ATTACHMENT 1: PHOTO LOG

Photo 1: Looking Downstream of Crossing (Photo Taken on 11/11/2020)

Photo 2: Looking Upstream of Crossing (Photo Taken 11/11/2020)

ATTACHMENT 1: PHOTO LOG

Photo 3: Culvert Inlet with Dry-Laid Headwall (Photo Taken 11/11/2020)

Photo 4: Culvert Outlet with Dry-Laid Stone Headwall (Photo Taken 11/11/2020)

ATTACHMENT 1: PHOTO LOG

Photo 5: Headwall Collapse at Outlet (Photo Taken 11/11/2020)

Photo 6: Interior of Culvert. Sections Have Shifted (Photo Taken 11/11/2020)

ATTACHMENT 1: PHOTO LOG

Photo 7: Sinkhole Formed Along Culvert Crossing (Photo Taken on 8/10/2020)

Photo 8: Sinkhole Formed Along Culvert Crossing (Photo Taken on 8/10/2020)

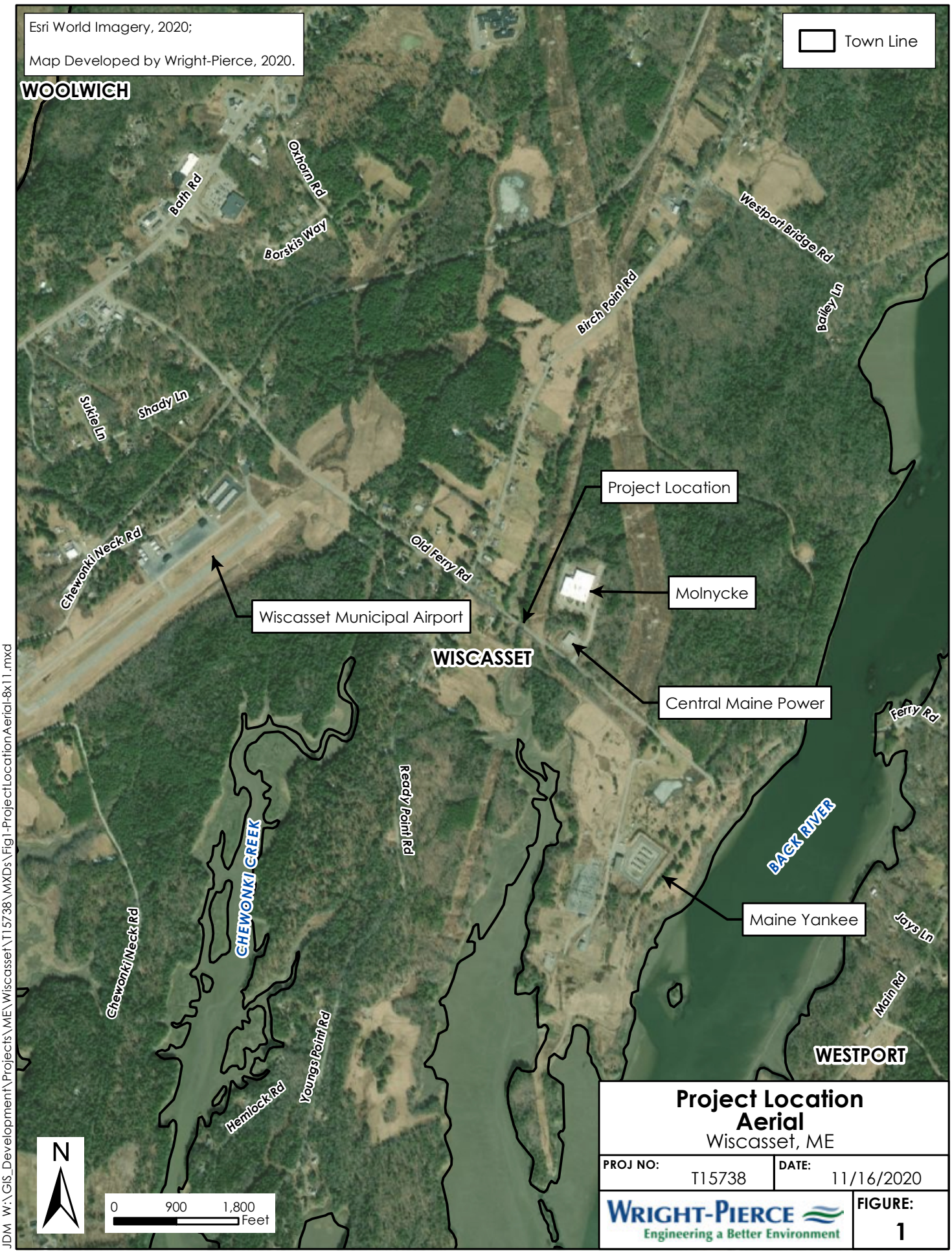
ATTACHMENT 1: PHOTO LOG

Photo 9: Sinkhole Formed Along Culvert Crossing (Photo Taken on 8/10/2020)

Photo 10: Old Ferry Road at Crossing (Photo Taken 11/12/2020)

WRIGHT-PIERCE
Engineering a Better Environment

Attachment 2
Maps



Project Location Aerial
Wiscasset, ME

PROJ NO:	DATE:
T15738	11/16/2020

WRIGHT-PIERCE
Engineering a Better Environment

FIGURE: 1

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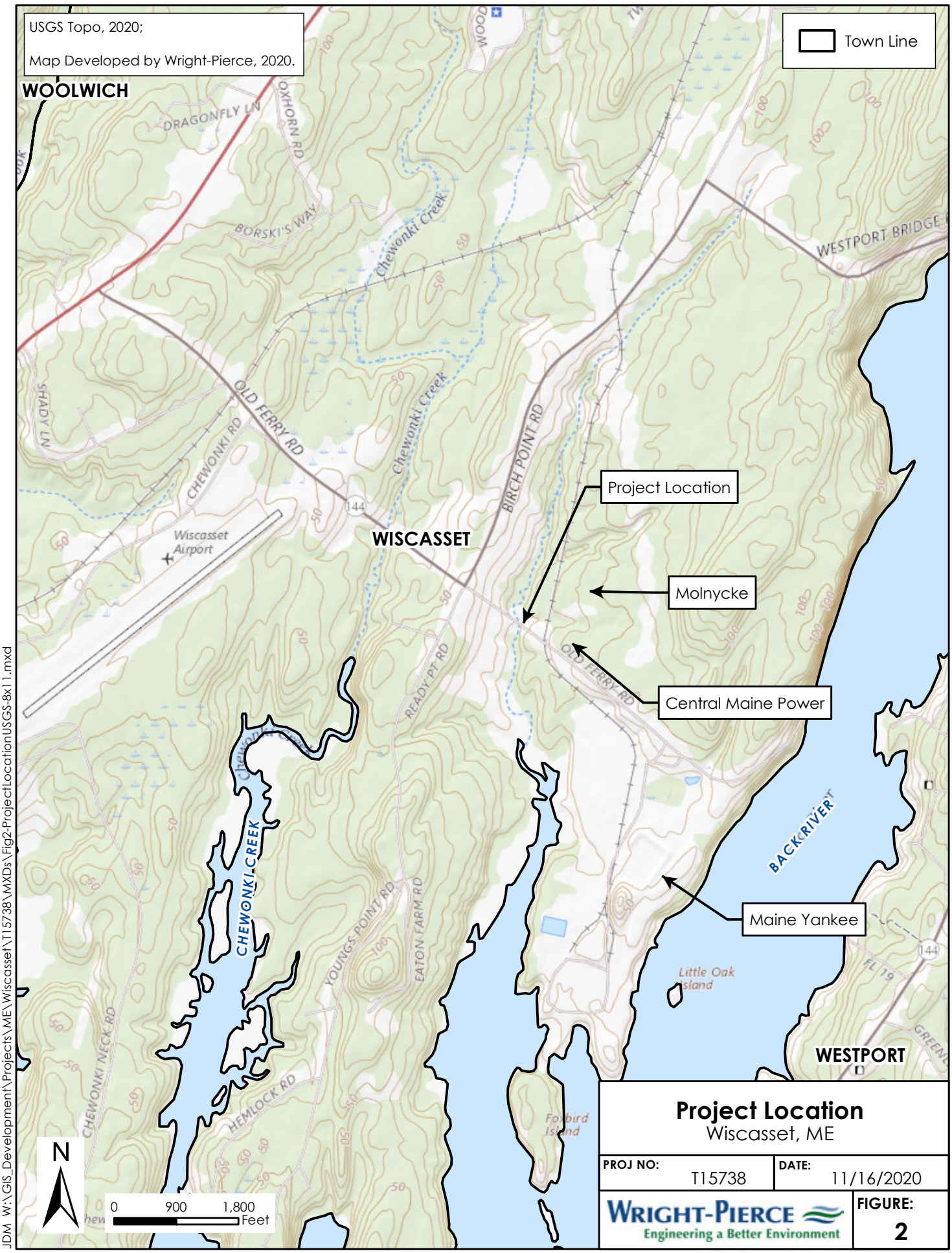


Project Location
Wiscasset, ME

PROJ NO:	DATE:
T15738	11/16/2020

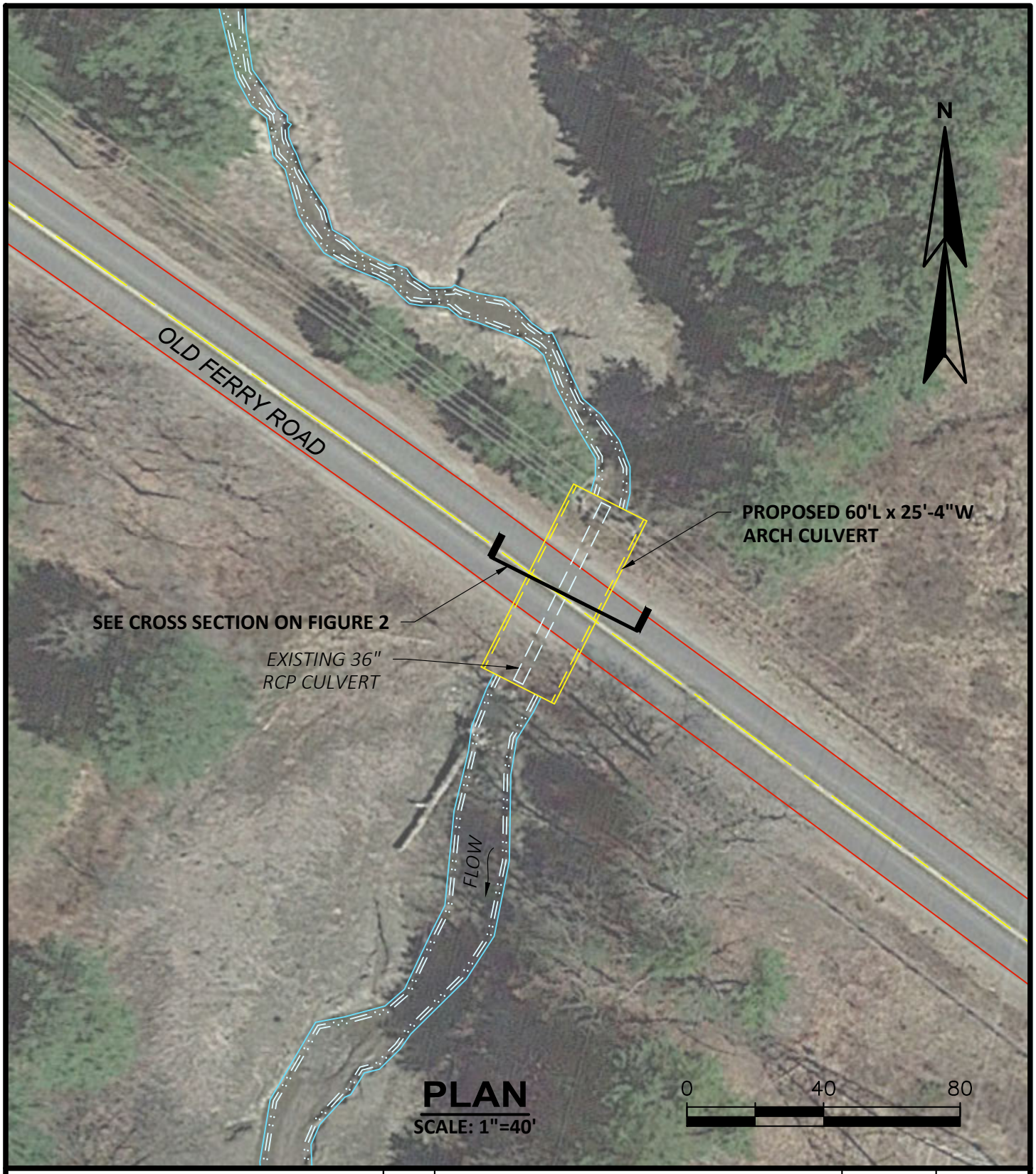
WRIGHT-PIERCE
Engineering a Better Environment

FIGURE: 2

JDM W:\GIS_Development\Projects\ME\Wiscasset\T15738\MXDs\Fig2-ProjectLocationUSGS-8x11.mxd

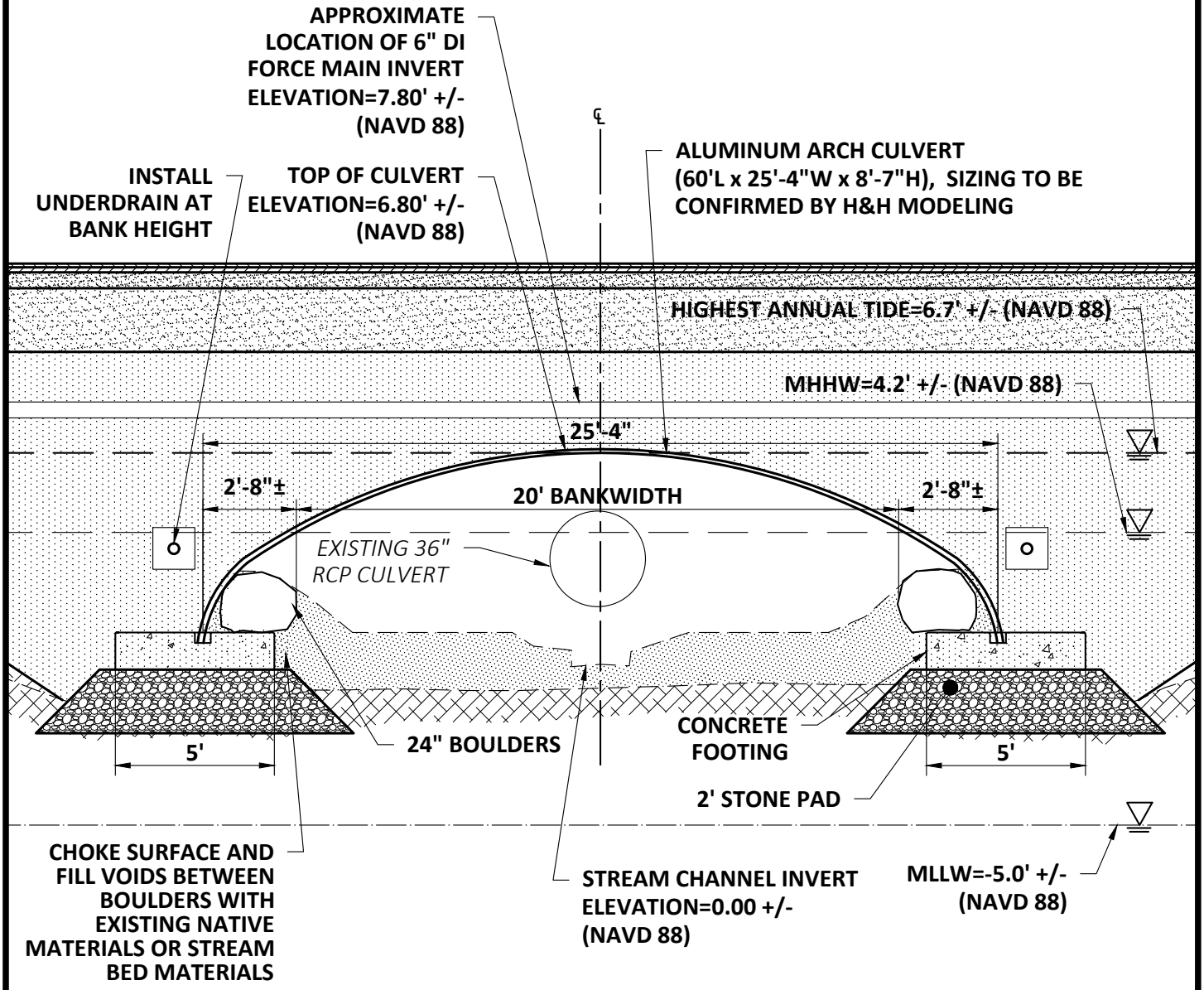
WRIGHT-PIERCE
Engineering a Better Environment

Attachment 3
Plans



PLAN
SCALE: 1"=40'

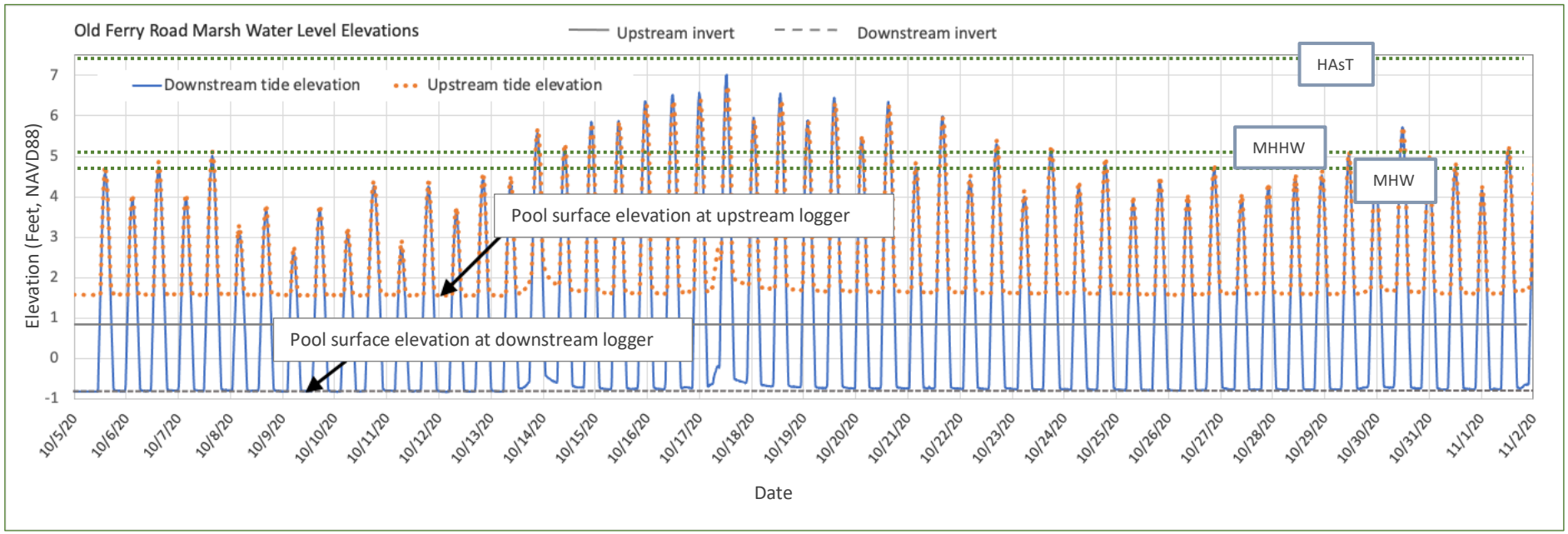
TOWN OF WISCASSET OLD FERRY ROAD CULVERT REPLACEMENT WISCASSET, MAINE	NO.	REVISIONS	DRAWN BY	APP'D
	1		---	
	2			
	3			
PROJ NO: T15738 DATE: NOVEMBER 2020				
WRIGHT-PIERCE	OLD FERRY RD CULVERT REPLACEMENT PRELIMINARY SITE PLAN			FIGURE: 1

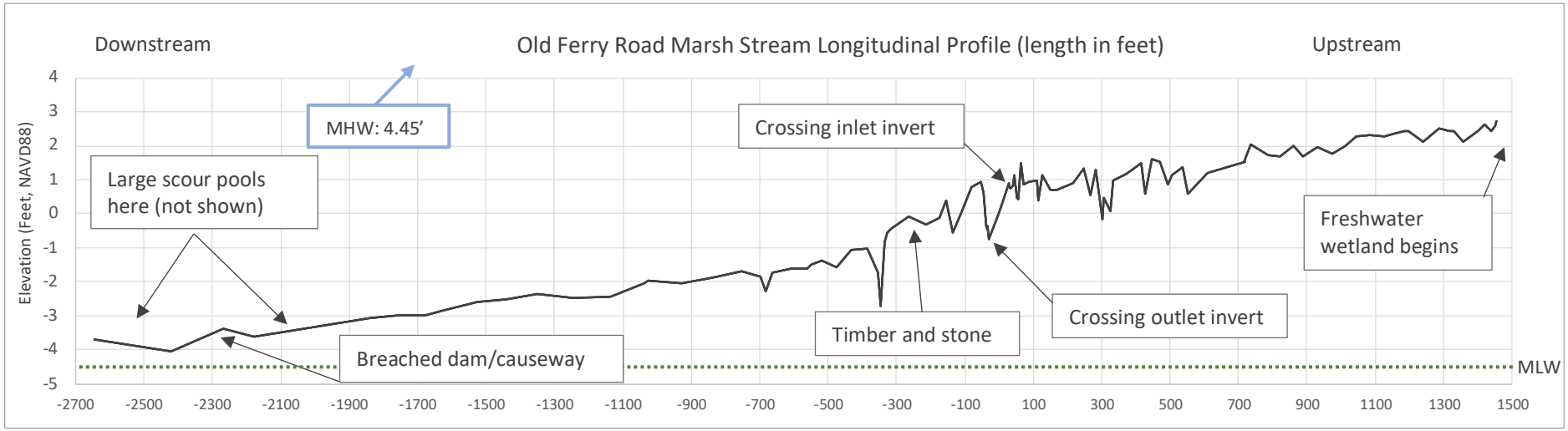


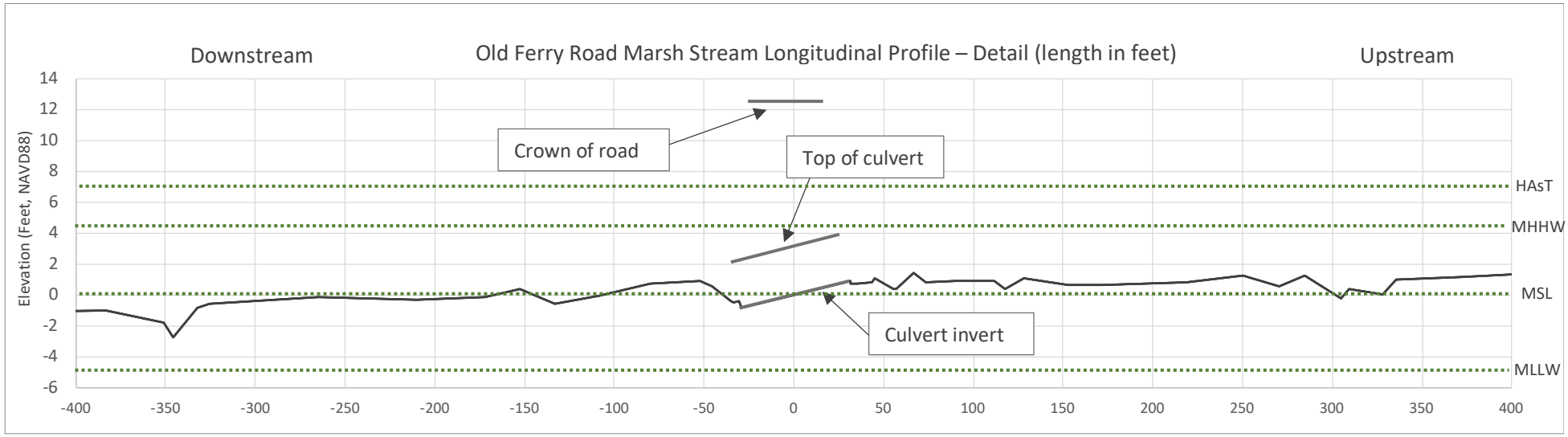
ARCH CULVERT CROSS SECTION

SCALE: NTS

TOWN OF WISCASSET OLD FERRY ROAD TIDAL CULVERT REPLACEMENT WISCASSET, MAINE	**NO.**	**REVISIONS**	**DRAWN BY**	**APP'D**
	1		---	
	2			
	3			
PROJ NO: T15738 **DATE:** NOVEMBER 2020				
WRIGHT-PIERCE	**TIDAL CULVERT REPLACEMENT** **PRELIMINARY CROSS SECTION**			**FIGURE:** 2


Old Ferry Road Marsh Water Level Elevations
Upstream invert
Downstream invert
Downstream tide elevation
Upstream tide elevation
HAsT
MHHW
MHW
Pool surface elevation at upstream logger
Pool surface elevation at downstream logger
Elevation (Feet, NAVD88)
7
6
5
4
3
2
1
0
-1
10/5/20
10/6/20
10/7/20
10/8/20
10/9/20
10/10/20
10/11/20
10/12/20
10/13/20
10/14/20
10/15/20
10/16/20
10/17/20
10/18/20
10/19/20
10/20/20
10/21/20
10/22/20
10/23/20
10/24/20
10/25/20
10/26/20
10/27/20
10/28/20
10/29/20
10/30/20
10/31/20
11/1/20
11/2/20
Date


Downstream
Old Ferry Road Marsh Stream Longitudinal Profile (length in feet)
Upstream
Elevation (Feet, NAVD88)
4
3
2
1
0
-1
-2
-3
-4
-5
MHW: 4.45'
Large scour pools here (not shown)
Crossing inlet invert
Freshwater wetland begins
Breached dam/causeway
Timber and stone
Crossing outlet invert
MLW
-2700
-2500
-2300
-2100
-1900
-1700
-1500
-1300
-1100
-900
-700
-500
-300
-100
100
300
500
700
900
1100
1300
1500

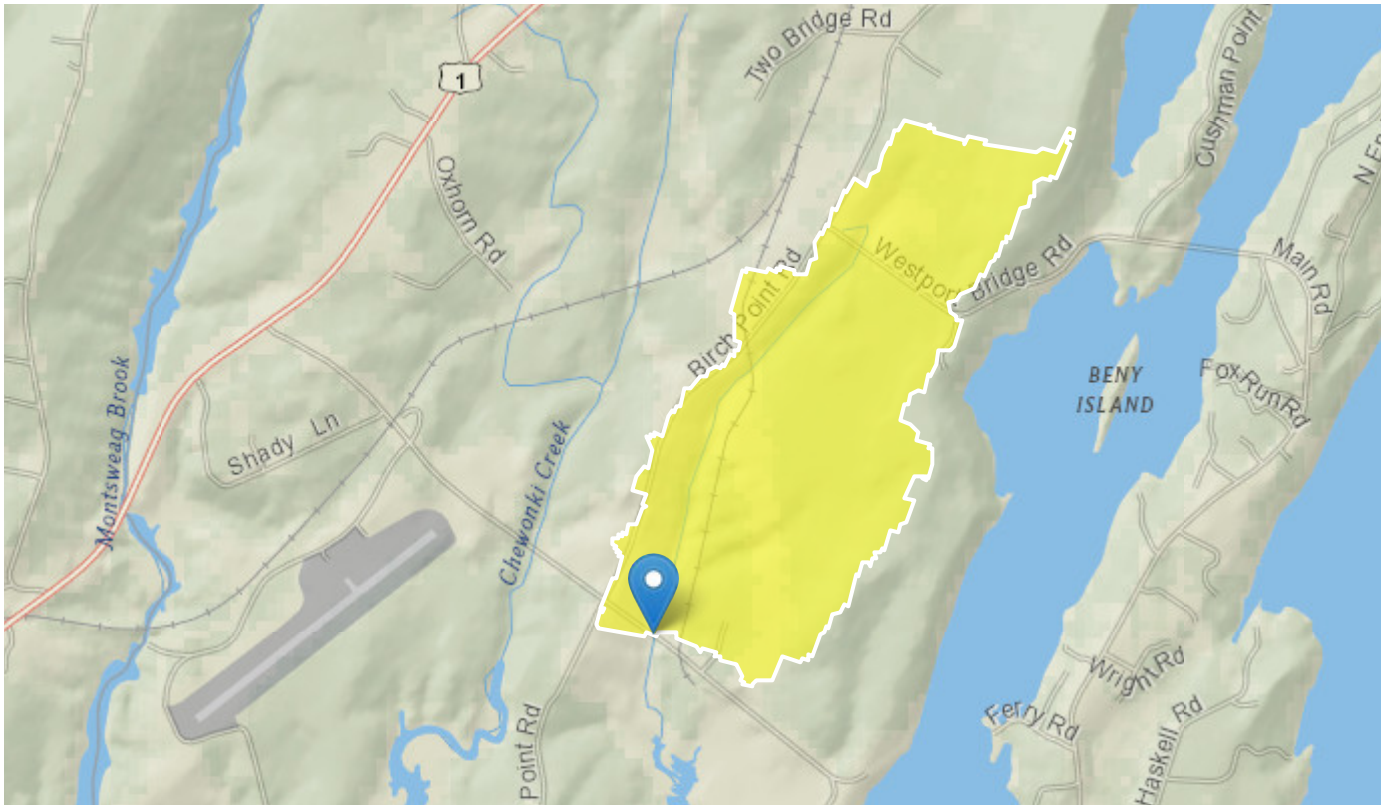

Downstream
Old Ferry Road Marsh Stream Longitudinal Profile – Detail (length in feet)
Upstream
Elevation (Feet, NAVD88)
14
12
10
8
6
4
2
0
-2
-4
-6
-400
-350
-300
-250
-200
-150
-100
-50
0
50
100
150
200
250
300
350
400
Crown of road
Top of culvert
Culvert invert
HAsT
MHHW
MSL
MLLW

WRIGHT-PIERCE
Engineering a Better Environment

Attachment 4
Stream Stats, Layer Details, Tidal Restrictions & Letters of Support

StreamStats Report

Region ID: ME
Workspace ID: ME20201111234714968000
Clicked Point (Latitude, Longitude): 43.96116, -69.69808
Time: 2020-11-11 18:47:33 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.5	square miles
STORNWI	Percentage of strorage (combined water bodies and wetlands) from the Nationa Wetlands Inventory	2.71	percent

Peak-Flow Statistics Parameters[Statewide Peak Flow DA LT 12sqmi 2015 5049]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.5	square miles	0.31	12
STORNWI	Percentage of Storage from NWI	2.71	percent	0	22.2

Peak-Flow Statistics Flow Report[Statewide Peak Flow DA LT 12sqmi 2015 5049]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SEp
1.01 Year Peak Flood	10.1	ft^3/s	38
2 Year Peak Flood	33.5	ft^3/s	34
5 Year Peak Flood	53	ft^3/s	35
10 Year Peak Flood	67.4	ft^3/s	37
25 Year Peak Flood	87.9	ft^3/s	39
50 Year Peak Flood	104	ft^3/s	41
100 Year Peak Flood	121	ft^3/s	42
250 Year Peak Flood	139	ft^3/s	44
500 Year Peak Flood	165	ft^3/s	47

Peak-Flow Statistics Citations

Lombard, P.J., and Hodgkins, G.A.,2015, Peak flow regression equations for small, ungaged streams in Maine— Comparing map-based to field-based variables: U.S. Geological Survey Scientific Investigations Report 2015–5049, 12 p. (http://dx.doi.org/10.3133/sir20155049)

Bankfull Statistics Parameters[Central and Coastal Bankfull 2004 5042]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.5	square miles	2.92	298

Bankfull Statistics Disclaimers[Central and Coastal Bankfull 2004 5042]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Bankfull Statistics Flow Report[Central and Coastal Bankfull 2004 5042]

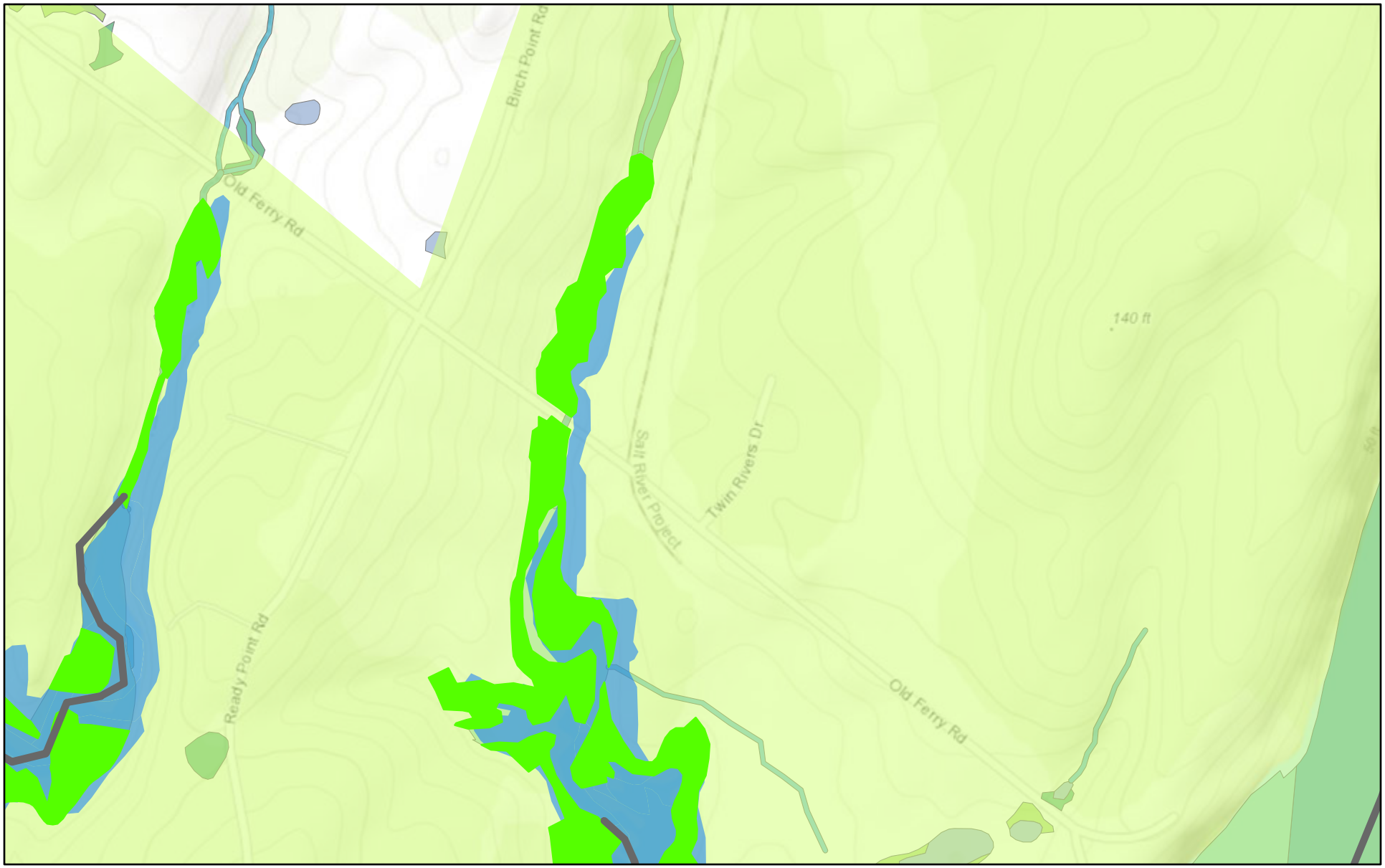
Statistic	Value	Unit
Bankfull Streamflow	2.51	ft^3/s
Bankfull Width	5.35	ft
Bankfull Depth	0.469	ft
Bankfull Area	2.51	ft^2

Bankfull Statistics Citations

Dudley, R.W.,2004, Hydraulic-Geometry Relations for Rivers in Coastal and Central Maine: U.S. Geological Survey Scientific Investigations Report 2004-5042, 30 p (http://pubs.usgs.gov/sir/2004/5042/pdf/sir2004-5042.pdf)

Application Version: 4.4.0

Viewer Map



November 12, 2020

alewifedh
- Stream
- tidalmarshes
- tidalwaterfowl
- bwhfocusareas
- towns

wetlands
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake

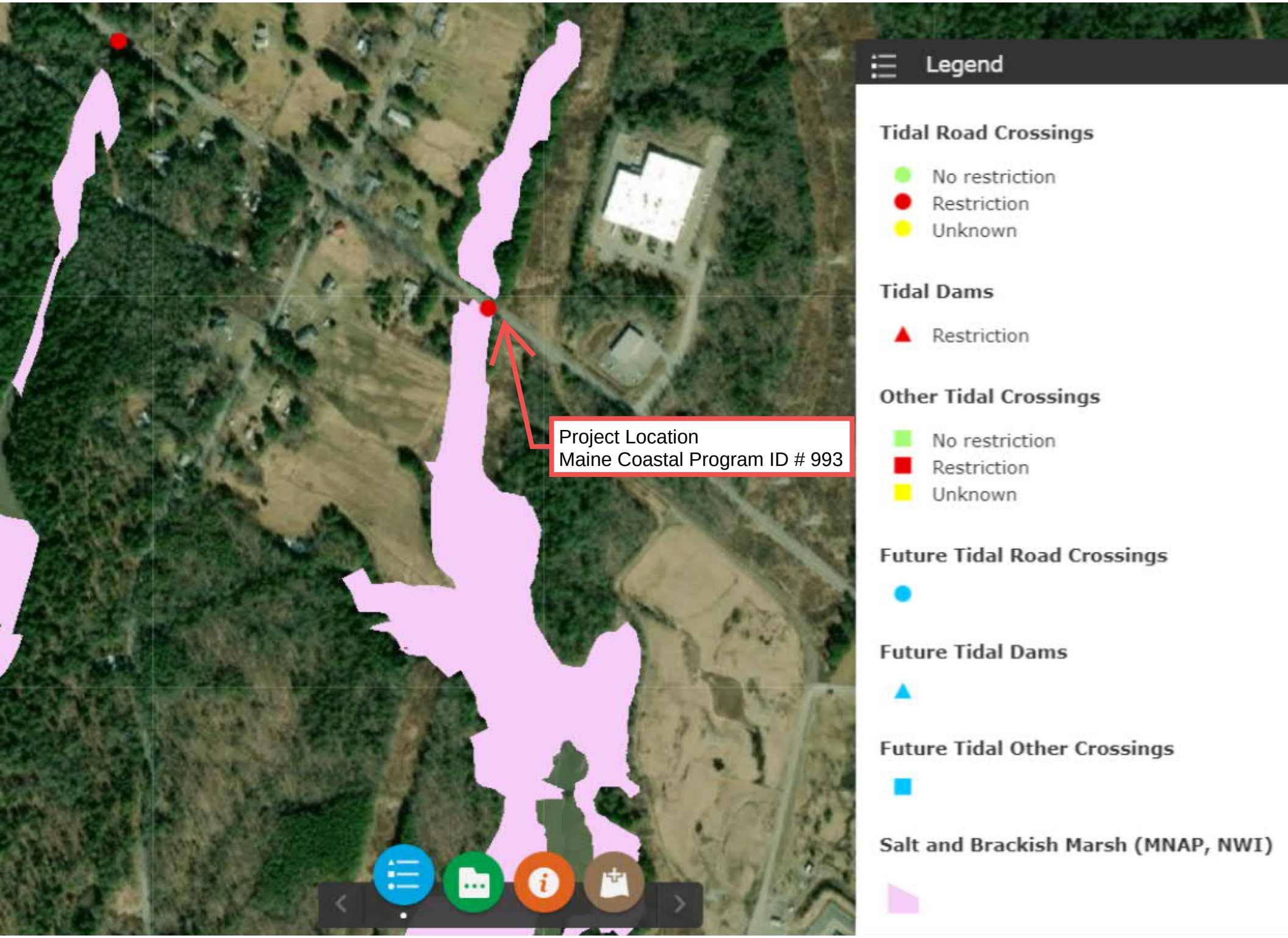
1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

Stream Habitat Viewer


Project Location
Maine Coastal Program ID # 993
Legend
Tidal Road Crossings
No restriction
Restriction
Unknown
Tidal Dams
Restriction
Other Tidal Crossings
No restriction
Restriction
Unknown
Future Tidal Road Crossings
Future Tidal Dams
Future Tidal Other Crossings
Salt and Brackish Marsh (MNAP, NWI)

STATE OF MAINE
DEPARTMENT OF MARINE RESOURCES
21 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0021

JANET T. MILLS
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

November 11, 2020

John Maclaine
Non-Point Source Training Center Coordinator
Office of the Commissioner
Maine Department of Environmental Protection
17 State House Station, Augusta, ME 04333

Dear Mr. Maclaine,

The Maine Department of Marine Resources (DMR) is writing to express support for Wiscasset's DEP funding application through the Crossing Upgrade Grant Program. The crossing involved is in exceedingly poor condition, likely impacts a smelt spawning population, and is the only access for a medical manufacturing facility and a boat launch used by marine harvesters. In addition, the town and other partners are working together to implement a tidal crossing that meets Coastwise guidance. This is the highest priority stream crossing application DMR has reviewed this fall as it relates to our resources, need, access, and public benefit. DMR is also planning to add citizen science sampling at the sight and nearby areas for smelt as a result of this application.

At the site in question, Old Ferry Road crosses over a tidal marsh/stream that is part of the larger Back River system. The crossing structure is a severely undersized, partially blocked 36" concrete culvert. With road shoulder sinkholes and collapsing headwalls, the compromised condition and safety of this crossing are a major concern. Also at risk is the resiliency of the upstream salt marsh. The culvert is so undersized that tidal water levels upstream of the crossing are 2'-3' lower than downstream, which limits the delivery of sediment, saline waters, and other materials necessary to maintain marsh health under conditions of accelerated sea level rise. The undersized crossing is also implicated in the collapse of a local population of rainbow smelt, a species of heightened management concern.

The Town and their multi-partner team are addressing these issues by developing a crossing design that integrates best practices and elements of the CoastWise Approach. Using CoastWise, they intend to build a crossing that is safe, cost-effective, climate resilient, and ecologically-supportive. The costs of tidal crossings meeting these performance objectives is often far more than for non-tidal crossings. Consequently, funding from DEP's Crossing Upgrade Grant Program is especially important for projects of this type.

Sincerely,

Sean Ledwin

Sean M. Ledwin
Division Director
Sea-Run Fisheries and Habitat

United States Department of the Interior
U.S. Fish and Wildlife Service
GULF OF MAINE COASTAL PROGRAM
4R Fundy Rd., Falmouth, ME 04105
Phone: (207) 781-8364 FAX: (207) 781-8369

November 9, 2020

John Maclaine
Non-Point Source Training Center Coordinator
Office of the Commissioner
Maine Department of Environmental Protection
17 State House Station, Augusta, ME 04333

Dear Mr. Maclaine,

The U.S. Fish and Wildlife Service Gulf of Maine Coastal Program (GOMCP) is pleased to demonstrate our support for Wiscasset's DEP funding application through the Crossing Upgrade Grant Program. Funding of their proposal will support the replacement of an undersized and failing crossing on Old Ferry Road that is a fish passage barrier and impairing the upstream tidal marsh. Furthermore, the crossing is the sole access to Maine Yankee, a medical manufacturing facility, and a boat launch used almost exclusively by marine harvesters.

GOMCP staff will work with the Town of Wiscasset and their multi-partner team to replace the failing crossing by developing a crossing design that integrates best practices and elements of the CoastWise Approach. This will create a site that demonstrates the benefits and principles of the CoastWise Approach by building a safe, cost-effective, climate resilient, and ecologically-supportive tidal crossing. Furthermore, the new crossing will restore the hydrology of over 3-acres of tidal marsh, reconnect approximately 1.3-miles of stream, and build resiliency within the Town's transportation network.

Coastal marshes are among the most important habitats for wildlife in Maine, which are highly threatened by sea-level rise and land-use pressures. Salt marshes also provide a vital buffer for coastal communities by absorbing storm surges and dampening the effects of extreme storms. Restoring these important habitats is a high priority for the U.S. Fish and Wildlife Service and we are pleased to be in this multiple party partnership. If you have any questions please do not hesitate to contact this office.

Sincerely,

Christopher Meaney
Gulf of Maine Coastal Program Project Leader

LCRPC
LINCOLN COUNTY REGIONAL PLANNING COMMISSION

297 Bath Road
207-882-5983
Wiscasset, ME 04578

November 16, 2020

John Maclaine
Non-Point Source Training Center Coordinator
Office of the Commissioner
Maine Department of Environmental Protection
17 State House Station, Augusta, ME 04333

Dear Mr. Maclaine,

Lincoln County Regional Planning Commission very strongly supports the Town of Wiscasset's Stream Crossing Upgrade application to DEP. This funding opportunity comes at a very critical time, since this deteriorating crossing is the only access to a low-level radioactive waste storage facility and three other employers, in addition to impacting a tidal resource.

Old Ferry Road extends easterly from Route 144, about a mile south of Route One. The road crosses over a tidal marsh/stream that is part of the larger Back River system. The structure itself is a severely-undersized, partially-blocked 36" concrete culvert. With road shoulder sinkholes and collapsing headwalls, the compromised condition and safety of this crossing are major concerns. The crossing is the **sole** access to Maine Yankee (40 employees), a CMP facility, Molnlycke (a major employer with 130 jobs), and a public boat launch used almost exclusively by wormers and clammers (about 25-30). It also conveys a public sewer main that is at risk to discharge into the marsh should the crossing fail.

The culvert is so undersized that tidal water levels upstream of the crossing are 2'-3' lower than downstream, which limits the delivery of sediment, saline waters, and other materials necessary to maintain marsh health under conditions of accelerated sea level rise. The undersized crossing is a possible cause of the collapse of a local population of rainbow smelt, a species of heightened management concern.

The LCRPC works as a partner with the Town on many economic and community development initiatives, including the future re-development of the Mason Station property and improvements to the Town's waterfront. We also communicate regularly with Maine Yankee about the status of its Independent Spent Fuel Storage Installation (ISFSI) and about potential re-development of additional MY acres. It is essential that full, 24-hour, daily access to this facility be maintained.

We expect, as a result of this grant, that the Town, the LCRPC, and other partners will succeed in addressing these urgent physical infrastructure and public safety needs, and environmental issues with a safe, cost-effective, and ecologically-sound solution. DEP's Crossing Upgrade Grant will very much be a necessary piece to maintaining full access to well over 200 jobs and the Maine Yankee.

Sincerely,

Mary Ellen Barnes

Mary Ellen Barnes
Executive Director

MAINE YANKEE
321 Old Ferry Road, Wiscasset, Maine 04578

November 16, 2020

John Maclaine
Non-Point Source Training Center Coordinator
Office of the Commissioner
Maine Department of Environmental Protection
17 State House Station, Augusta, ME 04333

Dear Mr. Maclaine,

On behalf of Maine Yankee, I am writing in support of the Town of Wiscasset's DEP funding application to replace the subject culvert that crosses under Old Ferry Road. As documented in the Town's funding application, the crossing is in exceedingly poor condition warranting prompt remediation.

At the site in question, Old Ferry Road crosses over a tidal marsh/stream that is part of the larger Back River system. As documented in the Town's funding application, the crossing structure is a severely undersized, partially blocked 36" concrete culvert with road shoulder sinkholes and collapsing headwalls that compromise the condition and safety of this crossing.

Old Ferry Road is the sole means of access to Maine Yankee's Independent Spent Fuel Storage Installation (ISFSI) where spent nuclear fuel and Greater than Class C waste is stored in accordance with its U.S. Nuclear Regulatory Commission license. Twenty-four hour, seven day a week access to the ISFSI site is required.

According to the Town's funding application, they and their multi-partner team are developing a crossing design that integrates best practices and elements of the CoastWise Approach to build a crossing that is safe, cost-effective, climate resilient, and ecologically-supportive.

Sincerely,

Daniel Laing

ISFSI Manager, Maine Yankee

WRIGHT-PIERCE
Engineering a Better Environment

11 Bowdoin Mill Island, Suite 140
Topsham, ME 04086
207.725.8721 | www.wright-pierce.com