Memorandum

To: Rhode Island Department of Transportation
Two Capitol Hill
Providence, RI 02903

Date: March 15, 2019

Project #: 72900.00

From: Peter J. Pavao, PE, PTOE
Director of Transportation Systems

Re: Reconstruction of the Pell Bridge Approaches
Environmental Assessment – Indirect and Cumulative Effects

1. Introduction

This technical memorandum describes the indirect and cumulative effects expected to be associated with the Proposed Action Alternative of the Claiborne Pell Newport Bridge (Pell Bridge) Interchange Project (Project).

Federal regulations (40 Code of Federal Regulations [CFR] 1502.16, 1508.7, 1508.8) implementing the National Environmental Policy Act (NEPA) require that indirect and cumulative effects be considered in NEPA documents because they inform the public and decision-makers about possible unintended consequences of a project that are not always revealed by examining only the direct effects of the individual project under review. This information helps project planners, designers, and builders mitigate direct effects under their control in ways that can make adverse indirect and cumulative effects less likely and less severe.

Indirect effects (sometimes called indirect impacts or secondary impacts) "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508.8). Indirect effects result from one project but, unlike direct effects, typically involve a chain of cause and-effect relationships that can take time to develop and can occur at a distance from the project site. Indirect impact categories evaluated for this Project include air quality, coastal resources, noise, climate, cultural resources, floodplains, land use, environmental justice, socioeconomic, oil and hazardous materials, stormwater, threatened and endangered species, traffic, water resources, and wetlands.

Cumulative effects (sometimes called cumulative impacts) are "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). A cumulative effect is the project's direct and indirect effects on an environmental resource, combined with the past, present, and future effects of other human activities on that same resource. The result is the expected future condition of the resource when all the external factors known or likely to affect it are considered. Cumulative impacts evaluated for this Project include air quality, coastal resources, noise, climate, cultural resources, floodplains, land use, environmental justice, socioeconomic, oil and hazardous materials, stormwater, threatened and endangered species, traffic, water resources, and wetlands.

2. Project Overview

The Pell Bridge carries State Route 138 between Jamestown and Newport and is the only road connection between Jamestown and Aquidneck Island. The Proposed Action Alternative of the Project would provide direct connection from the northern part of the City to the downtown area, reduce queued vehicle traffic onto the Pell Bridge, reduce traffic in downtown Newport, and provide a portion of the bicycle and pedestrian facilities envisioned in the Aquidneck Island Transportation Study. The Proposed Action (Project) would occur in the City of Newport and Town of Middletown, Rhode Island. In accordance with NEPA, an Environmental Assessment (EA) is being developed to evaluate the impacts of construction and operation of the re-designed interchange on environmental resources.

2.1 Purpose and Need

2.1.1 Purpose of the Project

The purpose of the proposed Project is to:

- Reconfigure the Pell Bridge approach roads and ramps to improve traffic circulation and safety.
- Increase connectivity to downtown Newport.
- Support the City of Newport's economic development plan by providing land area for redevelopment.

2.1.2 Need for the Project

Traffic volumes on Aquidneck Island bridges and roadways have increased significantly over the past 40 years. This traffic increase is attributable to many factors, including more households spread among different locations on the Island, increasing levels of automobile ownership, changing commuting patterns, and increased tourism. Ongoing safety concerns in the Island community have been elevated following several pedestrian fatalities along Island roadways, which were caused in part by the increasing difficulty in safely crossing major streets.

2.2 Proposed Action

The Rhode Island Department of Transportation (RIDOT) proposes the following changes to Pell Bridge Interchange System:

- Removal of the ramping system to/from Pell Bridge. The southbound off-ramp from the Pell Bridge to downtown Newport would be removed and a new loop off-ramp constructed to serve downtown traffic. The new ramp would connect to the proposed JT Connell Highway Extension and would include a new bridge structure spanning over the existing JT Connell Highway.
- Construction of a new connection from JT Connell Highway (near the Pell Bridge ramps) to Halsey Street and Admiral Kalbfus Road, following an alignment along the south and east edges of the Department of Public Works (DPW) property and west of Newport Grand. This new roadway would provide an alternate connection to/from the JT Connell Highway/Farewell Street area to Admiral Kalbfus Road and the potential redevelopment areas.
- Construction of a shared-user path and the development of rail-shuttle service to Downtown Newport. Service along a portion the Newport and Narragansett Bay Railroad right-of-way (ROW) would be restored to provide shuttle service between a park-and-ride that would be constructed off JT Connell Highway and Downtown

Newport. This would help to further reduce vehicle traffic in Downtown Newport. Additionally, one of the existing railbeds from the Narragansett Bay Railroad would be converted to a shared-user path that would connect between the park-and-ride and Downtown Newport and provide new recreation opportunities in Newport.

- Road resurfacing of JT Connell Highway. This would occur from the roundabout to the intersection with West Main Road (Route 114) in Middletown, Rhode Island.

2.3 No Action Alternative

The No Action Alternative represents a baseline condition against which the impacts of the Project are assessed. Under the No Action Alternative, the Pell Bridge interchange would not be reconfigured, and no improvements would be made to the existing structure. Lane and ramp configuration would be the same as those that exist today. Although this alternative is inconsistent with the Project purpose and need and would not address the Pell Bridge interchange and off-ramp system's existing condition, congestion, and safety issues, its evaluation is required by NEPA.

3. Study Areas and Methodologies

This section provides a summary of the study areas and methodologies use in assessing the indirect and cumulative impacts for each of the resource areas. Detailed information on study areas and methodologies are provided in each resource's respective technical memorandum.

3.1 Air Quality

3.1.1 Study Area

Air quality is considered using two distinct study areas. The local study area considers pollutant concentrations at the microscale. The local air quality study area for the Project mirrors the intersection study area from the transportation analysis, as local air quality is most likely to change at intersections affected by the Project. The regional study area for air quality encompasses Newport County in which the Project is located and is informed by the extents of the regional transportation study area. This regional study area is congruent with the geographical boundaries the Environmental Protection Agency (EPA) uses to designate the Attainment or Nonattainment of criteria pollutants. See the Air Technical Memorandum for additional information.

3.1.2 Methodology

The air quality study included a local (microscale) air quality analysis of carbon monoxide (CO) to demonstrate compliance with the NAAQS by evaluating air quality impacts of the Build Condition. This scenario is associated with the highest network volumes and delays and thus presents the worst-case scenario for analysis. The microscale analysis evaluated the evening peak hour, as volumes and delays across the study intersections were worse than the morning peak hour.

A mesoscale assessment was undertaken to assess the effect the Project will have on regional air quality. All the vehicle emission factors used in the mesoscale analysis were obtained using EPA's MOVES2014a emissions model. The emissions calculated for this air quality assessment include Tier 3 emission standards. It also includes Rhode Island-specific conditions, such as the state vehicle registration age distribution and the statewide Inspection and Maintenance (I/M) Program. Oxides of Nitrogen (NOX), Volatile Organic Compounds (VOC), Particulate Matter (PM10

and PM2.5) and Carbon Dioxide (CO2) were considered. The daily vehicle miles travelled (VMT), the vehicle hours travelled (VHT) and link speeds for the proposed Project were estimated through the traffic study assessment (VISSIM model).

The Project has low potential Mobile Source Air Toxics (MSAT) effects and, therefore, requires qualitative analysis only. See the Air Technical Memorandum for additional information.

3.2 Coastal Resources

3.2.1 Study Area

The Study Area for evaluating coastal resource effects is the limits of disturbance for the Project on Aquidneck Island in Newport and Middletown, Rhode Island. It extends from Bridge Street in Newport at the southern end north to Coddington Highway in Middletown. The western limits of the Study Area are where Pell Bridge reaches Aquidneck Island near Washington Street. The eastern limits are near the intersection of Admiral Kalbfus Road and Girard Avenue in Newport, and the intersection of Coddington Highway and West Main Road in Middletown. The Study Area includes portions of Route 138, Admiral Kalbfus Road, JT Connell Highway, and other connecting roads. Adjacent land currently owned by RIDOT and the City of Newport that will be divested and made available for future redevelopment by others is also considered. See the Coastal Resources Technical Memorandum for additional information.

3.2.2 Methodology

Coastal Resources Management Council (CRMC) guidance, applicable Coastal Resource Management Program (CRMP) policies and performance standards, Aquidneck Island Special Area Management Plan (SAMP) goals and objectives, and Aquidneck Island SAMP coastal development standards were used in the coastal resources analysis. The spatial boundaries for the cumulative effects analysis includes the Project's Limits of Disturbance (LOD), plus additional adjacent land currently owned by RIDOT and the City of Newport likely to be redeveloped because of the Project. The temporal limits of the effects analysis include present day through 2030. These dates were selected because development within the coastal zone from present day forward is potentially subject to a Federal Coastal Zone Consistency Determination, and because 2030 is the current planning horizon for the Rhode Island Office of Statewide planning. The analysis assumed that by 2030 redevelopment of Study Area land divested by RIDOT and the City of Newport because of Project implementation would be completed. See the Coastal Resources Technical Memorandum for additional information.

3.3 Noise

3.3.1 Study Area

The noise study area includes noise-sensitive land uses such as residences, schools, a health clinic, cemeteries, and recreational land uses within 500 feet of the roads that would be improved by the Proposed Action Alternative. This study area was determined to include all noise-sensitive receptor locations where noise levels may exceed the abatement criteria and where noise mitigation may be warranted. The Project roadways extend from Farewell Street at Van Zandt Avenue in the south to the driveway of RK Shopping Plaza to the north, and from Admiral Kalbfus Road at 3rd Street in the west to Malbone Street and Girard Avenue to the east. This area includes the ramps and approach roads on the east end of the Pell Bridge, Admiral Kalbfus Road, JT Connell Highway, and Farewell Street. See the Noise Technical Memorandum for additional information.

3.3.2 Methodology

The methodology for evaluating noise includes identifying noise-sensitive land use, conducting measurements at key receptor locations and modeling noise at all receptors within the study areas. Noise levels were predicted at all receptors for the Alternatives using the Federal Highway Administration's (FHWA) Traffic Noise Model (TNM) version 2.5. In areas where noise levels would approach or exceed acceptable thresholds, noise abatement such as noise barriers were evaluated. See the Noise Technical Memorandum for additional information.

3.4 Climate

3.4.1 Study Area

The Study Area for inventorying the road structures subject to sea level rise includes the area around the Pell Bridge ramp and approaches in the City of Newport, associated roadways including Admiral Kalbfus Road, JT Connell Highway, and Halsey Street, as well as the Newport Secondary Track Rail Line. See the Climate Technical Memorandum for additional information.

3.4.2 Methodology

Several studies and analyses pertinent to the region were used to understand the anticipated climate conditions in Newport. These studies included:

- Federal Highway Administration Order 5520: Policy on transportation system preparedness and resilience to climate change and extreme weather events.
- U.S. Department of Transportation (USDOT) Highways in the Coastal Environment: Assessing Extreme Events: Guidance on quantifying exposure to sea level rise, storm surge, and waves because of climate change.
- National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information, Rhode Island State Summary: Climate summaries for all 50 states with information on observed and projected climate changes.
- Vulnerability of Transportation Assets to Sea Level Rise (Technical Paper 164, Rhode Island Division of Statewide Planning): Analysis on the State of Rhode Island transportation assets at risk under one, three, five, and seven feet of sea level rise.
- Vulnerability of Municipal Transportation Assets to Sea Level Rise and Storm Surge (Technical Paper 167, Rhode Island Division of Statewide Planning): Analysis of Rhode Island municipal transportation assets at risk under one, three, five, and seven feet of sea level rise, and various scenario changes under a 100-year storm surge event.
- Advanced STORMTOOLS: Online mapping program for estimating coastal inundation in Rhode Island under various scenarios. Available overlays include various levels of sea level rise and storm surge.
- City of Newport's Natural Hazard Mitigation Plan, 2016 Update: Identifies local policies and actions that can be implemented over the long term to reduce risk and future losses from hazards.
- City of Newport's Comprehensive Land Use Plan, 2017: Roadmap to promote orderly growth and development as well as ensure the protection and management of land, water, and natural and cultural resources.

See the Climate Technical Memorandum for additional information.

3.5 Cultural Resources

3.5.1 Study Area

An aboveground historic property survey was prepared for the Project's Area of Potential Effects (APE), which encompasses the Project's LOD and all properties within a one-tenth-mile of the LOD. The APE is "the geographic area within which the undertaking may cause changes in the character of or use of historic properties if any such properties exist" [36 CFR 800.16(d)]. A historic property is defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register maintained by the Secretary of the Interior" [36 CFR 800.16(l)]. See the Cultural Resources Technical Memorandum for additional information.

3.5.2 Methodology

The methodology for the survey of aboveground and subsurface resources was designed to locate and identify all properties, including districts, buildings, structures, objects, and sites, within the Project's APE that are listed or may be eligible for listing in the National Register of Historic Places (National Register). Background research, windshield survey, field surveys, Rhode Island Historical Preservation and Heritage Commission (RIHPHC) inventories, and archaeological analyses were conducted.

See the Cultural Resources Technical Memorandum for additional information.

3.6 Floodplains

3.6.1 Study Area

The Project site is located within a low area draining northwest to Coasters Harbor within Narragansett Bay; an unnamed stream flows across this area from the southeast to the northwest. The primary flooding source within the study area is coastal flooding due to storm surge and high tides. Route 138 crosses the study area running north-south along a raised embankment, providing limited protection from coastal flooding to the east. Although the study area is largely sheltered from wave action by Coasters Harbor Island to the west, there are two potential sources of coastal flooding: storm surge and wave setup from the northwest, via Coasters Harbor; and wave runup overtopping the low ridge west of 3rd Street. The Project site is located within the 1% floodplain according to the National Flood Insurance Program (NFIP) flood insurance rate map (FIRM) Panel 44005C0089J (2013), with associated Base Flood Elevations (BFE) of 13 feet and 12 feet North American Vertical Datum (NAVD) 88. The Study Area is located between two Federal Emergency Management Agency (FEMA) transects: Transect 38 (approx. 0.5 mile north of the study area) and Transect 39 (approx. 0.3 mile south of the study area). See the Floodplains Technical Memorandum for additional information.

3.6.2 Methodology

A coastal transect model was developed in accordance with guidance from the "Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update" from February 2007 (2007 Update) developed by the FEMA. This is the same methodology used by FEMA to develop coastal flooding models for the Effective Flood Insurance Study (FIS) for Newport Country. The results of the coastal model analysis were used to estimate flood elevations and wave heights, evaluate the protection of the Project site, and estimate any changes in flood risk to neighboring properties due to the Project. See the Floodplains Technical Memorandum for additional information.

3.7 Farmland

3.7.1 Study Area

The Study Area for inventorying lands subject to the Farmland Protection Policy Act (FPPA) and assessing the Project's potential impact to such lands was defined as the Project's LOD. This encompasses lands around the Pell Bridge ramp and approaches in the City of Newport, along with associated roadways including Admiral Kalbfus Road, JT Connell Highway, and Halsey Street, as well as the Newport Secondary Rail Line. See the Farmland Technical Memorandum for additional information.

3.7.2 Methodology

To identify the presence of prime and important farmland within the Study Area, data were obtained from the Web Soil Survey, a database of soils and soil characteristics that is maintained by the Natural Resources Conservation Service (NRCS). This information was cross-referenced with current aerial imagery and the City of Newport Comprehensive Land Use Plan to understand existing and future development patterns within the Study Area. See the Farmland Technical Memorandum for additional information.

3.8 Land Use

3.8.1 Study Area

The Study Area for land use was defined as a 1/10-mile-wide buffer around the Project's LOD. This Study Area is based on the extent of the Project and those areas most likely to experience land use impacts due to their adjacency to the Project footprint. See the Land Use Technical Memorandum for additional information.

3.8.2 Methodology

To identify and describe the topography of the Study Area, United States Geological Survey (USGS) topographic maps were consulted. Existing local land uses and zoning were obtained from a desktop survey using the City of Newport's Property Information web map accessed from its GIS Public Portal and associated internet searches. Details of applicable zoning classifications were obtained from the City's Zoning Ordinance, Title 17 of the City of Newport Codified Ordinance. Community land use goals and intended future land uses were retrieved from applicable State Guide Plan element reports and the City of Newport Comprehensive Land Use Plan. Potential impacts to land use were assessed by evaluating the Project's LOD and the larger Study Area in terms of existing and future land uses, as well as current zoning districts. Impacts such as roadway relocations and property acquisitions, along with those resulting from construction activities, were evaluated based on their potential to directly affect the use of intersected or proximate properties. Overall, the Project was evaluated for its consistency with State and local land use goals and plans. Impacts were further evaluated relative to Project duration, including temporary impacts that would occur during the construction phase and permanent impacts that would occur during the operations and maintenance phase. See the Land Use Technical Memorandum for additional information.

3.9 Environmental Justice and Socioeconomic

3.9.1 Study Area

The Study Area for the environmental justice (EJ) analysis was defined as a 0.25-mile-wide buffer around the Project's limit LOD. This Study Area is based on the extent of the Project and populations most likely to experience environmental impacts due to their adjacency to the Project footprint. The Study Area is comprised of the following 13 intersecting census block groups. See the EJ Technical Memorandum for additional information.

- 440050412001
- 440050402002
- 440050402001
- 440050403042
- 440050403021
- 440050405001
- 440050405002
- 440050405003
- 440050406004
- 440050406001
- 440050411003
- 440050411001
- 440050410001

3.9.2 Methodology

Data from the latest American Community Survey (ACS) (*2012-2016 ACS 5-Year Estimates*) informed the identification of minority and low-income populations. The EPA's Environmental Justice Screening and Mapping Tool (Version 2018), along with a windshield survey of the Study Area and reputable internet sources, informed the identification of public and subsidized housing.

To determine whether potential impacts from the Project would have a disproportionately high and adverse effect on affected EJ communities, this analysis referred to the U.S. DOT and FHWA EJ Orders to determine whether any identified adverse effect would: be predominantly borne by a minority and/or low-income population; or be suffered by the minority or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by non-environmental justice populations. Adverse effects include those negative effects that impact individual or cumulative human health or environmental effects. See the EJ Technical Memorandum for additional information.

3.10 Oil and Hazardous Materials

3.10.1 Study Area

Several Corridor Land Use Evaluations (CLUEs) were completed that collectively encompass the entire Study Area, and a Limited Subsurface Investigation (LSI) was completed within a significant portion of the Study Area. Information contained in Environmental Database Resources, Inc. (EDR) reports and additional publicly available environmental resources were reviewed. Properties within and surrounding the Study Area, in accordance with industry standard protocols for evaluating any surrounding properties that pose a potential to impact conditions within the Project. See the Oil and Hazardous Materials (OHM) Technical Memorandum for additional information.

3.10.2 Methodology

The 2013 and 2017 CLUEs were used to inform the study of OHM in the vicinity of the Project to assess the potential for OHM in soils and groundwater within the Study Area. The 2017 CLUE determined that overall, there were no significant changes to the findings of the 2013 CLUE and that the previous scope of work for the proposed subsurface investigation would sufficiently evaluate the environmental concerns documented in the CLUEs. In November and

December 2017, forty-four (44) soil borings were advanced and sixteen (16) groundwater monitoring wells were installed in the Study Area. Soil and groundwater samples were submitted for laboratory analysis for a variety of analytes. In October of 2018, a CLUE was performed for the extended Study Area, which included proposed milling and paving along JT Connell Highway and Coddington Highway. The CLUE identified documented releases of OHM or observations of use/storage of OHM at properties located in close proximity to the additional review areas that may have the potential to impact future construction. See the OHM Technical Memorandum for additional information.

3.11 Stormwater

3.11.1 Study Area

The Study Area for Stormwater Impacts was defined as the Project's LOD with a ten-foot buffer. This Study Area is based on the extent of the Project and those areas most likely to experience stormwater impacts. See the Stormwater Technical Memorandum for additional information.

3.11.2 Methodology

The amount of impervious surface within the Study Area was used to estimate relative increases in runoff volume and peak flow for each of the receiving wetlands and the receiving water body. The Stormwater Technical Memo has calculated changes in impervious surface area based on conceptual design plans. When designs are complete, the changes to impervious surface cover will inform the amount of water quality volume that must be treated and the types of structural best management practices (BMPs) that should be implemented within the Study Area. See the Stormwater Technical Memorandum for additional information.

3.12 Threatened and Endangered Species

3.12.1 Study Area

The Study Area includes the Project's LOD and a corridor width of 200 feet on either side of the LOD. The Study Area was defined based on the extent of the Project Area and the land adjacent to it that may experience project impacts that have the potential to affect any Federal or state-listed species and their associated habitat. See the Threatened and Endangered Species Technical Memorandum for additional information.

3.12.2 Methodology

To assess if any Federal or state-listed species are potentially present within the Study Area, information was evaluated from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Tool and the RIDEM online-Environmental Resource Map (ERM) and consulted with the RIDEM Division of Fish and Wildlife (DFW) regarding RIDEM's bat survey records. Consultation with the USFWS was initiated on October 9, 2018 through a request for an official species list from the IPaC Tool and applied the LOD of the Proposed Action as the Project Location. The Official Species List was generated by the New England Ecological Services Field Office, located in Concord, New Hampshire. The state-listed species within the Study Area on October 9, 2018 was reviewed by overlaying the Natural Heritage Area within the RIDEM Environmental Resource Map. Consultation with RIDEM DFW's bat management specialist occurred on February 9, 2018. See the Threatened and Endangered Species Technical Memorandum for additional information.

3.13 Traffic

3.13.1 Study Area

The Pell Bridge approach roadway system includes major corridors for local and regional travel between Downtown Newport, Naval Station Newport, Aquidneck Island, southern Rhode Island, Connecticut, and southeastern Massachusetts. The Study Area extends from Farewell Street at Van Zandt Avenue in the south to the driveway of RK Shopping Plaza to the north, and from Admiral Kalbfus Road at 3rd Street in the west to Malbone Street and Girard Avenue to the east. This area includes the ramps and approach roads on the east end of the Pell Bridge, Admiral Kalbfus Road, JT Connell Highway, and Farewell Street. Many of the Study Area roadways are designated hurricane evacuation routes. See the Traffic Technical Memorandum for additional information.

3.13.2 Methodology

Capacity analyses were conducted for the existing and the future signalized intersections in the Study Area. For this study, the capacity analyses were completed using VISSIM microscopic traffic simulation software (Version 8). For the future traffic conditions, background growth (assumed to be 0.25 percent per year) was applied to the existing conditions to project the 2040 No Action Alternative. This information is based upon the Rhode Island Statewide Planning model as well as recent census data.

The site generated trips were derived from trip generation rates published by the Institute of Transportation Engineers (ITE) in Trip Generation. The site generated trips were applied to the 2040 No Action Alternative to develop the 2040 Proposed Action traffic volumes. Based on the ITE Trip Generation, pass-by trips were also accounted for in the analysis. See the Traffic Technical Memorandum for additional information.

3.14 Wetlands

3.14.1 Study Area

The Project will be located on Aquidneck Island in Newport and Middletown, Rhode Island. The Study Area for wetlands and waterways includes 137 acres of an urbanized coastal watershed that drains into Narragansett Bay near Coasters Harbor Island. The Study Area extends from Bridge Street in Newport at the southern end to Coddington Highway in Middletown to the north. The western limits of the wetlands and waterways Study Area are located where the Pell Bridge ramps reach Aquidneck Island near Washington Street. The eastern limits are located near the intersection of Admiral Kalbfus Road and Girard Avenue in Newport, and the intersection of Coddington Highway and West Main Road in Middletown. The Study Area includes portions of Route 138, Admiral Kalbfus Road, JT Connell Highway, other connecting roads, and adjacent lands. See the Wetlands Technical Memorandum for additional information.

3.14.2 Methodology

Potential effects to wetlands and waterways were assessed by projecting the Project's LOD over the wetlands and waterways Study Area base map. Impacts, such as filling, grading, clearing, or adjacent upland disturbance, were evaluated based on potential for direct effects to wetlands and waterways (i.e., effects within the LOD) and indirect effects (i.e., effects outside of the LOD). Impacts to wetlands and waterways resulting from redevelopment of decommissioned City and RIDOT land by others as a result of this Project were considered in the analysis of indirect

effects. Effects were further evaluated relative to duration, including temporary effects that would occur during the construction phase and permanent effects that would occur during the operations and maintenance phase. Cumulative effects include past, present, and reasonably foreseeable future actions, including federal and non-federal actions. The spatial boundaries for the cumulative effects analysis the Study Area defined by the area where wetland field delineations were completed. The temporal limits of the effects analysis span from 1939 to 2030. These dates were selected because 1939 is the earliest year that aerial photographs of the Study Area are available for estimating the historic extent of wetlands, and because 2030 is the current planning horizon for the Rhode Island Office of Statewide planning. The extent of wetlands within the Study Area in 1939 was mapped using aerial photo interpretation. The acreage of wetlands in 1939 and present-day within the Study Area was calculated using GIS to assess cumulative wetland loss from 1939 through present-day. Changes in functions and values were also estimated based on historic and present-day conditions using aerial photo interpretation and recently collected field data to establish baseline conditions. See the Wetlands Technical Memorandum for additional information.

4. Applicable Regulations and Criteria

4.1 Air Quality

The Clean Air Act (CAA) is the primary statute that drives regulating air quality and sets the nation's air quality standards for pollutants. The act protects the quality of the nation's air resources at both the federal and state level. The air quality assessment quantifies and summarizes the National Ambient Air Quality Standards (NAAQS) criteria pollutants emissions resulting from the operation of the Project and the corresponding effect on ambient air. Air Pollution is a general term that refers to one or more substances determined to degrade the quality of the atmosphere including carbon monoxide (CO), particulate matter (PM), volatile organic compounds (VOC's) and oxides of nitrogen (NOx), which are emitted from gasoline and diesel engines. The FHWA has established procedures for the Transportation Conformity requirements of the CAA, as amended in 1990. The Transportation Conformity provisions of the CAA are intended to integrate transportation and air quality planning in areas that are designated by the EPA as not meeting the NAAQS. The CAA authorizes the USEPA to "protect public health by regulating emissions of harmful pollutants." NEPA and the Conformity Rule also require the analysis of potential impacts in terms of the project's context, intensity, and duration. It established NAAQS for various criteria pollutants to protect the health and welfare of the public.

Guidance from both the EPA and DEP defines the air quality modeling and review criteria for analyses prepared pursuant to the 1990 Clean Air Act Amendments (CAAA) and the State Implementation Plan (SIP). The CAAA and the SIP require that a proposed project not:

- Cause any new violation of the NAAQS;
- Increase the frequency or severity of any existing violations; or
- Delay attainment of any NAAQS.

These criteria are addressed in a microscale and mesoscale analyses. The CAAA resulted in states being divided into Attainment and Nonattainment areas with classifications based upon the severity of their air quality problem. A Nonattainment area is an area that has had measured pollutant levels that exceed the NAAQS and that has not been designated to attainment. The CAAA established emission reduction requirements that vary by an area's classification. See the Air Quality Technical Memorandum for more information.

4.2 Coastal Resources

Activities proposed by RIDOT related to the Pell Bridge Project will require a Coastal Zone Management (CZM) Consistency Determination from the Coastal Resource Management Council (CRMC) due to the Project's location within the Coastal Zone as identified in the Rhode Island Coastal Resource Management Plan (RICRMP) and the Aquidneck Island Special Area Management Plan (SAMP). The CZM Consistency Determination will evaluate the proposed Project against applicable CRMP performance standards, Aquidneck Island SAMP goals and objectives, and Aquidneck Island SAMP coastal development standards. Many of the Aquidneck Island SAMP goals focus on setbacks to coastal resources, public shoreline access, and preserving and establishing coastal greenways along the shoreline, which are not applicable to the Project given it is not a shoreline development project. However, other goals of the SAMP are applicable to the Project such as managing impervious surface coverage, use of Low Impact Development

techniques to manage stormwater runoff, and open space. See the Coastal Resources Technical Memorandum for more information.

4.3 Noise

The highway noise analysis was prepared in accordance with FHWA noise regulations, 23 CFR 772 (Procedures for Abatement of Highway Traffic and Construction Noise), and the RIDOT Noise Abatement Policy approved in June 2011. The RIDOT Noise Abatement Policy applies to all highway construction projects that receive federal aid or are otherwise approved by the FHWA. A Type I project is defined as one that includes construction of a highway in a new location, the physical alteration of an existing highway that results in substantial horizontal or vertical alterations, the addition of through-traffic lanes, the addition of auxiliary lanes, the addition or relocation of interchange lanes or ramps, restriping to add through-lane capacity, or substantial alterations to toll plaza, or rest stops. Substantial vertical alteration is defined as changes to a highway elevation that would expose the line-of-sight between a receptor and the traffic noise sources. Substantial horizontal alteration is defined as relocating a highway so that the distance between the highway and the closest receptor is half or less that of the existing condition. If any portion of a project is determined to be a Type I project, then the entire project area is considered a Type I project. The proposed Project meets the definition of a Type I highway project due to the addition of through-traffic lanes and substantial alteration of existing roadways. As a Type I highway project, it is necessary to evaluate highway noise levels in accordance with FHWA regulations and the RIDOT policy. See the Noise Technical Memorandum for more information.

4.4 Climate

As of fall 2018, new sea level rise analyses are required for projects subject to coastal hazards. According to final rule 650-RICM-20-00-1.1.6(I), new roadway projects that occur within CRMC's jurisdiction will now require the submission of the CRMC coastal hazard application worksheet.[1]

In 2014, Order 5520 of the FHWA established a policy on preparedness and resilience to climate change. This Order requires "incorporating consideration of climate change and extreme weather event preparedness and resilience in all FHWA programs, policies, and activities within the framework of existing laws, regulations, and guidance."

There are no current federal statutes that require federally-funded or -assisted projects to be built to withstand increases in sea level rise. See the Climate Technical Memorandum for more information.

4.5 Cultural Resources

State-level review is required by the RIHPHC under Rhode Island General Law (R.I.G.L.) 42:45 et seq. The Project is also required to comply with Federal laws including NEPA, Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303), and Section 106 of the National Historic Preservation Act of 1966 as amended, and the implementing regulations of the Advisory Council on Historic Preservation (36 CFR 800). In the event of a finding of adverse effect to aboveground and subsurface resources, Rhode Island Department of Transportation (RIDOT) will consult with the Executive Director of the RIHPHC/RIHPHC to determine whether there are prudent and feasible alternatives that would

[1] Rhode Island Coastal Resources Management Council 650-RICR-20-00-1.1.6(I) "Coastal hazard analysis application requirements".

avoid, minimize, or mitigate any adverse effects of the Project pursuant to 36 CFR 800.5(e) and 800.9. See the Cultural Resources Technical Memorandum for more information.

4.6 Floodplains

Under Executive Order 11988 Section 2.(a)(2) (EO11988), federally-financed projects located within the NFIP-designated 1% floodplain are required to be designed to minimize potential harm to or within the floodplain, and are required to prepare and circulate a notice containing an explanation of why the action is proposed to be in the floodplain.

The Flood Disaster Protection Act of 1973 and the Flood Insurance Reform Act of 1994 require federally-regulated and insured lenders to mandate the purchase of flood insurance for properties located within an area having special flood hazards for the term of the loan. Any future development within the Project area located within the 1% Floodplain would be subject to this requirement.

Under the 2007 Rhode Island Fresh Water Wetlands Act (the Act), the 1% floodplain is designated as a wetland. However, the floodplain is defined in Section 2-2-20(3) of the Act to apply only to areas subject to flooding associated with rivers, streams, or other flowing bodies of water; areas subject to coastal flooding are not considered to be freshwater wetlands. Accordingly, the Act does not apply to the 1% Floodplain for this Project.

The Coastal Development Regulations of the Aquidneck Island SAMP requires projects to minimize flood impacts and shoreline erosion by requiring that the "Coastal Greenway" shoreline land area be maintained and managed to protect resources from coastal flood hazards. In particular, areas identified as high hazard wave areas (Zone VE) should be preserved as open space. The limit of disturbance for the proposed Project does not extend into any areas designated as Zone VE on NFIP flood hazard maps, or into any areas identified as Zone VE based on VHB's site-specific coastal flooding model. As a result, the requirements of the Rhode Island RI Coastal Resources Management Council Aquidneck Island SAMP are not applicable.

Pursuant to Rhode Island General Laws Section 46-23-6, the Rhode Island CRMC is authorized to develop and adopt freeboard calculations for proposed development within the coastal floodplain. The CRMC requires all applicants proposing construction within flood hazard zones to demonstrate that all applicable portions of the RISBC, and more specifically RISBC-8, are met. Any future building development within the flood zone in the Project Area may be subject to additional RISBC floodplain construction requirements.

Chapter 15.24 of the City of Newport Code of Ordinances requires permits for all projects that meet the definition of development, not just "building" projects. Development projects include any filling, grading, excavation, mining, drilling, storage of materials, temporary stream crossings. If the construction or other development within a special flood hazard area is not covered by a building permit, all other non-structural activities shall be permitted by either the Rhode Island Coastal Resources Management Council and/or the Rhode Island Department of Environmental Management as applicable. See the Floodplains Technical Memorandum for more information.

4.7 Farmland

Federal actions are subject to FPPA requirements if they have the potential to irreversibly convert (directly or indirectly) prime farmland, unique farmland, or land of statewide or local importance to non-farm use. The Secretary of Agriculture, along with the Rhode Island Department of Administration's Division of Planning, has identified lands

in Rhode Island that meet the requirements for such classifications. There are several exemptions under the FPPA, which include lands already in or committed to urban development or water storage. Farmlands are considered to be already in development if they are located within "urbanized areas" identified by the U.S. Census Bureau. Any Federally-funded or -assisted project that includes lands subject to FPPA is required to consult with the local office of the NRCS or U.S. Department of Agriculture (USDA) Service Center, and submit Form AD-1066 to support a land evaluation and site assessment (LESA). This assessment, performed by NRCS, establishes a farmland conversion impact rating score that should inform a project's alternatives development. See the Farmland Technical Memorandum for more information.

4.8 Land Use

There are federally-owned properties within the Study Area; however, there are no applicable regulations that govern their use. These properties, which are tax-exempt, are affiliated with Naval Station Newport and are north of Pell Bridge to the west of 3rd Street and JT Connell Highway along the City's coastline. As they are federally-owned, they are not subject to state or local land use regulations.

As established by the Comprehensive Planning and Land Use Act, enacted in 1988 and amended in 2011, Rhode Island recognizes that cities and towns make most development and land use decisions. According to the Comprehensive Planning and Land Use Act, municipalities are required to adopt plans that implement local goals and support implementation of goals identified in the State Guide Plan. The State reviews local comprehensive plans and, when approved, these plans become binding on state agencies. This process requires state agencies to conform their programs and projects to local comprehensive plans. Comprehensive plans provide the basis for local land use regulations. For the Study Area and the City at large, this document is the City of Newport Comprehensive Land Use Plan, adopted by the Newport City Council in 2017. The primary vehicle for land use regulation in the City of Newport is the City's Zoning Ordinance. The City's zoning includes 16 zoning districts, nine of which are variations of residential use that are primarily differentiated by allowable density. Five zoning districts are variations of commercial use that are distinguished by function and location, and the remaining two are an open space district and a recreational district. Within each district, there are specified permitted uses and requirements pertaining to dimensions, lot coverage, building height, and density. See the Land Use Technical Memorandum for more information.

4.9 Environmental Justice and Socioeconomics

Environmental justice has its origins in Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, which President Clinton issued in 1994. According to this EO, "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."[2] Further, EO 12898 requires each Federal agency to develop an agency-wide environmental justice strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on these populations.

[2] President of the United States. (1994). Executive Order 12898 of February 11, 1994 - *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Retrieved 8 November 2018, from https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf

Issued in 2012, USDOT Order 5610.2(a), *Final DOT Environmental Justice Order*, sets forth the policy to consider environmental justice principles in all DOT programs, policies, and activities, as well as describes the objectives of how environmental justice is to be integrated into the agency's planning and programming, rulemaking, and policy formulation. It also notes the steps to prevent disproportionately high and adverse effects to minority and low-income populations through environmental justice analyses conducted as part of Federal transportation planning and NEPA provisions and the measures to be taken to address such effects if anticipated.

FHWA Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, establishes the policies and procedures for FHWA to use in complying with EO 12898. It reaffirms the principles of Title VI of the Civil Rights Act of 1964 ("Title VI") and related statutes, such as NEPA, and emphasizes the integration of those provisions in the agency's environmental and transportation decision making processes.

Under Title VI, each Federal agency is required to ensure that "no person on the grounds of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance."[3]

Effective June 26, 2009, the Rhode Island Department of Environmental Management's ("DEM's") issued its *Policy for Considering Environmental Justice in the Review of Investigation and Remediation of Contaminated Properties*. This policy provides for the proactive consideration of environmental justice relative to site investigations and property site remediation projects to enable all communities to have meaningful input in environmental decision-making regardless of race, income, national origin or English language proficiency.[4]

See the Environmental Justice and Socioeconomic Technical Memorandum for more information.

4.10 Oil and Hazardous Materials

The EPA is the federal governing body for environmental health in the United States; however, EPA relies on state regulations for small cleanups and other regulatory actions. The agency undertakes large-scale cleanups under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (40 CFR Parts 300, 311, 355, 370, and 373), often referred to as the "Superfund" program) and manages wastes that are considered hazardous based on characterizations. Superfund sites are contaminated by hazardous waste and have been placed on the National Priorities List (NPL) based on their threat or potential threat to human health and/or the environment. EPA may also manage cleanups for hazardous waste sites that have been abandoned and where no potentially responsible party can be identified, or in situations where the potentially responsible party is not able to finance cleanup operations due to bankruptcy or other financial issues. EPA also regulates hazardous substances under the Resource Conservation and Recovery Act (RCRA, 40 CFR Parts 240299) and the Toxic Substances Control Act (TSCA, 40 CFR Parts 745, 761, and 763). State Regulations The Rhode Island Department of Environmental Management (RIDEM) is the primary governing body for environmental regulations in the state of Rhode Island. RIDEM's Bureau of Environmental Protection is responsible for preventing and minimizing pollution to, and monitoring the quality and overseeing the restoration of, water, air, and land. This includes oversight of the storage and management of oil and/or hazardous materials, as well as the assessment and remediation of contaminated sites. Such work is governed by the Rules and

[3] FHWA. (2012). Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Retrieved 8 November 2019, from https://www.fhwa.dot.gov/legsregs/directives/orders/664023a.pdf

[4] DEM. (2009). *Policy for Considering Environmental Justice in the Review of Investigation and Remediation of Contaminated Properties*. Retrieved 8 November 2018, from http://www.dem.ri.gov/envequity/pdf/ejfinal.pdf

Regulations for the Investigation and Remediation of Hazardous Material Releases (DEM-DSR-01-93, as amended, also known as the Remediation Regulations). In addition to the Remediation Regulations, other programs within RIDEM, such as the Office of Water Resources, also have regulations and guidelines that are applicable to this Project. These include the Regulations for the Rhode Island Pollutant Discharge Elimination System (RIPDES), which establish discharge limitations for various activities, including point source discharges to receiving waters resulting from dewatering of construction sites

The Rhode Island Department of Environmental Management (RIDEM) is the primary governing body for environmental regulations in the state of Rhode Island. RIDEM's Bureau of Environmental Protection is responsible for preventing and minimizing pollution to, and monitoring the quality and overseeing the restoration of, water, air, and land. This includes oversight of the storage and management of oil and/or hazardous materials, as well as the assessment and remediation of contaminated sites. Such work is governed by the *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases* (DEM-DSR-01-93, as amended, also known as the Remediation Regulations).

In addition to the Remediation Regulations, other programs within RIDEM, such as the Office of Water Resources, also have regulations and guidelines that are applicable to this Project. These include the *Regulations for the Rhode Island Pollutant Discharge Elimination System (RIPDES),* which establish discharge limitations for various activities, including point source discharges to receiving waters resulting from dewatering of construction sites. See the OHM Technical Memorandum for more information.

4.11 Stormwater

The Project has the potential to impact stormwater resources and will be subject to the following regulations:

- The RIPDES: Addresses water pollution by regulating point sources that discharge pollutants to waters of the U.S. Requires permits for discharges from construction activities that disturb one or more acres, and discharges from smaller sites that are part of a larger common plan of development or sale. Additionally, RIDOT requires a large site Stormwater Pollution Prevention Plan (SWPPP) to be prepared for projects that disturb more than one acre.
- Clean Water Act Section 401/404: The Project may require work in Waters of the United States, consequently authorization under these regulatory programs will be required. RIDEM will evaluate review the Project for a Water Quality Certificate (WQC) under Section 401 of the CWA concurrent with the Wetlands Application. If any fill is proposed within Waters of the United States, the Project will also require Section 404 authorization by the USACE.
- Rhode Island Stormwater Design and Installation Standards Manual (RISDISM): The RISDISM defines redevelopment as work that requires disturbance down to an erodible surface of 10,000 square feet (SF) or more of existing impervious area. The proposed Project work will exceed this threshold, so the design will have to incorporate stormwater treatment measures to comply with the RISDISM.
- RIDOT Municipal Separate Storm Sewer System (MS4) Consent Decree: Section 16 of the Consent Decree between RIDOT and the EPA concerning the implementation of their MS4 Program specifies that for RIDOT new construction or reconstruction projects (the proposed Project is considered reconstruction in accordance with the Consent Decree) must address water quality improvements. The Consent Decree specifies that reconstruction projects that will discharge any pollutants of concern to an impaired water body segment directly or indirectly shall implement structural stormwater controls and may implement enhanced Non-Structural BMPs that will, to

the maximum extent practicable, support the achievement of the pollutant load reduction and other requirements of the Consent Decree.

See the Stormwater Technical Memorandum for more information.

4.12 Threatened and Endangered Species

The following provides a summary of Federal and state regulations applicable to threatened and endangered species.

- The Endangered Species Act (ESA; 16 U.S.C. § 1531 et seq.), passed by Congress in 1973, provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found (USFWS, 2017a). Under Section 7, federal agencies must consult with the United States Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration (NOAA) when any action the agency carries out, funds, or authorizes (such as through a permit) may affect a listed endangered or threatened species (USFWS, 2017a; NOAA Endangered Species Conservation).
- The 4(d) Rule was established in 1975 and final rule published in 2016 to extend the protections of the ESA to federally threated species by directing the USFWS to issue regulations deemed necessary and advisable to provide for the conservation of threatened species (Levin et al., 2018). A Final 4(d) Rule specific to "take" prohibitions of the NLEB was published in the Federal Register on January 14, 2016 (USFWS, 2016). Take prohibitions identified in the Final 4(d) Rule for the NLEB are meant to protect maternity colonies, hibernating bats, and the areas that bats use as they enter and leave hibernation sites.
- The Migratory Bird Treaty Act (MBTA; 16 U.S.C. 703-712), passed in 1918 and amended in 1972 to include birds of prey, protects migratory birds.
- The Bald and Golden Eagle Protection Act (Eagle Act; 16 U.S.C. 668-668c), enacted in 1940 and amended several times since, prohibits anyone from taking bald or golden eagles.
- The Rhode Island Endangered Species of Animals and Plants Act (RIESAPA; Rhode Island General Law Title 20, Chapter 37) provides additional state protections to federal and state endangered plants or animals.
- The Rhode Island Natural Heritage Program (RINHP) was established in 1979 to catalogue the state's rare flora and fauna (RIDEM et al., 2015). If any state-listed species occur within a study area and the related proposed action is subject to other environmental regulations promulgated by the RIDEM and/or the Rhode Island Coastal Resources Management Council, then coordination between the RINHP and the regulating agency will be necessary to determine if an effects determination on the state-listed species can be determined based on the project's description or if survey efforts and mitigation are required.

See the Threatened and Endangered Species Technical Memorandum for more information.

4.13 Traffic

Guidance documents referenced for traffic include the Highway Capacity Manual and the ITE Trip Generation Manual. See the Traffic Technical Memorandum for more information.

4.14 Wetlands

The United States Army Corps of Engineers (USACE) has jurisdiction over Waters of the United States, which include waterways and adjacent wetlands, through §404 of the federal Clean Water Act (CWA). Wetlands and waterways within the Study Area are addressed in accordance with the following federal and state requirements:

- Under Executive Order 11990 of 1977 (Protection of Wetlands), federal agencies are to avoid destruction and modification of, or construction within, existing wetlands where there is a practicable alternative.
- The Rhode Island Department of Transportation/ Federal Highway Administration will consult with federal, state, and local agencies. The impact analysis for unavoidable impacts will be provided in the final Environmental Assessment and will include an opinion of the proposal's "overall effect on the survival and quality of the wetlands.
- Section 401 of the CWA specifies additional requirements for permit review on the state level and Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States.
- The State of Rhode Island has jurisdiction over freshwater wetlands and waterways promulgated under Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act (Rules). The Freshwater Wetlands Act is administered by the Rhode Island Department of Environmental Management (RIDEM). The Coastal Resources Management Council (CRMC) has jurisdiction over coastal wetlands and replaces freshwater regulatory jurisdiction of the RIDEM in certain coastal areas under the Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast (Coastal Wetland Rules). Freshwater wetlands jurisdiction falls to the CRMC in the western portions of the Study Area (generally including areas west of the existing railbed) and to the RIDEM in the eastern parts of the Study Area.

See the Wetlands Technical Memorandum for more information.

5. Indirect Impacts

5.1 Air Quality

The Project is expected to reduce congestion across the Study Area. This reduction in congestion and improved network operations will indirectly result in the reduction of regional pollutant emissions. In the Build Conditions, mobile source pollutant emissions are expected to be reduced compared to the Existing and No Build Conditions. Emissions reductions in the Build Conditions range from 0.01 to 0.38 tons per year for NOx, VOC, PM_{10} and $PM_{2.5}$ when compared to the No Build Condition. Reductions in CO_2 in the Build Conditions range from 528 to 1,009 tons per year when compared to the No Build Condition. The Project will provide a net benefit under the Build Conditions, reducing emissions compared to the No Build Condition. As such, no indirect air quality impacts are anticipated from the Project.

5.2 Coastal Resources

The Project does not propose any activity in coastal waters, coastal resources, shoreline feature, or within the 200-foot contiguous area. Indirect Project effects because of construction of the Project may include stormwater runoff, impacts to freshwater wetlands, disturbance to vegetation and open space, and erosion and sedimentation.

5.3 Noise

There are no indirect noise effects for the Project. Redesigning the interchange of the Pell Bridge, reducing bridge traffic, and reducing downtown Newport traffic would not indirectly affect noise in the area.

5.4 Climate

The Project will not have any measurable indirect impact on future rising sea levels, increased rainfall amounts, or other expected climate changes.

5.5 Cultural Resources

The APE is generally fully developed and no historic resources would be displaced due to the Project. The Project is anticipated to create future development opportunities within the APE, however, the development will occur on land that is presently vacant therefore new development should avoid impacts to historic resources within the APE.

No archaeological sites were identified during the Phase I Archaeological Survey. Therefore, the Project will not adversely impact any archaeological resources within the APE.

5.6 Floodplains

Nearly the entire Project area is located within the existing 1% Floodplain, but development is restricted by the alignment of the Pell Bridge access ramp. By opening more land to development, the Project could have an indirect effect of increasing the flood risk liability of the City of Newport. More development and infrastructure within the 1% Floodplain would place a greater burden on emergency services during and after a coastal flooding event, and would increase the costs to repair damaged infrastructure following the event.

5.7 Farmland

The Project is not expected to result in the beneficial use of the prime and important farmlands within the Study Area for agricultural production, commercial or otherwise. The reconfiguration of the Pell Bridge ramp and approaches will create new development opportunities; however, any development that indirectly results from the Project is expected to conform to the City of Newport's vision for these lands, which includes mixed-use, innovative development that focuses on "the development of incubator/accelerator type businesses."

5.8 Land Use

The reconfiguration of the Pell Bridge approaches and ramps, including the consolidation and removal of excess highway infrastructure, would open land formerly occupied and constrained by such infrastructure to new development. RIDOT intends to dispose of the unused right-of-way as surplus property which would be a beneficial indirect impact, freeing up the land for uses consistent with the City's land use planning and zoning, as potentially amended.

5.9 Environmental Justice-Socioeconomic

The Project will indirectly result in new development opportunities (associated with the anticipated "Innovation Hub"). Any new development is not expected to have a disproportionately high and adverse effect on minority and low-

income populations, as such development would conform to the City of Newport's existing and future land use planning and regulations. New development opportunities are expected to result in new employment opportunities for persons living in the Study Area.

5.10 Oil and Hazardous Materials

Potential indirect impacts could occur if the Project has the potential to affect ongoing remediation of existing subsurface contamination or would produce additional sources of contamination or waste materials. This is currently not anticipated to occur because of the Proposed Action but could be the case if previously undiscovered contaminants are encountered during construction. Another potential indirect impact, albeit unlikely, is the accidental mismanagement of regulated soil or groundwater waste materials outside the Study Area, such as dumping of contaminated, regulated soils at an unlicensed facility or location. The Proposed Action may also result in an indirect beneficial impact if it results in the removal and disposal of contaminated materials in accordance with state and Federal regulations.

5.11 Stormwater

The Project will make available a significant amount of decommissioned RIDOT and City of Newport land for redevelopment projects for potential commercial and retail use proximate to the Pell Bridge interchange area. Redevelopment projects have the potential to increase impervious surface which can lead to negative effects on stormwater quality and the receiving water bodies. Water can flow faster off impervious surfaces, which can increase erosion in receiving waterbodies and therefore potentially increase the amount of sediment in the water. Sediments block light from passing through the water and can also carry contaminants that attach to the surface of sediment particles. Therefore, increased sediment loads in waterways could increase pollutant concentrations. Sediment can also reduce the capacity of a water body and increase the risk of flooding.

These negative potential effects to stormwater from the future redevelopment projects will be mitigated with new stormwater controls and BMPs that will be required by RIDEM regulations. Based on the anticipated traffic volumes generated by new development, the Project Area and associated land available for development will be defined as a land used with higher potential pollutant loads (LUHPPL). In order to treat this area, the RISDISM requires specific BMPs to treat the higher pollutant loading. These BMPs and compliance with other RIDEM stormwater regulations will treat and reduce pollutants in stormwater runoff and will ultimately have the indirect effect of improving water quality of the receiving water bodies within the Study Area

5.12 Threatened and Endangered Species

The federally-listed species with the potential to occur within the Study Area are the northern long-eared bat (NLEB; *Myotis septentrionalis*) and the roseate tern (Northeastern subspecies; *Sterna dougallii dougallii*). The Project will have no indirect effects on the roseate tern because it is unlikely that the Study Area presently supports this species and the Project will not change the Study Area's habitat suitability for the roseate tern. It is unlikely that the Project will have indirect effects on the NLEB because this species is not anticipated to occur within the Study Area based on the probable absence results of the acoustic surveys.

5.13 Traffic

Potential indirect impacts may occur as a result of the Project's effects on the surrounding roadway network. Completion of the Project would make a substantial amount of land available for redevelopment where the existing roadway infrastructure is today. While this development would not be constructed as part of the Proposed Action, it would generate trips that would affect traffic volume and operations. The City of Newport has envisioned a mixed-use redevelopment in the parcels made available after Project completion that includes office, research and development, commercial, intermodal support, and open space uses. The existing Newport Grand site is also planned for redevelopment with a 250-room hotel and 150,000 square feet of retail space. Due to the uncertainty of the development timeline and the fact that there is no specific building program for most of the future redevelopment area, it was assumed for purposes of the traffic analysis that only the Newport Grand site and a 300-space Park & Ride would be constructed concurrently with the Proposed Action.

5.14 Wetlands

Indirect effects to wetlands are anticipated and include:

- Impacts to wetlands on RIDOT and City of Newport property located outside of the LOD that would be decommissioned, sold, and redeveloped by others in the future.
- Sedimentation in wetlands adjacent to the Project LOD.
- Project construction and operation within unregulated adjacent uplands.
- Temporary disturbance to wetland wildlife habitat functions adjacent to the LOD.
- The potential for hydrologic modifications to wetlands adjacent to the LOD.

Wetland or waterway impacts that result from redevelopment of decommissioned RIDOT and City of Newport land by others that is made available by the Project constitutes an indirect project effect to wetlands or waterways. Indirect, temporary, and adverse effects to wetlands adjacent to the Project LOD could also occur during project construction because of sedimentation when adjacent upland soils are disturbed. These temporary effects are considered minor because the wetland areas that may be affected by sedimentation are small, and erosion and sedimentation will be managed using BMPs during construction in accordance with applicable state and federal regulations. Unregulated adjacent uplands (i.e., those associated with wetlands not classified as bogs, swamps, or marshes under Rhode Island state law) within the LOD will be permanently affected by excavation, fill, grading, vegetation removal, and redevelopment. The affected adjacent uplands have previously been developed or disturbed by construction within the Study Area, so effects will be minor because there will be no new development of intact, undeveloped adjacent uplands. Wildlife inhabiting wetlands adjacent to the LOD and construction area may also be temporarily disturbed by project construction noise and activities. However, project construction would occur in an area that is already intensely developed with busy roadways and significant noise, so any indirect, adverse construction-phase effects to adjacent wetland wildlife habitat would be temporary and minor. Recontouring of the land and modification of impervious surface coverage may result in changes to surface runoff or groundwater hydrology with the potential to affect the hydrology of wetlands adjacent to the LOD. These permanent, indirect hydrologic effects to adjacent wetlands are expected to be minor, given the current highly developed landscape context.

6. Cumulative Impacts

6.1 Air Quality

There are no known projects that would substantially affect air quality conditions in the Study Area. Nationwide, mobile source pollutant emissions are expected to decrease with time due to increasingly restrictive regulations on vehicle fuel consumption and emissions. As such, mobile source pollutant emissions in the Study Area in the design year are expected to be less than the Existing Conditions. The Project is expected to provide a net benefit and reduce pollutant emissions compared to the existing and No Build conditions, helping to offset any increase of emissions occurring from other projects. Therefore, there would be no significant adverse cumulative air quality effects.

6.2 Coastal Resources

Impacts to the coastal zone resulting from the Project are anticipated to be minor, because the CRMC's coastal zone Consistency Determination will ensure that the Project conforms to RICRMP and SAMP criteria intended to protect and enhance the coastal zone. Construction of the Project would result in land that is currently in use as right of way becoming available for future development by others. Future redevelopment on this land would also be completed in Rhode Island's designated coastal zone, and depending on the scope of any specific future project, may require a coastal zone Consistency Determination. Projects requiring a coastal zone Consistency Determination would also need to meet applicable policies, goals, and standards of the CRMP and the Aquidneck Island SAMP to obtain a coastal zone Consistency Determination. Projects that do not trigger the need for a Consistency Determination are assumed to be small enough in scope that they would not have any significant effects to the coastal zone. Therefore, future cumulative effects to the coastal zone are anticipated to be minor.

6.3 Noise

Although the Project would result in noise impacts at some sensitive receivers in the Study Area, there are no other known projects that would affect long-term operational or short-term construction noise conditions in the study area. Therefore, no significant adverse cumulative noise effects are anticipated.

6.4 Climate

Rising sea levels and storm surge could impact future development in the area, but the proposed Project would not contribute to these impacts. Therefore, there are no cumulative effects for climate under this Project.

6.5 Cultural Resources

Based on a review of aerial imagery, historic resources within the APE have not changed significantly since at least 1995. The Project itself would not substantially alter known historic resources and hence would not contribute to adverse cumulative impacts to historic resources within the APE.

No archaeological sites were identified during the Phase I Archaeological Survey. Therefore, the Project would not contribute to adverse cumulative impacts to archaeological resources within the APE.

6.6 Floodplains

Grading and changes to structures associated with the Project, in conjunction with anticipated future increases in sea levels, may result in cumulative effects. These sea level increases will exacerbate coastal flooding by raising stillwater elevations, increasing the area of the 1% floodplain. Development of the surplus right of way would result in additional impervious cover and fill in the Study Area, potentially compounding these effects. Although the Project is not expected to contribute to cumulative effects on flood elevations, proposed grading in conjunction with sea level rise may affect the specific area inundated during flood events. In addition, increased storm rainfall intensity would result in greater riverine flooding associated with the unnamed stream flowing through the Project area, and this could be exacerbated by increased impervious cover and fill from parcel development. However, the flood elevations and extents associated with the unnamed stream are negligible compared to coastal flooding, and this would not be predicted to have a cumulative impact on the 1% floodplain.

As a consequence of higher stillwater elevations from sea level rise, more coastal structures will be submerged during coastal flood events and the effects of breaking wave action and wave setup will extend further inland. Modeling indicates that the limits of significant wave action (Zone VE) and moderate wave action (LiMWA) will remain seaward of the Project area, but wave setup effects will propagate further into the Project area. The existing raised embankment carrying the Pell Bridge approach ramp serves as a barrier against wave setup propagating further eastward, but this embankment would be removed under proposed Project grading. The cumulative impact of sea level rise with the removal of this barrier could result in higher future coastal flood elevations east of Route 138.

6.7 Farmland

Because the Study Area is within an urbanized area identified by the U.S. Census Bureau, and associated lands are not subject to the provisions of the FPPA, the Project is not expected to contribute to cumulative impacts to farmlands.

6.8 Land Use

Based on a review of aerial imagery, land use patterns within the Study Area have not changed significantly since at least 1995. Though the Project itself would not substantially change such patterns, except for several residential, commercial, and public service property acquisitions, it is anticipated that large-scale redevelopment of currently undeveloped or underdeveloped properties within the Study Area would occur as an indirect impact. No other present or reasonably foreseeable future actions are known that would result in the Project having adverse cumulative impacts to land use within the Study Area. Because JT Connell Highway/Coddington Highway is existing transportation infrastructure and adjacent parcels are already largely developed, no impact on development is anticipated from resurfacing this roadway up to W Main Road.

6.9 Environmental Justice and Socioeconomics

The Project is not expected to result in disproportionately high and adverse effect on environmental justice populations or in adverse effects to socioeconomics. Accordingly, it is not expected to contribute to cumulative effects in either of these areas.

The redevelopment of the Newport Grand would generate new employment opportunities within the Study Area, and therefore, add to the number of potential jobs resulting from the redevelopment of the parcels freed up by the

Project. The building program for the former casino includes a 250-room hotel and 150,000 square feet of new retail. This is considered a beneficial cumulative effect.

6.10 Oil and Hazardous Materials

The Project would have no adverse impacts in the Study Area, and hence would not contribute to cumulative effects. Any hazardous materials encountered during Project implementation will be mitigated via RIDEM-approved work plans, methodologies (e.g., stockpile management, dust monitoring, construction oversight by an environmental professional), and (as appropriate) an Environmental Land Usage Restriction (ELUR). Beneficial impacts may result after proper disposal or capping (via engineered controls) of contaminated materials (i.e., soil, groundwater, and debris) and legal restriction of the future property usage via the ELUR is completed.

6.11 Water and Stormwater

Cumulative effects to stormwater within the Project Area based on the interaction of the Project with past, present and reasonably foreseeable future actions would be beneficial. Implementation of required stormwater controls and BMPs will reduce pollutant loading, provide groundwater recharge, and reduce the peak flows to the surrounding drainage outfalls.

6.12 Threatened and Endangered Species

The Project includes components that would be considered potential stressors to NLEB; however, the acoustic survey results indicate the probable absence of the NLEB. Therefore, the Project is not anticipated to contribute to cumulative effects on NLEB. In addition, based on a review of the habitat within the Study Area, the Project is unlikely to have contribute to cumulative effects on roseate tern or the MBTA-listed species, because the habitat needs for these species are not present within the Study Area.

6.13 Traffic

While the Proposed Action would decrease congestion and improve travel times in the Study Area, congestion is predicted to occur at the northbound approach to the proposed roundabout. However, the net effect of the project would be beneficial, and therefore the Proposed Action is not expected to contribute to adverse cumulative effects.

6.14 Wetlands

Based on review of georeferenced aerial photographs from 1939 available through RIGIS, an estimated 63 acres of the Study Area was wetland in 1939. In 1939 a network of surface ditching through wetlands resembled salt marsh, freshwater marsh, wetland pasture, or hayfield ditched were present for surface water management and drainage. The one stream delineated in the Study Area during 2017 was already ditched and straightened on the 1939 aerial photographs. It extended further south and east into the Study Area than present day conditions. The wetlands were abutted by a mix of developed urban land, an apparent landfill, and upland agricultural fields in 1939. Wetland field investigations completed in 2017 and 2018 in the Study Area revealed that wetlands currently constitute approximately 6.6 acres of the Study Area, meaning that approximately 56.4 acres of wetlands, along with their associated functions and values, were lost between 1939 and 2018. This loss constitutes approximately 90 percent of the estimated 63 acres of wetlands that existed in the Study Area in 1939, and losses of the following assumed functions and values based on evaluation of the historic state and present-day site conditions:

- Wildlife habitat;
- Production export;
- Groundwater discharge/ recharge;
- Flood flow alteration;
- Sediment/ toxicant/ pathogen retention; and
- Nutrient removal/ retention/ transformation.

The proposed Project would result in permanent, direct effects to an additional 0.85 acre of wetlands, which is approximately one percent of the Study Area's estimated 1939 wetland acreage of 63 acres, and 13 percent of the 6.6 acres of wetlands that presently exist. An additional 2.2 acres of previously developed perimeter wetlands only regulated by the state would also be permanently affected. Of the original estimated 63 acres of wetlands located within the Study Area, 5.8 acres (9 percent) would remain following construction of the Project. Additional indirect wetland and waterway impacts related to future in-fill development on land made available by construction and operation of the Project may include construction-phase erosion and sedimentation, redevelopment of adjacent uplands, construction-phase disturbance to wildlife habitat functions, and modifications to watershed drainage and runoff. These impacts are not quantified, although it is assumed that indirect impacts would be minimized and limited in area in accordance with state and Federal regulations and BMP guidance, and therefore would be minor.

Other reasonably foreseeable future actions that could affect the existing 6.6 acres of Study Area wetlands and their functions, or values by 2030 include other development and land alterations that could have direct, adverse effects on wetlands or waterways by fill, grading, or vegetation removal, or indirect adverse effects through development of adjacent uplands, sedimentation, or stormwater and hydrologic modifications. The existing state and federal wetland regulatory systems require that impacts to wetlands and waterways be avoided and minimized to the extent practicable before they can be permitted. Stormwater management and construction phase BMP's provide measures for managing and mitigating stormwater and erosion and sedimentation effects related to construction and postconstruction runoff. Therefore, adverse cumulative effects of the Project in combination with other reasonably foreseeable future actions are anticipated to be minor.

7. Mitigation

7.1 Air Quality

As no significant adverse air quality impacts are anticipated, mitigation for cumulative effects is not required.

7.2 Coastal Resources

Minor indirect effects to coastal resources will be mitigated through implementation of construction phase BMP's, use of low impact design (LID) approaches where feasible, post-construction stormwater management, and by minimizing and mitigating impacts to wetlands if they cannot be avoided.

7.3 Noise

Because mitigation for Project noise impacts was determined not to be reasonable and feasible, none is proposed. No additional impacts are expected as a result of reasonably foreseeable future actions, and hence no additional mitigation would be required.

7.4 Climate

This Project would not have a measurable impact on changing climate conditions, but in conjunction with sea level rise could contribute to cumulative impacts in the Study Area. Potential mitigation strategies for addressing climate change, according to the Federal Highway Administration, include: maintaining infrastructure for optimal performance, increasing redundancy, such as providing alternate routes, protecting the shoreline infrastructure through hardened or soft engineered solutions, increasing bridge deck elevations or lowering road profiles to allow for overwash, or relocating the structure away from the vulnerable coastal area.

7.5 Cultural Resources

Because no indirect or cumulative adverse impacts are anticipated, no mitigation is required for cultural resource.

7.6 Floodplains

It is assumed that surplus right of way parcels would be graded to the same elevation as the surrounding roadway. Indirect and cumulative impacts can be mitigated or reduced within the development parcels by designing site grading, building floor elevations, and utility infrastructure to provide adequate freeboard above the current and predicted future 1 percent floodplain elevation.

7.7 Farmland

Because no indirect or cumulative adverse impacts are anticipated, no mitigation is required for farmland.

7.8 Land Use

Although the Project is anticipated to convert several residential, commercial, and public service properties to transportation right-of-way, these conversions are not anticipated to significantly change land use patterns within the Study Area or the City at large. Accordingly, no mitigation measures are anticipated. Related to these land use conversions, RIDOT will work with property owners, including the City of Newport, to ensure fair compensation and relocation assistance.

7.9 Environmental Justice-Socioeconomics

As the Noise Technical Memorandum notes, RIDOT reviewed the feasibility and reasonableness of noise abatement measures based on standard criteria in its Noise Policy. The criteria address 1) engineering feasibility, 2) viewpoints of benefited receptors, 3) cost effectiveness, 4) acoustic feasibility, and 5) date of development. Based on RIDOT's review, noise abatement measures would not be feasible and reasonable for impacted receptors in identified environmental justice geographies. For residences on JT Connell Highway near Bay View Park, it is not feasible to significantly alter the alignment of JT Connell Highway or institute speed or truck restrictions to these local roads and noise barriers are not feasible due to pedestrian access needed for these residences. Although noise barriers would be feasible for receptors near the intersection of Garfield Street and Halsey Street, such barriers would not be reasonable based on cost. Accordingly, no mitigation for noise impacts is proposed.

The Project will require property acquisitions within identified environmental justice geographies. RIDOT will work with property owners to ensure fair compensation and relocation assistance in accordance with 49 CFR Part 24 requirements.

7.10 Oil and Hazardous Materials

During construction activities, BMPs and other requirements would need to be followed to mitigate potential impacts from the Project. RIDOT and any selected contractors/sub-contractors would be required to follow a Remedial Action Work Plan (RAWP), which details specific measures to be taken by the contractor, the process for handling and managing impacted materials (soil and groundwater), and specifications on the construction of any cap. The Oil and Hazardous Materials Technical Memorandum contains additional information on these measures.

7.11 Stormwater

As noted above, the use of onsite post-construction stormwater management BMPs would offset the loss of water quality due to additional impervious surface and help to perform wetland functions, including sediment/ toxicant retention and nutrient removal/ retention/ transformation. A reduction in sedimentation within wetlands and waterways would be achieved through implementation of construction of the BMPs to control erosion. The mitigation also includes LID practices that may include grass swales, sedimentation forebays, and bioretention areas.

7.12 Threatened and Endangered Species

As described above, the Project is not expected to contribute to adverse cumulative effects on threatened and endangered species. However, RIDOT would continue to coordinate with USFWS regarding these species and may implement avoidance and minimization measures as appropriate during construction. Information on these measures can be found in the Rare, Threatened, and Endangered Species Technical Memorandum.

7.13 Traffic

Overall, the Project would improve traffic circulation and safety and would not require mitigation. It is recommended that a queue detector be installed on the JT Connell Highway northbound approach to help meter the southbound and eastbound traffic and provide gaps in the roundabout for the northbound traffic to enter.

7.14 Wetlands

Authorization for Project impacts to wetlands and waterways that are protected under Section 404(b) of the federal Clean Water Act will require Pre-Construction Notification under the USACE's State of Rhode Island General Permit 18 because total project impacts to federally regulated wetlands and waterways would exceed 5,000 square feet in area. Agency coordination and consultation will be required with the U.S. Fish and Wildlife Service, the Coastal Resources Management Council, the Rhode Island Historical Preservation & Heritage Commission, and the Narragansett Tribe.

8. Regulatory Coordination and Required Permits

8.1 Air Quality

No special permits or coordination are required for air resources.

8.2 Coastal Resources

The Project will require CZM Consistency Determination from the CRMC due to the Project's location within the Coastal Zone as identified in the CRMP and the Aquidneck Island SAMP. The CZM Consistency Determination will evaluate the proposed Project against applicable CRMP performance standards, Aquidneck Island SAMP goals and objectives, and Aquidneck Island SAMP coastal development standards.

8.3 Noise

The FHWA and RIDOT are responsible for all noise abatement considerations up until the "Date of Public Knowledge" of the Project for all existing or permitted development. After this date, RIDOT is still responsible for analyzing changes in traffic noise impacts, when appropriate, but is no longer responsible for providing noise abatement for new development that occurs adjacent to the proposed highway Project. Provision of such noise abatement becomes the responsibility of local communities and private developers.

8.4 Climate

No special permits or coordination are required to protect the Project from the impacts of climate change.

8.5 Cultural Resources

The RIHPHC has review authority over projects requiring state or federal funding, licensing, permitting, and/or approvals, in order to evaluate potential impacts to properties listed or eligible for listing in the National Register, in compliance with the standards and guidelines established by the Rhode Island Historic Preservation Act of 1968, the Secretary of the Interior's Standards and Guidelines for Identification (1983), and National Register Bulletin 24, Guidelines for Local Surveys: A Basis for Preservation Planning (1977, revised 1985).

8.6 Floodplains

Any future building development in the Project area within the 1% Floodplain would require a building permit from the City of Newport and would be subject to the Use Regulations listed in Chapter 15.24.040 of the City of Newport Code of Ordinances. In addition, any future building development within the 1% Floodplain will require submittal to the CMRC demonstrating that all applicable portions of the RISBC and specifically RISBC-8 are met.

EO 11988 requires public notification documentation supporting efforts to minimize adverse effects for federally-supported projects located within the 1% Floodplain. The NEPA public review process and this Environmental Assessment study satisfies this requirement.

The City of Newport is a participating community in the NFIP. Given the anticipated changes to the delineated extents of the Zone AE floodplain resulting from proposed grading, VHB recommends coordinating with the local City of Newport Floodplain Administrator. The City and/or the developer of new parcels in the Project Area may want to apply for a Letter of Map Revision (LOMR) to update floodplain maps to better reflect the actual horizontal limits of the 1% Floodplain, especially if individual parcel grading would raise new construction above the 1 percent BFE.

8.7 Farmland

The prime and important farmlands present within the Study Area are already in or committed to urban development, and the Study Area in whole is within an urbanized area identified by the U.S. Census Bureau. Accordingly, these lands are exempt from the provisions of the FPPA and coordination with NRCS is not required.

8.8 Land Use

As a state agency, RIDOT is not subject to local land use regulations and associated approvals or permitting. However, its actions must be consistent with the goals laid out in the City of Newport Comprehensive Land Use Plan. As demonstrated in the previous sections of this technical memorandum, the Project supports the vision laid out by the City of Newport by enabling key economic development opportunities to be realized (i.e., the Innovation Hub in the City's North End).

8.9 Environmental Justice-Socioeconomics

The environmental justice analysis was developed in accordance with EO 12898 and the FHWA and DOT EJ Orders and should inform RIDOT's obligations and non-discrimination requirements under Title VI. As stated, under Title VI, RIDOT is required to ensure that "no person on the grounds of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance."[5] No Federal, State, or local permits are required relative to environmental justice.

8.10 Oil and Hazardous Materials

Mr. Jeffrey Crawford, Principal Environmental Scientist for the Rhode Island Department of Environmental Management (RIDEM) Office of Waste Management, is the RIDEM Project Manager for the Project. Communications have taken place with Mr. Crawford at various stages throughout the Project to determine that appropriate regulatory guidelines were being adhered to. Mr. Crawford is the RIDEM representative who sent RIDOT the Letter of Responsibility, after the Department received the Release Notification Form.

8.11 Stormwater

The Project will require the development of BMPs in accordance with the RISDISM and the MS4 Consent Decree. The RISDISM provides guidance on the volume of stormwater treatment will be necessary and which types of BMP

[5] FHWA. (2012). Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Retrieved 8 November 2019, from https://www.fhwa.dot.gov/legsregs/directives/orders/664023a.pdf

technologies should be used depending on the pollutants that are being targeted. The RIPDES program will require the development of a storm water pollution prevention plan (SWPPP) to minimize soil erosion and sedimentation during the construction of the Project.

8.12 Threatened and Endangered Species

The Official Species List provided by the USFWS indicates that there are two federally-listed species with the potential to occur within the Study Area: the NLEB and the roseate tern. Roseate tern habitat is not present within the Study Area and an acoustic survey targeting the northern long-eared bat resulted in the probable absence of this species within the Study Area. At the time of submission of this technical report, consultation with the USFWS under Section 7 of the ESA is on-going and an effect determination has not yet been received. Given current information on the abundance and habitat preferences of listed species, the habitat conditions within the Study Area, and results of on-site field investigations and observations, RIDOT is seeking a determination of "may affect, but not likely to adversely affect." When the determination is received it will be appended to this memorandum.

There are no State-listed species of state-concern, state-threatened, or state-endangered mapped within the Study Area, therefore consultation with the RINHP was not necessary. The Project is not anticipated to have any impact on state-listed species.

8.13 Traffic

No special permits or coordination are required for traffic.

8.14 Wetlands

Authorization for Project impacts to wetlands and waterways that are protected under Section 404(b) of the federal Clean Water Act will require Pre-Construction Notification under the USACE's State of Rhode Island General Permit 18 because total project impacts to federally regulated wetlands and waterways would exceed 5,000 square feet in area. Agency coordination and consultation will be required with the U.S. Fish and Wildlife Service, the Coastal Resources Management Council, the Rhode Island Historical Preservation & Heritage Commission, and the Narragansett Tribe.

Federal Water Quality Certification under Section 401 of the Clean Water Act will also need to be obtained through application to the RIDEM Office of Water Resources, which has been delegated authority to issue Clean Water Act Water Quality Certifications. Impacts to state-protected Freshwater Wetlands for Project impacts will require authorization from the Rhode Island Department of Environmental Management or the Rhode Island Coastal Resources Management Council. As a linear project located on both sides of the CRMC and RIDEM jurisdictional boundary (see Figures 1 and 2), the RIDEM and CRMC shall jointly determine which agency will serve as the freshwater wetland review agency for the Project. This determination will be issued by CRMC within 10 days of receiving a written request from the applicant for a determination of wetland review jurisdiction. Depending on which agency is established as the Project's freshwater wetland review agency, an Application to Alter a Freshwater Wetland will need to be filed with the RIDEM or an Application to Alter Freshwater Wetlands in the Vicinity of the Coast Application Package will need to be filed with the CRMC. Either of these applications requires public noticing, and will probably require a public hearing given the scope of the Project and impacts. Public notices and hearings for the Freshwater Wetland Permits may be coordinated with the Section 404 and Water Quality Certification permit processes.