
II. Existing Conditions

2.1 Nonquit Pond Bridge No. 292 and Roadway

Nonquit Pond Bridge carries Pond Bridge Road over Almy Creek. The bridge was built in 1939 by the Town of Tiverton using Works Progress Administration (WPA) funds to replace an existing structure that was washed out by the Hurricane of 1938, and has not been reconstructed since. The construction plans for the bridge are unavailable, however the following information about the structure is taken from Inspection and Load Rating Reports. The existing bridge is a single-span concrete-encased steel beam bridge with a concrete deck supported on concrete abutments. The bridge superstructure has a span of 35'-2"± and an out-to-out width of 22'-6"±. The superstructure consists of concrete encased steel stringers supporting a concrete deck with a bituminous wearing surface. The Nonquit Pond Bridge travel way measures 20 feet curb-to-curb and carries one lane of traffic in each direction. Concrete bridge parapets are present on both sides of the bridge. No sidewalks or bike lanes are currently present along the bridge roadway and the narrow width of the current bridge prevents the addition of these features. The existing bridge geometry is as follows:

Structure Information:

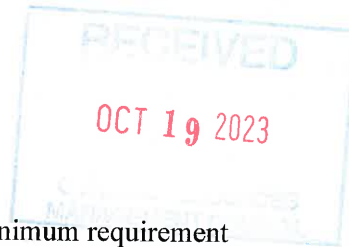
Bridge Number:	029201
Location:	Tiverton, Rhode Island
Route Carried:	Pond Bridge Road
Feature Intersected:	Nonquit Pond
Year Built:	1939
Dates of Rehabilitation:	None
Superstructure Type:	Concrete encased rolled steel beams
Substructure Type:	Reinforced concrete abutments (foundation unknown)
Number of Lanes:	2 lanes (1 each direction)
Load Rating/Posting:	9 Tons (2-axle), 13 Tons (3-axle)
Bridge Span Length:	35'-2" ±
Skew:	0± degrees
Bridge Width:	22'-6" ±
Roadway Width:	20'-0" ±
Road Surface:	Bituminous concrete pavement
Curb Height:	No curb present
Shoulder Width:	None
Sidewalk Width:	None
Railing Type:	Reinforced Concrete Parapet
Railing Height:	3'-0" ±
Railing Depth:	1'-0" ±



Utilities:	Overhead wire: National Grid Electric, Verizon, Cox; Unknown Conduit on North Fascia, Buried watermain south of bridge
Surrounding Features:	Nonquit Pond Dam & Fish Ladder, pump station, farmland
Geographical description(s):	Rural, Coastal, Agricultural
Composition of Vehicular Traffic:	Passenger, Agricultural

Pond Bridge Road is a rural local road in the Town of Tiverton. Pond Bridge Road is not part of the National Highway System (NHS). The existing geometric conditions of the approach roadway are as follows:

Number of Lanes:	2 lanes (1 each direction)
Approach Width:	20'-0" ±
Lane Width:	10'-0" ±
Usable Shoulder Width:	None
Sidewalk Width:	None
Design Speed:	25 mph
ADT:	500
Truck Percentage:	10%
Sight Distance:	Exceeds minimum requirement
Signalization/Signage:	None



The horizontal and vertical alignments at the approaches are tangent. Steel guardrail is present at all approaches to the bridge.

The bridge is oriented in an east-west direction over the tidal waterway. Ebb tide flows south and flood tide flows north. Surrounding land use in the vicinity of the bridge consists of agricultural farmland to the south and northeast, ruderal grassland/shrub land to the northwest, and wetlands to the north and south.

Based on the RIDOT Bridge Inspection Report dated October 3, 2019 and field observations by Pare, the bridge is in overall Poor condition. The condition ratings of the bridge components are as follows: the bridge deck is rated 4 (Poor), the superstructure is rated 2 (Critical/Intolerable), and the substructure is rated 3 (Serious). The concrete decking exhibits extensive spalling and delamination exposing the reinforcing steel, which has experienced severe section loss. Concrete encasing steel components on the underside of the bridge have been completely spalled away and the exposed beams have heavy laminated rust and section loss. The substructure exhibits cracking, large, delaminated areas, and severe scaling with exposed reinforcing. Efflorescence and staining are present with evidence of bridge joint leakage.

The latest RIDOT Bridge Load Rating Report recommends that the bridge be posted. Calculations that account for the existing bridge condition have resulted in a bridge posting of 9-tons for two axle vehicles and a 13-tons for vehicles with three or more axles. These limits restrict the passage of certain school buses, emergency



vehicles, and trucks. Due to the existing conditions ratings, observed deficiencies, and load rating, the bridge is considered to be structurally deficient and in need of replacement.

2.2 Utilities

Overhead utilities are present over the north portion of the structure. An unknown utility is attached to the north fascia of the bridge. A buried watermain owned by the City of Newport is present along the south shoulder of the road but crosses under the waterway south of the bridge. The property adjacent to the north of the bridge is also owned by the City of Newport, which operates the dam and uses Nonquit Pond as a source for their water distribution system. An existing dry hydrant is located northwest of the bridge at the edge of a gravel turnaround area that is utilized by local fire departments.

2.3 Drainage

Under existing conditions, the roadway has no closed drainage system and sheet flow directs to the low point in the roadway outside of the bridge limits, then flows to either side of the roadway and into roadside drainage trenches or adjacent vegetated road shoulders. Currently there are no stormwater treatment areas in the project area.

2.4 Wetlands

The limits of the shoreline features, coastal wetlands, high tide line, freshwater wetlands, and Areas Subject to Storm Flowage (ASSF) were field delineated by Pare on July 16, 2020. CRMP and Regulations of the Rhode Island CRMC Freshwater Wetlands in the Vicinity of the Coast (the FWWIVC regulations) regulated wetland types in the vicinity of Nonquit Pond Bridge are described briefly below and in greater detail in the Wetland Delineation Report in Section 5.

Almy Creek is a tidally influenced tributary to the Sakonnet River. Nonquit Pond is impounded by the Nonquit Pond Dam, which discharges to the creek immediately upstream of the bridge. The dam demarcates the head of the tide to Almy Creek, and the freshwater Nonquit Pond is a designated drinking water supply for the City of Newport. Waters within Almy Creek are classified under the CRMP as Type 1- Conservation Areas.

The Rhode Island Department of Environmental Management (RIDEM) water quality classification for the Nonquit Pond (Waterbody ID# RI0007035L-08) is Class AA. Class AA waters are designated as a source of public drinking water supply or as tributary waters within a public drinking water supply watershed, for primary and secondary contact recreational activities and for fish and wildlife habitat. According to RIDEM's Clean Water Act Integrated List of Waterbodies – Appendix A 2016 Index of Waterbodies and Category Listing, the impairments affecting this waterbody segment are total phosphorus and total organic carbon (TOC). RIDEM has classified Nonquit Pond as a Category 5 waterbody that is not supporting fish and wildlife habitat or public drinking water supply. The waterbody is fully supporting primary and secondary contact recreation, and is not assessed for fish consumption. A TMDL is under development for the phosphorus and TOC impairments and scheduled to be adopted in 2019. The waterbody is a designated Special Resource Protection Water (SRPW) for ecological habitat and drinking water supply.



The RIDEM water quality classification for Almy Creek (Waterbody ID# RI0010031E-01B) is Class SA. Class SA waters have designated uses for swimming, primary and secondary contact recreation, fish and wildlife habitat; shellfishing; and fish consumption. However, it should be noted, the RIGIS data layer for Shellfish Harvest Restrictions shows the area to be prohibited from shellfishing. The waterbody is not listed as being impaired, however is a designated SRPW of the Sakonnet River for recreational and ecological uses including recreation, ecological habitat, federal park, and critical habitat for rare and endangered species.

Two areas of coastal wetlands were identified along the Almy Creek shoreline in the vicinity of the bridge. On the downstream side of the bridge, two areas of salt marsh occupy the intertidal zone on either side of the channel. The eastern saltmarsh perimeter was located by handheld GPS and no flags were hung. This area consists of low saltmarsh between elevations 0.5 and 1.5 of the intertidal zone. The western saltmarsh, defined as wetland flag series SM, begins near the southwest wingwall and borders the base of the bridge and roadway embankment slope. Low saltmarsh ranges between El. 0.75 and 1.5, and high saltmarsh between El. 1.5 and 3.0 at the base of the slope. The western saltmarsh continues to the southwest corresponding to the edge of creek, beyond the limits of the SM series. Upslope of the saltmarsh, a contiguous brackish wetland extends along the coastal bank and roadway shoulder, defined as flag series C, beginning at coastal bank flag R-112=C-1 and continuing west to border the roadway shoulder and agricultural field.

In the vicinity of the bridge, areas of manmade shoreline include bridge support structures and concrete retaining walls corresponding to the dam structure, inclusive of a fish ladder adjacent to the northeast wingwall and dam retaining wall. In all of these manmade shoreline areas, the creek edge transitions immediately to developed upland, with no contiguous wetland communities present upslope of the high tide mark.

Two freshwater wetland complexes occupy the vegetated areas bordering the upstream sides of Nonquit Pond in the vicinity of the bridge. The wetland edges in the vicinity of the project area were delineated in two series (A and B series) to establish the limits of the resource areas and their associated Buffer Zones and Jurisdictional Areas. Based on field reconnaissance and review of published mapping, the areas appear to be part of continuous, interconnected wetland complexes that ultimately border on a majority of the pond to the north. Under the FWWIVC regulations, these areas are classified as Freshwater Wetlands in the Vicinity of the Coast. Wetland A consists of a Shrub Wetland edge closest to the roadway that is contiguous to a larger marsh/wet meadow complex further to the north bordering the pond and the farmed agricultural field. Wetland B consists of a Scrub Shrub Swamp/Marsh complex in the area northwest of the bridge located along the upstream side of the dam embankment and pond edge. The wetland occupies a low-lying area between Nonquit Pond and the bordering City of Newport Water Division property and consists of a marsh interior with shrub wetland edges.

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An overgrown vegetated drainage swale, classified under the FWWIVC Regulations as an Area Subject to Storm Flowage (ASSF), was identified along the shoulder of the roadway along the southwest embankment, upslope of the eastern bank bordering Almy Creek, downstream of the bridge. This area appears to convey drainage from the adjacent roadway into the creek, and is defined by flag series ASSF200. Two additional drainage patterns were identified in the vicinity of the bridge. Flag series ASSF defines the centerline of a narrow, eroded drainage pattern leading from the gravel parking area northwest of the bridge to the edge of Nonquit Pond. Flag series ASSF100 defines a worn walking path leading from the gravel parking area



southwest of the bridge down to Almy Creek. Both areas appear to convey drainage from the upland gravel areas to the corresponding waterbodies downslope.

According to the FEMA Flood Insurance Rate Map for Bristol County, Rhode Island (Community Panel 44005C0112J, effective date September 4, 2013), the site is located within the 100-year Floodplain associated with Almy Creek and Nonquit Pond. Nonquit Pond is mapped as Zone AE, subject to wave action, with a base flood elevation of 16 feet. The areas to the northeast and northwest of the bridge, the bridge itself, and the roadway are mapped as Zone AE with a base flood elevation of 14 feet. Almy Creek downstream of the bridge is mapped as a Coastal Barrier Resource Area (D02) System Unit under jurisdiction of the USFWS. The Almy Creek channel is mapped as a Zone AE, coastal flood zone subject to wave action, with a base flood elevation of 16 feet. The area downstream of the bridge is mapped as Zone AE, coastal flood zone subject to wave action, with a base flood elevation of 15 feet.

2.5 Threatened and Endangered Species

USFWS Section 7 Endangered Species Act

According to the U.S. Fish and Wildlife Service's Information for Planning and Conservation (IPaC) online mapping tool, the Northern Long-Eared Bat (*Myotis septentrionalis*) is the only federally-listed threatened species on the species list for the project area (see attached IPaC Official Species List in Section 6). However, no critical habitat for the Bat has been established within the project area. The project involves the demolition of the bridge superstructure and removal of one tree adjacent to the bridge's southwest abutment, therefore the project was evaluated for potential impacts to threatened or endangered species through the IPaC process as the Project "may affect, but is not likely to adversely affect (NLAA)" the northern long-eared bat. The effect determination was submitted on January 25, 2021 to the U.S. Fish and Wildlife Service under the FHWA Programmatic Biological Opinion (PBO) for Transportation Projects within the Range of the NLEB (presented in Section 6). The Service did not notify the lead Federal action agency or designated non-federal representative within 14 days, and therefore the project may proceed with the Proposed Action under the terms of the Not Likely to Adversely Affect (NLAA) concurrence provided in the PBO as of February 8, 2021. The following avoidance and minimization measures (AMMs) given under the terms of the NLAA concurrence provided in the PBO will be included in the contract documents:

General AMM 1: The project will ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures.

Tree Removal AMM 1: All phases/aspects of the project (e.g., temporary work areas, alignments) will be modified, to the extent practicable, to avoid tree removal in excess of what is required to implement the project safely.

Tree Removal AMM 2: Time of year restrictions will be applied for tree removal when bats are not likely to be present (inactive season November 1st-March 31st).

Tree Removal AMM 3: Tree removal will be limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).

Tree Removal AMM 4: The project will avoid cutting down/removal of all (1) documented Indiana bat or NLEB roosts (that are still suitable for roosting), (2) trees within 0.25 miles of roosts, and (3) documented foraging habitat any time of year.

NOAA NMFS Section 7 Endangered Species Act – Essential Fish Habitat

The data inquiry tool was used within NOAA National Marine Fisheries Service (NMFS) EFH Mapper (<https://www.habitat.noaa.gov/application/efhmapper/index.html>) to generate a list of species with potential to occur within the tidal reaches of Almy Creek. This list of species was then cross-checked with NOAA Fisheries Species Directory of ESA Threatened and Endangered Species (NOAA Fisheries Species Directory) to determine if any of the species within the project area are listed under the ESA, of which there are none. The species list that was generated is attached in Section 6. Programmatic consultation with NOAA NMFS Greater Atlantic Regional Fisheries Office, Habitat Conservation Division (GARFO HDC) for Essential Fish Habitat (EFH) was initiated on 1/25/21 by RIDOT through submittal of the Appendix B Verification Form (attached) of the FHWA Programmatic Essential Fish Habitat Consultation For Select Transportation Actions in the NMFS Greater Atlantic Region.

NOAA Fisheries lists the following time-of-year restrictions for in-water work (i.e., turbidity producing activities, noise activities, or activities which may encroach greater than 25% into a waterway with migration):

RI Managed Species	Time of Year Restrictions
Winter Flounder	February 1 to June 30
Diadromous Fish	March 15 to June 30 and September 1 to November 30*

*All diadromous areas: Use the fall TOY restriction in cases where an action will substantially block the waterway in the fall.

Time of year restrictions provided by NMFS during EFH consultation will be applied to in-water work, which is limited to placement of control of water (COW) measures and dewatering behind COW with minimal turbidity anticipated during placement of COW measures. The project is not anticipated to have a substantial effect on EFH and impacts have been avoided to the maximum extent practicable. EFH programmatic consultation was completed with RIDOT and GARFO HDC concurrence that the project will not have a substantial effect on EFH and the project is in compliance with all applicable EFH conservation recommendations, demonstrated by the signed Appendix B form provided in Section 6. Please note, since the EFH form was signed, follow up correspondence between NMFS and RIDOT has concluded the shellfish TOY restriction (May 1 to October 14) does not need to be implemented for this project. Furthermore, since the COW measures have been reduced to 25% of the channel width, NMFS has



responded that in-water work may occur at any time of the year behind COW, and COW measures should be installed outside of the TOY restrictions windows.

NOAA NMFS Section 7 Endangered Species Act – Protected Resources

Formal consultation with NOAA NMFS GARFO Protected Resources Division (GARFO PRD) was conducted by the submission of an Appendix A FHWA GARFO NLAA (Not Likely to have an Adverse Affect) Program Verification Form. RIDOT as FHWA’s designated non-federal representative and GARFO PRD are in concurrence that the project is not likely to adversely affect ESA-listed species or designated critical habitat under NMFS jurisdiction in accordance with the Program, and all effects are either insignificant or discountable. The ESA Section 7 mapper and executed Appendix A consultation form are included in Section 6.

Rhode Island Endangered Species Act

Review of Rhode Island Natural Heritage Program data through the RIDEM Environmental Resource Map on 1/12/21 and again on 6/3/21 shows the project is not located within a Natural Heritage Area. Therefore, no effects are anticipated on state-listed threatened or endangered species.

Migratory Bird Treaty Act

The Migratory Bird Act (MBTA) states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance with the Act’s policies and regulations. The IPaC Resource List contains several migratory birds that could be found in the project area. However, species that may be found in this area are not limited to this list. When there is general vegetation removal with potential for nesting birds, it is recommended that if vegetation clearing will occur during the migratory bird breeding season (March 1- August 31), the contractor shall avoid any active bird nests. If the active nests cannot be avoided, the contractor shall notify RIDOT NRU to evaluate the situation. During the non-breeding season (September 1- February 28) vegetation removal is not subject to this restriction. For this project location, vegetation removal is proposed to occur during the non-breeding season, therefore habitat evaluation surveys will not be required to identify existing active or past nests.

Rhode Island Department of Fish & Wildlife (RIDEM DFW)

Although the project is not located within a state mapped Natural Heritage Area, it is located adjacent to a dam with a RIDEM fish ladder which provides passage for anadromous fish species. A project scope and preliminary plans were sent to RIDEM DFW on 1/26/21 for comment. DFW responded they are in agreement with the TOY restrictions that NMFS and ACOE have implemented and have asked that even outside the TOY restrictions that the water controls do not encroach on more than 25%. Email correspondence between RIDOT NRU and RIDEM DFW is provided in Section 6.

2.6 Historic Resources

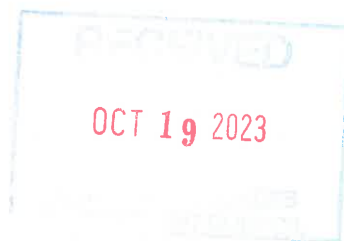
Euro-American settlement of the western shore of Tiverton as well as the area today called Tiverton Four Corners dates to the early 18th century. At that time, a ferry was established between Fogland Point and the east shore of Portsmouth. It is likely that that settlement necessitated a crossing of Nonquit Pond at its southern end. Although the 1870 Beers Atlas shows a bridge at this location, historical research has not yet established the structural type. It is likely that it was a timber stringer bridge resting on stone masonry abutments. This bridge was one of the four Tiverton structures washed out in the Hurricane of September 1938. The extent of damage to Nonquit Pond was such that the former freshwater body, utilized as a storage reservoir by the Newport Water Works Company (City of Newport), was rendered a tidewater salt pond.

By December of 1938 the Town voted to appropriate a modest \$10,000 for a replacement structure on Pond Bridge Road. Shortly after, Representative George Winard ushered a bill through the General Assembly to make Pond Bridge Road part of the State road system. This new status and the availability of Works Progress Administration (WPA) funding allowed a more ambitious bridge replacement project to move forward. The bridge was to be named Nonquit Pond Bridge 292. The lack of any Department of Public Works (DPW) engineering drawings suggests that while there was likely coordination with that agency, the state WPA office managed design and construction.

The WPA chose a deck of concrete-encased, rolled steel I-beams resting on reinforced concrete abutments. The parapet was solid concrete with WPA plaques inserted. For a span of this size and proximity to salt water, this choice was consistent with the work being carried out elsewhere in the state by the DPW. The bridge was open to traffic by January of 1940. As built, no provision was made to address the influx of saltwater into Nonquit Pond. This issue was addressed over the next decade with the construction on the north side of the span of an attached dam and spillway (RI DEM No. 396) to eliminate any saltwater contamination of Nonquit Pond. Subsequently a concrete fish ladder was built at the northeast corner of the bridge and dam.

Nonquit Pond Bridge 292 has provided communication between the Tiverton Four Corners area and the town's western shore for eighty years.

A summary of historic and tribal coordination completed for this project is provided in Section VI.



III. Proposed Project

The proposed project involves replacing the existing deteriorated concrete bridge structure with a new single span bridge. The existing concrete bridge abutments will be left in place but will be cut down to provide adequate clearance for the new bridge. The new bridge abutments will be constructed behind the existing abutments. This method of construction allows the foundations to be constructed “in the dry,” outside of both the waterway limits. Temporary impacts to the waterway will result from dewatering necessary during construction, however these impacts will be short-term and temporary in nature and the project presents little or no potential for significant impact to the waterway.

The bridge will be replaced in its existing location and the new superstructure will remain within the limits of the existing substructure, thus not encroach on the channel beyond the existing substructure footprint. The bridge will be widened by approximately 8.5-feet for safety purposes, to increase safe passage for pedestrians/bicyclists and vehicles simultaneously, however the superstructure will remain within the footprint of the existing abutments and wingwalls. Currently, the bridge is 20’ wide with no shoulders for pedestrians and bicyclists. The proposed bridge width will accommodate two 11-foot travel lanes with 3-foot shoulders.

The proposed vertical and horizontal profiles of the bridge will be closely matched, while the overall width of the roadway over the bridge will be increased by 8-feet. The approach roadway work will consist of full depth pavement reconstruction to the limits shown on the plans.

The proposed structure consists of a NEXT D prestressed concrete beam superstructure with a bituminous wearing surface, supported on concrete abutments with steel micropiles drilled into bedrock. The bridge span is 55'-6" long, with a total out-to-out width of 31'-0". The total roadway width is 28'-0" with 6" granite curbs and 12" concrete parapets on both sides of the structure.

The proposed bridge replacement consists of removing and disposing of the existing superstructure and the upper portions of the abutments and wingwalls. Shielding will be placed beneath the structure to prevent debris from falling into the channel, and the overhead utilities will be temporarily relocated to the north of their existing locations. After demolition, the remaining portions of the substructure will be repaired for use as scour protection for the proposed abutments which will be placed behind the existing portions.

The proposed substructure consists of reinforced concrete abutments and wingwalls, supported on steel micropiles. The steel micropiles will be drilled into the bedrock below, and the pile caps will be cast around them, followed by the abutment and wingwall stems cast on top of the pile caps. Once the substructure is cast and cured, the NEXT D prestressed concrete beams will be erected, and closure pours will be placed between each beam to create a composite superstructure.

After the superstructure is constructed, the concrete parapets and granite curbs will be placed on the superstructure and wingwalls, the approach slabs will be placed, and the roadway will be paved with bituminous concrete to the limits of the project. Finally, the roadway will be striped, permanent signing will be placed, guardrails will be installed, and landscaping will be completed.



3.1 Utilities

Overhead utilities on the north side of the bridge, an unknown utility attached to the north fascia, and a water main are present at Bridge No. 292. The overhead utilities will be temporarily relocated to the north during construction with temporary utility poles. The existing poles will be relocated slightly north of their existing locations, to accommodate the guardrail layout, following construction. As part of the temporary relocation two alternatives have been proposed. The first includes the use of two anchor poles across the street on the east and west sides of the bridge as well as guy wires to support them. The second alternative uses push poles to reduce wetland clearing. Further coordination with National Grid is required to determine the location of temporary utility pole support structures. Please note the proposed layout on the Project Plans depicts the alternative anticipated to have the maximum impacts to vegetation, however final layout will be determined prior to construction.

The water main is located south of the bridge and will remain in place.

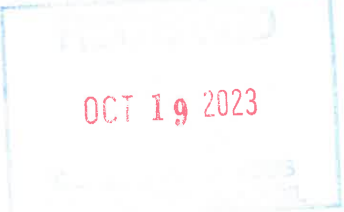
A temporary utility bridge will be constructed to support a water pipe across the bridge. This pipe is proposed to link the dry hydrant connection on the west side of the bridge with the temporary connection to the east of the bridge. This feature will be utilized by local fire departments during filling of tanks, by means of a pump truck connecting the dry hydrant to the pipe and pumping water to the east side of the bridge for filling.

Further investigation of the unknown utility is required to determine the type of utility and its disposition during and after construction.

3.3 Drainage and Stormwater Measures

Due to the limited size of the project area and numerous site constraints including right-of-way, adjacent wetlands, and site usage by RIDEM DFW and local fire departments, no suitable locations in or adjacent to the project site were identified for the addition of stormwater treatment BMPs. A roadside drainage swale to the southeast of the bridge will be relocated and sized to match the existing swale to be removed. A stone wall is present to the south of the swale, which will be relocated slightly south to accommodate the shift of the swale. A paved swale will be constructed at the low point of the road to convey flow towards the earthen portion of the swale. The western end of the swale will be reinforced by stone for velocity protection.

The proposed area of disturbance is less than 1 acre and therefore coverage under the RIPDES General Permit for the Discharge of Stormwater Associated with Construction Activity is not required. A RIDOT Small Site SWPPP has been prepared, and the project plans include detailed erosion and sediment control notes and specify that erosion and sediment control Best Management Practices shall be provided in accordance with the SWPPP.



3.4 Control of Water and Construction Phase Erosion Controls

During demolition of the bridge, the contractor will use shielding to protect the channel from debris entering the waterway. The top portion of bridge will be removed from the topside, and existing concrete abutments will remain to reduce impacts to the waterway.

In order for the work to be performed “in the dry,” control of water (COW) measures (i.e., sandbags, super sacks, etc.) will be installed around each bridge abutment during demolition and patching repairs, and dewatering behind the sandbags is anticipated. Although means and methods for COW, and design of the system are ultimately the responsibility of the contractor, it is anticipated that super sacks or sandbag barriers with a filter fabric lining will be utilized. The dewatering effluent will be pumped to a dewatering bag, which will then discharge into Almy Creek. Proposed locations of dewatering basins are shown on the Project Plans.

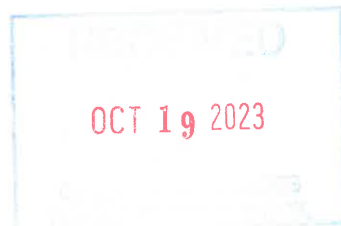
Compost filter socks will be installed along the perimeter of pervious surfaces within the limits of disturbance as shown on the Project Plans.



IV. Construction Sequence

The temporary erosion controls will be in place prior the start of excavation, demolition, or other earthwork activities. The dewatering operations will include the use of settling basins, filter bags, or other appropriate methods to treat dewatering effluent prior to discharge into the adjacent waterway. Existing overhead utilities on the north side of the roadway will be temporarily relocated further north to avoid interference with construction operations. The general sequence of construction operations is anticipated to be as follows:

- Signage and messaging for the detour route will be placed as shown on the Temporary Traffic Control Plans. After alerting the Town and public as required, Pond Bridge Road will be closed to traffic in advance of the bridge.
- Temporary control of water measures and shielding will be placed as required to begin demolition of the structure. The Contractor shall remove and dispose the existing superstructure and portions of the substructure to the limits shown on the plans.
- With control of water measures in place, the Contractor shall repair the portions of the existing concrete abutments and wingwalls that will remain.
- Excavate behind existing abutment walls. Drill and grout micropiles, to a depth of 20-feet into the bedrock at the locations specified on the plans.
- Construct formwork, place reinforcing, and pour concrete for cast-in-place pile caps, and abutment and wingwall stems.
- Place elastomeric bearing pads, and erect precast concrete NEXT beams, and approach slabs.
- Pour closure between beams, end of decks, end diaphragms, and sections of approach slabs.
- Construct the parapets and endposts.
- Relocate utility poles and overhead wires to the proposed final alignment.
- Install filter strips at the locations shown on the plans.
- Install guardrail, place curbing, asphalt, striping, and signage.
- Open structure to normal operating conditions.
- Complete required landscaping.



V. Wetland Impacts

The replacement of Nonquit Pond Bridge, temporary utility relocation, and installation of stormwater treatment filter strips have been designed in order to avoid impacts to the waterway and surrounding coastal and freshwater wetlands to the maximum extent practicable.

Resource Area	Permanent Impacts (SF)	Temporary Impacts (SF)	Total Impacts (SF)	Proposed Activities
Tidal Waters Almy Creek (Waters of the U.S.)	0	400±	400±	Temporary: COW measures (i.e., sandbags and/or supersacks), dewatering behind COW
Saltmarsh	0	10	10	Temporary: inclusive of impacts to tidal waters, 10 s.f. of saltmarsh substrate temporarily impacted due to dewatering
Shoreline Feature (Manmade Shoreline)	110± linear feet	0	110± linear feet	Permanent: existing bridge abutments cut to accommodate new bridge
Shoreline Feature (Coastal Wetland)	0	140±	140±	Temporary: select clearing for guy wire clearance only (no grubbing)
200-foot Contiguous Area	4,374±	14,265±	18,640±	Permanent: relocation and construction of swale, associated grading, vegetation removal, guardrail installation, construction of bridge components outside existing impervious surfaces, grading of gravel parking area outside existing limits, roadway widening, landscaping Temporary: vegetation trimming, roadway resurfacing, installation of temporary utility poles, site access, temporary water pump service bypass
Freshwater Wetlands	0	341±	341±	Temporary: select trimming and pruning for overhead wire clearance only
Freshwater Wetland Buffer Zones	4,374±	14,265±	18,640±	Permanent: relocation and construction of swale, associated grading, vegetation removal, guardrail installation, construction of bridge components outside existing impervious surfaces, grading of gravel parking area outside existing limits, roadway widening Temporary: vegetation trimming, roadway resurfacing, installation of temporary utility poles, site access, temporary water pump service bypass
Freshwater Wetland Buffers	0	414±	414±	Temporary: vegetation trimming for temporary overhead utilities
Area Subject to Storm Flowage	80± linear feet	0	80± linear feet	Permanent: relocation of a roadside drainage swale to match existing conditions and drainage patterns

Tidal Waters and Waters of the United States (WOTUS)

As presented in Table 1, proposed temporary impacts to the tidal waters of Almy Creek will total approximately 400 square feet. The minor temporary impacts to the creek channel include site access, temporary COW measures, and dewatering during demolition and abutment repairs. Temporary fill in tidal waters results from the temporary COW measures which will be removed upon completion of the work in these areas. COW measures will be installed from the topside of the bridge, and no heavy equipment will be allowed within the channel. Protective shielding will be installed below the bridge to contain debris from entering the channel during demolition. No permanent impacts to tidal waters are anticipated from the proposed work. Temporary impacts to 10 square feet of saltmarsh are described below under Coastal Wetlands.

Manmade Shoreline Features

Permanent impacts to the existing bridge support structures will total approximately 110 linear feet due to partial removal of the upper portions of wingwalls and abutments. The bottom portion will remain in place to function as scour protection for the new abutments, to be installed landward of the existing abutment.

Coastal Wetlands

Temporary impacts to the freshwater wetland contiguous to the coastal wetland (classified as Coastal Wetland under the CRMP) will total approximately 140 square feet due to vegetation clearing. Vegetation will be selectively cleared for the purpose of utility pole guy wire installation. No grubbing is proposed in this area, and the vegetation is anticipated to revegetate naturally following removal of the temporary facilities.

Inclusive of the temporary tidal water impacts is a 10 square foot area of unvegetated saltmarsh adjacent to the southeast wingwall. This area will be protected from foot traffic by means of a temporary platform or similar placed over the unvegetated substrate during construction activities, and will be removed once work in this area is complete. Low saltmarsh plantings are proposed in this area to mitigate for the temporary impacts caused by dewatering, and no additional fill material is anticipated as the existing substrate provides a planting media base for the proposed saltmarsh plantings.

CRMC 200-foot Contiguous Area and 100-year Floodplain

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The entire project area landward of the shoreline features lies within Floodplain and the 200-foot Contiguous Area. Work within these jurisdictional areas is necessary to achieve the project goal, and only minor impacts to the natural environment are anticipated from the proposed work.

Permanent impacts will result from relocation and construction of the drainage swale, vegetation removal, site grading, guardrail installation, construction of bridge components outside of existing impervious surfaces, grading of the gravel turnaround area outside of the existing limits, landscaping, and roadway widening. The remaining area within the limits of disturbance will experience temporary impacts due to roadway resurfacing, vegetation trimming, installation of temporary utility poles, site access, and a temporary water pipe for fire trucks along the north of Pond Bridge Road.

Approximately 2,040 square feet of vegetation removal is proposed along the southern roadway shoulder to accommodate the tapered roadway and relocate the adjacent vegetated drainage swale and a section of stone wall. The swale will be planted with loam and a native coastal salt tolerant seed mix upon completion of the work to provide a native coastal buffer for the downstream creek. Approximately 915 square feet of select pruning and trimming will take place in areas northeast and northwest of the bridge, and approximately 180 square feet of select clearing in an area southwest of the bridge, to accommodate for overhead wire clearance during temporary utility pole relocation. Only limbs or branches that may interfere with the wires will require trimming, and the remainder of the area will remain in its natural state.



The trimming will impact approximately 375 square feet of Freshwater Wetlands, however special care will be taken to only trim those areas necessary for the work to be completed. No grubbing is proposed in Freshwater Wetlands, and only the minimum amount of trimming necessary will take place.

No net loss of floodplain will occur as the proposed structure will closely match the existing profiles. Overall the reduction of bridge abutments will result in a net gain of 40 cubic yards of floodplain.

The project will result in an overall increase of approximately 1,450 square feet of impervious surface due to bridge and minimal roadway widening.

Freshwater Wetlands

As described above, select vegetation trimming and pruning for overhead wire clearance will temporarily impact approximately 341 square feet of Freshwater Wetlands. No vegetation removal or other ground disturbing activities are proposed within these areas.

Buffer Zones to Freshwater Wetlands

Work within the Buffer Zone associated with Freshwater Wetlands upstream of the bridge consists of approximately 18,640 square feet of impacts which includes the entire project area. Impacts to Buffer Zones are identical to impacts to Contiguous Area both of these jurisdictional areas cover the entire project.

Of these total impacts, 4,374 square feet will be permanent due to vegetation clearing along the southern roadway shoulder to accommodate the roadway improvements and relocation of the roadside drainage swale. As previously stated, this area will be revegetated upon completion of the work with a native coastal seed mix. This work is not located within Buffer to the Freshwater Wetland, as it is located on the opposite side of Pond Bridge Road from the freshwater wetland. The remaining permanent impacts will result from increase of width of the roadway in the vicinity of the bridge, grading of the gravel turnaround areas utilized by fire trucks, regrading of the roadside swale, installation of guard rails, and relocation of a stone wall to accommodate the realigned swale.

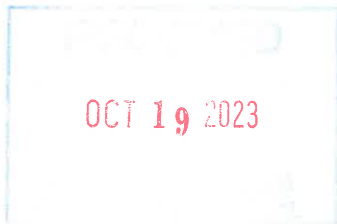
The remaining 14,265 square feet will be temporary impacts due to roadway resurfacing, construction access, installation of temporary utility poles, vegetation trimming to the northwest and southwest of the bridge, installation of temporary utility poles, site access, and a temporary water pipe.

Within Buffer Zones, approximately 414 square feet of vegetated Buffer will be temporarily impacted. This will be as a result of select pruning and trimming to accommodate for overhead wire clearance during temporary utility pole relocation. Only limbs or branches that may interfere with the wires will require trimming, and the remainder of the area will remain in its natural state. Special care will be taken to only trim those areas necessary for the work to be completed. No grubbing is proposed in Buffer, and only the minimum amount of trimming necessary will take place.

Areas Subject to Storm Flowage

To accommodate the section of proposed roadway that will be tapered to match the existing roadway, a roadside drainage swale, identified as ASSF200 series, will be relocated slightly south. The proposed roadway shoulder slope will closely match the existing elevation of the swale, in order to maintain existing drainage patterns. The swale will be revegetated upon completion of the work to provide a vegetated buffer to the downstream creek. The work will impact approximately 80 linear feet of ASSF, however the existing drainage pattern in this area will be closely matched.

There are two additional ASSFs that were identified at the site (flag series ASSF and ASSF100), however the proposed project is not anticipated to impact these areas.



VI. Historic Coordination

Pare Corporation was tasked by the Rhode Island Department of Transportation (RIDOT) to prepare a Preliminary Structures Report to assess alternatives to address the structurally deficient Nonquit Pond Bridge Number 029201 in Tiverton, Rhode Island. Based on the 2015 Rhode Island Historic Bridge Inventory Update, Nonquit Pond Bridge is considered to have historic and cultural significance due to its construction in 1939-1940 as part of the Works Progress Administration (WPA) programs during the Great Depression. Unfortunately, due to its close proximity to a coastal environment, the bridge has become structurally deficient with considerable deterioration of the superstructure and substructure. The bridge is posted for 9-tons for 2-axle vehicles and 13-tons for 3-axle vehicles, which limits access for certain emergency vehicles, school buses, and trucks.

Given the balance of public safety and cost, with options to preserve aspects of cultural and historic significance, it was recommended to replace the structure. The structure would be replaced while maintaining portions of the existing substructure, matching the aesthetics of the existing structure, and incorporating the existing plaques in the replacement structure to retain as much of the structure's historic and cultural significance as possible.

Because this project is receiving funding from the Federal Highway Administration (FHWA), it must comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and Section 4(f) of the United States Department of Transportation Act (US DOT Act), both as amended.

The Town of Tiverton is generally sensitive for pre-contact Native American and contact-era archaeological evidence. Although the tidal surge of the September 1938 Hurricane caused general disturbance in the vicinity of the bridge, temporary easements or staging areas should be evaluated for potential soil disturbance. This potential for archaeological sensitivity should be considered as planning for this project moves forward.

As of now, the Preliminary Structures Report has been submitted by the RIDOT CRU as part of the Section 106 and 4(f) process to determine if replacement of the structure is acceptable. Pare's subconsultant, AHS, Inc., is continuing with RI Historic Resource Archive documentation following a Phase II Archaeological survey performed in February 2023. FHWA provided a comment letter stating the replacement of the bridge would constitute an adverse effect on the historic property. AHS will assist with a Memorandum of Agreement in order to resolve adverse effects under Section 106. The MOA can be provided upon request.



VII. Compliance with CRMC Policies and Standards

The proposed project includes the removal and replacement of the existing Nonquit Pond bridge, restoration and widening of the roadway over the bridge and the bridge approaches, relocation of utility poles, and habitat restoration within a small portion of saltmarsh. Although the project includes widening of the existing roadway by approximately 8.5 feet over the bridge, the proposed bridge superstructure that carries the roadway will remain within the footprint of the existing bridge substructure. The proposed bridge replacement and roadway repairs appear to meet the criteria of the CRMP for a Category A State Assent. The construction of the existing bridge predates the Council, and it is unlikely that the structure has been permitted by a Council Assent. The applicable CRMP standards are addressed below to demonstrate consistency in the project design.

1.1.11 Coastal Buffer Zones

Impacts to the coastal buffer zone include vegetation clearing south of the roadway within a drainage swale to accommodate relocating the swale and an adjacent stone wall to accommodate the proposed bridge and roadway widening. This area will be stabilized and restored with loam and a native coastal salt tolerant seed mix. The embankment slope to the southwest was previously cleared during surveying activities, and will be planted with native coastal vegetation according to the planting schedule on the “Vegetation Impact and Landscape Plan” sheet of the Project Plans.

1.3.1 (B) Filling, Removing, or Grading of Shoreline Features

Replacement of the bridge structure will require partial removal of the existing bridge wingwalls and abutments which constitute the manmade shoreline feature surrounding the existing bridge. Removal is limited to the upper portions of the wingwalls and abutments, as described in Section III above, and removal will not extend below the high tide line or Mean High Water. As part of the bridge replacement approximately 110 linear feet of manmade shoreline will be partially removed and replaced with new abutments positioned behind the existing abutments and wingwalls. Lower portions of the existing abutments and wingwalls will remain and function as scour protection for the new structure. Appropriate erosion and sedimentation controls will be installed prior to the partial demolition and removal of the manmade shoreline and will remain until work is fully complete and stabilized.

Installation of a temporary utility pole and guy wires will require select vegetation clearing within a coastal wetland for guy wire clearance only. No grubbing or other earth disturbance is proposed for this work. The work will temporarily impact approximately 140 square feet of coastal wetland.

As required under § 1.3.1(B)1(c) an Erosion and Sediment Control Plan is included on the “Drainage and Utility” sheet of the Project Plans. All work associated with the abutment and wingwall replacement, and vegetation trimming will be conducted in accordance with the applicable standards of § 1.3.1(B).

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1.3.1 (F) Treatment of sewage and stormwater

Due to the limited size of the project area and numerous site constraints including right-of-way, adjacent wetlands, and site usage by RIDEM DFW and local fire departments, no suitable locations in or adjacent to the project site were identified for the addition of stormwater treatment BMPs. The project conforms to the RIDOT Linear Stormwater Manual according to the maximum extent practicable.

1.3.1 (J) Filling in Tidal Waters

Temporary fill in tidal waters (below the HTL) consists of approximately 46 cubic yards of sandbags/supersacks associated with COW measures. The fill will be limited to the construction period and is unavoidable in order to properly perform the bridge replacement. All work will be conducted in accordance with the applicable standards of Section 1.3.1(J) of the CRMP. The COW measures are necessary to reduce sedimentation impacts during construction and allow concrete abutment repairs to be performed in the dry. It is not anticipated that the temporary COW measures will degrade or permanently impact Almy Creek and the fill materials will be removed upon completion of the work.

1.3.1 (M) Public Roadways, Bridges, Parking Lots, Railroad Lines and Airports

The proposed project represents the replacement of an existing public bridge and roadway. Impacts to tidal waters, shoreline features, and the Contiguous Area have been minimized to the extent practicable through an iterative design process. The proposed design avoids permanent fill in tidal waters and the bridge will remain within the footprint of the existing substructure. Surrounding coastal wetlands and vegetated areas that provide water quality benefits to Almy Creek will be protected during construction. All clearing within the 200-foot Contiguous Area associated with the relocation of utility lines has been minimized to the extent practicable. Cleared vegetation will only be grubbed in the swale location, and where possible, only pruning and trimming will be conducted to the extent that overhead wires are provided clearance during relocation.

Freshwater Wetlands in the Vicinity of the Coast

The project complies with the Freshwater Wetland and Buffer Protection Standards included in §9.7.1 of the FWWIVC regulations to the extent practicable as demonstrated below.

A. General Freshwater Wetlands Protection Standard

Temporary impacts to Freshwater Wetlands in the Vicinity of the Coast will result from temporary utility pole installation described in Section III and 1.3.1 (M) above. In their current location the utility poles along Pond Bridge Road interfere with the proposed limits of work and will need to be relocated in order for the work to be accomplished. Select trimming and pruning of vegetation within approximately 341 square feet of freshwater wetlands is required to provide clearance for the relocated overhead wires supported by the temporary poles. Trimming limits have been minimized to the extent practicable and vegetation will not be grubbed to allow for natural re-growth following project completion. Trimming and pruning of vegetation will be performed as allows in order to minimize clearing in both biological wetlands and their buffers.

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B. Freshwater Wetlands Buffer Standard

As the proposed project is a bridge replacement project, there is no designated target buffer width. The vegetation edge surrounding the roadway has been established in order to allow safe travel for vehicles and pedestrians and there is no feasible location for the installation of new buffer plantings. Access for the Division of Marine Fisheries is required to the northeast of the bridge and therefore the grassed area adjacent to the fish ladder is unavailable for plantings. The gravel turnarounds to the northwest and southwest of the bridge are required for safety vehicles (mainly firetrucks) and therefore these areas are also unavailable for plantings. Therefore, the area within and in the vicinity of the site is currently vegetated to the greatest extent practicable, with the exception of areas where plantings are currently proposed along the southwest embankment.

C. Setback Standards

A 5-foot accessory structure setback and 20-foot primary structure setback both apply for the proposed project. The bridge is the only structure proposed and it is a replacement of the existing bridge. Minor increases in size to improve public safety are proposed, however this is an in-kind replacement and cannot be proposed elsewhere due to the existing built infrastructure that surrounds it.

D. Rare or Endangered Species Standard

No Natural Heritage Area (December, 2022) is mapped in the vicinity of the site. Additionally, there are no rare freshwater wetland types (as defined in 9.3(a)(60)) in the vicinity of the site.

According to the U.S. Fish and Wildlife Information for Planning and Consultation (IPaC) tool, the Northern Long-Eared Bat (*Myotis septentrionalis*) is listed as Endangered and the Monarch Butterfly (*Danaus plexippus*) is listed as Candidate under the Federal Endangered Species Act as of July 25, 2023. The Northern Long-Eared Bat and the Monarch butterfly are both mapped for “wherever found” by the IPaC tool, however, there are no known hibernacula for the Northern Long-Eared Bat in Rhode Island. There will be minor vegetation clearing and most of the work is proposed on developed land; therefore, no impacts to rare species or endangered species habitat are anticipated. The only proposed area for clearing that will not be replanted or revegetated naturally is to the southeast of the bridge. This area is predominantly shrubs and sparse saplings with a high population of invasive species that grow between the roadway and the field. As such, in the opinion of Pare it does not provide high priority habitat for the Northern Long-Eared Bat or the Monarch Butterfly and therefore, there should be no reduction of the buffer’s ability to ensure the long term viability of these species. Due to the avoidance of work in naturally vegetated areas and mapped rare species habitat to the greatest extent practicable, the project meets the Rare and Endangered Species Standard.

E. Flood Protection Standard

No net loss of floodplain will occur as the proposed structure will closely match the existing profiles. Overall the reduction of bridge abutments will result in a net gain of 40 cubic yards of floodplain.

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F. Surface Water and Groundwater Diversion Standard

It is not anticipated that the flow of groundwater or surface water into or out of freshwater wetlands will be adversely impacted by the project. The proposed grading scheme matches the existing contours of the site to the extent practicable and drainage patterns are preserved to the extent practicable. Peak flow rates will be maintained from the existing condition and an increase in erosion or scour is not anticipated.

To accommodate the section of proposed roadway that will be tapered to match the existing roadway, a roadside drainage swale, identified as ASSF200 series, will be relocated slightly south. The proposed roadway shoulder slope will closely match the existing elevation of the swale, in order to maintain existing drainage patterns. The swale will be revegetated upon completion of the work to provide a vegetated buffer to the downstream creek. The work will impact approximately 80 linear feet of ASSF, however the existing drainage pattern in this area will be closely matched.

G. Stormwater Management Standard

Due to the limited size of the project area and numerous site constraints including right-of-way, adjacent wetlands, and site usage by RIDEM DFW and local fire departments, no suitable locations in or adjacent to the project site were identified for the addition of stormwater treatment BMPs. The project conforms to the RIDOT Linear Stormwater Manual according to the maximum extent practicable.

H. Erosion and Sedimentation Control Standard

As required under § 1.3.1(B)1(c) an Erosion and Sediment Control Plan is included on the “Drainage and Utility” sheet of the Project Plans. All work associated with the abutment and wingwall replacement, and vegetation trimming will be conducted in accordance with the applicable standards of § 1.3.1(B) of the CRMP. Erosion and sedimentation controls will be implemented throughout the site in accordance with the Rhode Island Soil Erosion and Sediment Control Handbook and Rhode Island Stormwater Design and Installation Manual for work upgrading of the channel.

I. Water Quality Standard

The project is not anticipated to result in adverse impacts to surface water or groundwater resources. There will be no direct impacts to freshwater surface water resources and the minor increases in impervious surfaces are located closer to tidal waters on the site than freshwater wetlands.



VIII. Compliance with Federal Regulations

Almy Creek is a tidal water of the United States and under the jurisdiction of the U.S. Army Corps of the Engineers (USACE) and it is anticipated that the proposed project will qualify as a PCN under the General Permits for the State of Rhode Island.

The historic significance of Nonquit Bridge requires project compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and Section 4(f) of the United States Department of Transportation Act (US DOT Act), both as amended. Refer to Section VI of this Project Narrative for historic coordination to date. Ongoing coordination with RIHPHC will continue throughout the application review process and will be made available upon receipt.

Coordination with NOAA NMFS and USFWS has been completed prior to this application review process, as addressed in Section 2.5 of this Project Narrative, and conditions pertaining to protected wildlife will be met by the project design.

