Reconstruction of the Pell Bridge Approaches

Newport and Middletown, Rhode Island

November 2019

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Reconstruction of the Pell Bridge Approaches

Newport and Middletown, Rhode Island

ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to 42 U.S.C. 4332(2)(c) and 23 U.S.C. 138

U.S. Department of Transportation

Federal Highway Administration

And the

Rhode Island Department of Transportation

11/15/19

Date

Peter Alviti, Jr., P.E., Director
Rhode Island Department of Transportation

11/14/19

Date

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List of Acronyms

ACS	American Community Service
ADA	Americans with Disabilities Act
AIPC	Aquidneck Island Planning Commission
AITS	Aquidneck Island Transportation Study
APE	Area of Potential Effects
AST	Aboveground Storage Tank
ATR	Automatic Traffic Recorder
BCC	Birds of Conservation
BCID	Bat Call Identification
BFE	Base Flood Elevations
BMPs	Best Management Practices
CAAA	Clean Air Act Amendments
CBRS	Coastal Barrier Resource System
CCRI	Community College of Rhode Island
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Compensation and Liability Information System
CFR	Code of Federal Regulations
CI	Commercial Industrial
CLUE	Corridor Land Use Evaluation
CMF	Crash Modification Factors
CMZ	Coastal Zone Management
CNEs	Common Noise Environment
CO	Carbon Monoxide
CO2	Carbon Dioxide
CRMC	Coastal Resources Management Council
CRMP	Coastal Resource Management Program
CT	Commercial-Technology
CWA	Clean Water Act
CZM	Coastal Zone Management
dBA	Decibels
DFW	Division of Fish and Wildlife
DPW	Department of Public Works

EA	Environmental Assessment
EDR	Environmental Database Resources
EIS	Environmental Impact Statement
EJ	Environmental Justice
ELUR	Environmental Land Usage Restriction
EO	Executive Order
EPA	Environmental Protection Agency
ERM	Environmental Resource Map
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GIS	Geographic Information Systems
HSG	Hydrologic Soil Group
HSM	Highway Safety Manual
I/CDEC	Industrial/Commercial Direct Exposure Criteria
I/M	Inspection and Maintenance
IPaC	Information for Planning and Consultation
ITE	Institute of Transportation Engineers
LESA	Land Evaluation and Site Assessment
LID	Low Impact Development
LiMWA	Limit of Moderate Wave Action
LOD	Limits of Disturbance
LOS	Level of Service
LSI	Limited Surface Investigation
LUHPPL	Land Used with Higher Potential Pollutant Loads
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MgCl2	Magnesium Chloride
MOE	Measure of Effectiveness
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics

NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHL	National Historic Landmark
NLEB	Northern Long-Eared Bat
NOAA	National Oceanic and Atmospheric Administration
NOx	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
PAH	Polycyclic Aromatic Hydrocarbons
PM	Particulate Matter
R.I.G.L	Rhode Island General Law
R10	Residential
RACR	Remedial Action Closure Report
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RDEC	Residential Direct Exposure Criteria
RIDEM	Rhode Island Department of Environmental Management
RIDOT	Rhode Island Department of Transportation
RIESAPA	Rhode Island Endangered Species of Animals and Plants Act
RIHPHC	Rhode Island Historical Preservation and Heritage Commission
RINHP	Rhode Island Natural Heritage Program
RIPDES	Rhode Island Pollutant Discharge Elimination System
RISDISM	Rhode Island Stormwater Design and Installation Standards Manual
RITBA	Rhode Island Turnpike and Bridge Authority
SAMP	Special Area Management Plan
SEMS	Superfund Enterprise Management
SF	Square Feet
SHWS	State Hazardous Waste Sites
SIP	State Implementation Plan

SIR	Site Investigation Report
SMP	Soil Management Program
SPF	Safety Performance Functions
SVOCs	Semi-Volatile Organic Compounds
SWF/LF	Solid Waste Facility's and Landfill
SWPPP	Storm Water Pollution Prevention Plan
TNM	Traffic Noise Model
TOY	Time of Year
TPHs	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
UCL	Upper Concentration Limit
UESPA	United States Environmental Protection Agency
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VHT	Vehicle Hours Travelled
VMT	Vehicle Miles Travelled
VOCs	Volatile Organic Compounds
WNS	White-Nose Syndrome
WQC	Water Quality Certification

Project Parties

The Rhode Island Department of Transportation is the applicant and project sponsor as defined under 23 Code of Federal Regulations (CFR) 771.107.

The Federal Highway Administration is the Federal lead agency for the project as defined under 23 CFR 771.107.

Preparers

This Environmental Assessment was prepared by Vanasse Hangen Brustlin, Inc. (Providence, Rhode Island; Watertown, Massachusetts; and New York, New York offices).

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Executive Summary

The Rhode Island Department of Transportation (RIDOT) is proposing to reconfigure the ramps on the Newport approach of the Claiborne Pell Bridge (Pell Bridge), which spans the East Passage of Narragansett Bay to connect the City of Newport with the Town of Jamestown. The proposed action, known as the Reconstruction of the Pell Bridge Approaches (the Project), is intended to improve traffic circulation, reduce queuing, and improve safety; reconnect the neighborhoods segmented by the current highway infrastructure; and support the City of Newport's economic development plan by maximizing land area for redevelopment.

The defined Limits of Disturbance (LOD) for the Project include the Pell Bridge approach roadway system, which serves local travel between Downtown Newport, Naval Station Newport, Aquidneck Island, southern Rhode Island, Connecticut, and southeastern Massachusetts. The Project Area extends from Farewell Street at Van Zandt Avenue on the south to the driveway of RK Shopping Plaza on the north, and from Admiral Kalbfus Road at 3rd Street on the west to Malbone Street and Girard Avenue on the east. This area includes the ramps and approach roads on the east end of the Pell Bridge, Admiral Kalbfus Road, J. T. Connell Highway, and Farewell Street.

In accordance with the National Environmental Policy Act (NEPA), RIDOT undertook an alternatives analysis that evaluated seven action alternatives and a No Action Alternative to arrive at the Proposed Action. The impacts of the Proposed Action and the No Action Alternative are evaluated in this Environmental Assessment (EA*).* The Federal Highway Administration (FHWA), as the lead federal agency for this Proposed Action, is responsible for aiding RIDOT in developing this EA and its supporting documentation, approving the EA for public dissemination, and making a NEPA determination of either a Finding of No Significant Impact (FONSI) or a decision to prepare an Environmental Impact Statement (EIS).

A portion of the project included in this Environmental Assessment was determined by FHWA and RIDOT to have independent utility from the remainder of the project and has

been advanced by RIDOT to obtain a Categorical Exclusion (CE) under NEPA. The proposed improvements along J.T. Connell Highway, north of RK Plaza driveway, include state of good repair and safety improvements which can be implemented without the remainder of the Proposed Action being advanced. Due to the availability of funding and completion of a separate NEPA CE for these improvements, they will be constructed prior to the other improvements described in this EA.

Proposed Action

The purpose of the Proposed Action is to reconstruct the Pell Bridge approach ramps to improve traffic circulation, reduce queuing, improve safety, reconnect the neighborhoods segmented by the current highway infrastructure, and support the City of Newport's economic development plan by maximizing land area for redevelopment.

The Proposed Action (Figure ES-1) would address traffic congestion by realigning the approach roads to provide sufficient storage for vehicle queuing and accommodate future traffic volumes resulting from expected growth in the area. Advanced traffic signal systems would be provided to help process the varying traffic demands resulting from Newport's tourism-based economy. Vehicles would be queued on lower-speed roadways, rather than on the high-speed bridge as they are under existing conditions. The proposed design would also soften the horizontal curve radius for the off-ramp, which is projected to decrease the number of accidents that result in fatalities or serious injuries. The existing rotary would be converted to a modern roundabout, which is expected to result in less severe crashes.

The Proposed Action would provide connectivity for all road users, including bicycles and pedestrians. Shared use paths are proposed along the Newport Secondary railroad, Admiral Kalbfus Road, and JT Connell Highway. This would provide off-road facilities throughout the study area and connectivity between Newport's North End and Downtown. At path crossings, enhanced pedestrian crossing treatments would be provided to lessen pedestrian exposure and risk. A surface parking facility is also proposed to offer satellite parking, which would allow both residents and visitors to Newport the ability to use alternate modes of transportation. In addition to the traditional park-and-ride for commuter use, visitors would be able to park outside of Downtown Newport and be shuttled in, saving time and reducing congestion.

With the realignment of the approach roads and removal of excess transportation infrastructure, 20 to 30 acres of land would be made available for new development opportunities. Any new development would be a separate undertaking from the Proposed Action and would be expected to conform to the City's land use planning and zoning, which anticipates the redevelopment of this area. The Proposed Action itself would support State land use, transportation, and economic development goals and is consistent with existing zoning. Table ES-1 provides a summary of the impacts and mitigation anticipated for each resource area evaluated under the Proposed Action.

Table ES-1 Summary of Proposed Action Impacts and Mitigation

	Direct Impact	Indirect Impact	Cumulative Impact	Mitigation
Transportation Network	Changes in ramp location and geometry would affect traffic patterns in the vicinity of Pell Bridge. These changes would reduce congestion and improve safety compared to existing and No Action conditions.	Traffic pattern changes would not alter regional access, only local movements and access within the project Study Area. These connectivity changes are not expected to change regional travel patterns.	No adverse cumulative transportation impacts.	Mitigation not required or proposed.
Land Use	Project would result in the acquisition of up to three residential and two commercial properties (220,000 s.f.), which would be converted to transportation uses. Temporary road closures during construction would change traffic patterns and property access.	Project would result in beneficial indirect impacts by freeing up approximately 20-30 acres of land for uses consistent with the City's land use planning and zoning department.	No present or reasonably foreseeable future actions currently known that would result in in adverse cumulative impact to land use.	Mitigation not required or proposed.
Farmlands/Soils	No prime or unique farmland soils are located within the LOD.	None identified.	None identified.	Mitigation not required or proposed.
Wetlands and Waters of the U.S and State	Project would require filling of approximately 0.5 acres of wetland under USACE and State RIDEM jurisdiction, and an additional 0.7 acres of mostly developed 50-foot Perimeter Wetland (upland buffer) protected under the RI Freshwater Act.	Impacts may occur 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. • Potential for hydrologic modifications to wetlands adjacent to the LOD.	The Proposed Action would contribute to the historical trend of wetland filling within the Study Area.	Proposed compensatory mitigation would include restoring existing wetlands in the Study Area and potentially replacing some wetland functions and values at an offsite location.
Floodplains	No adverse impacts to the floodplain associated with increased flood elevations, wave heights, wave setup, or wave runup associated with the Proposed Action.	Nearly the entire Study Area is located within the existing 1% floodplain, but development is restricted by the alignment of the Pell Bridge access ramp. Removal of the ramp would allow additional development in the floodplain.	The cumulative impact of sea level rise with the removal of the Pell Bridge approach ramp, which currently acts as a barrier, could result in higher future coastal flood elevations east of Route 138.	
Water Quality/Stormwater	There would be a minimal increase in impervious surface within the Study Area along with corresponding increases in stormwater runoff and pollutant loading.	Future redevelopment of surplus right of way could result in increases in impervious surface, runoff volumes, and pollutants.	The overall amount of impervious surface in the Study Area is likely to increase, along with runoff and pollutant loads.	Implementation of required stormwater controls and Best Management Practices (BMPs) for the Proposed Action and future redevelopment will reduce pollutant loading, provide groundwater recharge and reduce peak flows to the surrounding drainage outfalls.
Coastal Resources	Construction-phase and permanent effects to coastal resources from stormwater runoff, impacts to wetlands, disturbance to vegetation and open space, and erosion and sedimentation are anticipated to be minor.	Potential for indirect impacts from future development of surplus right of way. Future redevelopment of land would be required to comply with RICRMP and SAMP Coastal Determination.	Future cumulative effects to the coastal zone are anticipated to be minor.	Mitigation not required or proposed.

	Direct Impact	Indirect Impact	Cumulative Impact	Mitigation
Federally Threatened or Endangered and State Natural Heritage Species/Bio-Diversity	The Proposed Action includes components that would be considered potential stressors to Northern Long-Eared Bats (NLEB); however, acoustic survey results indicate the probable absence of the NLEB, and therefore the Project is not anticipated to have any effects on NLEB. The Study Area does not provide habitat suitable to roseate tern or MBTA-listed species, therefore it is unlikely that the Project will have any effect on these species	No indirect impacts to threatened and endangered species are anticipated.	None identified.	Mitigation not required or proposed.
Cultural (Historic and Archeological) Resources	No National Register-eligible historic resources would be affected by the Proposed Action. Phase IA and Phase IB surveys have identified no archaeological sites or features; no archaeological impacts are anticipated.	The APE is generally fully developed, and no historic resources are expected to be displaced due to redevelopment of surplus right of way.	None identified.	Mitigation not required or proposed.
Environmental Justice & Socio-Economics	• Adverse impacts would occur due to noise levels that exceed the FHWA Noise Abatement Criteria in minority and low-income areas. • Travel times and delays would improve and safety would be enhanced for all roadway users. • Project would have a beneficial effect by improving connectivity to the City's North End neighborhood. • Overall, no disproportionately high and adverse effects on environmental justice populations are anticipated as a result of the Proposed Action.	Project would result in the potential for future redevelopment, which would result in future employment opportunities for people in the area.	Improved access and redevelopment, in conjunction with proposed redevelopment of the Newport Grand, would provide economic development benefits in the area.	• Noise mitigation has been determined not to be feasible and/or reasonable according to RIDOT standards. • For property acquisitions within identified environmental justice geographies, RIDOT will work with property owners to ensure fair compensations and relocation assistance. • RIDOT will work with property owners to employ best management practices and other requirements to minimize or mitigate construction impacts.
Visual Resources	• Beneficial impacts to visual quality would occur in the JT Connell Highway commercial area (both north and south of the rotary) and residential neighborhoods on Girard Avenue and west of Farwell Street. Visual impacts in other portions of the Study Area would be minor.	The reconfiguration of the Pell Bridge on/off ramps and removal of excess highway structures would open land formerly occupied transportation infrastructure. RIDOT plans to dispose of unused right-of-way as surplus property, which is expected to result in new development that would be visible from within the Study Area.	Together with development of the proposed Innovation Hub, the Project is expected to have a beneficial impact.	New developments on land made available after completion of the Proposed Action should be designed to interface visually with the redevelopment of adjacent parcels.
Air Quality	The Proposed Action is not expected to cause or contribute to an exceedance of the NAAQs, and no local air quality impacts are anticipated.	Reduction in traffic congestion in the Study Area is expected to reduce regional pollutant emissions.	The Project's improvements to congestion would contribute to an anticipated overall reduction in mobile source pollutant emissions due to increasingly restrictive regulations on vehicle fuel consumption and emissions nationwide.	Mitigation is not required or proposed.
Noise and Vibration	Design-year noise levels would approach or exceed the Noise Abatement Criteria or exceed the substantial increase criterion of 10 dBA or greater in several portions of the Study Area.	None identified.	None identified.	Noise mitigation has been determined not to be feasible and/or reasonable according to RIDOT standards.

	Direct Impact	Indirect Impact	Cumulative Impact	Mitigation
Hazardous Materials	The exposure of subsurface soils containing contamination above RIDEM thresholds could result in adverse public health effects for workers and people living or working nearby in locations where excavation or other intrusive construction activity is anticipated. The removal and disposal of contaminated materials in accordance with state and Federal regulations may have a beneficial impact.	• If previously undiscovered containments were encountered during construction, it could affect ongoing remediation of existing subsurface contamination or produce new sources. • Redevelopment of land formerly occupied by ramps and other infrastructure could disturb identified or unidentified hazardous materials.	None identified.	During construction activities, BMPs and other regulatory requirements would need to be followed to mitigate potential impacts. RIDOT and its contractors would be required to follow a Remedial Action Work Plan.
Climate Change/Resiliency	No direct impacts are anticipated. Current and future storm surge conditions, on top of an estimated three feet of future sea level rise, would occasionally inundate the area.	No indirect impacts are anticipated.	None identified.	Potential mitigation strategies include maintaining infrastructure for optimal performance, increasing redundancy by providing alternate routes, protecting the shoreline infrastructure through engineered solutions, increasing bridge deck elevations or lowering road profiles to allow for overwash, or relocating structures away from the vulnerable coastal area.

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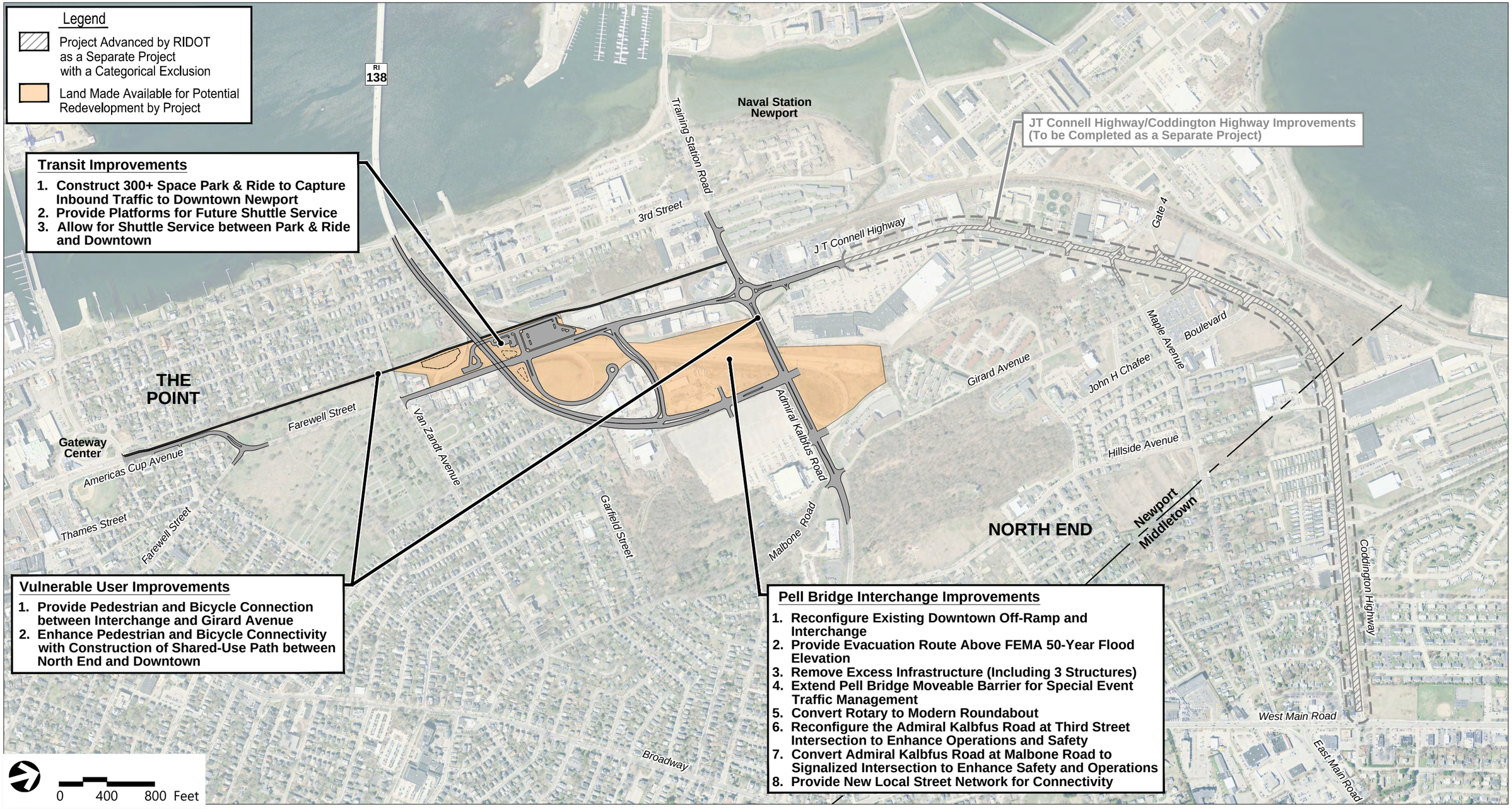
\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\Oct 2019\FIG 3-1 Proposed Action.dwg



Aerial Source: RIGIS

Figure ES-1

Proposed Action
Project Components

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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1

Overview

1.1 Project Summary

The Rhode Island Department of Transportation (RIDOT) is proposing to reconfigure the ramps on the Newport approach of the Claiborne Pell Bridge (Pell Bridge), which spans the East Passage of Narragansett Bay to connect the City of Newport with the Town of Jamestown. The proposed action, known as the Reconstruction of the Pell Bridge Approaches (the Project), is intended to improve traffic circulation, reduce queuing, and improve safety; reconnect the neighborhoods segmented by the current highway infrastructure; and support the City of Newport's economic development plan by maximizing land area for redevelopment.

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The Pell Bridge accommodates approximately 27,000 vehicles per day across the East Passage of Newport Bay on Route 138. The bridge connects the City of Newport on Aquidneck Island to the Town of Jamestown on Conanicut Island. This area, known as the Aquidneck Island Travel Corridor, has experienced growing travel demand., The City of Newport comprehensive plan and the report *Creating a Model for National Resilience*

identified a series of potential improvements to reduce congestion queuing, and crashes on the bridge ramps and nearby roadways.

Figure 1-1 shows the regional context of the Project Area in relation to the state of Rhode Island.

1.2 Project Background

In June 1999, RIDOT solicited proposals for design engineering services to re-design the Pell Bridge approach roads and ramps in Newport. The project limits were from America's Cup Avenue, at the southern end, to just north of the rotary on J. T. Connell Highway. On the west, the project limits extended from the edge of the existing railroad tracks east to the Newport Grand site driveway. Major concerns that the project was intended to address were the backup of eastbound traffic over the Pell Bridge destined for Downtown Newport; the disconnection of JT Connell Highway, which resulted in a circuitous route for vehicular traffic; the lack of connections for pedestrians or bicyclists between the north side of the City and downtown Newport as well as decreasing the roadway infrastructure to free up developable space within the City.

Between 2002 and 2006, various public workshops were conducted, which presented two preferred alternatives to the public. The City of Newport convened a Citizens Advisory Committee to review the alternatives and provide input to RIDOT. The City could not endorse one concept over another; therefore, the Project was put on hold.

While the project was on hold, the Rhode Island Office of Statewide Planning began an initiative to identify critical travel corridors throughout Rhode Island. Through this initiative, the Aquidneck Island Travel Corridor was identified as a major travel corridor of statewide significance, and long-range goals were established for the corridor out to the year 2020. The corridor was cited as a contributing factor to the economic vitality of Aquidneck Island and the state of Rhode Island as a whole.

In 2009, in order to plan for anticipated growth on Aquidneck Island, the Aquidneck Island Planning Commission (AIPC) undertook the Aquidneck Island Transportation Study (AITS), a comprehensive multi-modal transportation plan for the entire island transportation network. This study included traffic counts, destination surveys, public meetings, and observations of current traffic patterns. In addition, the study reviewed various proposed developments, community comprehensive plans, and transportation improvements that were being planned for the island, including the reconfiguration of the Pell Bridge approach ramps. The AITS summarized two years of coordinated planning efforts by Island residents, business owners, elected officials, municipal officials, advocacy groups, and state and federal agency representatives. The current Project is intended to implement the following recommendations from the AITS:

› Reconfiguration of the ramp system to/from Pell Bridge to reduce vehicle queues on the bridge due to traffic exiting to Downtown Newport.

- 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 DPW property and west of the Newport Grand site.
- Construction of a traffic signal or roundabout at the intersection of Admiral Kalbfus Road at Malbone Road/Girard Avenue due to the number of observed crashes at this location.

The Project, as currently proposed, reflects the evaluation of numerous alternatives over a period of nearly 20 years since it was first initiated. Chapter 4 provides a description of these alternatives and how they were evaluated. The Proposed Action incorporates substantial feedback from stakeholder outreach throughout the process. Stakeholders that have been involved include, but are not limited to, the Rhode Island Turnpike and Bridge Authority (RITBA), the City of Newport, United States Navy as well as Newport residents and commuter groups. Figure 1-2 summarizes the property owners of the Project area.

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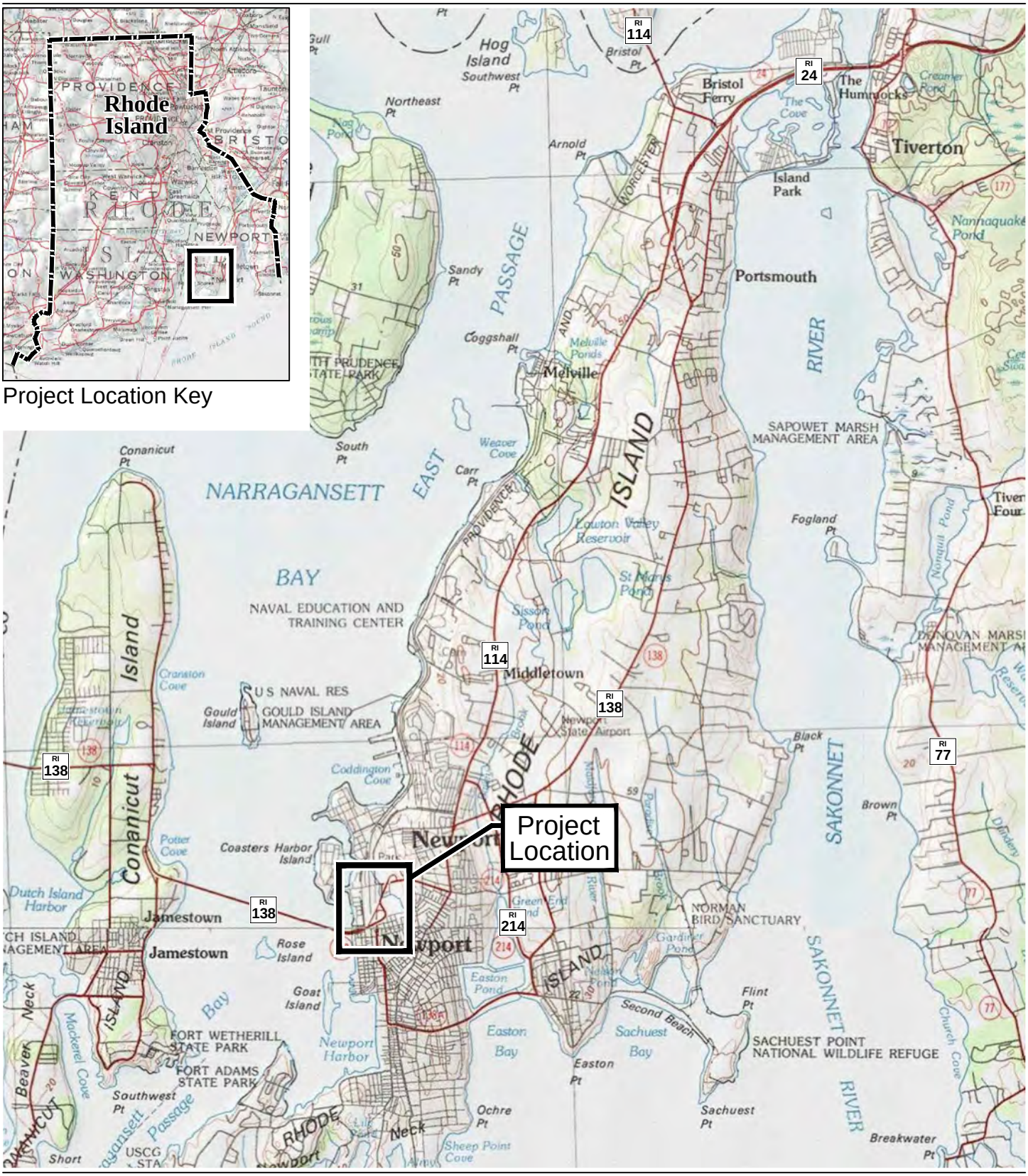
Project Location Key



Source: USGS Quadrangles

Figure 1-1

Project Location Map

0 1.5 Miles

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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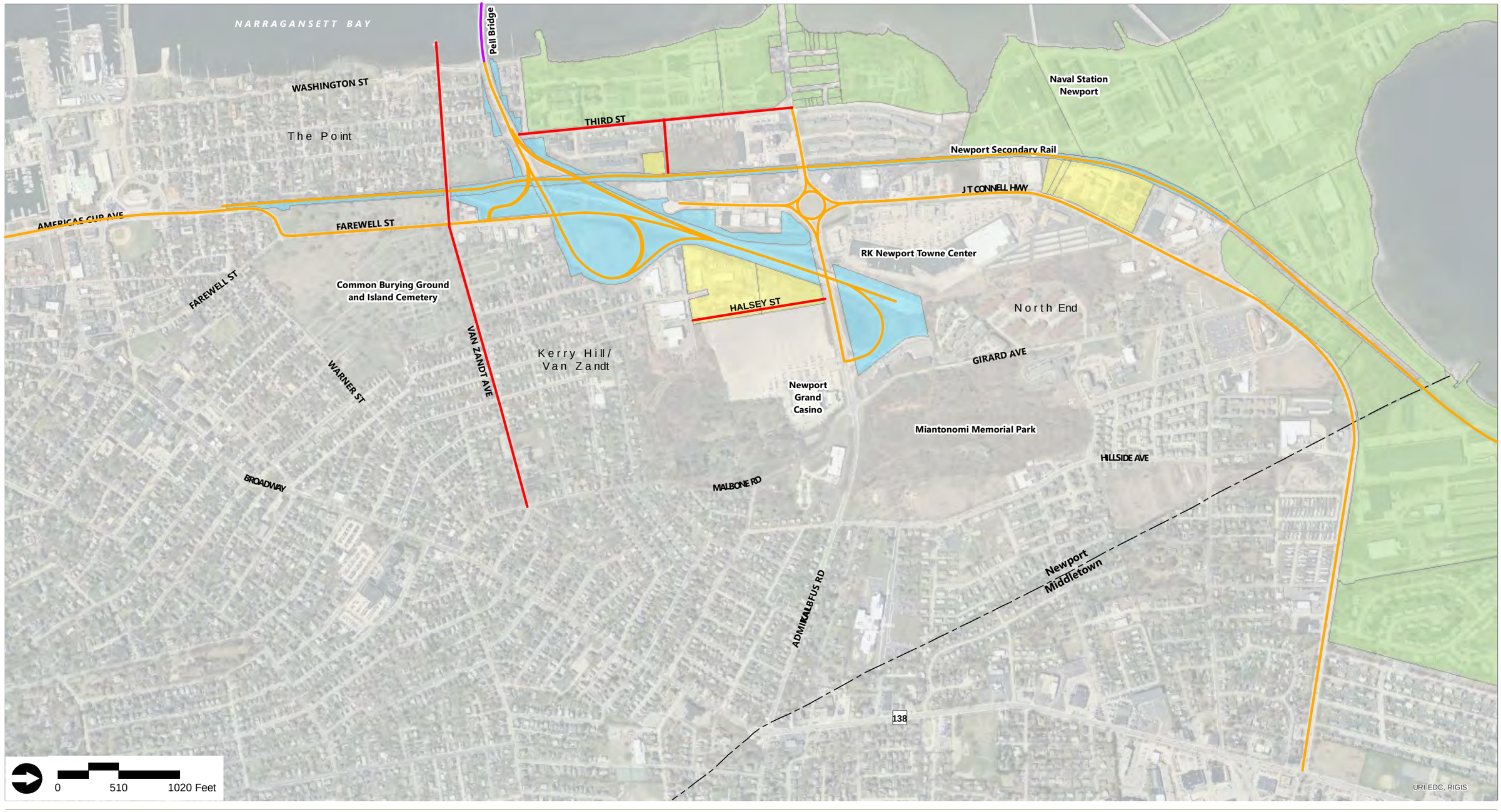

Source: RIDOT, RIGIS, City of Newport

Legend

— – Municipal Boundary

Property Onwership

- City of Newport
- Rhode Island Department of Transportation
- United States of America

Jurisdiction

- Rhode Island Department of Transportation
- Rhode Island Bridge and Turnpike Authority
- City of Newport

Figure 1-2

Project Area Ownership and Jurisdiction

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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2

Purpose and Need

2.1 Purpose

The purpose of the Project is to reconstruct the Pell Bridge approach ramps to provide:

- Improved traffic circulation, reduced queuing, and improved safety;
- Reconnection of the neighborhoods segmented by the current highway infrastructure, including improved vehicle, pedestrian, and bicycle connections; and
- Support of the City of Newport's Comprehensive Land Use Plan and associated economic development goals by maximizing land area for redevelopment.

2.2 Need

As described in Chapter 1, the initial effort to redesign the Pell Bridge ramps began in 1999. Major concerns that the project was intended to address at that time were the same as they are today: the backup of eastbound traffic destined for Downtown Newport over the Pell Bridge; the disconnection of JT Connell Highway, which resulted in a circuitous route for vehicular traffic; the lack of connections for pedestrians or bicyclists between the north side of the City and downtown Newport; and the large amount of land occupied by the roadway infrastructure, which reduces developable space within the City.

The lack of available storage on the Downtown Newport off-ramp results in substantial congestion and queuing onto the Pell Bridge, causing Route 138 to operate below its functional capacity, and has been observed to cause safety concerns. Existing queues can approach a mile long during the AM peak hour, and are expected to increase substantially

by 2040. The discontinuous local roadway network, which was never completed following the initial construction of Route 138 in the 1960s, restricts connectivity throughout Newport neighborhoods and Aquidneck Island for vehicles, pedestrians, and bicyclists. In addition, the City of Newport has identified the need for economic development measures to counter stagnant growth and declining population, and proposes to implement these measures through the creation of an "Innovation Hub" on right-of-way freed up for development by relocation of the Pell Bridge ramps. The Project's importance has been identified in multiple Federal acts that have provided funding for its planning, design and construction.

2.3 Additional Background

Project Status: The Project has been identified as a key transportation need in Newport and the state for the last two decades.

The initial effort to redesign the Pell Bridge ramps began in 1999. Major concerns that the project was intended to address at that time were the same as they are today: the backup of eastbound traffic destined for Downtown Newport over the Pell Bridge; the disconnection of JT Connell Highway, which resulted in a circuitous route for vehicular traffic; the lack of connections for pedestrians or bicyclists between the north side of the City and downtown Newport as well as reducing the amount of roadway infrastructure to free up developable space within the City. The 2009 Aquidneck Island Transportation Study reaffirmed these needs, and included participation by Island residents, business owners, elected officials, municipal officials, advocacy groups, and state and federal agency representatives. As discussed below in Section 2.2.5, the Project would facilitate economic development envisioned for Newport's North End in the City's 2017 Comprehensive Land Use Plan.

Construction of the Project is slated to begin in 2020, pending satisfactory completion of the NEPA process and associated Federal and state approvals. In recognition of the Project's importance, a Federal appropriation for $20 million of the approximately $40 million construction cost was awarded in December 2018.

Capacity and Roadway Deficiencies: The lack of available storage on the Downtown Newport off-ramp results in substantial congestion and queuing onto the Pell Bridge, causing Route 138 to operate below its functional capacity, and has been observed to cause safety concerns.

The Pell Bridge carries approximately 27,000 vehicles per day on a typical day, but the volumes increase by up to 30% during the summer, which is peak tourism season in the City of Newport and a major contributor to the City's economy. The increase in vehicles leads to substantial queuing and congestion along Route 138 eastbound. The queuing consistently extends back onto the Pell Bridge, which creates unsafe conditions that have led to an increased number of crashes in this area. RIDOT and RITBA have serious concerns with the queuing on the bridge due to the crash history at this location. With the continuous need for residents and tourists to access Aquidneck Island, transportation and safety are a major priority of Project stakeholders.

RIDOT constructed the existing off-ramp from the Pell Bridge to Downtown Newport during the original design of Route 138 in 1963. The ramp was intended to be a temporary facility

that would only be used until the permanent ramp was complete. However, the project was halted once the initial Pell Bridge interchange and off-ramp system were complete, truncating the ramps and roadway to downtown Newport and the highway to the north end of Aquidneck Island. As a result, Route 138 and the planned connection across Aquidneck Island from the north to Route 24 in Portsmouth were never completed.

The existing Pell Bridge ramp system and approaches were evaluated for conformance with current AASHTO Design Criteria and the RIDOT Highway Design Manual. The evaluation concluded that the geometric condition of the existing off-ramp to Downtown Newport does not meet current design standards, contributing to the congestion, queuing, and delays experienced along the eastbound side of the Pell Bridge. The primary existing deficiency is related to the minimum radius of the curve of the ramp, as shown in **Table 2-1**.

Table 2-1 Geometric Assessment – Existing Pell Bridge

AASHTO Criteria	AASHTO Recommended Standard	Existing Condition[1]
Minimum Curve Radius	371′	250′

Source: AASHTO Geometric Design of Highways and Streets, 2011 Edition, RIDOT Highway Design Manual 2008, & survey by VHB

1 RIDOT guideline for determining design speed states that the design speed is the posted speed limit plus 5 mph for roadways with a posted speed limit less than 40 mph in an urban area

In addition to the ramp's failure to meet current design standards, it lacks sufficient storage for vehicles, especially during the summer months with the influx of tourist traffic. Vehicles are observed to be queuing back onto Route 138 from the intersection of the off-ramp with JT Connell Highway, a distance of approximately 4625 feet.

Table 2-2 shows the vehicle queues for the existing weekday condition based on traffic counts collected in mid-July, during the height of the peak summer season. By 2040, traffic volumes are expected to have increased due to planned population and employment growth in the area. If the off-ramp and connecting street network remain in their current layout, congestion will increase substantially, and queues will grow longer than the existing condition. Table 2-3 compares the weekday queue lengths between the existing and future 2040 conditions. As shown, the queues along the Downtown Newport off-ramp are expected to increase by nearly a quarter-mile between the existing and future 2040 conditions, stretching nearly one and one-quarter miles from the JT Connell Highway intersection.

Table 2-2 Summary of Existing Weekday Queue Lengths

Location	Peak Hour	Queue Length (feet)	
		Average Queue	Maximum Queue
Downtown Newport Off-Ramp	AM	3085	4624
	PM	1383	2429

Table 2-3 Comparison of Existing and Future 2040 Weekday Queue Lengths

Location	Peak Hour	Queue Length (feet)			
		Average Queue		Maximum Queue	
		Existing	2040	Existing	2040
Downtown Newport Off-Ramp	AM	3085	4741	4624	6394
	PM	1383	2198	2429	3683

The queuing described above has been shown to cause an increase in vehicular crashes along the ramp and Route 138. Over a five (5) year study period, there were 47 crashes due to queuing on Route 138. Nearly 80 percent were rear-end type crashes, the most frequent type of crash resulting from queuing. The crashes that are attributed to the queuing on Route 138 account for nearly 15 percent of total crashes throughout the entire Project Area. RIDOT and RITBA are concerned with the number and severity of crashes that have occurred at this location. With traffic volumes predicted to increase in the future, there is an increased potential for these rear-end crashes, especially with the lack of available storage along the Newport off-ramp to Route 138.

While the most severe safety concerns associated with the Pell Bridge are those related to the Downtown Newport off-ramp, there are several other safety concerns throughout the Project area. These include a substantial number of vehicle crashes at the off-ramp to Admiral Kalbfus Road due to the horizonal curve, and crashes at the signalized intersections throughout the Project area as well as crashes involving pedestrians and bicycles on Project area roadways.

As congestion grows, travel speeds are expected to be slower and delays throughout the Project area are expected to increase because of high traffic volumes coupled with the limited capacity under the existing and future 2040 conditions. Table 2-4 presents a comparison of the existing and 2040 traffic conditions. Traffic speeds during weekday evening peak hours are expected to decrease by nearly 10 miles per hour (mph) by 2040 as a result of the increased traffic volumes. Conditions may be worse than the results presented in the table below during periods of high seasonal traffic or special events in Newport.

Table 2-4 Comparison of Existing and Future 2040 Weekday Traffic Volumes, Average Speed, and Delay

Peak Hour	Existing Peak Hour Volume[1]	2040 Peak Hour Volume[1]	Average Speed[2]		Total Delay[3]	
			Existing	2040	Existing	2040
AM	4,341	5,500	20	16	96	216
PM	6,228	6,462	22	13	205	253

1 Vehicles per day
2 Miles per hour
3 Seconds

System Linkage: The discontinuous local roadway network restricts connectivity throughout City of Newport neighborhoods and Aquidneck Island for vehicles, pedestrians, and bicyclists.

Construction of the existing ramps created a "broken link" in the local roadway network that the Project would address. Route 138 was originally envisioned to continue north across

Aquidneck Island and connect into Route 24 in Portsmouth. As noted above, the Pell Bridge interchange was constructed in 1963 with the intention to extend the highway to the north; however, the project was halted and the extension to Route 24 was never constructed. As a result, the transportation network near the bridge is discontinuous and inefficient at moving traffic, particularly as traffic volumes have increased over time. Re-establishing network connections is critical to improving traffic circulation and efficiency.

Neighborhoods throughout the City of Newport are also disconnected as a result of the existing ramp and roadway infrastructure. Route 138 creates a barrier between the North End and Downtown Newport neighborhoods as well as The Point and the Off-Broadway neighborhoods. The discontinuous network forces drivers to navigate neighborhood streets to reach their destinations rather than continue on JT Connell Highway. Reconfiguration of the ramps would help to restore neighborhood connections as well as improving traffic flow.

The existing highway infrastructure in this area was not constructed to accommodate pedestrians or bicycles, thereby limiting multi-modal access throughout Aquidneck Island. An inventory of sidewalks along Project area roadways, conducted as part of the AITS, deemed the sidewalks along JT Connell Highway and Admiral Kalbfus Road to be sparse, and noted that the sidewalk segments that do exist were in fair or poor condition. There are limited opportunities for pedestrians to cross in marked crosswalks or at locations with pedestrian signal equipment. At existing marked crosswalks, the roadways have at least three lanes, which increases pedestrian exposure and in turn increases the potential for vehicle-pedestrian accidents. Because of the high traffic volumes, the Project area is suitable for experienced bicyclists, but not beginner or novice bicyclists, as there are no existing on-road facilities. As previously noted, congestion is expected to increase by 2040, which will make connectivity considerably worse for pedestrians and bicyclists. The lack of connectivity also has a negative impact on economic development in the Project area due to the lack of access to, from, and between developable properties.

Legislation: The Project's importance has been identified in multiple Federal acts that have provided funding for its planning, design and construction.

To date, the Project has been allocated $25 million in federal funding in recognition of its importance to the community and the state. In the 2005 transportation law (SAFETEA-LU), RIDOT received an initial $5 million earmark to help jump-start the state and local planning process and obtain some of the rights of way needed to move the Project forward. Most recently, in December 2018, an additional $20 million was secured in the fiscal year 2018 appropriations law through the "Better Utilizing Investments to Leverage Development" (BUILD) grant program. A letter from Rhode Island Senator Jack Reed in support of the grant application highlighted the importance of the Project as follows:

> *Besides bringing deteriorating transportation infrastructure into a state of good repair, the project will improve the flow of traffic onto several state and local roads, and it will improve safety by reducing queuing on and off the bridge. The improvements will also improve access to Newport's world renowned tourist attractions and events, as well as to other economic centers on Aquidneck Island, including Naval Station Newport, the Naval War College, and the Naval Undersea Warfare Center. Most significantly, the project will open up 30 acres of land within a recently designated opportunity zone for redevelopment by the*

City of Newport as the anchor for the Newport Innovation Hub. This will be a campus for applied research and commercialization for start-up and existing innovation companies, focused on resilience, ocean, and defense technologies.

Social Demands/Economic Development: Stagnant growth and declining population in the City of Newport have created economic development needs that the City has addressed in its land use plans by identifying redevelopment opportunities in the Project area.

The City of Newport's population has seen a steady, consistent decline since the 1980s. Between 2000 and 2015, the population dropped by 8 percent; by 2040, it is expected to have declined by nearly 30 percent from its 2000 level. At the same time, the median age is steadily increasing: the number of residents over 55 grew by 17 percent from 2000 to 2010, while those under 55 decreased by 13 percent in the same period. Employment growth has been stagnant in recent years, with a net loss of over 600 jobs between 2000 and 2014. Jobs in the City are generally concentrated in a few sectors, including educational services, health care, and social assistance (24.7 percent of the total) and arts, entertainment, recreation, and accommodation and food services (20.8 percent). Because the City accommodates an estimated 3.5 million tourists each year, primarily in the summer, the economy experiences seasonal peaks and valleys.

In response to these trends, the City has identified economic development initiatives that will diversify the local tax base, provide employment for residents, leverage existing technical and human capital, improve city capital facilities, and otherwise support and promote a healthy economy. These initiatives are described in the Economic Development element of the City's Comprehensive Land Use Plan, adopted in February 2017. The North End of the City, near the Project area, is identified as an opportune location for future development that would "address the needs of the community, innovate, re-position, leverage and otherwise move the City forward." Building on the anticipated reconfiguration of the Pell Bridge ramps, the plan designates a 67-acre area surrounding the interchange—including the approximately 30 acres of right-of-way that would become available as a result of the Project—as an "Innovation Hub." The Innovation Hub is envisioned as an economic driver that will bring together government, research, educational, and private investment partners to create employment through incubator/accelerator type businesses focused on global resiliency and climate change issues.

The future development envisioned for the state-owned right of way after removal of the bridge ramps would be undertaken by individual developers and authorized by land use actions on the part of the City of Newport. Thus, it would not be a direct impact of the Project; however, the Project would indirectly facilitate this development, which is expected to be consistent with the Comprehensive Land Use Plan. The resulting indirect and cumulative impacts are described in Chapter 6 of this EA. The traffic analysis in Section 6.1 accounts for an increment of potential future development; however, because the nature of full buildout is still unknown, some local roadway improvements may be necessary to address the impacts of developing specific sites.

3

Proposed Action

The Proposed Action includes a number of different improvements, which are described briefly in the following sections. Chapter 4 provides information on the alternatives that were evaluated in order to identify the Proposed Action.

3.1 Interchange Improvements

The Proposed Action would remove the existing highway infrastructure and associated ramps to reconnect existing roadways and create a new local roadway network. The Proposed Action would remove the existing Downtown Newport off-ramp, which would eliminate the existing queuing on the Pell Bridge (Route 138) by providing sufficient storage in the local street network for vehicles to safely queue when entering Downtown Newport during peak conditions. The new off-ramp would connect to the new local roadway network, and elimination of the existing off-ramp would vacate right-of-way that could be used to create new areas for developable parcels in the future. The extension of Route 138 to Halsey Street would also allow for the extension of the existing moveable barrier system from the Pell Bridge abutment to the first intersection off the ramps, which would assist the City of Newport in traffic management for evacuation and special events.

3.2 Vulnerable User Improvements

Pedestrian and bicycle accommodations would be incorporated into the Proposed Action. The Project would remove one of the two existing rail lines along the Newport Secondary Rail Corridor to install a shared-use path between Downtown Newport and Admiral Kalbfus Road. In addition, pedestrian and bicycle improvements, including sidewalks and a shared

use path, would be installed along Admiral Kalbfus Road between Girard Avenue and JT Connell Highway. Pedestrian and bicycle improvements are also proposed on JT Connell Highway between Admiral Kalbfus Road and West Main Road. The improvements include a shared use path on the east side of the highway from the roundabout to the Community College of Rhode Island (CCRI) campus, then on-street bike lanes from CCRI to West Main Road.

3.3 Multi-modal Alternative Improvements

Multi-modal improvements would also be incorporated into the Proposed Action. A park-and-ride of approximately 250-300 parking spaces would be constructed along JT Connell Highway, north of Route 138, which would allow both residents of and visitors to Newport the ability to use alternate modes of transportation. In addition to the traditional park-and-ride for commuter use, visitors could choose to park outside of Downtown Newport and be shuttled in, saving time and reducing congestion. The Proposed Acton would allow multiple options for park-and-ride users to travel the ¾ mile trek to downtown Newport. The proposed shared path along the rail corridor abuts the park-and-ride, allowing users to walk or bike to downtown. An on-street shuttle service could also be provided to transport users to downtown amenities or provide a connection to the Gateway Transit Center. RIDOT is also considering a pilot program for a shuttle service along the Newport Secondary Rail Corridor. The shuttle service would require a platform to access the train, which would be a temporary structure during the pilot program but may become permanent if the shuttle service were extended past the pilot phase.

3.4 Admiral Kalbfus Road Safety Improvements

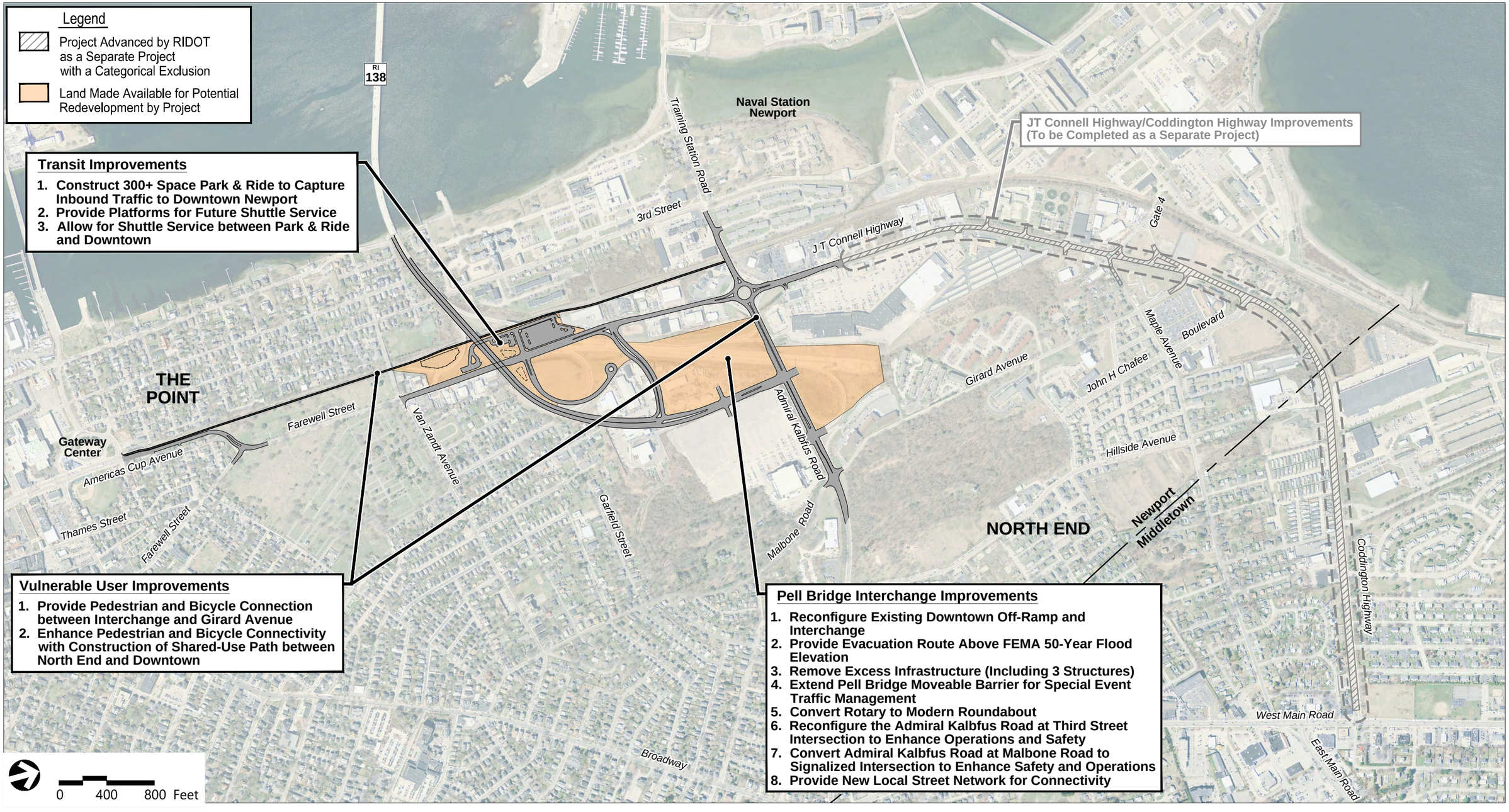
Based on safety concerns, the intersection of Admiral Kalbfus Avenue with Girard Avenue/Malbone Street, which is currently an unsignalized intersection with side street stop control, would be converted to a signalized intersection. The existing signalized intersection with 3rd Street would be upgraded with the installation of an exclusive left-turn lane to increase safety and alleviate congestion during peak periods. The Newport Secondary at-grade crossing would be upgraded to incorporate the latest safety features. In addition, the existing rotary would be reconstructed into a modern roundabout, which will reduce the existing footprint.

3.5 JT Connell Highway Improvements

Proposed improvements to JT Connell Highway include the resurfacing of the roadway between RK Towne Plaza and West Main Road. Additional low-cost safety improvements are also proposed along the corridor, including restriping the roadway to narrow the travel lanes in order to reduce travel speeds and realigning intersections along the corridor to improve sight distance.

Figure ES-1 shows the Proposed Action's components in more detail.

\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\Oct 2019\FIG 3-1 Proposed Action.dwg



Aerial Source: RIGIS

Figure 3-1

Proposed Action
Project Components

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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4

Alternatives Analysis

RIDOT began evaluating alternatives for reconstructing the Pell Bridge approach ramps in 1999. The primary objective was to alleviate existing congestion entering Downtown Newport by processing vehicles more efficiently while still planning for future growth in the City. In addition, the City had expressed an interest in removal of the existing roadway infrastructure from the abrupt termination of Route 138 in order to free up developable land. Between 2002 and 2006, several alternatives were reviewed and presented to stakeholders, but none of these alternatives were selected to advance the design process. In 2008, new alternatives were identified and brought to the Newport City Council and stakeholders for review, but no alternatives were endorsed, and the project was put on hold.

In 2009, the Aquidneck Island Transportation Study (AITS) provided the Aquidneck Island Planning Commission (AIPC) with a set of recommended potential transportation improvements and a proposed development plan for Aquidneck Island, including the area surrounding the Pell Bridge approach ramps. Since 2009, several more alternatives have been developed and reviewed by stakeholders to incorporate additional project elements that may not have been considered during the AITS.

The range of potential solutions evaluated represents different ways to address the existing and projected future deficiencies of the study area roadways, as described in Chapter 2, Purpose and Need. From 1999, when the Project was originally initiated, to the present, RIDOT has considered over twenty alternatives. These were narrowed to seven alternatives to be compared as part of the initial screening, along with a “no action” alternative. After the initial screening, the remaining alternatives were evaluated against a more specific set of criteria, which resulted in the recommendation of a single alternative for the Project.

The following subsections summarize the evaluation process that led to the identification of the Proposed Action.

4.1 Initial Screening

As described above, more than 20 alternatives identified since 1999 were narrowed to seven initial alternatives for the Reconstruction of the Pell Bridge Approach Ramps project. These alternatives were screened using general criteria that included:

- Project Transportation Benefits (Operational and Capacity Improvement)
- Developable Land
- Right-of-Way
- Visual Impacts
- Environmental Impacts

The roadways within the study area were reviewed both individually and as part of a complex transportation network within the area. Because the study area is the entrance to Aquidneck Island from the west, changes to roadways in this area can have a large effect on the City's overall roadway network. The screening process examined opportunities to improve traffic flow and decrease congestion throughout the roadway network, while improving safety for all users (i.e. vehicles, pedestrian, bicyclists) and reconnecting streets that had been severed by the original ramp construction.

Table 4-1 summarizes the alternatives considered for the initial screening. All of the alternatives, with the exception of No Action, include the construction of a shared-use path along the rail corridor, a park-and-ride, sidewalks and bicycle features on Project area roadways, and the reconnection and resurfacing of JT Connell Highway/ Coddington Highway from the RK Towne Plaza to West Main Road. The alternatives were evaluated to compare their performance on the criteria listed above and to identify additional constructability constraints. The results of the analysis are summarized in Table 4-1 and shown in Figures 4-1 through 4-6.

Table 4-1 Summary of Initial Screening Results

Alternative/Description	Screening Results	Carried Forward?
No-Action: Maintain existing infrastructure.	› Significant amount of traffic would queue from the Downtown Newport off-ramp on to the Pell Bridge (Route 138), with a queue length of nearly 1.25 miles › No developable land created › JT Connell Highway remains disconnected › Existing elevated highway remains › No pedestrian and bicycle improvements	Yes
Alternative 1: Maintain existing elevated highway and construct loop off-ramp to Downtown Newport.	› Downtown off-ramp queues would decrease slightly compared to the No Action and provide free flow operations onto JT Connell Highway from Route 138 › New structure constructed › Least amount of developable land created › Existing elevated highway remains › Widening required on JT Connell Highway would impact 8+ business frontage/properties (5,095 s.f.)	No
Alternative 2: Similar to Alternative 1, except existing elevated highway and Admiral Kalbfus off-ramp would be removed and a ramp constructed to JT Connell Highway from Route 138 eastbound.	› Similar to Alternative 1 › Second least amount of developable land created › Removes elevated highway to create local street network › Removes traffic signals and rotary to install modern roundabouts which improve traffic operations › Widening required on JT Connell Highway would impact 8+ business frontage/properties and impact City of Newport properties. (82,985 s.f.)	Yes
Alternative 3A: Existing elevated highway would be removed and existing Downtown Newport off-ramp reconstructed to carry vehicles on a new roadway built on the rail corridor.	› Reconstructed Downtown off-ramp would provide continued flow and sufficient area for queuing › Additional capacity exiting to Downtown Newport › Moderate amount of developable land created › Increased noise for a significant number of residential properties along the new roadway › Potential impacts to cultural resources (cemetery) › ROW widening required on JT Connell Highway would impact 8+ business frontage/properties and impact City of Newport properties. (105,570 s.f.)	No
Alternative 3B: Similar to Alternative 3A, except the Downtown Newport off-ramp would remain in the existing location.	› Existing Downtown off-ramp would remain with installation of traffic signal › Wider roadways would be created between developable parcels, resulting in longer crossings for pedestrians › ROW widening required on JT Connell Highway would impact 8+ business frontage/properties and impact City of Newport properties. (105,570 s.f.) › Van Zandt Avenue restricted to westbound right-turns only and closed on eastbound approach—this restriction would prevent	No

Alternative/Description	Screening Results	Carried Forward?
	residential neighborhoods from accessing Route 138 and disconnect the neighborhoods east and west of Farewell Street	
Alternative 3C: Similar to Alternative 3A, except the Downtown Newport off-ramp would be removed.	› Wider roadways would be created between developable parcels, resulting in longer crossings for pedestrians › ROW widening required on JT Connell Highway would impact 8+ business frontage and impact City of Newport properties. (105,570 s.f.) › Closely spaced traffic signals at the end of Pell Bridge off-ramp at JT Connell Highway are not preferred but would operate suitably	No
Alternative 4A: Existing elevated highway and existing off-ramps to Downtown Newport and Admiral Kalbfus Road would be removed. A local road network would be created between Halsey Street and JT Connell Highway.	› Eliminates congestion and queuing on the Pell Bridge and provides sufficient spacing between traffic signals › Roadways would be narrower than Alternative 3, which would improve walkability between developable parcels › Maximum developable land › 42 businesses impacted by ROW required for ramp alignment and impact City of Newport properties. (161,120 s.f.) › Off-ramp alignment shifted towards residential properties, but elevated highway removed › Horizontal curve at end of bridge ramps minimized to increase safety (reduction in roadway departure crashes)	No
Alternative 4B: Similar to Alternative 4A	› Similar to Alternative 4A › Second highest amount of developable land › Minimizes ROW impacts to businesses compared to Alternative 4A, but would have ROW impacts for 2-3 residential properties and 1 business and impact City of Newport properties. (219,915 s.f.)	Yes

4.2 Detailed Screening

Three alternatives were identified for detailed quantitative assessment after the initial screening: No Action, Alternative 2, and Alternative 4B. The Vissim traffic simulation model was used to calculate queue lengths, travel speeds, and delay for each of the alternatives as a measure of future congestion. These results were then compared with those for the No Action alternative. The two action alternatives reduced queue lengths significantly compared to No Action by providing efficient traffic signal timing and/or improving the geometry of the Downtown Newport off-ramp.

Table 4-2 Estimated Weekday Queue Length Comparison

Location	Peak Hour	Queue Length (feet)					
		Average Queue			Maximum Queue		
		No Action	Alt. 2	Alt. 4B	No Action	Alt. 2	Alt. 4B
Downtown Newport Off-Ramp	AM	4741	114	169	6394	534	486
	PM	2198	69	132	3683	442	442

Table 4-3 Estimated Roadway Network Speeds and Delay Comparison

	Average Speed (mph)		Total Delay (seconds)	
Alternative	**AM**	**PM**	**AM**	**PM**
No Action	16	13	216	253
Alternative 2	22	18	74	138
Alternative 4B	25	20	94	169

The results shown in Tables 4-2 and 4-3 were used to compare the two action alternatives in order to identify the Proposed Action. The factors considered included:

- Alternatives 2 and 4B performed similarly in reducing delays throughout the Project Area.
- Average speeds would be higher under Alternative 4B, compared to Alternative 2.
- The queue lengths for Alternatives 2 and 4B would be over a mile less than the No Action Alternative for the maximum queue length during the morning peak hour.
- The maximum queue for Alternative 4B would be less than for Alternative 2.
- Alternative 4B would create better opportunities to expand the pedestrian and bicycle infrastructure because it would provide a new local roadway network by reconnecting JT Connell Highway and creating a new access road between JT Connell Highway and Halsey Street.
- Alternative 4B would also provide significantly more area than Alternative 2 to convert to developable land in the future in support of the City of Newport's economic development goals.
- Alternative 4B would have fewer visual impacts that Alternative 2 because it would remove three structures, while Alternative 2, would install two new structures for the revised ramp configuration.

Based on the considerations described above, Alternative 4B was determined to best meet the purpose and need of the project and was carried forward as the Proposed Action for the Reconstruction of the Pell Bridge Approaches.

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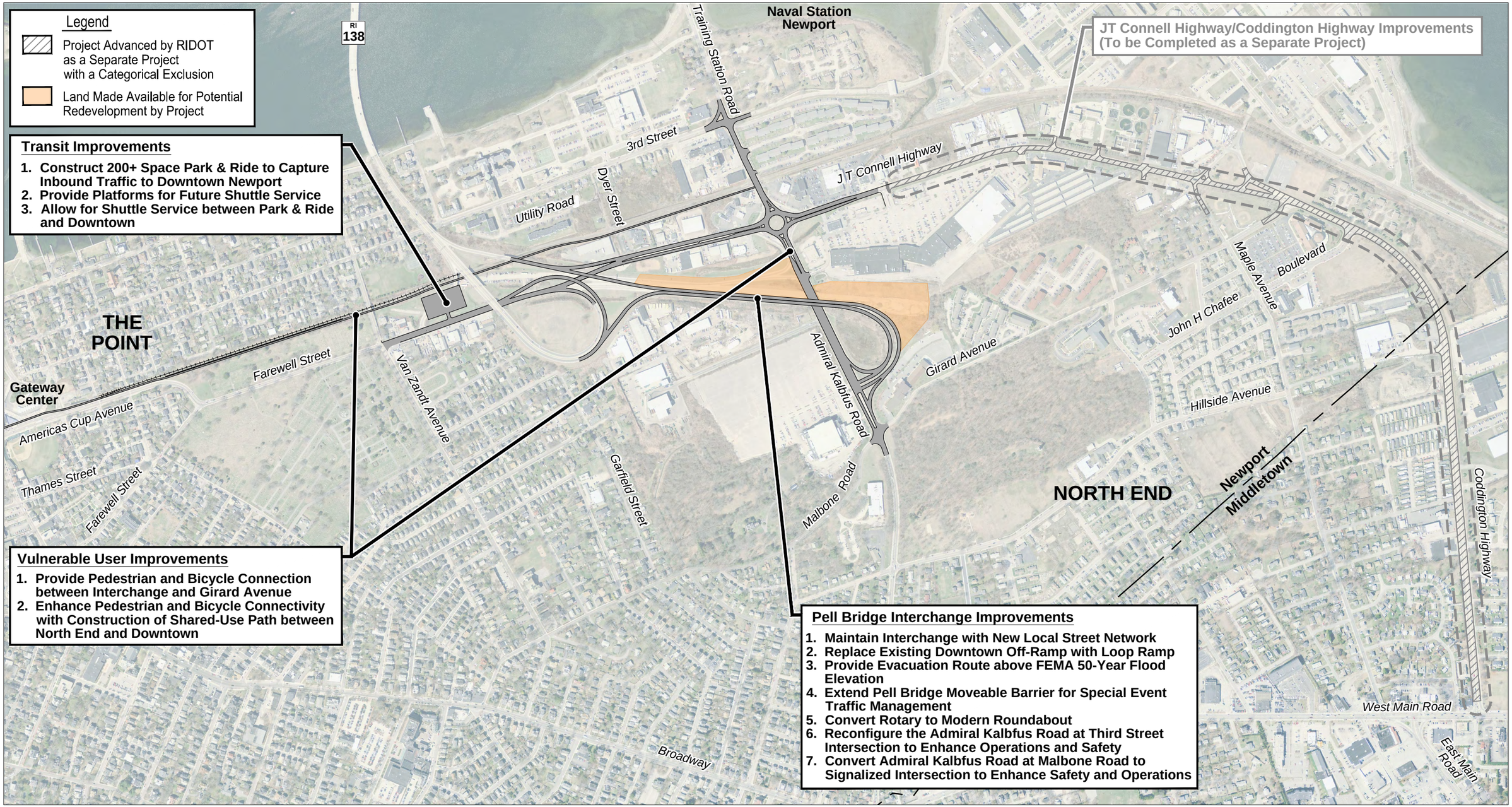

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Figure 4-1
Alternative 1

0 350 700 Feet

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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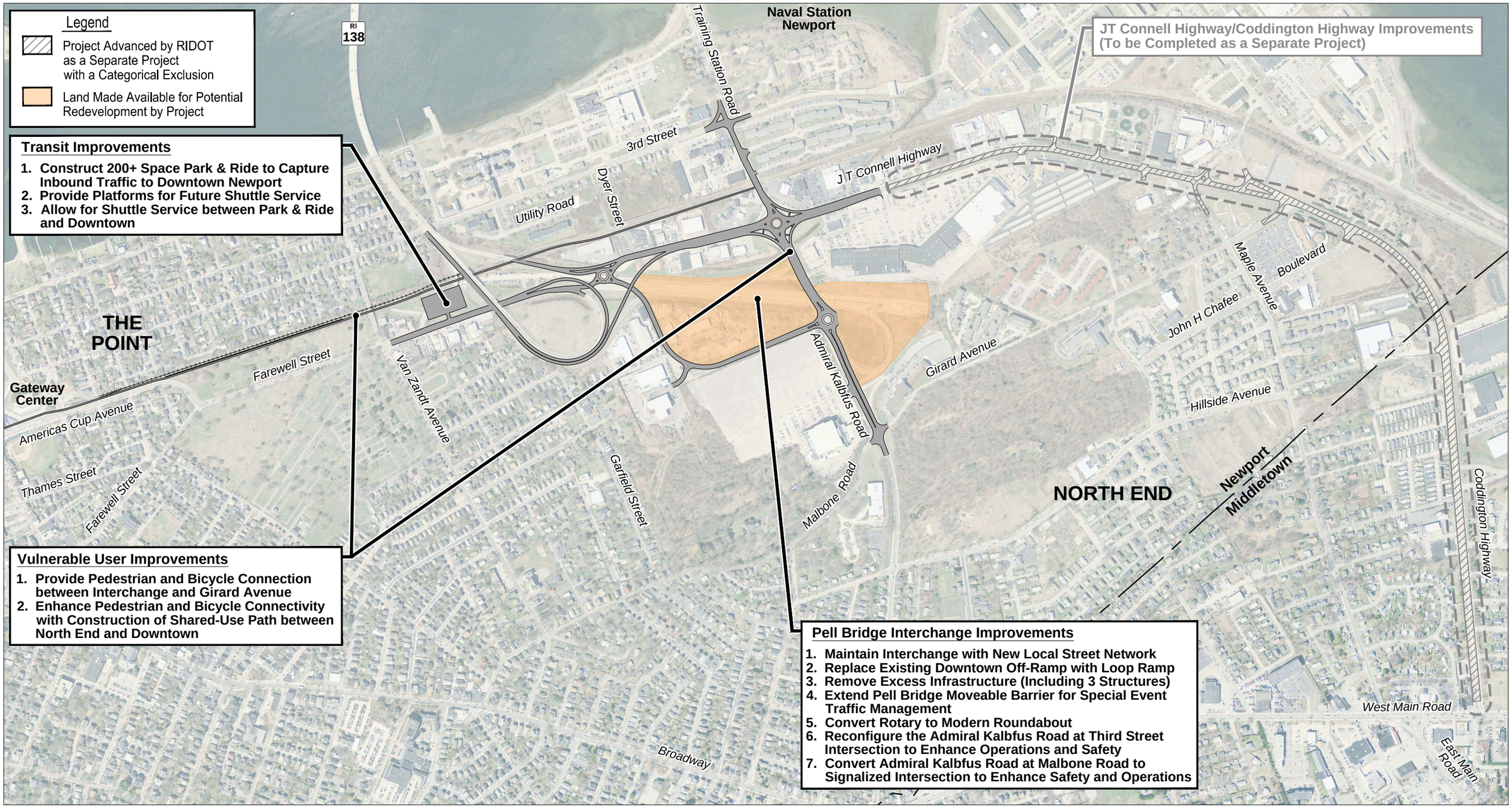

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Figure 4-2
Alternative 2

0 350 700 Feet

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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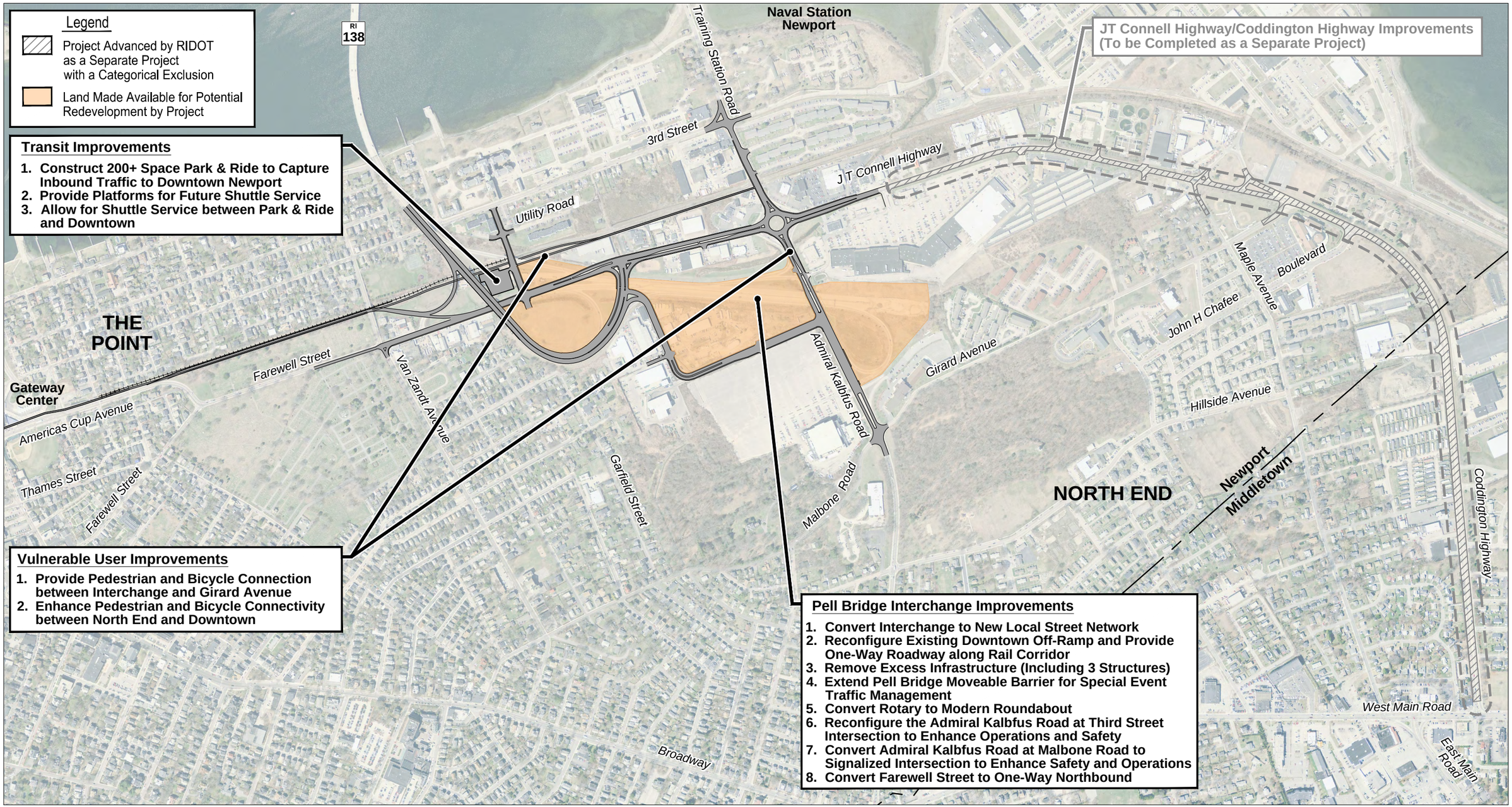

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Figure 4-3
Alternative 3A

0 350 700 Feet

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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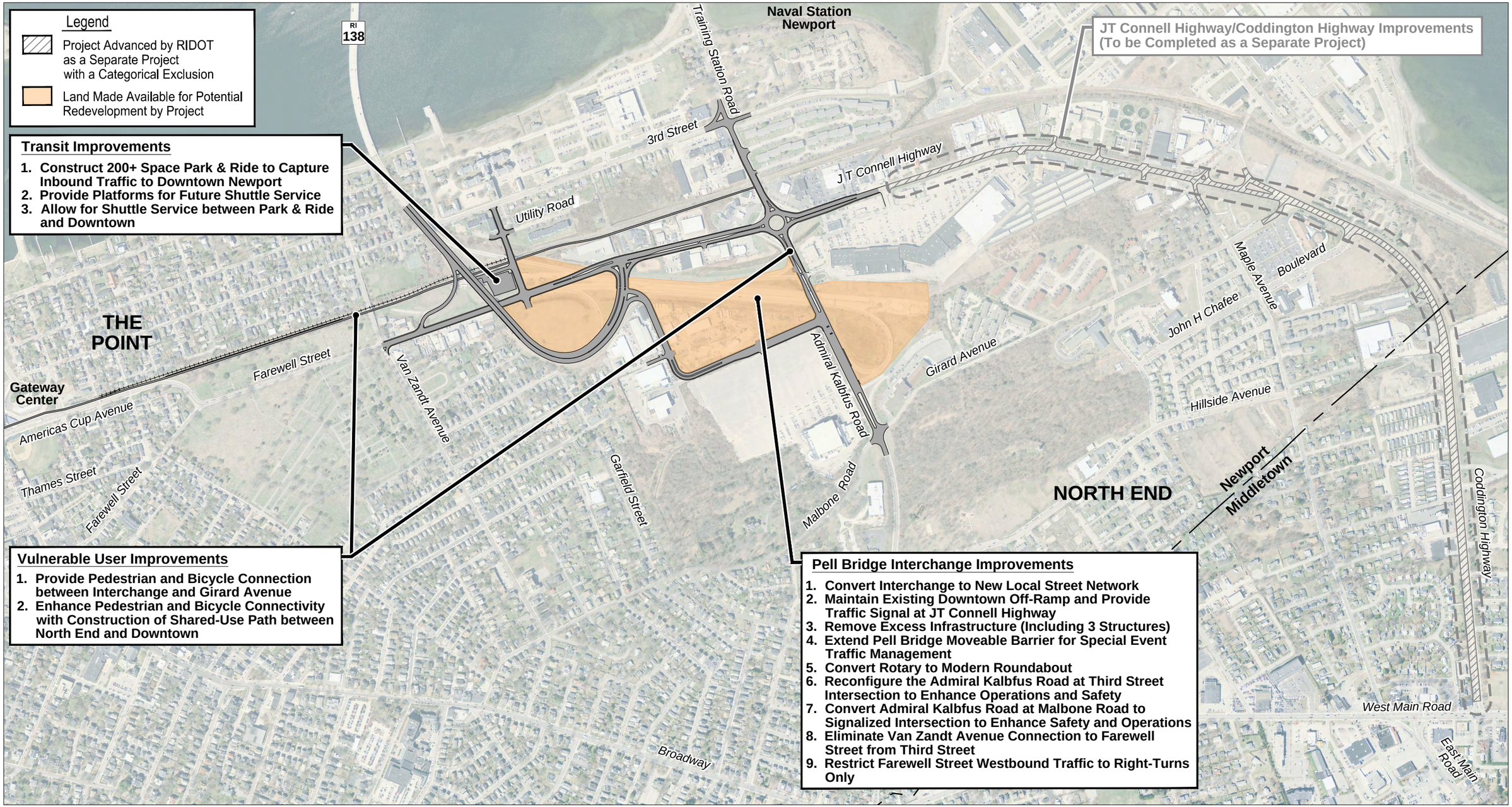

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Figure 4-4
Alternative 3B

0 350 700 Feet

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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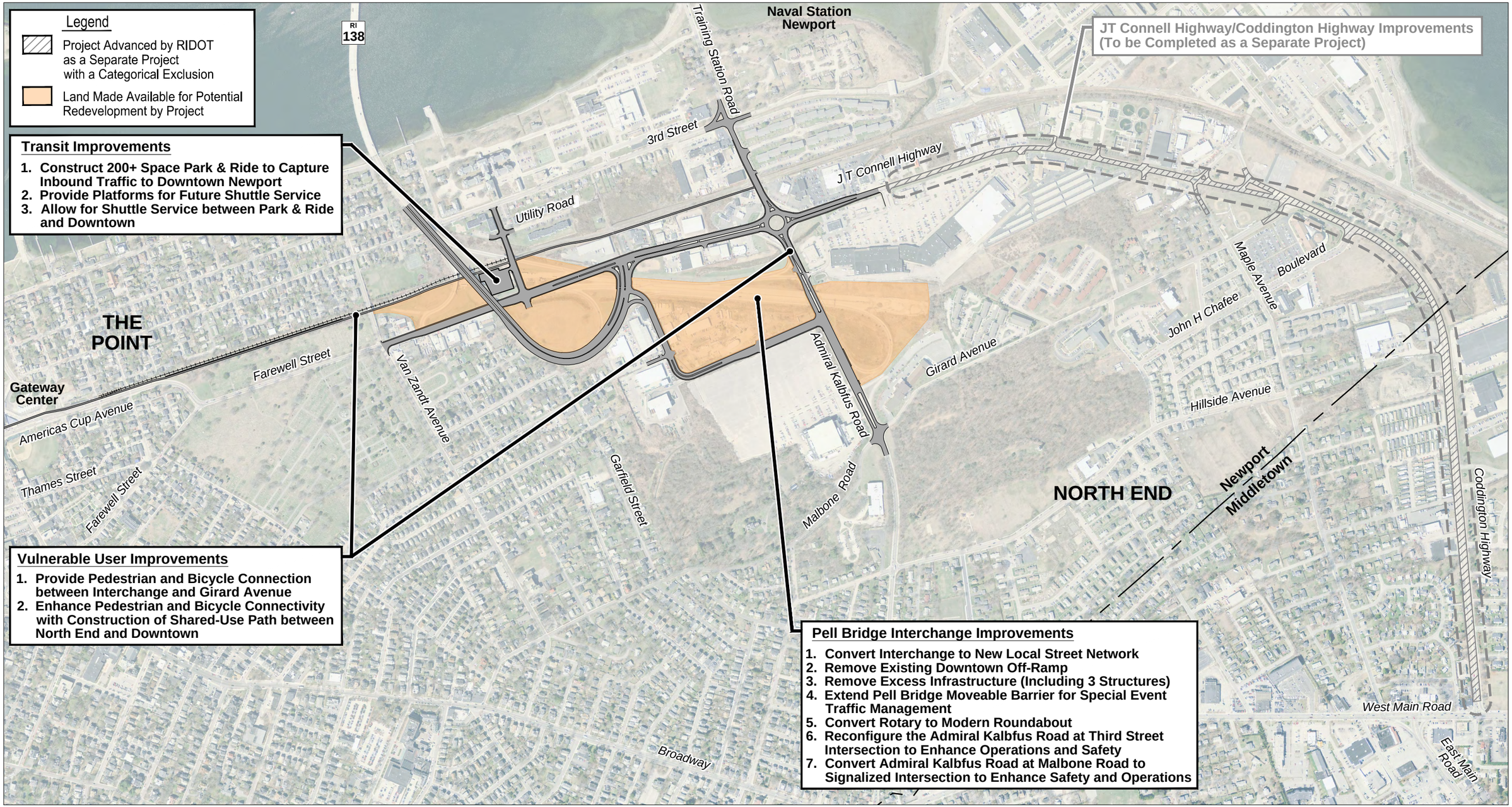

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Figure 4-5
Alternative 3C

0 350 700 Feet

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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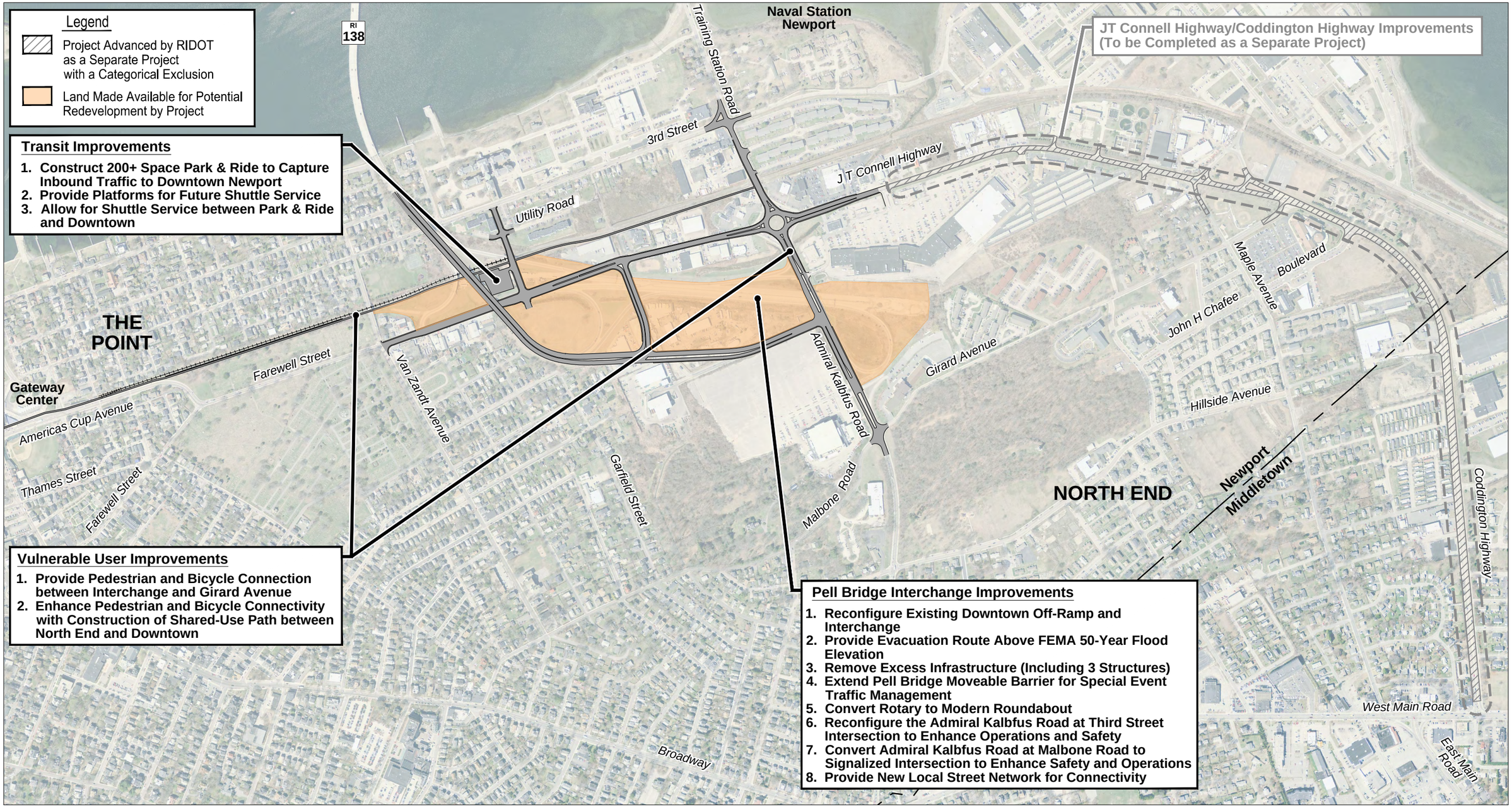

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0 350 700 Feet

Figure 4-6
Alternative 4A

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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5

Affected Environment

This chapter discusses the existing social, economic, and environmental setting of the Project area as well as identifying environmentally sensitive features in the corridor. This information provides a basis for understanding the impacts of the Proposed Action, which are described in Chapter 6.

5.1 Transportation Network

Please refer to Appendix B1[1] for the Transportation Technical Memorandum, which provides additional information on the transportation analysis.

5.1.1 Study Area and Methodology

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 on the south to the driveway of RK Shopping Plaza on the north, and from Admiral Kalbfus Road at 3rd Street on the west to Malbone Street and Girard Avenue on the east. This area includes the ramps and approach roads on the east end of the Pell Bridge, Admiral Kalbfus Road, J. T. Connell Highway, and Farewell Street. Many of

[1] Analysis in the Technical Appendices was completed prior to the development of the EA and is based on an earlier version of the project design. Subsequent to the appendices being finalized, the project design changed, which resulted in rerouting of traffic. The EA analysis is based on the updated design.

the Study Area roadways are designated hurricane evacuation routes. Figure 5-1 illustrates the study area roadways and intersections.

Methodology

To identify current traffic flow characteristics, daily and hourly traffic counts were collected in July 2017 and supplemented with traffic volume data from prior studies. Typically, summer traffic counts are not preferred as a basis for analysis; however, given the higher traffic volumes associated with summer tourism Aquidneck Island, a summer count program was appropriate. Weekday morning and afternoon peak period manual turning movement counts were collected between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM. 48-hour Automatic Traffic Recorder (ATR) counts were also collected during the weekday throughout the study area.

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

Traffic trips generated by operation of the Proposed Action were derived from trip generation rates published by the Institute of Transportation Engineers (ITE). These trips were added to the 2040 No Action Alternative to develop the 2040 Proposed Action traffic volumes.

5.1.2 Applicable Regulations and Criteria

Guidance documents referenced for traffic include the Highway Capacity Manual, RIDOT Traffic Design manual, and the ITE Trip Generation Manual.

5.1.3 Existing Conditions

Traffic Volumes

Traffic Data Collection

Evaluation of the morning and evening peak period turning movement counts shows that the morning peak hour for the Study Area occurs between 8:00 AM and 9:00 AM, and the evening peak hour occurs between 4:00 PM and 5:00 PM. Figures 5-2 through 5-4 summarize the existing daily, weekday morning, and evening peak hour traffic volumes, respectively.

Seasonal Fluctuation

Due to the unique travel characteristics of Aquidneck Island and the City of Newport specifically, seasonal fluctuations in traffic are an important consideration in the traffic analysis. Consistent with RIDOT and FHWA, the Aquidneck Island Transportation Study (AITS)

adopted a practice of using the 30th highest hourly traffic volumes to represent summer peak season travel.

Origin-Destination Study

An origin-destination study was conducted to better understand traffic patterns in the Study Area and to calibrate the VISSIM microsimulation model. The data was collected by StreetLight Data, Inc using vehicle probe data, a massive volume of geospatial information created by mobile phones, GPS devices, connected vehicles/trucks, and more.

Pedestrians and Bicycles

The AITS included an inventory of the sidewalks in the Study Area, including a visual rating as either in good condition or fair/poor condition. Based on this inventory, the sidewalks along JT Connell Highway and Admiral Kalbfus Road are in fair/poor condition.

The existing bicycle system on Aquidneck Island is described in RIDOT's publication A Guide to Cycling in the Ocean State 2011-2012. The guide indicates that there are no roadways within the Study Area that are designated by RIDOT as "most suitable roads" or "suitable roads" for bicycle travel. "Most suitable roads" are defined as those with adequate (wider) shoulders, while "suitable roads" have less adequate (narrower) shoulders.

Public Transportation

Bus service though the Study Area is provided by RIPTA. Gateway Center, located south of the Pell Bridge in Downtown Newport, is the hub for RIPTA service in Newport. RIPTA bus service consists of six routes, two of which (Routes 14 and 64) use the existing bridge and ramps.

Safety Assessment

Historical Crash Trends

Crash data for the assessment area was provided by the RIDOT Traffic Research Unit for the five-year period between January 1, 2012 and December 31, 2016. The crashes were reviewed by severity and crash type. Severity is measured using the KABCO method, which assigns a severity type to each crash. K-type crashes result in a fatality, A-type crashes result in an incapacitating injury, B-type crashes result in an evident injury, C-type crashes result in complaints of pain, and O-type crashes result in property damage only.

Throughout the Study Area, 453 crashes occurred over the five-year analysis period. Of those crashes, less than 1 percent were K-type crashes, 1 percent were A-type crashes, 5 percent were B-type crashes, 20 percent were C-type crashes, and the remaining 73 percent were O-type crashes. Based on the review of the crash data, trends were identified at key locations within the Study Area as shown in Figure 5-5.

Traffic Operations

Observed Traffic Operations

To fully characterize existing traffic operations and deficiencies, existing traffic conditions were observed in the field along the Pell Bridge approaches and within the Study Area. This information was used to develop the base conditions for calibrating the VISSIM traffic simulation model.

Specific highlights of the traffic observations are presented below.

- Vehicle queues on the Pell Bridge eastbound off-ramp to JT Connell Highway (Downtown Newport exit) often back up onto the Pell Bridge, impacting the mainline traffic going to Route 138/Route 114/Route 24 (Middletown and Portsmouth). This is often caused by the combination of weaving off-ramp traffic and occasional vehicle queues on JT Connell Highway extending through the off-ramp as they approach the Van Zandt Avenue traffic signal.
- Due to the single lane approach on Farewell Street northbound, long delays and vehicle queues are experienced during the weekday evening peak hour. At times, northbound through vehicles are blocked by northbound left-turning vehicles waiting for gaps in southbound traffic.
- The vehicle queues on Admiral Kalbfus Road often spill into adjacent intersections. This includes the eastbound and westbound approaches at the Newport Towne Center south driveway/Pell Bridge eastbound on-ramp, the Newport Rotary, and Halsey Street. Due to heavy volumes traveling down JT Connell Highway toward Pell Bridge and Downtown Newport, the Admiral Kalbfus eastbound queue often extends to the Newport Rotary and westbound left-turns extend to Halsey Street during the evening peak hour.
- Due to the constraints at the Newport Towne Center south driveway/Pell Bridge westbound on-ramp and the heavy traffic exiting Naval Station Newport, eastbound Admiral Kalbfus Road approaching the Newport Rotary often experiences a backup beyond the railroad track and extending to the 3rd Street traffic signal.
- Vehicle queues on the JT Connell Highway northbound and southbound approaches at Newport Towne Center main driveway are long due to heavy through traffic in a single lane during the weekday evening peak hour.
- Traffic entering and exiting Malbone Road/Girard Avenue experiences delays during peak periods due to the large radii on all corners, which create a confusing, wide-open intersection. The lane-drop traveling eastbound through the intersection is also a contributing factor to confusion and delay. This makes it difficult for pedestrians and motorists to cross the intersection.

Traffic Operations Analysis

To quantify existing traffic operations, the Study Area roadways and intersections were modeled and analyzed using VISSIM microscopic traffic simulation software (Version 8). Because of its extensive modeling and analysis capabilities, the VISSIM model provides a more comprehensive evaluation of complex transportation facilities, such as the freeway ramp system network with closely spaced signalized, unsignalized, and roundabout/rotary

intersections, compared to traditional traffic analysis methodology based on the Highway Capacity Manual.

The Study Area roadways and intersections shown in Figure 5-1 were included in the VISSIM simulation model. Although there are several minor side streets and driveways along JT Connell Highway and Admiral Kalbfus Road within the Study Area, the traffic volumes entering and exiting them are relatively low based on field observations, and therefore were not included in the model.

The evaluation criteria used to analyze the Study Area roadways and intersections are based on the measures of effectiveness (MOEs) provided by the VISSIM traffic simulation model. Typical MOEs used for an operations analysis include vehicle throughput, delay, average speed/travel time, level of service, and queue length.

All model results reported in this evaluation are based on an average of ten model runs (each based on a unique random seed value) to accurately model the random nature of traffic. To ensure that the model results accurately reflect real-life conditions, the existing conditions results were calibrated using collected data and observations. All calibration thresholds were met; the results from the calibrated VISSIM model are consistent with the operational conditions observed in the field during the peak hour periods.

Intersection Operations Summary

The calibrated existing conditions VISSIM model was used to characterize the existing travel conditions in the network. Overall, most intersections in the network operate well at level of service A and B. Critical intersections showing existing deficiencies include:

- JT Connell Highway at Pell Bridge eastbound off-ramp
  - Weekday Morning: LOS F, critical movement EB
  - Weekday Evening: LOS F, critical movement EB
- Admiral Kalbfus Road/Training Station at 3rd Street
  - Weekday Evening: LOS E, critical movements EB, NB
- Admiral Kalbfus Road at JT Connell Highway
  - Weekday Evening: LOS E, critical movement EB

The VISSIM model delays, travel speeds and estimated LOS for existing weekday morning and evening peak hour conditions are summarized in Table 5-1. Detailed intersection MOEs are provided in Appendix B1.

Table 5-1 Existing Weekday Conditions

Intersection Control Type	Intersection	Peak Hour	Existing Condition		
			Delay[1]	LOS[2]	LOS E/F Movements
Stop Controlled	J. T. Connell Highway at Pell Bridge EB off-ramp	AM	**> 100**	**F**	**EB L/R**
		PM	**71**	**F**	**EB L/R**
Signal Controlled	J. T. Connell Highway/Farewell Street at Van Zandt Avenue	AM	14	B	
		PM	14	B	

Intersection Control Type	Intersection	Peak Hour	Existing Condition		
			Delay[1]	LOS[2]	LOS E/F Movements
Signal Controlled	J. T. Connell Highway at Newport Towne Center Main Drive	AM	19	B	
		PM	19	B	
Signal Controlled	Admiral Kalbfus Rd/Training Station Road at 3rd Street	AM	11	B	
		PM	**75**	**E**	**EB L/T/R and NB R**
Roundabout/ Rotary[3]	Admiral Kalbfus Road at J. T. Connell Highway	AM	5	A	
		PM	**47**	**E**	**EB L/T/R**
Signal Controlled	Admiral Kalbfus Road at Newport Towne Center South Drive/on-ramp	AM	11	B	
		PM	22	C	
Stop Controlled	Admiral Kalbfus Road at Halsey Street	AM	3	A	
		PM	18	C	**NB L/R**
Signal Controlled	Admiral Kalbfus Road at Newport Grand Drive/off-ramp	AM	18	B	
		PM	18	B	
Stop Controlled	Admiral Kalbfus Road at Girard Avenue/Malbone Road	AM	3	A	
		PM	8	A	**NB L/T/R**

Source: VISSIM 8 Node Evaluation. Compiled by VHB based on the average of 10 VISSIM model runs.
1 Delay = Vehicle delay expressed in seconds per vehicle
2 LOS = Estimated level of service
3 LOS criteria for roundabout/rotary are the same as LOS criteria for unsignalized intersection

Roadway operations are primarily characterized by travel speed. Lower travel speeds indicate longer travel times and increased delay. Because of the closely spaced intersections and congested roadway network, the traffic interactions between intersections can restrict and/or meter the traffic upstream and downstream of an intersection. The average speed for each of the Study Area roadway segments is illustrated in Figure 5-6 and Figure 5-7 for the morning and evening peak hour periods, respectively, to help illustrate the overall level of congestion within the Study Area.

5.2 Land Use

Presented below is a discussion of regulations and existing conditions pertaining to land use and topography. Please refer to Appendix B2 for the Land Use Technical Memorandum, which provides additional information on these topics.

5.2.1 Study Area and Methodology

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 was defined to include those areas most likely to experience land use impacts due to their proximity to the Project footprint.

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 through 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 nearby properties. Overall, the Project was evaluated for its consistency with State and local land use goals and plans. The analysis included temporary impacts that would occur during the construction phase and permanent impacts that would occur during the operations and maintenance phase.

5.2.2 Applicable Regulations and Criteria

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 located north of Pell Bridge to the west of 3rd Street and JT Connell Highway along the City's coastline. Because 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, which provide the basis for local land use regulations. For the Study Area and the City at large, development is guided by 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.

5.2.3 Existing Conditions

Topography

The Study Area, adjacent to Narragansett Bay, is within the Providence, RI-MA Urbanized Area defined by the United States Census Bureau. The area is largely developed with buildings and structures of various sizes and proportions. The surface itself generally consists of graded, excavated, or otherwise previously disturbed materials derived from glacial till or fill materials, and was previously cleared for agricultural purposes (refer to the Wetlands Section for more information). The Study Area is flat and low in elevation, with areas that were historically filled wetlands. Northeast, east, and southeast of this area, the land slopes up to the east in a series of hills and ridgelines running from Miantonomi Hill and Memorial Park to the North Burial Ground. West of the Study Area, the land gradually slopes to Newport Harbor and Narragansett Bay. An unnamed stream, which flows intermittently aboveground, runs in a generally northwest direction to Coasters Harbor.

Land Use

The Study Area consists mainly of commercial and residential land uses, which are generally defined by large setbacks with abundant parking supply. Neighborhood commercial uses are located in the southern part of the Study Area, near the intersection of West Marlborough Street and Thames Street.

Residential land uses are composed of densely developed single-, two-, and multi-family housing developments. The Point and Kerry/Hill Van Zandt neighborhoods, located to the south and southeast of the Pell Bridge ramp right-of-way, respectively, contain a mix of densely developed housing primarily consisting of single-family units. Multi-family housing within the Study Area is concentrated within the North End commercial and residential neighborhoods, which are generally north of the Pell Bridge ramp right-of-way and east of Newport's border with the Town of Middletown. The North End neighborhoods include several low-income/subsidized housing developments. Other land use types present within the Study Area include institutional, federally owned parcels associated with Naval Station Newport, state-owned parcels, and public uses.

There are also several parks and open spaces within the Study Area. Among these parks and open spaces, all but the Newport Dog Park are permanently protected through fee simple ownership or conservation easement. The City of Newport owns Coddington Field, Third Street Lot, Hunter Park, and Cardines Field. Miantonomi Memorial Park is under two conservation easements; the City of Newport is the management organization for the portion north of Beacon Street and the Rhode Island Department of Environmental Protection owns the easement for the remainder.

Future Land Use

Much of the Study Area is within a 67-acre area identified by the City of Newport as the "Innovation Hub," which is designated in the City of Newport Comprehensive Land Use Plan as a "Mixed-Use, Innovation" land use. As noted in the Comprehensive Plan, the Innovation Hub was envisioned as a way to realize the City's economic development goals using land

no longer needed for right of way after the Pell Bridge re-alignment, which would "provide significant opportunities for land development and economic diversification."

The Innovation Hub is envisioned by the City as an economic driver that brings together government, research, educational, and private investment partners to create employment through incubator/accelerator type businesses focused on global resiliency and climate change issues. Additional business types may include ocean, alternative energy systems, defense (underwater, maritime, and cyber security), and digital industries, along with their supporting sub-sectors.

Outside the Innovation Hub, future land uses within the Study Area are generally consistent with existing land uses, except for a "Light Industrial" designation of properties associated with Naval Station Newport. There are no current plans, however, to close or consolidate operations at Naval Station Newport.

Zoning

There are two primary zoning districts in the Study Area: Commercial Industrial (CI) and Residential (R10). According to the City's Zoning Ordinance, the R10 district is intended for medium density residential development in areas that extend outward from the highest density development located within the urban core. The purpose of this district is to transition residential development from high density to lower densities. The CI district was designed to consist exclusively of city-wide business and industrial uses, with the intention of concentrating such activities in areas where the transportation system is adequate and no infringement upon the character of established residential areas will result. Also present in the Study Area is the GB district, which consists of general retail and business uses that complement the existing characters of the neighborhoods in which they operate.

Related to the Innovation Hub, the City of Newport Comprehensive Land Use Plan states that the Mixed-Use, Innovation land use designation is only affiliated with the CI, R3, Open Space, and Recreational zoning districts. The City is planning for a "Commercial-Technology (CT)" zoning district that would better accommodate the various uses, activities, and services envisioned for this future land use. The inclusion of this new district in the City's Zoning Ordinance would require approval from the City Planning Board and City Council.

5.3 Farmland/Soils

A summary of existing conditions related to farmlands is presented below. Please refer to Appendix B3 for the Farmland/Soils Technical Memorandum, which contains additional information on this topic.

5.3.1 Study Area and Methodology

Study Area

The Study Area for assessing the Project's potential impact to farmlands 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.

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.

5.3.2 Applicable Regulations and Criteria

The Farmland Protection Policy Act (FPPA), passed as part of the Agriculture and Food Act of 1981, is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible, federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. 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. 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. 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 the 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 is meant to inform a project's alternatives development.

5.3.3 Existing Conditions

The Study Area includes mapped prime farmland and farmland of statewide importance. Approximately 3 acres of Pittstown silt loam, 3 to 8 percent slopes, which is rated as prime farmland, is within the Project's LOD between the RK Newport Towne Center and Newport Mini Storage Center along JT Connell Highway and the Festival Field Apartments and Bridgeview Condominiums along Girard Avenue. This area is currently undeveloped, but is envisioned for future mixed use, innovation development according to the *City of Newport Comprehensive Land Use Plan* (see section 5.2, Land Use, for more information).

Newport silt loam, 3 to 8 percent slopes, is another prime farmland found within the Study Area. Less than 1 acre of this soil type exists within the Project's LOD, located within the transportation right-of-way along Admiral Kalbfus Road just past its intersection with Malbone Road.

Stissing silt loam, which is rated as a farmland of statewide importance, comprises approximately 2 acres of the Study Area. This soil type is north of Dyers Gate Road behind residential properties that abut 3rd Street and within properties owned by an electric utility (Narragansett Electric Company d/b/a National Grid). The Newport Secondary Rail Line, which runs in a north-south direction, intersects this area. Stissing silt loam is also found in the area occupied by the Pell Bridge Route 138-Admiral Kalbfus Road off-ramp. Both locations are within a larger area that the City of Newport has identified for future mixed use, innovation development.

5.4 Wetlands and Waters of the U.S. and State

This section describes the Study Area, analysis methodologies, and baseline conditions for wetlands and waterway resources that may be affected by the Proposed Action. Please refer to Appendix B4 for the Wetlands and Waterways Technical Memorandum, which contains additional information on this topic.[2]

5.4.1 Study Area and Methodology

Study Area

The Project would 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 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 Appendix B4, Wetlands and Waterways Technical Memorandum, for additional information.

Methodology

Baseline Conditions

Wetland and waterway resources within the Study Area were mapped and characterized to identify baseline conditions using a combination of field investigation and GIS mapping.

[2] Analysis in the Technical Appendices was completed prior to the development of the EA and is based on an earlier version of the project design. Subsequent to the appendices being finalized, the project design changed, reducing the limits of disturbance (LOD) and impacts to wetlands. The EA analysis is based on the updated design.

Within the Study Area, wetlands were field delineated following the U.S. Army Corps of Engineers 1987 Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (version 2). Previously delineated wetland boundaries in the Study Area were reviewed and re-delineated as necessary in September 2017. Additional wetland delineations were completed in June and September 2018 to cover expansions of the Study Area. Appendix B4 contains more information on wetland delineation and mapping.

Field notes were collected on soil, vegetation, and hydrologic conditions within delineated wetlands. Photographs and notes on conditions along the wetland boundary and interior were also collected. All wetlands within the Study Area were characterized following the wetland classification system developed by the U.S. Fish and Wildlife Service's (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States,* commonly referred to as the Cowardin classification system, after the name of its primary author.) Wetlands functions and values were assessed based on a descriptive, best professional judgement approach, with reference to the U.S. Army Corps of Engineers (USACE) New England District's *The Highway Methodology Workbook Supplement: Wetland Functions and Values - A Descriptive Approach*. This publication defines wetland functions and values, and provides a descriptive methodology for conducting evaluations. Additional information about wetland functions and values can be found in Appendix B4.

Direct and Indirect Effects Analysis

Potential impacts 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 the Proposed Action were considered in the analysis of indirect effects. The analysis included temporary effects that would occur during the construction phase and permanent effects that would occur during the operations and maintenance phase.

Cumulative Effects Analysis

Cumulative effects include past, present, and reasonably foreseeable future actions, including federal and non-federal actions. The spatial boundaries for the cumulative effects analysis in the Study Area were 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.

5.4.2 Applicable Regulations and Criteria

Federal

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 also regulated in accordance with the following federal and state requirements:

- Executive Order 11990 of 1977 (Protection of Wetlands) requires federal agencies to avoid destruction and modification of, or construction within, existing wetlands where there is a practicable alternative.
- Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in a discharge into navigable waters must provide a certification from the state in which the discharge originates (401 Certification). In Rhode Island, Water Quality Certification is obtained via application to the Rhode Island Department of Environmental Management (RIDEM) Office of Water Resources.
- Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States, and Section 401 of the CWA specifies additional requirements for permit review on the state level.

State

The State of Rhode Island has jurisdiction over freshwater wetlands and waterways, promulgated under the *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.

5.4.3 Wetland and Waterway Resource Definitions

Resources addressed in this EA include wetlands and waterways subject to federal jurisdiction, as well as freshwater wetlands regulated by the state of Rhode Island. Some state-regulated wetlands have jurisdictional limits that may extend beyond federal limits. Coastal resources subject to the regulation of the CRMC and resources within the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map 1 percent annual chance floodplain (formerly referred to as the 100-year floodplain) are also located within the Study Area, but are addressed separately in Sections 5.5 and 5.7.

Waters of the United States under the jurisdiction of §404 of the federal Clean Water Act include all waters which are used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; all interstate waters, including interstate wetlands; and all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or drainage ditches leading to regulated Waters of the U.S., the degradation or destruction of which could affect interstate or foreign commerce (33 CFR Part 328).

Freshwater wetlands regulated by the RIDEM under the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* include swamps, marshes, bogs, forested or shrub wetlands, emergent plant communities, and other areas dominated by wetland vegetation and showing wetland hydrology. In addition to these vegetated wetland communities, the RIDEM regulates activities in and around waterways and open water bodies, including rivers, streams, ponds, Special Aquatic Sites, and Areas Subject to Storm Flowage (ASSF). The Rules also provide the authority to regulate floodplains as freshwater wetlands (see Section 5.5). More information on the types of wetlands, waterways, and waterbodies regulated by the RIDEM is provided in the Wetlands and Waterways Technical Memorandum in Appendix B4.

5.4.4 Existing Conditions

Wetlands

A total of 25 wetlands and ASSFs, one manmade stormwater treatment wetland, and one stream were field delineated in the Study Area. The wetlands identified belong to the non-tidal palustrine system of the Cowardin classification method (Federal Geographic Data Committee, 2013). Estuarine wetlands occur outside of the Study Area along the shoreline of Narragansett Bay. Palustrine systems are terrestrial and extend into areas inundated by less than six feet of water for at least part of the year. Areas with greater water depths are classified as deep-water habitats, which are absent within the Study Area. The three common classes within the palustrine system are forested wetlands (PFO), scrub-shrub wetlands (PSS), and wetlands dominated by emergent plants (PEM). Twenty-one of the 26 palustrine wetlands in the Study Area are of the PEM class. Sixteen of these belong to the *Phragmites australis* subclass, and five belong to the persistent emergent subclass, meaning that dead vegetation remains standing until the next growing season. Of the remaining emergent wetlands, two are classified as a mixed class with PSS broad-leaved deciduous components, two are classified as PSS broad-leaved deciduous, and one is classified as PFO broad-leaved deciduous.

Wetland soils within the Study Area generally consist of graded, excavated, or previously disturbed materials derived from glacial till or fill materials. However, native, organic wetland soils are present within some wetlands that are remnants of historically larger wetland areas. Historic aerial photography from 1939 indicates that most of the Study Area was previously emergent wetlands or wetlands that had been cleared for agricultural purposes and ditched to improve drainage. Subsequent urban development has resulted in conversion of most of this former wetland area to developed urban land. Where wetlands

remain within the Study Area, most are constructed linear ditches populated with invasive plant species. These wetlands function as drainage swales, or remnants of formerly more extensive wetlands. The hydrology of most of the wetlands within the Study Area is classified as saturated or seasonally flooded. Some of the excavated ditches within Study Area wetlands may be semi-permanently flooded.

Waterways

Wetlands contained within channels that are not dominated by trees, shrubs, or persistent emergent vegetation belong to the Riverine system of the Cowardin classification method. The one unnamed riverine wetland (A-S1) identified in the Study Area includes a lower perennial stream where the gradient is low and water velocity is slow, with an unconsolidated bottom of cobble and gravel. Existing site conditions and review of historic aerial photographs demonstrate the stream has been extensively ditched, culverted, and altered. The 1939 aerial photography shows the stream had either been ditched and straightened by that time or was created as a ditch for agricultural drainage purposes.

Stream A-S1 is not on the state's May 2015 303(d) List of Impaired Waters, and meets RIDEM Water Quality Standard B. Currently, the stream begins at a culvert outfall located approximately 350 feet southeast of the existing railroad bed crossing vicinity where the stream was delineated. The channel is approximately eight to ten feet wide, has been ditched and straightened, and drains to the northwest directly into Narragansett Bay approximately 420 feet from the existing railroad bed crossing. In hydrologically up-gradient areas of the watershed, Wetlands A-3, A-4, A-6, A-7, and A-11 contain stagnant ditches that may have been part of the same original drainageway, based on review of 1939 aerial photographs. Under present-day conditions, these ditches probably drain to the existing stream channel via subsurface culverts.

Wetland Functions and Values

Principal functions provided by wetlands within the Study Area are limited to water quality functions, including sediment and toxicant retention and nutrient removal and transformation. Runoff from the urbanized impervious surfaces within the Study Area typically contains high concentrations of sediment, toxicants, and nutrients. The stagnant ditch character of many of the Study Area wetlands provides a sink for runoff and the potential to attenuate these pollutants through sediment trapping, nutrient uptake by plants, and toxicant transformation through microbial processes.

Other functions to which wetlands contribute at a lesser degree in the Study Area include flood flow alteration, groundwater discharge/recharge, and provision of wildlife habitat. Many of the wetland ditches in the Study Area have constricted culverted outlets, allowing them to collect and temporarily hold surface runoff and provide some flood flow reduction. Such functions are limited, however, by the small area of the wetlands and their limited capacity to store runoff. Wetlands in the Study Area also intersect with the saturated zone of the subsoil, but the extent to which significant groundwater discharge or recharge occurs is limited by the small size of the wetlands and the dense till substrates that function as an impermeable layer or aquitard.

Wildlife habitat functions are provided at a low level because most of the wetland habitats are dominated by *Phragmites australis* and other non-native invasive species that provide limited habitat value. Invasive plant species can impact the diversity of local species by changing the conditions of the environment. This can include affecting soil nutrient quality and nutrient cycling as well as changing the light and microclimate levels in the invaded patches, depending on colony sizes. Invasive species patches can result in monotypic colonies of low-quality food, cover, shelter and basking sites for wildlife. The existing Study Area wetlands do have the potential to support small mammals and birds that live in urban settings, as well as insects, small amphibians, and reptiles tolerant of disturbed environments.

5.5 Floodplains

Provided below is a discussion of the floodplains identified and assessed within the Study Area. Please refer to Appendix B5 for the Floodplain Technical Memorandum, which provides additional information on this topic.

5.5.1 Study Area and Methodology

Study Area

The project Study Area is located within a low area draining northwest to Coasters Harbor within Narragansett Bay. As described in Section 5.4, 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.

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 Federal Emergency Management Agency (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 Proposed Action.

5.5.2 Applicable Regulations and Criteria

Under Executive Order 11988 Section 2. (a)(2) (EO11988), federally-financed projects located within the National Flood Insurance Program (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 federal 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 within the Study Area.

The Coastal Development Regulations of the Aquidneck Island SAMP require 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 LOD for the Proposed Action 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 the site-specific coastal flooding model. As a result, the requirements of the Aquidneck Island SAMP are not applicable.

Pursuant to Rhode Island General Laws Section 46-23-6, the Rhode Island Coastal Resources Management Council (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 Rhode Island State Building Code (RISBC), and more specifically RISBC-8, are met. Any future building development within the flood zone in the Study 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, or 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 CRMC and/or RIDEM, as applicable.

5.5.3 Existing Conditions

The Study Area is located within the 1% floodplain according to the 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 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). The current Effective FEMA FIS for Newport County estimates 1% Floodplain elevations and areas by interpolating between two coastal transect models located outside of the Study Area, and as such does not reflect the distinct coastal flooding behavior within the Study Area.

5.6 Water Quality/Stormwater

Provided below is a discussion on the water quality and stormwater issues related to the project Study Area. Please refer to Appendix B6, Water Quality/Stormwater Technical Memorandum, for additional information.

5.6.1 Study Area and Methodology

Study Area

The Study Area for stormwater was defined as the Project LOD with a 10-foot buffer. This area is considered the most likely to experience stormwater impacts based on the design of the Proposed Action.

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.

5.6.2 Applicable Regulations and Criteria

The Proposed Action is subject to the following regulations:

- Rhode Island Pollutant Discharge Elimination System (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 (CWA) Section 401/404: The Proposed Action may require work in Waters of the United States; consequently, authorization under these regulatory programs will be required. RIDEM will review the Proposed Action for a Water Quality Certificate (WQC) under Section 401 of the CWA. If any fill is proposed within waters of the United States, the Proposed Action will also require Section 404 authorization by the USACE, as described in Section 5.5.
- 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 Action would exceed this threshold, so the design is required 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 Action 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 best management practices (BMPs) that will, to the maximum extent practicable, support the achievement of the pollutant load reduction and other requirements of the Consent Decree.

5.6.3 Existing Conditions

As described above, the Study Area was defined as a ten-foot offset from the outermost edge of the new impervious surface. Wetland and waterway resources within the Study Area were mapped and characterized to identify baseline conditions using a combination of field investigation and GIS mapping.

The Natural Resource Conservation Service (NRCS) has mapped many soil types within the Study Area. Soils in the existing roadway network are mostly fill soils that are Udorthents – Urban Land complex and have a Hydrologic Soil Group (HSG) A rating. Areas that are developed with retail and parking lots are classified as Urban Land and are not assigned a Hydrologic Soil Group. The remaining area, excluding the wetlands, contains various Newport and Pittstown soils assigned a Hydrologic Soil Group (HSG) C rating. These soils have a slow infiltration rate when wet. They consist chiefly of soils that have a layer that impedes the downward movement of water or soils of moderately fine texture.

Historic aerial photography from 1939 indicates that most of the Study Area was previously emergent wetlands or wetlands that had been cleared for agricultural purposes and ditched to improve drainage. Subsequent urban development has resulted in conversion of most of this former wetland area to developed urban land. Where wetlands remain within the Study Area, most are constructed linear ditches populated with invasive plant species. These wetlands function as drainage swales, or remnants of formerly more extensive wetlands. The hydrology of most of the wetlands within the Study Area is classified as saturated or seasonally flooded; some of the excavated ditches within Study Area wetlands may be semi-permanently flooded. More information on wetlands can be found in Section 5.5.

5.7 Coastal Resources

Provided below is a discussion on the coastal resources identified within the Study Area. Please refer to Appendix B7, Coastal Resources Technical Memorandum, for more information.

5.7.1 Study Area and Methodology

Study Area

The Study Area for evaluating coastal resource effects is the LOD for the Proposed Action, which 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 would be divested and made available for future redevelopment by others is also considered.

Methodology

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 include the Project's 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 2035 is the current short-term planning horizon for Rhode Island. The analysis assumed that redevelopment of Study Area land divested by RIDOT and the City of Newport following implementation of the Proposed Action would be completed by 2030.

5.7.2 Applicable Regulations and Criteria

Federal regulations applicable to the Proposed Action include the Coastal Zone Management Act (CZMA; 16 U.S.C. 1451-1464; Public Law 92-583). and the Coastal Barrier Resources Act (CBRA; 16 U.S.C. 3501-3510; Public Law 97-348). Activities proposed by RIDOT related to the Pell Bridge Project will require a Coastal Zone Management (CZM) Consistency Determination from the CRMC due to the Proposed Action's location within the Coastal Zone as identified in the RICRMP and the Aquidneck Island SAMP. The CZM Consistency Determination will evaluate the Proposed Action 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 Proposed Action because it is not a shoreline development project. However, other goals of the SAMP are applicable to the Proposed Action, such as managing impervious surface coverage, use of low-impact development techniques to manage stormwater runoff, and open space.

5.7.3 Existing Conditions

Coastal resources within the Study Area are protected under the CBRA and the CZMA. These statutes require that the FHWA follow procedures for ensuring that a proposed action is consistent with approved coastal zone management programs.

Coastal Barrier Resources Act

The CBRA defines "undeveloped coastal barriers" as geological features including bay barriers, barrier islands, and other associated aquatic resources including wetlands, marshes, and estuaries that protect landward aquatic habitats from the detrimental effects of direct

wind and wave action. Under the CBRA, the USFWS was tasked with the preparation of maps depicting areas designated for protection. The John H. Chafee Coastal Barrier Resource System (CBRS) includes all areas designated for protection under the CBRA. The Study Area does not contain any coastal barriers mapped in the John H. Chafee CBRS, based on review of the USFWS CBRS mapping.

Coastal Zone Management Act

The CRMC administers the CZMA for the state. Rhode Island's Coastal Zone includes the entire state. The regulatory authority of the state's CZMA agency extends 200 feet inland from any coastal feature, and the Study Area for coastal resources does not occur within 200 feet of a coastal feature. However, the Rhode Island CRMC defines the Coastal Zone as "the area encompassed within the state's seaward jurisdiction (three miles) to the inland boundaries of the state's 21 coastal communities." Within these communities, CRMC exercises its federal consistency requirement over direct federal activities or federally sponsored activities that are reasonably likely to affect any coastal use or resource within the CRMC's jurisdictional area. The Pell Bridge project will therefore require a federal CZM Consistency Determination from the CRMC.

In some areas, CRMC coastal zone jurisdiction is expanded to include those areas within the watershed boundaries of certain coastal estuaries. These watershed areas are regulated under SAMPs; the Study Area is located within the Aquidneck Island West Side SAMP. Project activities that are potentially subject to CRMP policies and standards include site work/excavation; road, bridge, and parking lot work; and wetland and waterway impacts.

As described in Section 5.5, CRMC and RIDEM have established boundaries defining the limits of CRMC and RIDEM freshwater wetland jurisdictions. In the Study Area, the inland limit of CRMC jurisdiction over freshwater wetlands generally follows the existing railbed near the western limit of the Study Area. Freshwater wetlands falling under the jurisdiction of the CRMC are present within the Study Area and are addressed in Section 5.5. Because the Project Area includes areas falling under the jurisdiction of both CRMC and RIDEM, the two agencies will confer to determine whether state regulatory review of all Project Area wetland impacts will be delegated to just one of the two agencies, or if each agency will review wetlands within its defined area of jurisdiction.

5.8 Federally Threatened or Endangered and State Natural Heritage Species/Biodiversity

Presented below is a discussion of Federally and state-listed species in the Study Area. Please refer to Appendix B8, Threatened and Endeared Species Technical Memorandum, for additional information.

5.8.1 Study Area and Methodology

Study Area

The Study Area includes the LOD for the Proposed Action and a corridor width of 200 feet on either side of the LOD. This is the area that may experience project impacts with the potential to affect Federal or state-listed species and their associated habitat.

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; the LOD of the Proposed Action was applied 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 were identified 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.

5.8.2 Applicable Regulations and Criteria

The following Federal and state regulations are applicable to threatened and endangered species in the Study Area:

- 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 of the ESA, 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 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 for the northern long-eared bat (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 lead agency will be necessary to determine if an effects determination on the state-listed species can be made based on the project's description, or if survey efforts and mitigation are required.

5.8.3 Existing Conditions

The Official Species List generated by IPaC indicated that there are two listed species with the potential to occur within the Study Area: the NLEB, which is federally threatened, and the roseate tern (Northeastern subspecies; *Sterna dougallii dougallii*), which is federally endangered. Background information for each species is provided below. The Official Species List did not identify any critical habitats within the Study Area.

Northern Long-eared Bat Description and Habitat Requirements

The NLEB is a medium-sized bat that was listed under ESA as a threatened species due to drastic population declines of up to 99 percent in the northeast (USFWS, 2015a). This decline has largely been attributed to the disease known as white-nose syndrome (WNS).

According to the most recent (2018) USFWS Summer Survey Guidelines (Guidelines) for NLEB and Indiana bat *(Myotis sodalis),* suitable summer habitat for NLEB consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures (USFWS, 2018b).

The Study Area is within a highly urbanized area of Newport that contains the major interchanges linking to the Pell Bridge, industrial and commercial areas, and residential areas north, south, and west of the interchange area. While there are few contiguous blocks of vegetated habitat, suitable summer habitat as defined by the Guidelines is present within the Study Area. These areas include a privately-owned 15-acre block of forest that is located between the Newport Grand Casino, Malbone Road, and Halsey Street; Miantonomi Memorial Park, a 32-acre public recreational park owned by the City of Newport, located east of Girard Avenue; and fragmented forested areas adjacent to roadways and residential areas. According to the Guidelines, trees found in highly-developed urban areas (e.g. street trees and downtown areas) are extremely unlikely to be suitable habitat (USFWS, 2018b).

NLEB spend the winter months in hibernacula that include caves, mines, and other semi-enclosed areas that provide constant temperature, high humidity, and no air currents (USFWS, 2015a). There are no known hibernacula sites within or adjacent to the Study Area.

Roseate Tern Description and Habitat Requirements

The Roseate tern is a medium-sized tern that breeds in tropical locations in the Caribbean and in some scattered colonies in the temperate northern Atlantic (Cornell Lab of Ornithology). Roseate terns tend to nest in mixed colonies with common terns *(Sterna hirundo),* which can afford them protection due to the common terns' more aggressive anti-predator behavior (Gochfield et al., 1998). There is no suitable roseate tern habitat within the Study Area.

MBTA-protected Species

The Resources List prepared by IPaC listed 27 migratory birds protected by the MBTA that have the potential to occur within the Study Area. These 27 species are of particular concern either because they are listed on the USFWS Birds of Conservation Concern (BCC) list or because of other regulations that warrant consideration for the species, such as the Eagle Act. The BCC list was created because of a 1988 amendment to the Fish and Wildlife Conservation Act that mandated that USFWS identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA (USFWS, 2015b).

RIDEM ERM Review Results

There are no Natural Heritage Areas mapped within the Study Area. Consultation with the RINHP is not necessary for the Proposed Action.

RIDEM DFW Consultation Results

The Project Biologist consulted with the lead bat biologist, Charles Brown, at the RIDEM DFW in February 2018 to obtain details concerning the RIDEM's NLEB survey efforts and to ascertain if there are records of NLEB within the Study Area. The RIDEM DFW has been performing mist net surveys and inspections of hibernacula in Rhode Island since 2011 to perform bat species composition surveys. The RIDEM DFW also bands bats to track population size and movements of different species. There are no records of the NLEB within the Study Area or within the larger City of Newport. Rhode Island does not host large numbers of hibernating bats because there are no mines or natural caves that bats can use for hibernation. However, some manmade structures within Newport County provide suitable conditions for small hibernacula populations. The only three hibernacula known to host NLEB in Rhode Island are located in Jamestown to the west of the Pell Bridge. RIDEM does not currently conduct surveys to locate NLEB maternity roosting trees and does not maintain records of known maternity roosting trees.

NLEB Acoustic Survey Results

The Project Biologist conducted Presence/Probable Absence Acoustic Surveys targeting NLEB between August 6 and 8, 2018. Call data were auto-classified with Bat Call Identification (BCID) East Version 2.7d. Species recorded during the survey include big brown bat *(Eptesicus fuscus),* eastern red bat *(Lasiurus borealis),* hoary bat *(Lasiurus cinereus),* and silver-haired bat *(Lasionycteris noctivagans)*. The software did not auto-classify any calls as

NLEB or any other Myotis species. It also did not classify any calls as tri-colored bat *(Perimyotis subflavus),* which is currently being considered for listing under the ESA (USFWS, 2017c). Qualitative analysis confirmed two calls to be the eastern red bat, both during the first night of surveying at Sites 2 and 3. The survey results indicate the probable absence of NLEB within the Study Area. The complete Acoustic Survey Report is included in Appendix B8 and will be submitted to USFWS as part of the Section 7 consultation process. https://www.environment.fhwa.dot.gov/ecosystems/index.asp

5.9 Cultural (Historical and Archaeological) Resources

Provided below is a summary of cultural resources in the Study Area. Please refer to Appendix B9, Cultural Resources Technical Memorandum, for additional information.

5.9.1 Study Area and Methodology

Study Area

The Area of Potential Effects (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)]. An aboveground historic property survey was prepared for the Project's APE, which encompasses the LOD and all properties within one-tenth-mile of the LOD.

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 APE that are listed or may be eligible for listing in the National Register of Historic Places (National Register). Background research, windshield surveys, field surveys, Rhode Island Historical Preservation and Heritage Commission (RIHPHC) inventories, and archaeological analyses were conducted.

5.9.2 Applicable Regulations and Criteria

The Project is required to comply with 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) and Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303).

The proposed Project has been determined to be an "undertaking" subject to Section 106 of the National Historic Preservation Act of 1966. Therefore, RIDOT, in conjunction with the Rhode Island Historical Preservation and Heritage Commission (RISHPO), will need to assess potential Project impacts to aboveground and subsurface resources through the application of the Criteria of Adverse Effect, per 36 CFR 800.5(a)(1),(2). Should RIDOT recommend that the potential exists for an adverse effect to one or more historic resources, consulting parties

will work to avoid, minimize or mitigate any adverse effects of the Project pursuant to 36 CFR 800.5(e) and 800.9.

5.9.3 Existing Conditions

Historic Resources

Background research and subsequent field survey concluded that the APE encompasses one National Historic Landmark District, two properties listed in the National Register, and two properties determined eligible for listing in the National Register. Within the APE, there are also four properties (three buildings and one railroad) that are at least 50 years old, were not previously surveyed, and appear potentially eligible for listing in the National Register.

Of the four historic properties within the APE that were evaluated for listing in the National Register, one property (62 Van Zandt Avenue) is recommended as eligible for listing. A National Register Eligibility Evaluation has been compiled for the Old Colony and Newport Railroad and submitted to RISHPO. The evaluation is discussed further below.

Archaeological Resources

No archaeological sites were identified during the Phase I Archaeological Survey.

Historic Resources within the LOD

- Newport Historic Landmark District (NHL 1968, amended 2008; NR #68000001)
- Van Zandt Avenue Bridge (CDOE 1994)

Historic Resources within One-Tenth-Mile Radius of the LOD

- Common Burying Ground and Island Cemetery (1974, NR #74000044)
- Miantonomi Memorial Park and WWI Memorial Tower (1969, NR #69000003)
- United States Naval Hospital Newport Historic District (CDOE 1998)

Historic Resources Recommended Eligible within the APE

RIHPHC inventory forms were compiled for the three buildings and one railroad within the APE that were identified as 50 years or older, not previously surveyed, and appearing potentially eligible for listing. Construction dates were estimated based on visual observation, supplemented by available historic maps and atlases, aerial images, and ownership history. Basic information was collected for each property to identify historical significance and patterns of settlement, and to understand the relationships between the current built environment and historical development of the neighborhood bounded by Van Zandt Avenue, Malbone Road, Garfield Street, and Route 238. Of the properties evaluated within the APE, the property at 62 Van Zandt Avenue, a four-bay-by-two-bay Georgian-style residence completed in 1753, retains integrity of location, design, setting, materials, workmanship, feeling, and association. It is recommended as eligible under Criteria A and C with significance at the local level.

Historic Resources under Evaluation

The Project proposes a bike corridor extension along a portion of the Old Colony and Newport Railroad, which would result in the partial removal of the track structure. A National Register of Historic Places Eligibility Evaluation was prepared to assess the eligibility of the Old Colony and Newport line in its entirety. The Final EA will be updated to reflect the final determination of eligibility after evaluation by the RISHPO and RIDOT.

5.10 Environmental Justice & Socioeconomics

Provided below is a discussion on the environmental justice communities and socio-economic conditions in the Study Area. Please refer to Appendix B-10, Environmental Justice Technical Memorandum, for additional information.

5.10.1 Study Area and Methodology

Study Area

The Study Area for the environmental justice (EJ) analysis was defined as a 0.25-mile-wide buffer around the Project's LOD. This is the area most likely to experience environmental impacts due to its adjacency to the footprint of the Proposed Action. The Study Area is comprised of the following 13 intersecting census block groups:

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

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 Proposed Action would have a disproportionately high and adverse effect on affected EJ communities, this analysis referred to the U.S. DOT and FHWA EJ Orders (described in the following subsection) to determine whether any identified adverse effect would be predominantly borne by a minority and/or low-income population; or would be suffered by the minority or low-income population and be appreciably more severe or greater in magnitude than the adverse effect that would be suffered by non-environmental justice populations. Adverse effects include those negative effects that impact individual or cumulative human health or environmental effects. Where applicable, these analyses were supplemented by analyses under *Title VI of the Civil Rights Act of 1964*, which require comparing the selection rates of different ethnic/racial groups to determine if there is likely a disparate impact as a result of a project.

5.10.2 Applicable Regulations and Criteria

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." 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.

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, and describes objectives for integrating environmental justice into the agency's planning and programming, rulemaking, and policy formulation. It also identifies 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. The order encourages complete participation in the transportation decision-making process by any potentially affected minority and low-income communities. Such participation is encouraged from planning through implementation of the project; if the potential for discrimination is identified, action is required to eliminate that potential.

Under Title VI of the Civil Rights Act of 1964, 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." Federal guidance provides methodologies to determine whether there are disproportionate impacts among particular groups. More information on these methodologies and how they were applied to the Project are found in Appendix B-10.

Effective June 26, 2009, RIDEM 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. RIDEM has identified Environmental Justice Focus Areas throughout the state, which are block groups in which the percentage of minority or low-income residents is high enough to rank in the top 15 percent of block groups statewide.

5.10.3 Environmental Justice Outreach

RIDOT has engaged with local EJ communities during planning of the Project, and will conduct further outreach as part of the NEPA process and subsequent public involvement efforts during final design and construction. Two public meetings targeting environmental justice geographies were held at the Florence Gray Center at 1 York Street in census block group 440050405.001. Outreach for these two meetings was advertised in local newspapers and at community centers in both English and Spanish. The first of the two meetings discussed the existing conditions in the Study Area along with the goals of the Project. The second meeting was to present the seven action alternatives and to receive public input on the alternatives. Input received from these meetings informed elements of the project design, including additional safety improvements and pedestrian and bicycle accommodations. More information is provided in Appendix B-10.

5.10.4 Existing Conditions

Environmental Justice

As described above, the Study Area contains 13 census block groups that intersect with a 0.25-mile buffer around the Proposed Action's LOD. The characteristics of these census blocks with respect to environmental justice are described below.

Minority Geographies

The thresholds for identifying minority geographies are either the minority population percentage within a census block group exceeding 50 percent or a minority population 10 percent greater than the average minority population percentage of the State of Rhode Island at 16.8 percent. Therefore, the meaningfully greater threshold is a minority population percentage greater than 26.8 percent. Among the 13 census block groups within 0.25 mile of the Project's LOD, only one has a minority population percentage greater than 50 percent, while five additional census block groups have minority populations meaningfully greater than the State average.

Across the Study Area, approximately 67 percent of the population is White, 9 percent Black or African American, 13 percent Hispanic or Latino, 2 percent Asian, 1 percent American Indian & Alaska Native, and 10 percent foreign-born.

Low-Income Geographies

Low-income geographies were identified as census block groups that have a median household income at or below the U.S. Department of Health and Human Services (*HHS)* poverty guidelines based on their average household size (rounded to the next highest whole number). Average household sizes in the Study Area range from 2 to 3. According to HHS, the 2018 poverty guidelines for 2 and 3-person households are $16,460 and $20,780, respectively. Based on this threshold, two of the census block groups in the Study Area qualify as low-income geographies. These include block group 440050405.001, which has a median household income of $19,453, and block group 440050410.001, which has a median household income of $15,924.

In addition to the identification of low-income geographies above, there are many public or subsidized housing developments – some senior housing - within the Study Area. These developments are largely concentrated in the City of Newport's North End neighborhood. They include, but may not be limited to:

- Newport Heights, generally bounded by Maple Avenue and Sunset Boulevard and bisected by John H. Chafee Boulevard
- Park Holm, generally located east of Hillside Ave and north of Eisenhower Street
- 9 Tilley Avenue
- Mumford Manor, 39 Farewell Street
- Festival Field, 90 Girard Avenue
- Ahepa 245 Apartments, 87 Girard Avenue
- Coddington Point Condominiums, 231 Maple Avenue
- 50 Washington Square
- Harbor House, 111 Washington Street
- Bayside Village, 143 3rd St
- Rolling Green Village, 195 Admiral Kalbfus Road

In addition to the housing developments listed above, a mobile home park, Bay View Park, is situated along Coddington Highway, east of Sherman Lane.

Geographies with Linguistic Isolation and Limited English Proficiency Persons

In addition to the identification of minority and low-income geographies, this analysis provides data on linguistic isolation and limited English proficiency for the purposes of informing the Project's public engagement efforts.

Linguistic isolation is defined as the percent of people living in households in which all persons older than 14 years of age who speak a non-English language and identify as speaking English less than "very well" according to the U.S. Census. Linguistic isolation within the Study Area is reported to be as high as 9 percent (block group ID 440050406.001). According to the latest ACS estimates, the prevalent non-English language spoken at home within the Study Area is Spanish (13 percent of persons age 5 and above), though Indo-European languages such as Albanian, Lithuanian, Pashto, Romanian, and Swedish (2 percent); Tagalog (1 percent); and French (1 percent) are also spoken. The City of Newport is also known to have a large population of native Portuguese speakers (1 percent city-wide).

Based on DOT Title VI guidance, limited English proficiency persons are defined as persons with "limited ability to read, write, speak, or understand English." For the purposes of this study, limited English proficiency persons were defined as those individuals age five years and older who identified as speaking English less than well ("not well" or "not at all") based on ACS data. According to ACS estimates, there are approximately 269 limited English proficiency individuals in the Study Area, or approximately 2 percent of the Study Area residents age five and older.

RIDEM Environmental Justice Focus Areas

The Study Area intersects with an Environmental Justice Focus Area established by RIDEM. This area encompasses census block groups 440050405.001 and 440050412.001.

Socioeconomics

Demographic and Economic Indicators

There are 14,432 persons living within the Study Area, a total that has remained relatively stable since 2010. The median age in the Study Area is 35.3 years old, which is younger than the state median at 40.7 years, Newport County at 45.3 years, the City of Newport at 36.9 years, and the Town of Middletown at 44.8 years. For information on minority and low-income status, please see the Environmental Justice discussion above.

Whereas 58 percent of occupied residential units in Rhode Island are owner-occupied, only 31.4 percent of the units in the Study Area are occupied by their owners, with the remainder occupied by renters. The median home value in the Study Area ($321,284) is higher than the state median home value ($265,245) by 21.1 percent, but is lower than values in the other reference geographies and 36.9 percent lower than the City of Newport as a whole ($439,785). There are 6,143 households within the Study Area, with a median income of $57,144. This is lower than the median household income of the state at $58,972, Newport County at $76,030, the City of Newport at $65,134, and the Town of Middletown at $72,786. Per capita income in the Study Area is lower than all reference geographies at $32,311. The unemployment rate in the Study Area (3.4 percent) is the same as Newport County and lower than the state at 5 percent and the Town of Middletown at 4.2 percent, but higher than the City of Newport at 2.7 percent.

Community Facilities and Public Services

Within the Study Area, there are four educational facilities, 19 parks, six religious institutions, four medical facilities, and two community centers. Access to community facilities close to the Project's LOD is generally inhibited by the condition of existing surface transportation infrastructure, including sidewalks along JT Connell Highway and Admiral Kalbfus Road that are in fair/poor condition based on an inventory conducted as part of the Aquidneck Island Transportation Study.

There are also a number of public services within the Study Area. The City of Newport Water Division is responsible for drinking water, and the Water Pollution Control Division is responsible for wastewater treatment. The City's water distribution system also serves Middletown, and the City provides wastewater treatment on a wholesale basis to Middletown. Waste collection is managed by Clean City Newport in Newport and by the Refuse Collection Department in Middletown. National Grid is the primary electric and gas utility provider for both the City of Newport and the Town of Middletown. Within the Study Area, there is one fire station at 63 W Marlborough Street and one police station at 120 Broadway.

5.11 Visual Resources

Provided below is a discussion on the visual resources within the Study Area. Please refer to Appendix B11, Visual Resources Technical Memorandum, for more information.

5.11.1 Study Area and Methodology

Study Area

The Study Area for visual impact was defined as a 1/4-mile-wide buffer around the Project's LOD. This area is the most likely to experience visual impacts due to its adjacency to the Proposed Action footprint.

Methodology

Potential visual impacts of the Proposed Action were considered based on an understanding of local topographic conditions, land uses, location and configuration of existing buildings, and location and extent of existing landscape features.

The visual impact of a project represents the aesthetic effect that it has on those who experience it visually; this includes the residents of adjacent neighborhoods, workers in adjacent commercial districts, and visitors who pass by the site by vehicle, bicycle, or on foot throughout the day. The visual appearance of a project is central to the overall impact it has on its surrounding environment.

Factors that control visual impact generally involve property use restrictions (i.e., defining allowable uses and standards for such uses) to ensure compatibility among existing uses, as well as between existing and newly introduced uses. The most common visual impact control is zoning, which typically includes restrictions on building height, setback, etc. In Rhode Island, comprehensive plans typically serve as the basis of visual impact regulations.

5.11.2 Applicable Regulations and Criteria

NEPA requires federal agencies to undertake an assessment of the environmental effects of their proposed actions prior to making decisions. Visual impacts are included among those environmental effects. FHWA's *Guidelines for the Visual Impact Assessment of Highway* Projects (FHWA 2015) was reviewed and used to guide the visual impact analysis.

5.11.3 Existing Conditions

The visual setting of the Study Area can be summarized as follows:

- The commercial area along JT Connell Highway north of the rotary includes a strip mall supported by a large surface parking lot, restaurants, cafes, auto-body shops, and other small businesses.
- The area near the intersection of Admiral Kalbfus Road and Girard Avenue contains a hotel and conference center, along with multiple condominium complexes to the

north. The visual setting includes the existing exit ramp and overpass, which is currently also being used as de facto highway maintenance storage.

- South of Admiral Kalbfus Road and east of Farewell Street is a low-density suburban residential neighborhood consisting of detached single-family homes. The project site is only visible from certain locations within this neighborhood: specifically, looking north along Butler Street and Prescott Hall Road, and looking west along Garfield Street, each of which has a terminus abutting the existing bridge approach.
- South of Admiral Kalbfus Road and west of Farewell Street is another low-density suburban residential neighborhood consisting of detached single-family homes. The only part of the project site that is visible within this quadrant is Block E, which can be seen from Hunter Park and Van Zandt Avenue.
- Bayside Village is a low-income housing complex located just north of the Pell Bridge westbound on-ramp from JT Connell Highway. This project-based Section 8 community lies between 3rd Street and the decommissioned Old Colony and Newport Railroad line.
- The commercial area along JT Connell Highway south of the rotary contains a variety of businesses such as storage, auto-body shops, and restaurants. This area, located between Admiral Kalbfus Road and the cul-de-sac at Van Zandt Avenue, is within view of many of the Pell Bridge ramps and structures.

5.12 Air Quality

Provided below is a discussion of existing air quality resources in the Study Area. Please refer to Appendix B12, Air Technical Memorandum, for additional information.

5.12.1 Study Area and Methodology

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 Proposed Action mirrors the intersection Study Area from the transportation analysis, as local air quality is most likely to change at intersections affected by the Proposed Action. The regional study area for air quality encompasses Newport County, where the Proposed Action is located, and is informed by the extent of the regional transportation study area. This regional study area is congruent with the geographical boundaries the EPA uses to designate the attainment status of criteria pollutants.

Methodology

The air quality study included a local (microscale) air quality analysis of carbon monoxide (CO) to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) (see Section 5.12.2 for more information on applicable regulations. The microscale analysis evaluated the evening peak hour, as volumes and delays across the study intersections were worse than those during the morning peak hour.

A mesoscale assessment was undertaken to assess the effect of the Proposed Action 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 as well as 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 Action were estimated through the traffic study assessment (VISSIM model).

The Proposed Action has low potential *Mobile Source Air Toxics (MSAT*) effects and, therefore, requires qualitative analysis only.

5.12.2 Applicable Regulations and Criteria

The Clean Air Act (CAA) is the primary statute that 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. It establishes the NAAQS, which set criteria for specified pollutants (known as "criteria pollutants") to maintain human and environmental health. These pollutants include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter (PM), which includes PM with a diameter of 2.5 microns or less ($PM_{2.5}$) and PM with a diameter of 10 microns or less (PM_{10}). Of these pollutants, ozone, sulfur dioxide, and lead are not substantially or directly emitted by motor vehicles. In addition, analyses of transportation emissions generally consider oxides of nitrogen (NOx) rather than NO_2.

EPA designates areas as either meeting or not meeting the NAAQS. An area with measured pollutant concentrations that are lower than the NAAQS is designated "attainment," and an area with pollutant concentrations that exceed the NAAQS is designated "nonattainment." Once air pollutant concentrations in a nonattainment area are reduced to levels that meet or are below the NAAQS, the EPA re-designates the area as a "maintenance" area. In nonattainment and maintenance areas, the state is responsible for developing a State Implementation Plan (SIP) that describes how the area will attain and maintain the standards by reducing pollutant emissions.

The 1990 Clean Air Act Amendments (CAAA) include a Transportation Conformity Rule that restricts federal funding to highway or transportation projects that do not conform to an applicable SIP. The responsibility of transportation conformity determination is vested in the Federal Highway Administration (FHWA) and state Department of Transportation, in this case RIDOT. 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.

5.12.3 Existing Conditions

Background pollutant concentrations were obtained from RIDEM, which maintains a network of ambient air monitors across the state. Background concentrations are added to project emission sources to determine the total pollutant concentration at a receptor location for comparison to the NAAQS. The background concentrations were obtained from the RIDEM Annual Monitoring Network Plan. Concentrations were chosen from the highest design values recommended by the network plan. Table 5-2 shows the background concentrations for pollutants that were considered in the air quality modeling, which are those directly emitted by motor vehicles. All background concentrations comply with the NAAQS, and the Study Area is designated as Attainment by the EPA.

Table 5-2 Background Concentrations

Pollutant	Units	Averaging Period	Background Concentration	NAAQS Standard
Carbon Monoxide	ppm	8-hour	1.8	9
	ppm	1-hour	3.0	35
Ozone	ppm	8-hour	0.070	0.070
Particulate Matter 2.5	µg/m3	Annual	9.3	12
	µg/m3	24-hour	24.5	35
Particulate Matter 10	µg/m3	24-hour	52	150

Source: Rhode Island Department of Environmental Management.

5.13 Noise and Vibration

Provided below is a discussion on noise and vibration in the Study Area. Please refer to Appendix B13, Noise Technical Memorandum, for additional information.

5.13.1 Study Area and Methodology

Study Area

The Study Area for this resource assessment 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. 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 Study Area roadways extend from Farewell Street at Van Zandt Avenue on the south to the driveway of RK Shopping Plaza on the north, and from Admiral Kalbfus Road at 3rd Street on the west to Malbone Street and Girard Avenue on 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.

Methodology

The methodology for evaluating noise includes identifying noise-sensitive land uses, conducting measurements at key receptor locations, and modeling noise at all receptors

within the study areas. Noise levels were predicted at all receptors 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 measures such as noise barriers were evaluated.

Noise levels for this analysis are described in terms of A-weighted decibels, abbreviated as dBA. A-weighted decibels are an expression of the relative loudness of sounds as perceived by the human ear. A change of 3 dBA is generally the smallest difference perceptible to the human ear, while a change of 10 dBA is perceived as a doubling or halving of loudness. In addition, noise measurements are expressed as an equivalent continuous sound level (Leq), which represents the average sound energy of a fluctuating noise source (like traffic) over a period of time.

5.13.2 Applicable Regulations and Criteria

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. Under the policy, a Type I project is defined as one that includes one or more of the following:

- 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
- 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 Action 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 result, it is necessary to evaluate highway noise levels in accordance with FHWA regulations and the RIDOT policy.

FHWA has established noise abatement criteria (NAC) to help protect public health, welfare and livability from excessive vehicle traffic noise. Table 5-3 shows the FHWA Activity Categories, the description of the types of land uses within each category, and the NAC

based on loudest-hour Leq[3] noise levels. When noise levels approach or exceed the NAC, then abatement (mitigation) must be considered. These abatement criteria apply to design-year noise conditions for a proposed project, regardless of whether the project would increase or decrease noise conditions compared to the existing or No Action condition.

RIDOT defines noise levels "approaching the NAC" as those that are 1 dBA below the FHWA NAC. For example, if design-year noise levels would be 66 dBA Leq at a residential receptor, they would be considered to approach the NAC of 67 dBA Leq, and noise abatement would need to be considered. RIDOT also defines a substantial increase in noise as an increase in design-year noise levels that is greater than 10 dBA compared to existing levels. A substantial noise increase does not depend on whether the design-year noise levels approach or exceed the absolute NAC. Potential noise abatement measures must be considered for areas where noise levels approach or exceed the NAC and/or where there would be a substantial increase.

Table 5-3. FHWA Noise Abatement Criteria (NAC)

Activity Category	Loudest-Hour Noise Level (Leq)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purposes.
B*	67 (Exterior)	Residential.
C*	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E*	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in Categories A-D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

*Includes undeveloped lands permitted for this Activity Category

Source: 23 CFR Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise.

5.13.3 Existing Conditions

Noise monitoring was conducted to characterize existing sound levels in the Pell Bridge Study Area. Monitoring was conducted at 19 receptor locations that are representative of noise exposure throughout the Study Area. Noise measurements were collected in two

[3] Leq is the A-weighted hourly-equivalent sound level.

sessions during December 2017 and June 2018 in conformance with FHWA noise monitoring guidelines. Traffic counts were conducted during the measurements, including volumes, vehicle mix (automobiles, medium trucks, and heavy trucks), and observations of operating speeds. The predominant noise source in the Study Area included vehicles on the Pell Bridge approach (State Route 138) and on other major roadways such as Admiral Kalbfus Road and JT Connell Highway. Existing noise levels ranged from 51 to 66 dBA Leq at all locations with most receptors near 60 dBA Leq.

For purposes of analysis, the Study Area was subdivided into 13 Common Noise Environments (CNEs). CNEs are groups of receptors within the same NAC category that are exposed to similar noise sources and levels, have similar traffic volumes, mix and speed, and have similar topographic features. Each of the 13 CNEs contains receptor locations that are sensitive to highway noise.

Table 5-4 shows the loudest-hour existing noise levels at all CNEs. Existing noise levels range from 35 to 67 dBA Leq at all receptors. The loudest existing noise conditions are generally within CNEs B, D, K and M.

Table 5-4 Existing Noise Level Summary

CNE	Activity Category	Location	Existing Noise Levels (Leq, dBA)
A	B	America's Cup Avenue/ Farewell Street	56-61
B	B	Third Street (South of Van Zandt Avenue)	48-66
C	B/C	Sycamore Street	53-63
D	B	Cypress Street	60-65
E	B	JT Connell Highway/Van Zandt Avenue	46-63
F	B/C	Third Street (North of Van Zandt Avenue)	51-60
G	D	Newport Naval Health Clinic	50 (15 interior) [A]
H	B	Rolling Green Apartments	60
I	E	Mainstay Hotel	55
J	B/C/D/E	Newport Community College/Reliance Row	46-63 (28 interior) [A]
K	B	Bayview Park/King Road	45-67
L	B	JT Connell Highway (north extent)	47-59
M	C	Braman Cemetery and Island Cemetery	51-64

Source: VHB, 2018.

A Interior sound level in parenthesis assuming 35 dBA outdoor-to-indoor noise reduction for masonry building with double-pane windows

5.14 Hazardous Materials

Provided below is a discussion of existing hazardous materials in the Study Area. Please refer to Appendix B14, Hazardous Materials Technical Memorandum, for additional information.

5.14.1 Study Area and Methodology

Study Area

The Study Area includes the area within an approximately 1/8-mile radius of the LOD for the Proposed Action. 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 area.

Methodology

CLUEs completed in 2013 and 2017 were used to assess the potential for oil and hazardous materials (OHM) in soils and groundwater within the Study Area. The 2013 CLUE identified several properties where a release of OHM had been documented or where overt evidence of a release or threat of release was identified. As a result, limited subsurface investigations in the vicinity of properties that were identified to have a potential to impact the Study Area were recommended. 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 an additional area of 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.

Information contained in Environmental Database Resources, Inc. (EDR) reports and additional publicly available environmental resources were reviewed for this analysis.

5.14.2 Applicable Regulations and Criteria

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, or CERCLA (40 CFR Parts 300, 311, 355, 370, and 373, often referred to as the "Superfund" program). 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).

Within Rhode Island, RIDEM is the primary governing body for environmental regulations. 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 the Proposed Action. 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.

5.14.3 Existing Conditions

This section summarizes the types of hazardous material contamination or potential contamination that have been identified during previous studies for the Proposed Action.

Corridor Land Use Evaluation (CLUE), 2013

A CLUE was completed to assess the potential for OHM in soils and groundwater within the Study Area at the request of RIDOT. The observations and conclusions of the 2013 CLUE were ultimately updated and summarized in a second CLUE in October 2017, described below.

CLUE, October 2017

Review of historical aerial photographs and Sanborn Fire Insurance Maps indicates that portions of the Study Area were developed prior to 1884 for both residential and commercial uses, as well as the Old Colony & Newport Railroad. Site development in the area continued for over a century until the present-day conditions were reached. The existing ramps for the Pell Bridge were constructed between 1963 and 1968.

As part of the CLUE, a windshield survey was conducted to identify obvious signs of oil and hazardous material storage and other indications of environmental degradation. Some of the notable observations during the site reconnaissance are summarized below.

- There are multiple gasoline and/or automobile service stations adjacent or in close proximity to the Study Area.
- Viking Tours is located at the terminus of Connell Highway. The facility contains several garage bays for storage of buses and trolleys. A large concrete vault/tank is located in a fence enclosure in the parking lot.
- A large aboveground storage tank (AST), possibly around 10,000 gallons, was observed behind the Waste Management Facility building at 65 Halsey Street.
- The City of Newport Department of Public Works (DPW) stores various heavy machinery and construction-related supplies and debris on the property located at the western side

of Halsey Street at the intersection of Admiral Kalbfus Road. The survey noted dumpsters, concrete structures (jersey barriers, etc.), soil piles, brick piles, plows, and sander trucks at the property.

- The Newport Grand property at 150 Admiral Kalbfus Road includes a large building and associated paved parking area. The property, which is listed on the EDR report as "Jai Alai," has an Environmental Land Usage Restriction and is known to be located over a portion of the former Newport City Dump.
- Two plastic aboveground storage tanks, size uncertain, of magnesium chloride ($MgCl_2$) were observed adjacent to the Old Colony and Newport Railroad tracks.
- Two residential properties are located at the corner of JT Connell Highway and Van Zandt Avenue. At least one of the homes appears to have a home heating oil storage tank, based on observations of vent and fill pipes along the side of the house.

The CLUE identified a number of properties that were listed on various databases associated with the release, storage and/or handling of OHM and were located in close proximity to the LOD. Listed databases included State Hazardous Waste Sites (SHWS), Resource Conservation and Recovery Act (RCRA) Generators and Non-Generators, Underground Storage Tanks (USTs), Above Ground Storage Tanks (ASTs), Leaking Underground Storage Tanks (LUSTs) and Solid Waste Facilities and Landfills (SWF/LFs). Based on these findings, the following properties may have the potential to affect or be affected by the Proposed Action:

- 105 Admiral Kalbfus Road – Rolling Green Village Apartment
- 150 Admiral Kalbfus Road – Jai Alai/Newport Grand/Newport City Dump
- 9 Connell Highway – Providence Gas Newport Division/Aardvark Antiques
- 10 Connell Highway - Fred's Texaco/K and K Food Mart
- 88 Connell Highway – Viking Tours of Newport/Haslam Texaco
- 111 Connell Highway – U-Haul International
- 138 JT Connell Highway – Shell Service Station
- 163 JT Connell Highway – Mobil Gasoline Station
- 166 Connell Highway – Barry Pontiac Buick, Inc.
- 199 Connell Highway – R.K. Festival Shoppes/Walmart/Newport Mall/Stop & Shop
- 65 Halsey Street – Newport Transfer Station/Safeway System, Inc./Waste Management of Newport
- 80 Halsey Street – Newport Public Works Garage/City of Newport Igloo
- 143 Third Street – Bayside Village
- 58 Van Zandt Avenue – B & C Auto/Bridge Citgo

Based on the findings of the CLUE, subsurface investigations, including drilling, soil sampling, monitoring well installation and groundwater sampling, were conducted to understand and characterize the subsurface conditions throughout the Study Area.

Limited Site Investigation (LSI), November and December 2017

The LSI included the advancement of forty-four (44) soil borings, sixteen (16) of which were constructed as groundwater monitoring wells, in November and December of 2017. The LSI was completed in areas expected to require excavation for Project construction based on the preferred layout at the time the investigation was completed. Soil and groundwater from the borings and wells were analyzed and compared to applicable RIDEM regulatory criteria set forth in the Remediation Regulations. Overall findings regarding soil and groundwater sampling and analysis have been summarized below.

Soil Data

- Total petroleum hydrocarbons (TPH) were detected in all but six of the soil borings. Two of the borings exceeded applicable RIDEM Residential Direct Exposure Criteria (RDEC). The highest TPH value, 31,000 mg/kg, was present in boring B-16 from 5 to 7.5 feet below grade, and was the only exceedance of the RIDEM Industrial/Commercial Direct Exposure Criteria (I/CDEC), which also exceeded the Upper Concentration Limit (UCL). All other detections of TPH were below the RIDEM criteria.
- PCBs were analyzed in three of the 44 borings. PCBs were detected in two of the three samples but did not exceed applicable RIDEM criteria.

Metals

- Arsenic was detected above RIDEM RDEC and the I/CDEC in 24 of the 44 borings. The highest concentration of arsenic in soil, 29 mg/kg, was detected at boring B-22 from 5 to 7 feet below grade.
- Lead was detected above applicable RIDEM RDEC and/or I/CDEC in 16 of the 44 borings. The highest concentration of lead in soil, 3,600 mg/kg, was detected at boring B-26 from 7.5 to 10 feet below grade.
- Copper was detected in every soil sample; however, only boring B-16, in which copper was reported at 9,700 mg/kg from 0 to 2.5 feet below grade, exceeded the RIDEM RDEC.
- Antimony was detected in several borings but was only detected above the RIDEM RDEC at boring B-26 from 7.5 to 10 feet below grade. All other detections were below applicable RIDEM standards.
- Thallium was detected in several borings but was only detected above RIDEM RDEC at boring B-1 from 7.5 to 10 feet below grade. All other detections were below applicable RIDEM standards.
- Various other metals were detected above the laboratory detection limits throughout the Study Area; however, all these detections were below applicable RIDEM criteria.

Volatile Organic Compounds (VOCs)

- Various VOC constituents were detected in 24 of the 44 soil borings. It should be noted, however, that in nine of those borings, the only detections were for acetone and/or methylene chloride. Both constituents are common laboratory contaminants, as they are used for various cleaning processes.

- Naphthalene was the only constituent that was detected above RIDEM RDEC criteria. Naphthalene was detected in boring B-26 from 7.5 to 10 feet below grade at a concentration of 120 mg/kg, exceeding the RIDEM RDEC.

Semi-Volatile Organic Compounds (SVOCs) and Polycyclic Aromatic Hydrocarbons (PAHs)

- Various SVOC constituents were detected in 21 of the 44 soil borings.
- Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene were detected in several of the borings at concentrations above the RIDEM RDEC.
- Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected in several of the borings at concentrations above the RIDEM I/CDEC.

Groundwater Data

- A variety of VOC constituents were detected in monitoring wells MW-3 and MW-15; however, all of the detections were below applicable RIDEM GB Groundwater Objectives.
- Other than MW-3 and MW-15, several VOC constituents were also detected in seven of the 14 remaining monitoring wells. All these concentrations were at levels below applicable RIDEM GB Groundwater Objectives.
- Although no groundwater concentrations were reported above the applicable Remediation Regulation objectives, some compounds were detected at levels that would likely exceed RIPDES discharge limitations, thereby requiring a Remediation General Permit should dewatering and a point source discharge to a surface water be proposed. Additional testing would be necessary to address RIPDES permit applicability and groundwater treatment requirements. Alternatively, impacted groundwater, if removed from the subsurface during dewatering activities to facilitate construction, could be containerized, characterized, and transported off-site to a licensed disposal facility.

CLUE, October 2018

A CLUE was completed in October 2018 that included an additional portion of the Study Area, based on some changes in the project layout. This area includes the entrance to the R.K. Center shopping plaza at 199 JT Connell Highway, proceeding north until the road becomes Coddington Highway and ultimately ending at the intersection of West Main Road and Coddington Highway in Middletown. Land uses in this area includes, but are not necessarily limited to, commercial properties (restaurants, shopping plazas, a brewery, a storage facility, etc.), residential properties, the Community College of Rhode Island's Newport Campus, the Newport Water Pollution Control Plant, and Naval Station Newport.

The CLUE concluded that the following properties were listed on various databases associated with the release, storage and/or handling of OHM and were located in close proximity to the LOD. Listed databases included the Superfund Enterprise Management System (SEMS) Comprehensive Environmental Response, Compensation and Liability

Information System (CERCLIS), RCRA Generators and Non-Generators, SHWS, UST, AST and LUST. Based on these findings, the following properties may have the potential to affect or be affected by the Proposed Action:

- 10 Coddington Highway – Getty Service Station #68002 (a/k/a Middletown Getty Inc.)
- Farewell Avenue & Conrail Tracks – Newport Naval Educational and Training Center (and DOD/NETC/Coddington Rubble Fill)
- 350 Coddington Highway (RIPTA Facility garage & pumping station)
- 1 John H Chafee Boulevard – Community College of Rhode Island – Newport Campus
- 312 JT Connell Highway – Newport Biodiesel Inc. (a/k/a Moriarty's LLC)
- 286 JT Connell Highway – Bell Atlantic (Nynex; Verizon New England/Maintenance Facility; National Grid Property – Newport)
- 250 JT Connell Highway – City of Newport Water Pollution Control Plant (a/k/a City of Newport WWTF; United Water)

5.15 Climate Change/Resiliency

Provided below is a discussion on climate change, sea level rise, and resiliency in the Study Area. Please refer to Appendix B15, Climate Technical Memorandum, for additional information.

5.15.1 Study Area and Methodology

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; and the Newport Secondary Track Rail Line.

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
- National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information, Rhode Island State Summary
- Vulnerability of Transportation Assets to Sea Level Rise (Technical Paper 164, Rhode Island Division of Statewide Planning)
- Vulnerability of Municipal Transportation Assets to Sea Level Rise and Storm Surge (Technical Paper 167, Rhode Island Division of Statewide Planning)

- Advanced STORMTOOLS: Online mapping program for estimating coastal inundation in Rhode Island under various scenarios
- City of Newport's Natural Hazard Mitigation Plan, 2016 Update
- City of Newport's Comprehensive Land Use Plan, 2017

5.15.2 Applicable Regulations and Criteria

The Rhode Island CRMC recently began requiring sea level rise analyses 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.

In 2014, FHWA Order 5520 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.

5.15.3 Existing Conditions

Sea Level Rise

Sea level rise is caused by thermal expansion of sea water and the addition of fresh water from melted land ice, both impacted by changing climate conditions. Rising sea level is a problem for coastal communities like Newport, as it increases the risk for flooding and the landward extent of storm surge during hurricanes and Nor'easters.

Although the Study Area has a general elevation of less than 20 feet (NAVD88), the coastal topography along Narragansett Bay restricts the landward impact of sea level rise. With a rise of three feet, impacts would be limited to the immediate coastal area. An exception occurs where an unnamed stream enters the bay just west of the 3rd Street Extension. The STORMTOOLS online mapping tool estimates that three feet of seal level rise would inundate the area along the stream at the end of Rolling Green Road.

According to the analysis done by the Rhode Island Department of Administration, State Highway 138 East/West and the on-ramp to Route 138 West are not vulnerable to three feet of sea level rise. The Newport Secondary Track in Newport would also not be directly impacted by up to three feet of sea level rise.

Storm Surge

The impacts of storm surge from a 1 percent annual chance storm (100-year event) would likely extend inland into the entire Study Area even without any sea level rise. However, it is worth noting that the project is located outside of the Limit of Moderate Wave Action (LiMWA) and damage from wave action is predicted to be negligible.

The STORMTOOLS online mapper visually displays the extent and elevation of the 100-year storm surge with three feet of sea level rise. Using this mapping data, the flood depth during a major storm surge event at the Admiral Kalbfus/JT Connell Highway rotary is estimated to be 7.59 feet above current ground elevation. The flood depth at the end of the local business access road is estimated to be 3.09 feet above ground elevation. It is anticipated that under three feet of sea level rise, storm surge would flood at-grade access to the elevated road structures.

Extreme Temperatures

Between 1895 and 2011, air temperatures in New England increased by almost two degrees Fahrenheit. By 2050, it is anticipated that Rhode Island cities such as Newport will experience 40 days of extreme heat a year, which is four times the current average of 10 days. Longer and hotter heat waves may lead to more pavement cracking or road buckling.

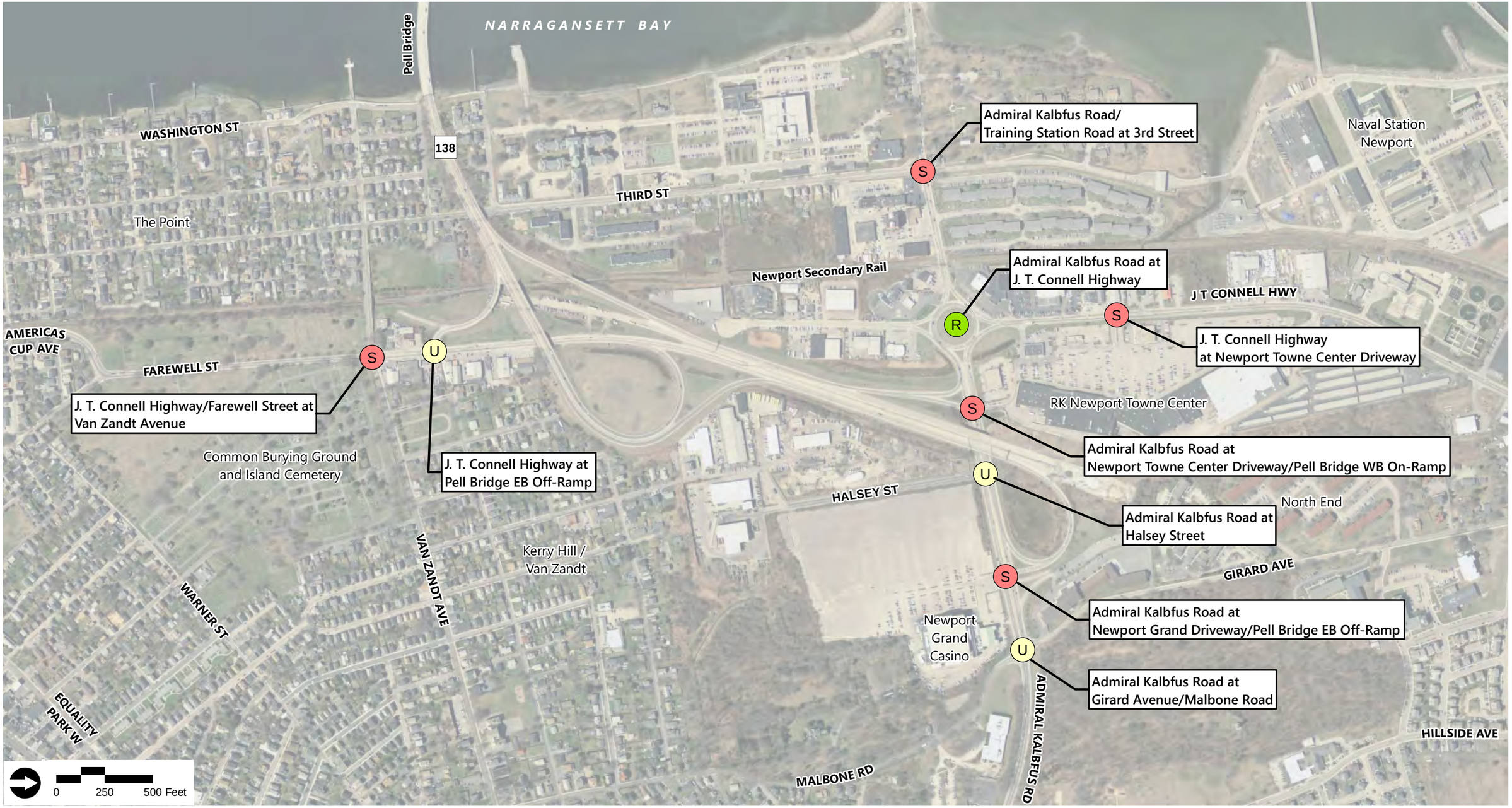
Warmer Sea Surface Temperatures

The average global sea temperature has generally risen from 1880 to 2015. During the past three decades, sea surface temperatures have been consistently higher than at any other time during the recorded period. The average ocean surface temperature is projected to rise through the early 21st century based on a range of greenhouse gas emission scenarios.

Increased Rainfall

As climate patterns change, Rhode Island is predicted to see an increase in annual precipitation and a greater number of extreme precipitation events. This could lead to more frequent washouts of unpaved surfaces and rutting of paved surfaces.

\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\FIG 5-1 Study Area Intersections.mxd



Aerial Source: RIGIS

Intersection Control Type

- R Roundabout
- S Signalized
- U Unsignalized

Figure 5-1

Study Area Intersections

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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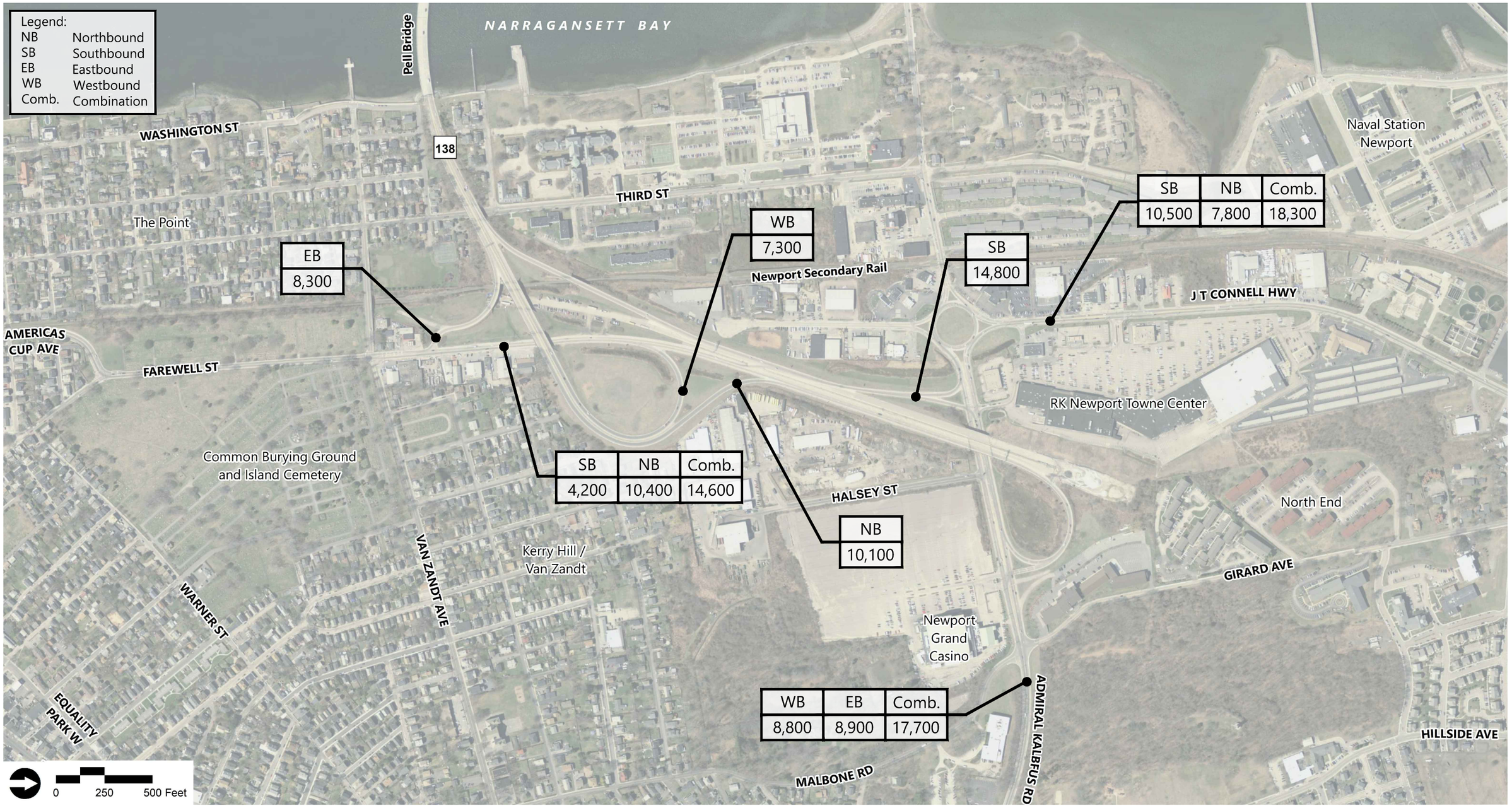
\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\FIG 5-2 Existing ADT.dwg



Aerial Source: RIGIS
Data Sources: Collected by Precision Data Industries LLC, compiled by VHB.

Note:
All volumes shown represent vehicles per day.

Figure 5-2
Existing Average Daily Traffic

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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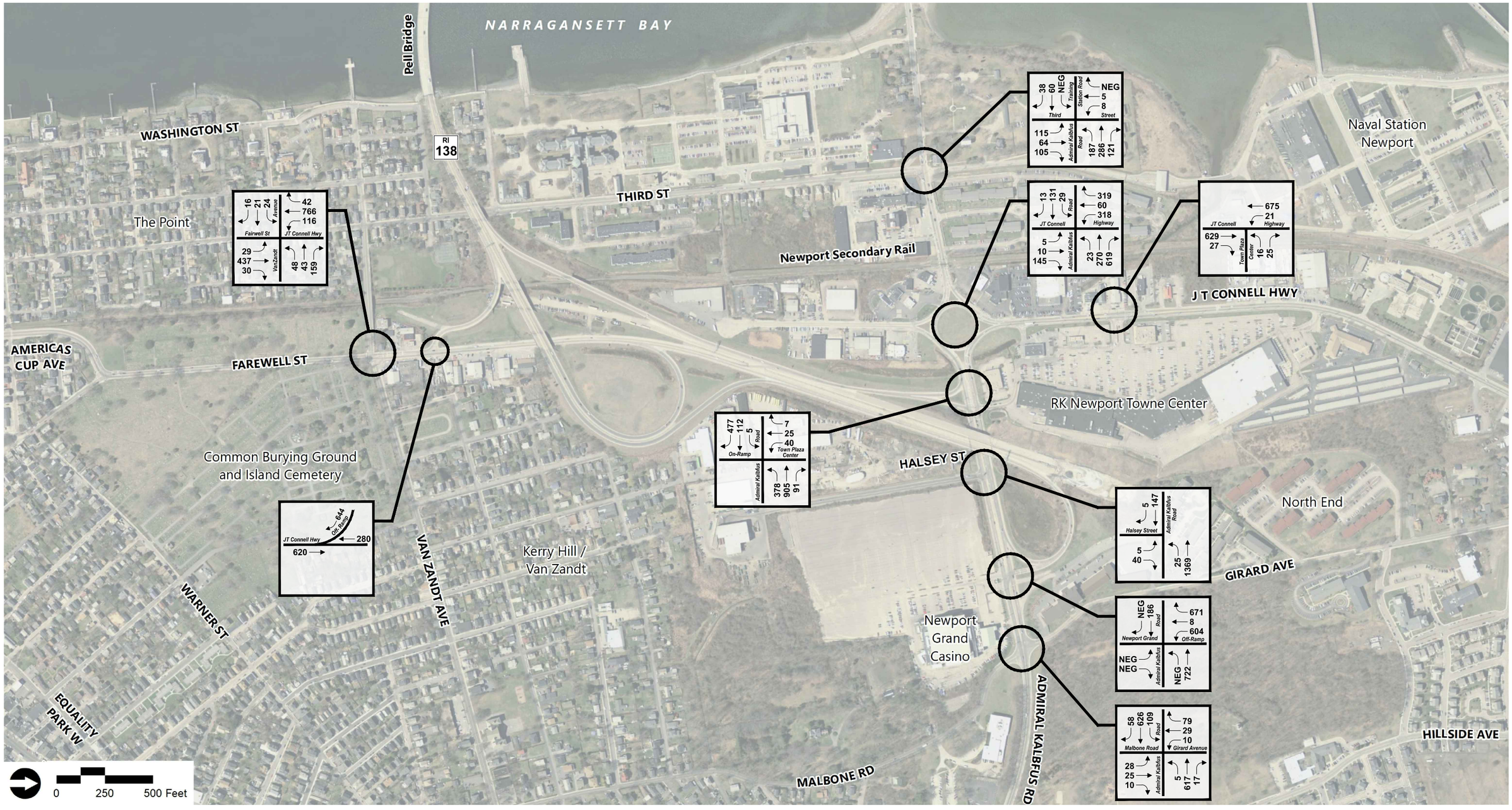

Aerial Source: RIGIS
Data Source: Collected by Precision Data Industries LLC, compiled by VHB

Figure 5-3

Existing Conditions
Weekday Morning Peak Hour Traffic Volumes

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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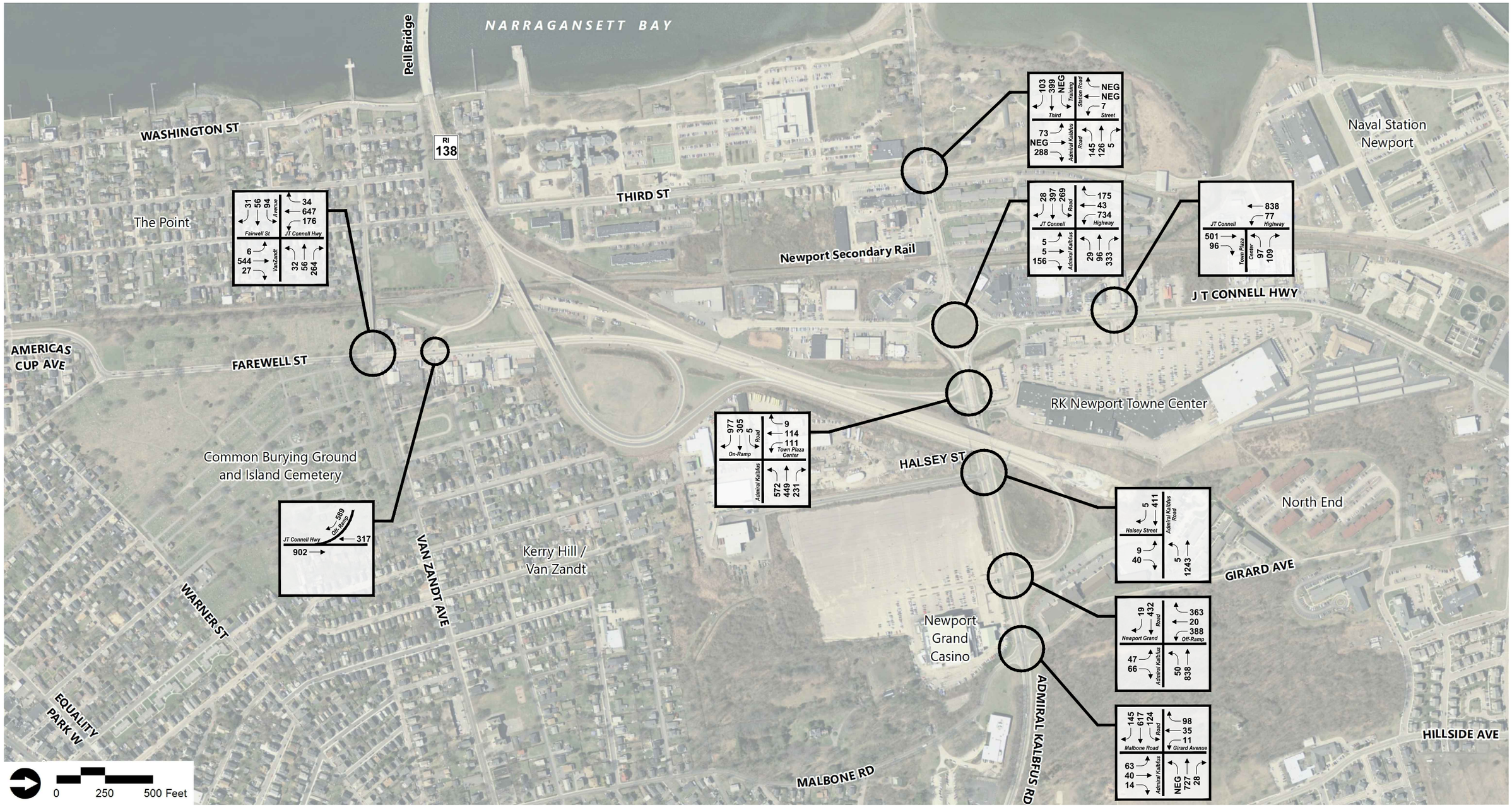

Aerial Source: RIGIS
Data Source: Collected by Precision Data Industries LLC, compiled by VHB

Figure 5-4

Existing Conditions
Weekday Evening Peak Hour Traffic Volumes

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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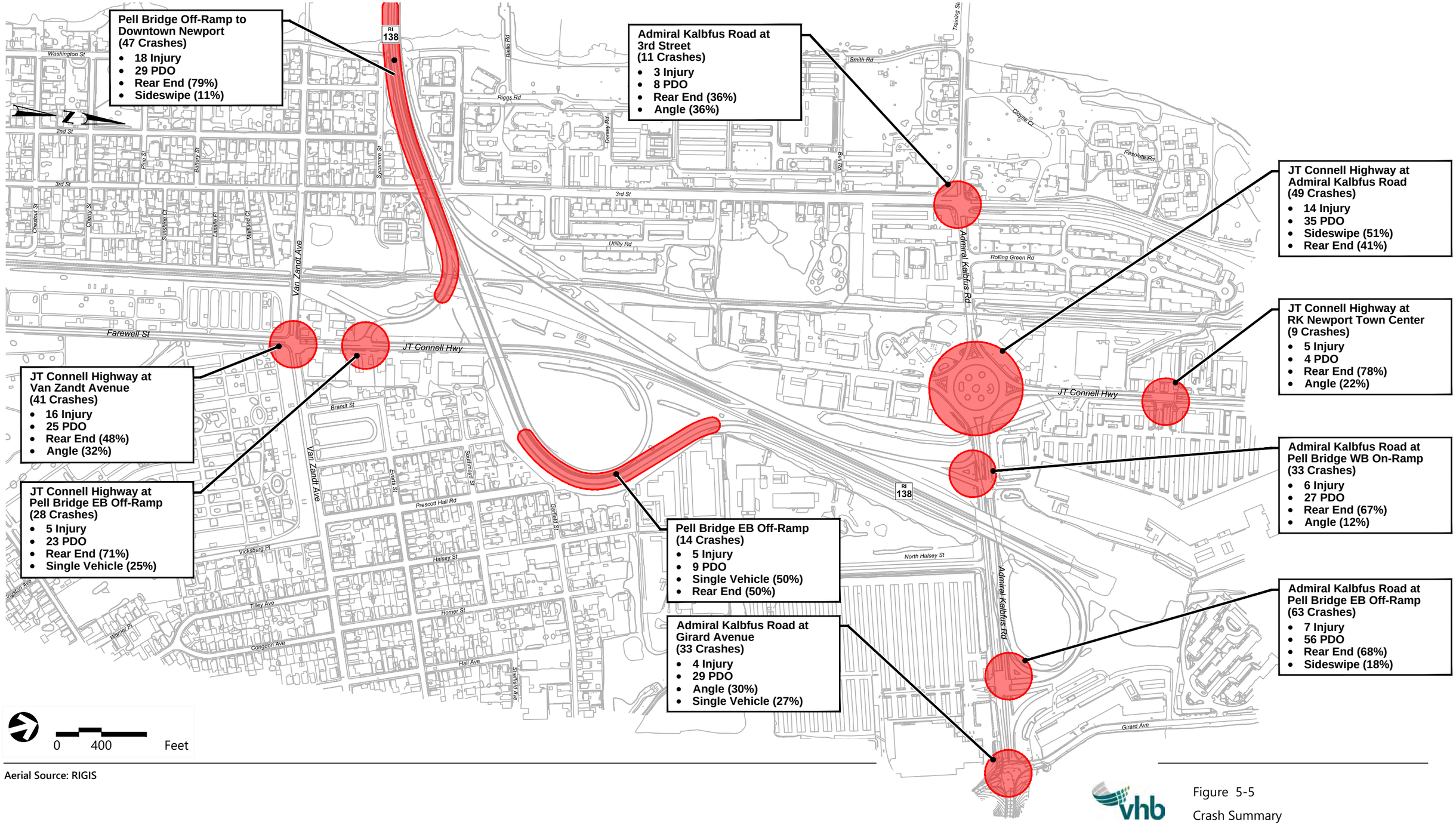

Aerial Source: RIGIS

Figure 5-5

Crash Summary
Existing Conditions

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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Aerial Source: RIGIS
Source: VISSIM 8 Node Evaluation. Compiled VHB Based on Average of 10 VISSIM Model Runs.

Intersection Operations

- Level of Service A/B
- Level of Service C/D
- Level of Service E/F

Existing Morning Average Speeds

- 0-10 MPH
- 11-15 MPH
- 16-25 MPH
- >25 MPH

Figure 5-6

Network Operations
Existing Conditions
Weekday Morning

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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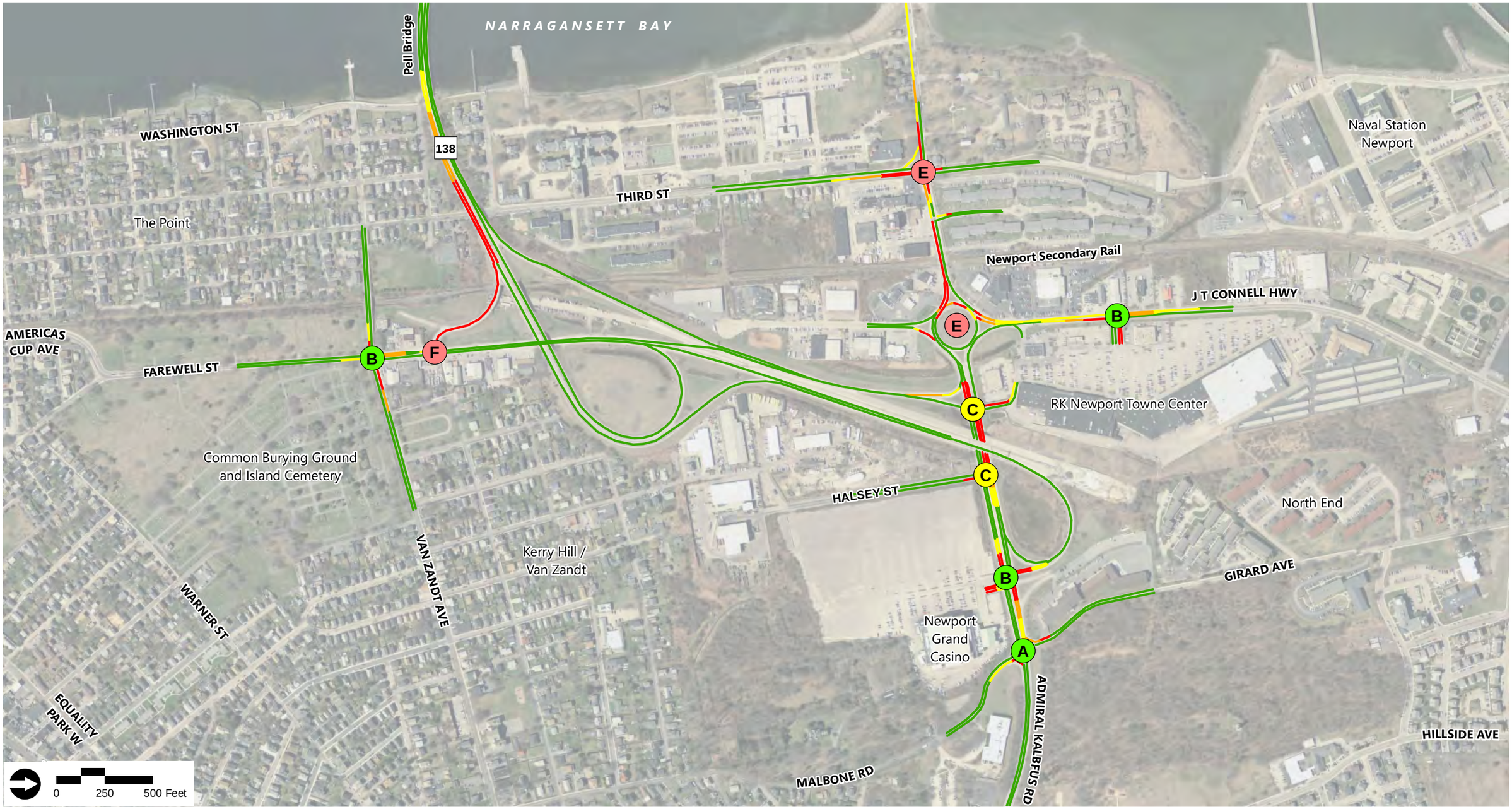

Aerial Source: RIGIS
Source: VISSIM 8 Node Evaluation. Compiled VHB Based on Average of 10 VISSIM Model Runs.

Intersection Operations

- Level of Service A/B
- Level of Service C/D
- Level of Service E/F

Existing Evening Average Speeds

- 0-10 MPH
- 11-15 MPH
- 16-25 MPH
- > 25 MPH

Figure 5-7

Network Operations
Existing Conditions
Weekday Evening

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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6

Environmental Consequences

This section describes the direct, indirect, and cumulative impacts of the Proposed Action on the affected environment using the methodologies discussed in Chapter 5. The impacts of the Proposed Action were used to then develop the potential measures that could be taken to mitigate these impacts, which are described in Chapter 7.

6.1 Transportation Network

6.1.1 Direct Impacts

No Action

This section establishes the 2040 "No Action" condition to provide a 2040 baseline condition against which potential impacts of the Proposed Action can be evaluated. Projected future traffic volumes without the Proposed Action were developed by applying an annual growth rate to the existing volumes to account for background growth in traffic, population, and planned development projects.

Historic data suggests a growth rate of 0.44 percent per year on roadways within the Study Area, and growth on the Pell Bridge of 0.55 percent per year (approximately 0.5 percent overall). These annual growth rates take into account some development in the area, in particular the North End Master Plan and the Innovation Hub. While planning for this project, the City of Newport has refined the development program for the Innovation Hub and identified potential parcels that would be created by the reconstruction of the Proposed Action and redevelopment of the Newport Grand. Under the No Action Alternative, these development opportunities would not come to fruition.

An average annual growth rate of 0.25 percent was applied to existing volumes to project the 2040 No Action traffic volumes. This growth rate represents a rate about half of the rate suggested by historical data. A rate of 0.25 percent annually until the year 2040 is a very conservative estimate of population and ambient traffic growth. While there could be some years of strong growth, it is conservative to assume that growth of 0.25 percent annually can be sustained over the next 20 years.

The 2040 No Action traffic volumes are illustrated in Figure 6-1 and Figure 6-2. More detailed discussion of the additional traffic generated by the Innovation Hub and the redevelopment of the Newport Grand is provided under the 2040 Proposed Action discussion.

Traffic Operations Analysis

As described in Chapter 5, the calibrated VISSIM traffic simulation model was used as a base to test and evaluate future transportation conditions by adjusting roadway geometry, where needed, and traffic conditions. Figures 6-3 and 6-4 show the morning and evening peak hour traffic operations results.

Intersection Operations Summary

Under the No Action condition, traffic operations will continue to deteriorate at critical locations. As shown in Table 6-1, the Pell Bridge eastbound off-ramp will continue to operate at LOS F, with queues extending further on the Pell Bridge during both the morning and evening peak periods.

Under the No Action condition, travel time and delays are expected to increase, and the average speed is expected to decrease. As illustrated in Figures 6-3 and 6-4, the average speed on the Pell Bridge eastbound approach, JT Connell Highway, and Admiral Kalbfus Road would all decrease due to growing traffic volumes.

Proposed Action

Trip Generation

As described in Chapter 3, the Proposed Action would involve the reconstruction of bridge ramps, construction of new roadway, intersection improvements to reconfigure the Pell Bridge approach roads and ramps to eliminate/reduce the existing queuing onto Pell Bridge, and improvements to traffic circulation and connections through the project area while providing land area for redevelopment. The new roadway connections and intersections would provide alternate connections and access. However, due to limited regional north-south and east-west connections, the traffic pattern changes would alter only local movements and access within the Study Area. The Proposed Action is not projected to change regional travel patterns.

Table 6-1 2040 No Action Weekday Conditions

Intersection Control Type	Intersection	Peak Hour	Existing Conditions			2040 No Action		
			Delay[1]	LOS[2]	LOS E/F Movements	Delay[1]	LOS[2]	LOS E/F Movements
Stop Controlled	J. T. Connell Highway at Pell Bridge EB off-ramp	AM	> 100	F	EB L/R	> 100	F	EB L/R
		PM	71	F	EB L/R	> 100	F	EB L/R
Signal Controlled	J. T. Connell Highway/Farewell Street at Van Zandt Avenue	AM	14	B		16	B	
		PM	14	B		16	B	
Signal Controlled	J. T. Connell Highway at Newport Towne Center Main Drive	AM	19	B		22	C	
		PM	19	B		28	C	
Signal Controlled	Admiral Kalbfus Road/Training Station Road at 3rd Street	AM	11	B		14	B	
		PM	75	E	EB L/T/R and NB R	> 100	F	EB L/T/R and NB R
Roundabout/ Rotary[3]	Admiral Kalbfus Road at J. T. Connell Highway	AM	5	A		7	A	
		PM	47	E	EB L/T/R	62	F	EB L/T/R WB L/T/R SB L/T/R
Signal Controlled	Admiral Kalbfus Road at Newport Towne Center South Drive/on-ramp	AM	11	B		16	B	
		PM	22	C		28	C	WB L
Stop Controlled	Admiral Kalbfus Road at Halsey Street	AM	3	A		5	A	
		PM	18	C	NB L/R	42	E	WB L/T NB L/R
Signal Controlled	Admiral Kalbfus Rd at Newport Grand Drive/off-ramp	AM	18	B		19	B	
		PM	18	B		26	C	
Stop Controlled	Admiral Kalbfus Road at Girard Avenue/Malbone Road	AM	3	A		3	A	
		PM	8	A	NB L/T/R	26	D	WB L/T NB L/T/R

Source: VISSIM 8 Node Evaluation. Compiled by VHB based on the average of 10 VISSIM model runs.

1 Delay = Vehicle delay expressed in seconds per vehicle

2 LOS = Estimated Level of service

3 LOS criteria for roundabout/rotary is the same of LOS criteria for unsignalized intersection

To estimate the traffic impacts of the Proposed Action, it is necessary to determine the traffic volumes that may be generated due to new development that would occur on the parcels no longer needed for road right-of-way. The potential traffic generated by this development would depend on numerous factors such as the size of the future parcels, the building program, access, and the economic climate (which will dictate the redevelopment timeline). As a result, traffic from future redevelopment of these parcels was not evaluated in the 2040 traffic analysis. Due to the uncertainty in the development timeline and the preliminary nature of the building program, it is assumed that only a 300-space Park and Ride and the planned redevelopment of the Newport Grand site with a 250-room hotel and 150,000 square feet of retail space, would occur in the same time frame as the Proposed Action.

Using ITE Trip Generation regression equations/rates for each land use, the morning and evening peak hour vehicle trips for the redeveloped areas were estimated and are summarized in Table 6-2.

Table 6-2 Trip Generation Summary

Parcel	Acres	Land Use	Gross Square Footage	AM Peak Hour			PM Peak Hour		
				Total	Enter	Exit	Total	Enter	Exit
D	5	Park & Ride (LUC 090)	***300 spaces***	214	169	45	188	47	141
E	3	Open Space	-						
Total	**41**		**733,000**	214	169	45	188	47	141
Newport Grand									
Newport Grand		Hotel (LUC 310)	***250 rooms***	120	71	49	161	82	79
		Retail (LUC 820)	150,000	227	141	86	734	352	382
		Total	**150,000**	**347**	**212**	**135**	**895**	**434**	**461**

Source: ITE Trip Generation Manual

Not all the traffic generated by the redevelopment would be new traffic on Study Area roadways. A portion of the vehicle trips generated would be drawn from the existing traffic stream passing through the area in the form of pass-by trips. Pass-by trips are vehicle trips already in the network that would visit destinations in the redeveloped areas en route to another destination. These trips are not additional trips added to the network, but rather existing trips which are reflected in the Proposed Action traffic volumes. In order to present a conservative analysis, 40 percent of the traffic generated by the new commercial/retail uses was assumed to be pass-by trips.

The traffic generated by the redevelopment is assigned to the Proposed Action Condition roadway network based origin-destination data, field operations, and local knowledge of the traffic patterns in the area.

Traffic Volumes

The 2040 Proposed Action traffic volumes were determined by adding new and pass-by trips to the No Action 2040 traffic volumes. This includes the redistributed 2040 traffic volumes and the traffic volumes generated by the proposed Park and Ride and the redevelopment of the Newport Grand. A new traffic signal on JT Connell Highway located just north of the Pell Bridge approach ramp will be installed to provide access to the Park & Ride. A new traffic signal will also be installed on Halsey Street to provide access to the Newport Grand property and an easement to the waste management facility. The Proposed Action morning and evening peak hour traffic volumes are illustrated in Figure 6-5 and Figure 6-6, respectively.

Traffic Operations Analysis

As described in Chapter 5, the calibrated VISSIM traffic simulation model was used as a base to test and evaluate future transportation conditions. The model was adjusted to evaluate the proposed roadway improvements and future traffic conditions. The VISSIM model was

updated to reflect the Proposed Action roadway network, the projected changes in traffic flow resulting from the redistribution of traffic, and the projected traffic volumes generated by the redevelopment. The revised VISSIM model was used to project 2040 conditions during the weekday morning and evening peak hour and the results of the operational analysis.

The results of the 2040 Proposed Action conditions are summarized in Table 6-3 and depicted in Figures 6-7 and 6-8. With the proposed improvements, the existing queuing on the ramp to Downtown Newport would be eliminated and/or shifted to the new ramp connector. Delays and queues at JT Connell Highway at Van Zandt Avenue would continue to increase. Degraded operations at this location are attributed to increased traffic flow along JT Connell Highway (improved throughput), new traffic generated by the Newport Grand redevelopment and Park and Ride, and a lack of capacity improvements at the intersection with Van Zandt Avenue.

By improving the operations along JT Connell Highway and Admiral Kalbfus Road, the delays and queue at the intersections along these corridors would decrease. All Study Area intersections are expected to operate at an overall LOS D or better.

The proposed reconstruction of the existing rotary at JT Connell Highway at Admiral Kalbfus Road into a modern roundabout and the new roadway network system would introduce more traffic northbound on JT Connell Highway approaching the intersection. The reconstructed roundabout would also introduce signalized pedestrian/bicyclist crossings of the northern and western legs of the roundabout as part of the proposed shared-use path.

The southern Newport Towne Center driveway is currently signalized with Admiral Kalbfus Road. Due to the proximity to the roundabout, this intersection is proposed to be closed and the access will be relocated to serve as the northern leg of the Admiral Kalbfus Road intersection with Halsey Street.

Predictive Crash Analysis

The Highway Safety Manual (HSM) predictive methodology was used to compare the No Action Alternative with the Proposed Action using projected traffic volumes for 2040. The HSM predictive methodology uses Safety Performance Functions (SPFs) and Crash Modification Factors (CMFs) to predict crash frequency at a roadway facility as a function of traffic, geometrics, and roadside characteristics. A review of the results shows that the Proposed Action is expected to reduce fatal and injury crashes by 36 percent compared to the No Action alternative. Property damage-only crashes were predicted to be reduced by 4 percent between the Proposed Action and No Action alternatives.

Table 6-3 2040 Proposed Action Weekday Conditions

Intersection Control Type	Intersection	Peak Hour	2040 No Action			2040 Proposed Action		
			Delay[1]	LOS[2]	LOS E/F Movements	Delay[1]	LOS[2]	LOS E/F Movements
Stop Controlled	J. T. Connell Highway at Pell Bridge EB off-ramp	AM	**> 100**	**F**	**EB L/R**	**Remove Existing Off-Ramp**		
		PM	**> 100**	**F**	**EB L/R**			
Signal Controlled	J. T. Connell Highway/ Farewell Street at Van Zandt Avenue	AM	16	B		26	C	
		PM	16	B		35	D	**WB L/T/R**
Signal Controlled	J. T. Connell Highway at Newport Towne Center Main Drive	AM	22	C		3	A	
		PM	28	C		9	A	
Signal Controlled	Admiral Kalbfus Road/Training Station Road at 3rd Street	AM	14	B		7	A	
		PM	**> 100**	**F**	**EB L/T/R and NB R**	4	A	
Roundabout/ Rotary[3]	Admiral Kalbfus Road at J. T. Connell Highway	AM	7	A		5	A	
		PM	**62**	**F**	**EB L/T/R WB L/T/R SB L/T/R**	**15**	**B**	
Signal Controlled	Admiral Kalbfus Road at Newport Towne Center South Drive/on-ramp	AM	16	B		**Remove Signal and Convert to Right-in/Right-out**		
		PM	28	C	**WB L**			
Stop Controlled	Admiral Kalbfus Road at Halsey Street/Newport Towne Center South Drive	AM	5	A		16	B[4]	
		PM	**42**	**E**	**WB L/T NB L/R**	24	B[4]	**SB L/T/R**
Signal Controlled	Admiral Kalbfus Road at Newport Grand Drive/off-ramp	AM	19	B		4	A[5]	
		PM	26	C		18	B[5]	
Stop Controlled	Admiral Kalbfus Road at Girard Avenue/Malbone Road	AM	3	A		11	B[4]	
		PM	26	D	**WB L/T NB L/T/R**	13	B[4]	
Signal Controlled	Halsey Street at Newport Grand / Parcel B	AM	**N/A**			4	A	
		PM				7	A	
Signal Controlled	Halsey Street at New Ramp Connector	AM	**N/A**			16	B	
		PM				11	B	
Signal Controlled	JT Connell Highway at New Ramp Connector	AM	**N/A**			29	C	
		PM				25	C	
Signal Controlled	JT Connell Highway at Park & Ride / Parcel C-D	AM	**N/A**			3	A	
		PM				5	A	
Signal Controlled	Farewell Street at America's Cup Avenue	AM				6	A	
		PM				7	A	

Source: VISSIM 8 Node Evaluation. Compiled by VHB based on the average of 10 VISSIM model runs.

1 Delay = Vehicle delay expressed in seconds per vehicle

2 LOS = Estimated level of service

3 LOS criteria for roundabout/rotary are the same as LOS criteria for unsignalized intersection

4 A new traffic signal would be installed under the Proposed Action conditions

5 The off-ramp from Pell Bridge would be removed under the Proposed Action conditions

6.1.2 Indirect Impacts

Operation of the Proposed Action is expected to result in indirect impacts on traffic in the Study Area. With the completion of the improvements, a significant amount of land would be opened for redevelopment where the existing roadway infrastructure is today. This redevelopment would generate additional trips, which would increase traffic volumes and congestion on Study Area roadways. Any redevelopment of this land would be separate from the Proposed Action and later in time; therefore, these impacts would be indirect and were not modeled in the traffic analysis for this EA.

When the City of Newport's Innovation Hub redevelopment building program and timeline have been determined, additional analysis will need to be performed to determine how the additional trips generated by the development would affect the operational performance of the Proposed Action. Based on the results of the capacity analysis presented above, it is expected that additional roadway and intersection improvements may be required to support the full buildout of the redevelopment parcels. Depending on the size of the developable parcels, the building program, and access, the additional improvements needed may include widening of JT Connell Highway and/or extending Halsey Street north to connect with JT Connell Highway/Coddington Road.

6.1.3 Cumulative Impacts

Past human activities that have demonstrably affected the Study Area include the construction of the Pell Bridge and Route 138. Prior to the construction of Route 138, the area was farmland with little infrastructure. After the construction of Route 138, the area around the interchange began to develop with commercial and residential development, as well as public facilities such as the City of Newport's Department of Public Works on Halsey Street.

The Proposed Action would improve traffic flow, travel time, and safety compared to No Action, resulting in a betterment. Therefore, it would not have the potential to add to or worsen impacts associated with past, present, or foreseeable future actions. Based on this evaluation, the Proposed Action would have no adverse cumulative transportation impacts to the Study Area.

6.2 Land Use

6.2.1 Direct Impacts

No Action

Under the No Action Alternative, the Project would not occur, and the land currently occupied by the existing ramps would not be made available for redevelopment in support of the City's economic goals. Changes to existing land uses and overall land use patterns within the Study Area are likely to be limited due to physical constraints on development, including the Pell Bridge ramp right-of-way and surrounding existing land uses that have

various ownership (public and private) and include several conservation restrictions (i.e., permanently protected open spaces).

Proposed Action

The Proposed Action would alter the topography of the Study Area, as it would reconfigure built structures and include some filling, grading, grubbing (soil disturbance), and vegetation clearing that would commence during the construction phase and persist through operations and maintenance. These impacts are considered minor and neither beneficial or adverse, as most of the existing topography is, and will continue to be, previously disturbed urban land.

The Proposed Action would have a beneficial impact by improving neighborhood connectivity through the creation of new north-south linkages. These linkages would better connect the City's North End neighborhoods to Downtown by way of a reconnected JT Connell Highway and an improved Newport Secondary Rail Line that includes a shuttle with connected park and ride and walking/bike trail. Neighborhood connectivity would also be supported through safety enhancements associated with the resurfacing of JT Connell Highway/Coddington Highway to West Main Road.

Roadway reconfigurations would require acquisition of several privately- and publicly-held properties. These acquisitions, which may be complete or partial depending on final concept design, include up to three residential properties along Halsey Street between Garfield Street and Columbus Way; up to two commercial properties, including an unoccupied commercial building at 60 Halsey Street and the Waste Management – Newport Hauling & Transfer Station at 65 Halsey Street; and the municipally-owned parcel at 70-90 Halsey Street that houses facilities associated with the City's Water Department and Clean City Program. These acquisitions, totaling approximately 220,000 square feet, would result in the conversion of the existing land uses to transportation use, as well as requiring the relocation of residential inhabitants, commercial occupants, and public services. Such conversions represent a moderate adverse impact but would not significantly alter the overall land use patterns in the Study Area or in the City at large. A summary of the proposed property acquisitions for all alternatives, including the Proposed Action, is included in Appendix B-17.

During construction of the Proposed Action, temporary impacts to land use are possible from noise generation, disruptions to traffic patterns, and air quality impacts related to vehicular and equipment emissions and inhalable dust. Construction activities would increase noise levels at land uses adjacent to the Study Area, which could affect receptors such as residences, parks, and schools. However, noise increases attributable to the Proposed Action would be temporary and are considered minor; construction activities would conform to Chapter 8.12 – Noise Abatement of the City of Newport Codified Ordinance, which includes restrictions for the purposes of protecting public health and welfare and quality of life. These restrictions include maximum permissible sounds levels by time of day for receiving land uses based on the sensitivity of those land uses to increased noise and have quantitative limits for construction that would occur at night and on weekends.

Project construction may result in the temporary closure and/or detouring of roadways within the Study Area; driveway access may also be impeded during construction. These impacts may limit the use of properties within the Study Area by creating an inconvenience for property owners and disrupting commercial operations. These temporary impacts would be minor in intensity and RIDOT will work with property owners and the City of Newport to develop a traffic management plan to minimize land use impacts during construction.

Construction activities could also impact the function of land uses within the Study Area because of increased air emissions from construction vehicle and equipment usage, as well as from ground-disturbing activities. Such impacts, however, would be temporary, and their intensity is considered minor given planned mitigation measures including effective control measures to limit airborne particulate matter and dust during construction, wetting of exposed soil, covering of trucks and other dust sources, and other best practices as practicable.

6.2.2 Indirect Impacts

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 (which would total approximately 20 to 30 acres, depending on final design and excluding an appropriate amount of property to be reserved for the proposed project and its future maintenance) as surplus property. This would be a beneficial indirect impact, freeing up the land for uses consistent with the City's land use planning and zoning and its economic development goals. Future development of this land would be independent of the Proposed Action and would occur after its completion; the locations, sizes, and uses of new development would be based on then-current planning and zoning, property owner objectives, and market forces at the time of development.

For any surplus property not reserved for the proposed project or its future maintenance, RIDOT will dispose of this property in accordance with the approved procedures governing such disposals (Title 37, Chapter 6 of the General Laws); for land that was acquired with Federal funds, any land disposition will be in accordance with 23 CFR 710.403 and 710.405. Unless otherwise provided for in the aforementioned regulations/laws, land dispositions will be made in exchange for the payment of Fair Market Value at the time of sale.

6.2.3 Cumulative Impacts

Based on a review of aerial imagery, land use patterns within the Study Area have not changed significantly since at least 1995. Though the Proposed Action itself would not directly change land use patterns, except for several property acquisitions, it is anticipated that large-scale redevelopment of surplus property remaining after completion of the Proposed Action would cause a substantial change in land use patterns in the Study Area. This change would be consistent with local planning and zoning, and therefore is not considered adverse. No other present or reasonably foreseeable future actions have been identified that would result in adverse cumulative impacts to land use within the Study Area.

6.3 Farmland/Soils

6.3.1 Direct Impacts

No Action

Under the No Action Alternative, the Proposed Action would not be constructed. Extant prime farmlands and lands of statewide importance within the Study Area would continue to exist as under current conditions; development of these lands is unlikely given that they are constrained by existing transportation right-of-way and existing land uses. If these lands became available for new development, such development would be expected to conform to the City's planning and zoning and is not likely to include commercial agricultural operations.

Proposed Action

Although prime farmlands and farmlands of statewide importance are present within the Study Area, the Proposed Action is not expected to result in an adverse impact to these resources as defined by the FPPA. These lands are already in or committed to urban development and are within the Providence, RI – MA Urbanized Area defined by the U.S. Census Bureau. Accordingly, they are exempted from the FPPA and not subject to the provisions therein.

The Proposed Action is not expected to result in the beneficial use of the prime and important farmlands within the Study Area with regard to agricultural production, commercial or otherwise.

6.3.2 Indirect Impacts

The reconfiguration of the Pell Bridge ramp and approaches would facilitate new development opportunities by making land currently occupied by infrastructure available for redevelopment. Some of this redevelopment would occur in areas mapped as prime farmland or farmland of statewide significance. However, as described above, these lands are committed to urban development and within the Providence, RI – MA Urbanized Area, and therefore are not subject to the FPPA. The Proposed Action is not expected to result in the beneficial use of the prime and important farmlands within the Study Area for agricultural production.

6.3.3 Cumulative Impacts

Because the Study Area is within an urbanized area identified by the U.S. Census Bureau, and because associated lands are not subject to the provisions of the FPPA, no cumulative impacts to farmlands are anticipated from the Project.

6.4 Wetlands and Waters of the U.S and State

6.4.1 Direct Impacts

No Action

Under the No Action Alternative, there would be no demolition or construction of transportation infrastructure and no divesting of land currently occupied by such infrastructure. Direct or indirect effects to wetlands and waterways would be avoided.

Proposed Action

Approximately 0.5 acres of wetlands and ASSFs within the LOD would be directly affected by project construction and operation. Direct, permanent, adverse effects to wetlands primarily involve the placement of earth fill within the wetland resulting in its permanent loss. These effects would commence during the construction phase and persist through project operation. Project construction and operation would avoid direct impact to the one perennial stream identified within the Study Area.

Most of the wetlands affected by the Proposed Action have been previously disturbed. The existing principal functions that would be diminished by the proposed action involve water quality including sediment/toxicant retention and nutrient removal/ retention/ transformation; secondary functions that may be adversely affected would include groundwater discharge/recharge, flood flow alteration, and wildlife habitat. Impacts have been avoided and minimized to the extent practicable. However, safe highway design principles involve geometric constraints that limit the ability to shift roadway alignments to avoid certain wetland impacts.

While not a federal resource, an additional 0.7 acres of mostly developed 50-foot Perimeter Wetland associated with Wetlands A-1 and A-8, regulated under Rhode Island's Freshwater Wetlands Act, would also be affected by construction and operation of the Project. It is anticipated that parts of the Perimeter Wetland associated with Wetland A-1 may be impacted by redevelopment after the existing ramps are removed. Most of this Perimeter Wetland is presently paved, and the redevelopment could include the revegetation of a portion of this state resource that would improve upon the existing condition.

The Project's direct, permanent effects to wetlands constitute a measurable and perceptible loss of wetlands and wetland functions, but not at a significant scale constituting a major effect. The intensity of direct, permanent adverse effects to wetlands resulting from project construction and operation are therefore considered moderate

Proposed alterations of freshwater will require authorization from the RIDEM Freshwater Wetlands Program with the Rhode Island Freshwater Wetlands Act, the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* (250-RICR-150-15-1), and *the Rules and Regulations for the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast* (650-RICR-20-00-02). Projects proposing fill in Waters of the US must also seek authorization from the US Army Corps of Engineers pursuant to Section 404 of the Clean Water Act. Under these regulatory programs, applicants must

define the purpose and need for the project and demonstrate that the project is not random, unnecessary or undesirable, and that the wetland impacts have been avoided, minimized and/or mitigated to the maximum extent practicable.

6.4.2 Indirect Impacts

Indirect effects to wetlands from the Proposed Action may include:

- Filling of wetlands outside the Proposed Action's LOD on lands that would be decommissioned, sold, and redeveloped by others in the future.
- Sedimentation in wetlands and streams 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 future redevelopment of decommissioned RIDOT and City of Newport land that is made available by the Proposed Action would constitute indirect project impacts. The extent of such potential impacts is currently undefined. Any redevelopment would be required to conform to federal, state, and local regulations requiring the avoidance or minimization of impact and mitigation of any impacts that remain.

Indirect, temporary, and adverse effects to wetlands adjacent to the 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 Best Management Practices (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) would 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 are expected to be minor because there would be no new development of intact, undeveloped adjacent uplands.

Wildlife inhabiting wetlands adjacent to the LOD and construction area may 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.

Project grading 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

6.4.3 Cumulative Impacts

Based on review of historical georeferenced aerial photographs available through RIGIS, in 1939 an estimated 63 acres of the Study Area was wetland. In that year, a network of ditching for surface water management and drainage through wetlands that resembled salt marsh, freshwater marsh, wetland pasture, or hayfield. The stream delineated in the Study Area during 2017 was already ditched and straightened in the 1939 aerial photographs and extended further south and east into the Study Area than under present-day conditions. The wetlands were abutted by a mix of developed urban land, an apparent landfill, and upland agricultural fields.

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 Action would result in permanent, direct effects to an additional 0.5 acres of wetland, which is approximately 0.8 percent of the Study Area's estimated 1939 wetland acreage of 63 acres, and 7.5 percent of the 6.6 acres of wetlands that presently exist. An additional 0.7 acres of previously developed 50-foot Perimeter Wetland (regulated upland) by the state would also be permanently affected. Of the original estimated 63 acres of wetlands located within the Study Area, 6.1 acres (9.7 percent) would remain following construction of the Proposed Action. Additional indirect wetland and waterway impacts related to future development on land made available after completion of the Proposed Action may include filling of additional wetlands, construction-phase erosion and sedimentation, redevelopment of adjacent uplands, construction-phase disturbance to wildlife habitat functions, and modifications to watershed drainage and runoff. Other reasonably foreseeable future actions that could affect the existing Study Area wetlands and their functions or values by 2030 include other development and land alterations that could adversely affect wetlands or waterways by fill, grading, or vegetation removal, or by development of adjacent uplands, sedimentation, or stormwater and hydrologic modifications.

Based on these past, present, and reasonably foreseeable future actions, the Proposed Action is expected to contribute to a cumulative adverse effect on Study Area wetlands and waterways. 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. Collectively, these avoidance, minimization, and mitigation requirements are expected to reduce the magnitude of cumulative wetland and waterway impacts in the Study Area.

6.5 Floodplains

6.5.1 Direct Impacts

No Action

Under the No Action Alternative, there would be no demolition or construction of transportation infrastructure and no divesting of RIDOT or City of Newport land occupied by such infrastructure. Direct or indirect effects on the existing floodplain would be avoided.

Proposed Action

Modeling completed for this analysis indicates that the Proposed Action would not result in adverse impacts to coastal floodplains associated with increased flood elevations, wave heights, wave setup, or wave runup. The results of the Wave Height Analysis for Flood Insurance Studies (WHAFIS) and Technical Advisory Committee for Water Retaining Structures (TAW) model runs are presented in Appendix B. Changes in proposed grading within the Study Area would result in approximately 4.9 acres being removed from the floodplain, and approximately 12.9 acres being added to the floodplain. The area added is primarily due to removing the raised embankment carrying the existing Pell Bridge roadway approach ramps; roadway elevations range from 12 to 26 feet NAVD88 under existing conditions, but the surrounding area is almost entirely below the base flood elevation (BFE). Because there is no specific design plan in place for the potential new parcels that would be created on property surplused under the Proposed Action, future floodplain areas were calculated by assuming that grading in these areas would be set at the same elevation as the surrounding roadway.

6.5.2 Indirect Impacts

Nearly the entire Proposed Action 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 Proposed Action could have the 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. However, site-specific grading for the new parcels created from surplus right-of-way could be raised by fill to move these areas out of the 1% floodplain. It is estimated that approximately 15 acres of the intermediate areas between proposed roadways could feasibly be raised above the BFE of 12 feet NAVD88, resulting in a net reduction of the 1% floodplain within the Study Area.

6.5.3 Cumulative Impacts

Increased storm rainfall intensity associated with climate change would result in greater riverine flooding associated with the unnamed stream flowing through the Study 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 therefore these changes would not be predicted to have a cumulative impact on the 1% floodplain.

Future increases in sea levels will exacerbate coastal flooding by raising stillwater elevations, increasing the area of the 1% floodplain. Similar to existing conditions, the Proposed is not predicted to contribute to a cumulative effect on flood elevations from sea level rise, but the specific area inundated would be affected by proposed grading within the limit of work.

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 limit of moderate wave action (LiMWA) will remain seaward of the Proposed Action area, but wave setup effects will propagate further into the 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 the Proposed Action grading design. 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.

6.6 Water Quality/Stormwater

6.6.1 Direct Impacts

No Action

Under the No Action Alternative, there would be no demolition or construction of transportation infrastructure and no divesting of RIDOT or City of Newport land occupied by such infrastructure. Therefore, direct or indirect effects to the existing stormwater controls would be avoided.

Proposed Action

Stormwater resulting from an increase in impervious surfaces can impact downstream waters by altering natural channels and impacting water quality. Downstream channels can be altered by increases in runoff volumes, increases in peak runoff discharge rates, and/or greater runoff velocities. Impacts to water quality may include increases in suspended and deposited sediments that adversely affect aquatic life. Sediment also transports other pollutants including nutrients, metals, and hydrocarbons. Sediment can also reduce the capacity of a water body, causing flooding. Project construction can also result in stormwater impacts, particularly erosion and sedimentation in runoff from disturbed soils.

Because some existing roadway structures would be removed to offset the new structures that would be built, the increase in impervious surface within the Study Area is expected to

be minimal. Stormwater best management practices (BMPs) would be used to minimize pollutants in runoff during project construction and operation. Therefore, only minor impacts to water quality and stormwater are expected to result from the Proposed Action.

6.6.2 Indirect Impacts

The Proposed Action would make available between 20 and 30 acres of decommissioned RIDOT and City of Newport land for redevelopment near 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. These effects are the same as those described above under Direct Impacts. In addition, based on the anticipated traffic volumes generated by new development, the Study Area and associated land available for development would be defined as a land use with higher potential pollutant loads. In order to treat this area, the Rhode Island Stormwater Design and Installation Standards Manual (RISDISM) requires specific Best Management Practices (BMPs) to reduce the higher pollutant loading. These BMPs and compliance with other RIDEM stormwater regulations would treat and reduce pollutants in stormwater runoff and would ultimately have the indirect effect of improving water quality of the receiving water bodies within the Study Area.

6.6.3 Cumulative Impacts

Historical development in the Study Area has increased the amount of impervious surface and introduced pollutants into receiving water bodies. Development has also reduced the extent of wetlands in the area, along with the water quality functions that they provide. However, recent development, as well as the Proposed Action, must comply with RIDEM stormwater regulations, which are designed to manage stormwater runoff flows and provide treatment to reduce pollutant loads in receiving waters. Future development in the Study Area must also follow these regulations. As a result, the Proposed Action and other reasonably foreseeable projects are expected to contribute to a betterment of existing conditions in the Study Area by reducing pollutant loading, providing groundwater recharge, and reducing peak flows to the surrounding drainage outfalls.

6.7 Coastal Resources

6.7.1 Direct Impacts

No Action

Under the No Action Alternative, there would be no demolition or construction of transportation infrastructure and no divesting of RIDOT or City of Newport land occupied by such infrastructure. Therefore, direct or indirect effects to the existing coastal resources would be avoided.

Proposed Action

The Proposed Action would result in construction and redevelopment activities within Rhode Island's designated coastal zone. These activities have the potential to affect coastal resources through stormwater runoff, impacts to wetlands, disturbance to vegetation and open space, and erosion and sedimentation. The Proposed Action activities would be reviewed by the CRMC relative to performance criteria in CRMC guidance that are applied as part of the Project's Federal Coastal Zone Consistency Determination.

Specific CRMC policies, goals, objectives, and standards relevant to the Proposed Action are described in Section 5.7. These include applicable CRMP policies and performance standards, Aquidneck Island SAMP goals and objectives, and Aquidneck Island SAMP coastal development standards, all of which will be considered as part of the Project's Federal consistency review. The CRMC will evaluate the Proposed Action for conformance with these policies, goals and objectives to protect the coastal zone, and ensure consistency with Rhode Island's coastal zone management plan. Therefore, construction-phase and permanent effects to coastal resources are expected to be minor.

6.7.2 Indirect Impacts

The Proposed Action does not include any activity that would directly affect coastal waters, coastal resources, or shoreline features, or that would involve work within the 200-foot contiguous area. Indirect effects to such areas related to the Proposed Action may include stormwater runoff, impacts to freshwater wetlands, disturbance to vegetation and open space, and erosion and sedimentation.

Construction of the Proposed Action would result in land currently owned by RIDOT and the City of Newport being divested and made available for future development by others. Future redevelopment on this land would also be located 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 Consistency Determination would also need to meet applicable policies, goals, and standards of the CRMP and the Aquidneck Island SAMP. 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 indirect effects of future development on the coastal zone are anticipated to be minor.

6.7.3 Cumulative Impacts

Because the direct and indirect impacts of the Proposed Action are expected to be minor, they would not contribute to cumulative impacts to coastal resources in the Study Area.

6.8 Federally Threatened or Endangered and State Natural Heritage Species/Biodiversity

6.8.1 Direct Impacts

No Action

The No Action Alternative would have no direct or indirect impacts to any threatened or endangered species because there would be no change to the existing environment.

Proposed Action

The Proposed Action includes components that would be considered potential stressors to NLEB. However, review of available data and the acoustic survey results indicate the probable absence of the NLEB; therefore, the Proposed Action is not anticipated to have any effects on NLEB.

Roseate terns prefer rocky coastal islands or beaches with suitable vegetative cover for nesting. The Study Area does not include this type of habitat; therefore, it is unlikely that roseate tern would occur within the Study Area. It is not expected that the Project would have any effect on this species.

On January 2, 2019, RIDOT requested concurrence from the U.S. Fish and Wildlife Service (USFWS) that the Project may affect, but is not likely to adversely affect, the NLEB and roseate tern. USFWS concurred with this determination on March 18, 2019.

6.8.2 Indirect Impacts

Because the NLEB is not anticipated to occur within the Study Area and there is no suitable habitat for the roseate tern, no indirect impacts on threatened or endangered species or state natural heritage species are anticipated.

6.8.3 Cumulative Impacts

The Proposed Action would have no direct or indirect impacts on threatened and endangered species. As a result, the Proposed Action is not expected to contribute to cumulative impacts on these species.

6.9 Cultural (Historic and Archaeological) Resources

6.9.1 Direct Impacts

No Action

Under the No Action Alternative, there would be no negative impacts to historic or archaeological resources.

Proposed Action

Historic Resources

Seven historic properties were identified within the Area of Potential Effect (APE). RIDOT is working with the identified consulting parties to assess potential effects that the Proposed Action may have on historic properties.

Archaeological Resources

Phase 1A Archival Research was conducted to determine the archaeological sensitivity of two loci: the first along the former Old Colony and Newport Railroad, where a proposed bike corridor extension would be located, and the second adjacent to the RK Newport Towne Shopping Center. The assessment indicated that the proposed bike path extension is adjacent to the Braman Cemetery (a contributing property to the Newport Historic Landmark District). In addition, the location adjacent to the RK Newport Town Shopping Center is sensitive for the presence of pre-contact archaeological deposits due to its proximity to RI-940. RI-940 is a late-Archaic-period site that was the subject of a Phase II Archaeological Site Evaluation in 1982. According to the Phase II report, the site was eligible for listing in the National Register (SUNY Binghamton Public Archaeology Facility Cultural Resource Management Report Phase I & Phase II I-895, Rhode Island 1982: 302). However, the accompanying RIHPHC Archaeological Site Inventory form notes the site as "Destroyed."

Phase IB archaeological testing was completed October 1-3, 2018, in the two loci. A total of 27 shovel test pits were dug in a linear transect at ten-meter intervals along the proposed bike path corridor adjacent to the cemetery. These pits exposed bedrock and/or standing water, and none contained natural strata. Four shovel test pits yielded a total of five historic-period artifacts within disturbed soils. Due to the low density and low diversity of the artifacts recovered, as well as the poor integrity of the deposits, these finds are not likely to yield significant information about past land use. A total of 29 shovel test pits were dug along a ten-meter grid in the open field east of the RK Newport Town Center. Modern materials and recent trash were recovered in these shovel test pits. No archaeological sites or features were identified in either location. No further archaeological investigations are recommended.

6.9.2 Indirect Impacts

The Proposed Action would facilitate future development opportunities within the APE by vacating land that would then become available for redevelopment. Because redevelopment would occur on land that is presently vacant, it is expected to avoid impacts to historic resources within the APE.

6.9.3 Cumulative Impacts

Based on a review of aerial imagery, historic resources within the APE have not changed significantly since at least 1995. The Proposed Action itself would not substantially change or alter known historic resources. No other present or reasonably foreseeable future actions are known that would result in adverse cumulative impacts to historic resources within the APE.

In addition, because no archaeological sites were identified during the Phase I Archaeological Survey, no adverse cumulative impacts to archaeological resources within the APE are expected.

6.10 Environmental Justice & Socioeconomics

6.10.1 Direct Impacts

No Action

Environmental Justice

Under the No Action Alternative, the Project would not occur. As a result, minority and low-income populations within the Study Area would not experience the anticipated benefits of the Proposed Action, which include improved safety on local surface transportation infrastructure; multimodal access for all roadway users (transit, bicyclists, pedestrians); and traffic circulation and connections. The community also would not see related enhancements to community connections and cohesion resulting from such improvements.

No adverse impacts to environmental justice populations are anticipated under the No Action Alternative. It is important to note, however, that noise levels under the No Action Alternative would be similar to existing conditions.

No land would be made available for redevelopment in support of the State and City's economic goals under the No Action Alternative, and no related employment opportunities for minority and low-income populations would be realized.

Socioeconomics

Under the No Action Alternative, the Project would not occur. Community connectivity and cohesiveness would continue to be impeded by the presence of the existing highway infrastructure; the local roadway network would not be reconnected or improved, and no new multimodal transportation options would be introduced to the Study Area. Development potential within the Study Area would continue to be limited by the Pell Bridge ramp right-of-way. No significant amount of land would be made available for redevelopment, and therefore, the Study Area would not fully realize any economic potential.

Proposed Action

Environmental Justice

Potential effects (burdens and benefits) on minority and low-income populations from transportation projects generally encompass changes to community cohesion (i.e., access to community facilities and services), employment, the community tax base or property values, and aesthetics, as well as traffic patterns, safety, and options. Additionally, burdens of transportation projects can include residential or commercial displacements or the

degradation of environmental conditions as they relate to noise, air quality, water quality, and hazardous materials.

To determine whether potential impacts from the Proposed Action would have a disproportionately high and adverse effect on environmental justice communities, this analysis referred to the U.S. DOT and FHWA EJ Orders (described in Section 5) to determine whether any identified adverse effect would:

1) Be predominantly borne by a minority and/or low-income population; or

2) 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.

The anticipated impacts of the Proposed Action on environmental resource categories related to human health or environmental effects, including social and economic effects, are summarized below.

- Noise: The noise analysis identified 31 residential receptors where noise levels would either exceed the FHWA Noise Abatement Criteria (NAC) to protect public health, welfare and livability from excessive vehicle traffic noise or where the Proposed Action would cause a substantial increase in noise. These impacted receptors are predominantly within identified minority and low-income areas and a geography where a low-income population was identified, and thus represent adverse impacts on minority and low-income populations. For details of these noise impacts, please see Section 6.13 and the Noise Technical Memorandum.
- Air Quality: Based on the FHWA categorical hotspot finding, the Proposed Action is not anticipated to have direct significant adverse air quality impacts. For more information on the expected impacts of the Project on air quality, please see Section 6.12 and the Air Quality Technical Memorandum.
- Water Quality: The Proposed Action would result in a minor increase in impervious surface area, which can impact downstream water and associated water quality. Impacts to water quality may include increases in suspended and deposited sediments; sediment transports other pollutants including nutrients, metals, and hydrocarbons. For more information on the expected impacts of the Project on stormwater, please see Section 6.6 and the Stormwater Technical Memorandum.
- Hazardous Materials: Contaminated subsurface soils containing total petroleum hydrocarbons (TPHs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals above RIDEM thresholds have been identified in the Study Area in locations where excavation or other intrusive construction activities are anticipated. There is some potential for new releases to occur or to be identified during construction, such as a release of oil or diesel from construction equipment. The Proposed Action LOD intersects with an identified Environmental Justice Focus Area, and accordingly, all appropriate notification measures will be taken as per RIDEM's Policy for Considering Environmental Justice in the Review of Investigation and Remediation of Contaminated Properties. For more information on

the expected impacts of the Project on hazardous materials, please see Section 6.14 and the Hazardous Materials Technical Memorandum.

- Land Use: The Proposed Action, along with its required property acquisitions, is not expected to significantly change local land use patterns or impede the functions of existing land uses. It would be consistent with State and local land use planning and would have the beneficial impact of better connecting land uses within the Study Area through new or improved north-south linkages. No disproportionately high and adverse effects on minority and low-income populations are anticipated. For more information on the expected impacts of the Project on land use, please see Section 6.2 and the Land Use Technical Memorandum.
- Traffic: Travel time and delays would improve as a result of the Proposed Action. Existing queuing on the ramp to Downtown would be eliminated and/or shifted, though delays and queues at JT Connell Highway at Van Zandt Avenue would continue to increase due to increased traffic flow along JT Connell Highway, new traffic generated by redevelopment, and a lack of capacity improvements at the intersection with Van Zandt Avenue. Accordingly, no adverse impacts are anticipated from a traffic perspective, and there would be no disproportionally high and adverse effects on minority and low-income populations. These populations would benefit from improved safety; the provision of multimodal access for all roadway users (transit, bicyclists, pedestrians); and improved traffic circulation and connections near the Study Area. For more information on expected impacts on traffic, please see Section 6.1 and the Traffic Technical Memorandum.
- Climate: Based on a review of climate change studies and analyses pertinent to the region, the Proposed Action LOD is not vulnerable to impacts from 3 feet of sea level rise, though current and future storm surge conditions in addition to 3 feet of sea level rise would occasionally inundate the area. The Proposed Action itself is not expected to worsen anticipated impacts from climate change in the Study Area, including for its minority and low-income populations, and is therefore, not expected to have disproportionately high and adverse effects. For more information on the implications of climate change relevant to the region, please see Section 6.15 and the Climate Technical Memorandum.
- Cultural Resources: As part of the Section 106 consultation process, RIDOT is working with the identified consulting parties to assess potential effects to historic properties within the Area of Potential Effects (APE) for the Proposed Action. For more information on the scope of the Section 106 process, please see Section 6.9 and the Cultural Resources Technical Memorandum.

As the only environmental resource category with an adverse impact, noise requires further analysis under Title VI. Based on the noise analysis described above and detailed in the Noise and Vibration Technical Memorandum, approximately 85 individuals (0.6 percent of the population of the Study Area) would be adversely impacted by the Project. Applying the percentages of individuals by race and ethnicity within the Study Area, it is estimated that of the impacted individuals, 54 persons would be white, five would be African American, 15 would be Hispanic or Latino, and one would be Asian. These values all represent less than

1 percent of each of these racial and ethnic groups within the Study Area. Further analysis using the Title VI "four-fifths rule" calculations (see Appendix B-10) determined that the impacts on Hispanic or Latino individuals are not likely to be significantly disparate because the number of individuals potentially affected would be very small.

Socioeconomics

Residential and Commercial Displacements

The Proposed Action would require the acquisition of several privately- and publicly-held properties. These acquisitions, which may be complete or partial depending on final concept design, include up to three residential properties along Halsey Street between Garfield Street and Columbus Way, up to two commercial properties including an unoccupied commercial building at 60 Halsey Street and the Waste Management – Newport Hauling & Transfer Station at 65 Halsey Street, and the municipally-owned 70-90 Halsey Street, which houses facilities associated with the City's Water Department and Clean City Program. These acquisitions represent a moderate adverse impact relative to their potential for displacements, but are expected to be conducted fairly, consistently, and equitably in accordance with 49 CFR Part 24 requirements.

Community Connectivity and Cohesion

The Proposed Action would have a beneficial impact by improving neighborhood connectivity through the creation of new north-south linkages. These linkages would better connect the City's North End neighborhood, including to Downtown by way of a reconnected JT Connell Highway and an improved Newport Secondary Rail Line that includes a shuttle with connected park and ride and walking/bike trail.

Community Facilities

The Proposed Action is not anticipated to alter existing community facilities or the services they provide. Local surface transportation improvements, such as the resurfacing of JT Connell Highway/Coddington Highway to West Main Road, are expected to improve access to these facilities.

Public Services and Utilities

The Proposed Action is not expected to interfere with or place new demands on public services. Although it includes the acquisition of properties dedicated to waste management (i.e., Newport Hauling & Transfer Station at 65 Halsey Street) and the City's Water Department and Clean City Program at 70-90 Halsey Street, these services are expected to be accommodated elsewhere.

Because the Proposed Action is transportation-based, its stationary-source energy requirements would be minimal. Any additional streetlighting and electronic signage above current conditions are expected to be easily accommodated by the local electric utility company and would not impact the provision of electric service to the community.

Demographics

The Proposed Action would not directly result in significant shifts of population and housing into or out of the Study Area. Although it would result in the acquisition of up to three residential properties and up to two commercial properties, such properties represent a fraction of the total number of properties within the Study Area. Because the Proposed Action would be entirely composed of new or improved surface transportation infrastructure, it will not directly result in added employment.

Tax Base and Property Values

The acquisition of several privately- and publicly-held properties within the Project's LOD represents a moderate adverse impact to the community tax base. As these properties represent a fraction of the total properties within the City of Newport, however, their acquisition and subsequent removal from the municipal tax roll is not anticipated to significantly reduce the City's property tax revenues.

The Proposed Action is not anticipated to negatively affect property values within the Study Area, as the neighborhood has largely developed around the Pell Bridge approaches and ramps since construction of the bridge commenced in 1966.

Temporary Construction Impacts

Construction activities would likely result in temporary disruptions to local businesses, particularly along JT Connell Highway, by impeding access due to potential roadway closures or detours and Project-related traffic congestion. Such impacts, however, would be temporary, and their intensity is considered minor, as RIDOT will coordinate with local business owners to minimize related impacts

6.10.2 Indirect Impacts

The Project would 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 as a result of the Proposed Action are expected to result in new employment opportunities for people living in the Study Area.

6.10.3 Cumulative Impacts

No past, present, or reasonably foreseeable future actions are known that, when combined with the Proposed Action, would result in adverse cumulative effects to human health and the environment, including social and economic effects, within the Study Area. Accordingly, no disproportionately high or adverse cumulative effects on minority and low-income populations are anticipated.

6.11 Visual Resources

6.11.1 Direct Impacts

No Action

The No Action Alternative would have no direct or indirect impacts to any visual resources because there would be no change to the existing environment.

Proposed Action

The Proposed Action would affect visual resources in portions of the Study Area, as identified in Section 5.11. These impacts are described below.

JT Connell Highway Commercial Area (north of rotary)

From those locations where the site can be seen, there would be a moderate and beneficial visual impact. Although Admiral Kalbfus Road would not undergo significant grade adjustments, the rotary would be redesigned.

Girard Avenue Hotel and Residences

The project would have a significant visual impact on this area due to demolition of the existing Route 138/Route. 238 exit ramp and the terminus of Route 138/Route 238, which is currently being used as a de facto highway maintenance storage. These changes, in addition to the preservation/enhancement of wetlands within the perimeter of the existing exit ramp, would have a major, beneficial visual impact within this area.

The project may lead to development north of the existing exit ramp. This development will be located directly adjacent to existing structures (i.e. the hotel and the condominiums to the north). Thus, the visual impact on these neighbors will be major, limiting views to the west and south.

Newport Grand Casino Site

The new bridge approach (being constructed in place of the existing Halsey Street) would run along the western edge of the Newport Grand Casino site, and the large parking lot that supports it. The infrastructure realignment would have a minor visual impact on this area, as the geometry of the new approach would not be dissimilar from that of the current-day Halsey Street, except that it would be characterized by a gradual upward slope from north to south.

Suburban Neighborhood East of Farewell Street

The Proposed Action area is only visible from certain locations within this neighborhood: specifically, looking north along Butler Street and Prescott Hall Road, and looking west along Garfield Street, each of which has a terminus abutting the existing bridge approach. The visual impact of the Proposed Action in this area would be minimal, because the elevation of the bridge approach at this location would not be significantly adjusted.

Suburban Neighborhood West of Farewell St

The only part of the project site that would be visible within this area can be seen from Hunter Park and Van Zandt Avenue. The existing exit ramp that currently allows eastbound drivers to exit onto Farewell Street would be replaced with a new open space amenity, expanding Hunter Park, which would be available for active and passive recreational public use. This revitalization represents a positive visual impact on this area.

Bayside Village

The Proposed Action would convert the decommissioned rail line running east of this complex into a trail supporting pedestrian and bicycle activity and tying into the new park-and-ride multimodal hub. The Proposed Action would have some visual impact on this quadrant; however, it would be limited by the vegetated buffers running along either side of the rail line.

JT Connell Highway Commercial District (south of rotary)

This area would be substantially affected by the Proposed Action. The rotary would be reconstructed as part of the project, and the stretch of the JT Connell Highway south of the rotary will be reprogrammed and extended southward to connect with Farewell Street. These changes would result in a substantial increase in the volume of traffic passing through the area. The visual impact would be major and beneficial, since the street (currently in poor condition) would be newly paved, and outfitted with contemporary markings, pavers, and equipment.

6.11.2 Indirect Impacts

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 that could be developed consistent with the City's land use planning and zoning, including proposed structures. This development would result in new buildings that would be visible from various locations within the Study Area. It is anticipated that architectural and landscape design guidelines would be employed to ensure that edge conditions for the new development would be visually attractive, so that it would be compatible with existing development in adjacent areas.

6.11.3 Cumulative Impacts

Based on a review of aerial imagery, visual resources within the Study Area have not changed significantly since at least 1995. The Pell Bridge approach infrastructure itself would not have a major visual impact on the surrounding community; however, the anticipated redevelopment of the area would have a substantial beneficial impact. No adverse cumulative impacts to visual resources are anticipated.

6.12 Air Quality

6.12.1 Direct Impacts

No Action

Under the No Action scenario, traffic volumes and congestion will increase, which would result in higher emissions of multiple criteria pollutants.

Proposed Action

All study intersections were compared to the acceptable parameter ranges allowed for by the FHWA Categorical Hotspot Finding to determine their compliance with transportation conformity regulations with the Proposed Action. The results of the analysis show that all intersections would comply with the acceptability criteria of the FHWA Categorical Hotspot Finding. As such, the Proposed Action is not expected to cause or contribute to an exceedance of the NAAQS, and no local air quality impacts are anticipated.

6.12.2 Indirect Impacts

The Proposed Action is expected to reduce traffic congestion across the Study Area. This reduction in congestion and improved network operations would indirectly result in the reduction of regional pollutant emissions. Mobile source pollutant emissions are expected to be reduced compared to existing and No Action conditions. Emissions reductions under the Proposed Action would range from 0.01 to 0.38 tons per year for NOx, VOC, PM10 and PM2.5 when compared to No Action. Reductions in CO_2 would range from 528 to 1,009 tons per year when compared to No Action. Overall, the Proposed Action would provide a net benefit, reducing emissions compared to No Action. As such, no adverse indirect air quality impacts are anticipated.

6.12.3 Cumulative Impacts

There are no known reasonably foreseeable future actions 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 under existing conditions. The Proposed Action is expected to provide a net benefit and reduce pollutant emissions compared to the existing and No Action conditions, helping to offset any increase of emissions that might occur from other projects. Therefore, there would be no adverse cumulative air quality effects.

6.13 Noise and Vibration

6.13.1 Direct Impacts

No Action

No Action noise levels would be similar to existing conditions, ranging from 35 to 67 dBA Leq at all receptors. General background growth in traffic volumes would result in a small increase in noise of approximately 0.2 to 0.3 dBA, which is not considered a perceptible increase.

Proposed Action

Design-year noise levels would approach or exceed the Noise Abatement Criteria (NAC) or exceed the substantial increase criterion at several Common Noise Environments (CNEs), including:

- CNE B – Third Street (South of Van Zandt Avenue)
- CNE D – Cypress Street
- CNE E – JT Connell Highway/Van Zandt Avenue Neighborhood
- CNE K- Bayview Park/King Road

Design-year noise levels would approach or exceed the NAC, or there would be a substantial increase in noise of 10 dBA of greater, at a total of 31 residential receptors. Noise abatement must be considered for all CNEs where design-year build noise levels would exceed the NAC, even if the Proposed Action would reduce future noise levels. Mitigation for noise impacts is discussed in Chapter 7.

6.13.2 Indirect Impacts

There are no indirect noise effects anticipated for the Proposed Action.

6.13.3 Cumulative Impacts

There are no known future actions that would affect long-term operational or short-term construction noise conditions in the study area. Therefore, there would be no significant adverse cumulative noise effects.

6.14 Hazardous Materials

6.14.1 Direct Impacts

No Action

Under the No Action Alternative, there would be no ground disturbance and therefore less opportunity for workers and other people in the vicinity to be exposed to contaminants in soil or groundwater. In addition, no potential would exist for hazardous material releases during construction. However, there would also be no opportunity to address the contamination identified in the vicinity of the proposed improvements by removing contaminated soil and groundwater.

Proposed Action

Contaminated subsurface soils containing elements and metals above RIDEM thresholds have been identified within the Study Area in locations where excavation or other intrusive construction activity is anticipated. Properties located adjacent to or in close proximity to areas where only surficial roadway disturbances (i.e., milling and paving) are currently anticipated could potentially impact the project if the construction scope of work changes and more intrusive work is implemented. The exposure of hazardous materials could result in adverse public health effects for workers and people working or living nearby. However, any hazardous materials encountered would be handled and disposed of in accordance with applicable regulations, as described in Section 7.14. The Proposed Action may also result in a beneficial impact if it results in the removal and disposal of contaminated materials in accordance with state and Federal regulations.

6.14.2 Indirect Impacts

Potential indirect impacts could occur if the Proposed Action were 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, 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. In addition, redevelopment of land formerly occupied by ramps and other infrastructure could disturb identified or unidentified hazardous material sites in these areas.

6.14.3 Cumulative Impacts

The Proposed Action is not expected to contribute to adverse cumulative OHM impacts in the Study Area. Direct and indirect effects associated with the Proposed Action implementation would be mitigated via RIDEM-approved work plans, methodologies (e.g., stockpile management, dust monitoring, construction oversight by an environmental professional), and an Environmental Land Usage Restriction (ELUR). Therefore, any adverse effects should be minimized, and/or beneficial impacts would 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.

6.15 Climate Change/Resiliency

6.15.1 Direct Impacts

No Action

The Study Area is not vulnerable to impacts from three feet of sea level rise. Current and future storm surge conditions, on top of the three feet of sea level rise, would occasionally inundate the area.

Proposed Action

Conditions with the Proposed Action would be similar to those under the NO Action Alternative.

6.15.2 Indirect Impacts

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

6.15.3 Cumulative Impacts

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

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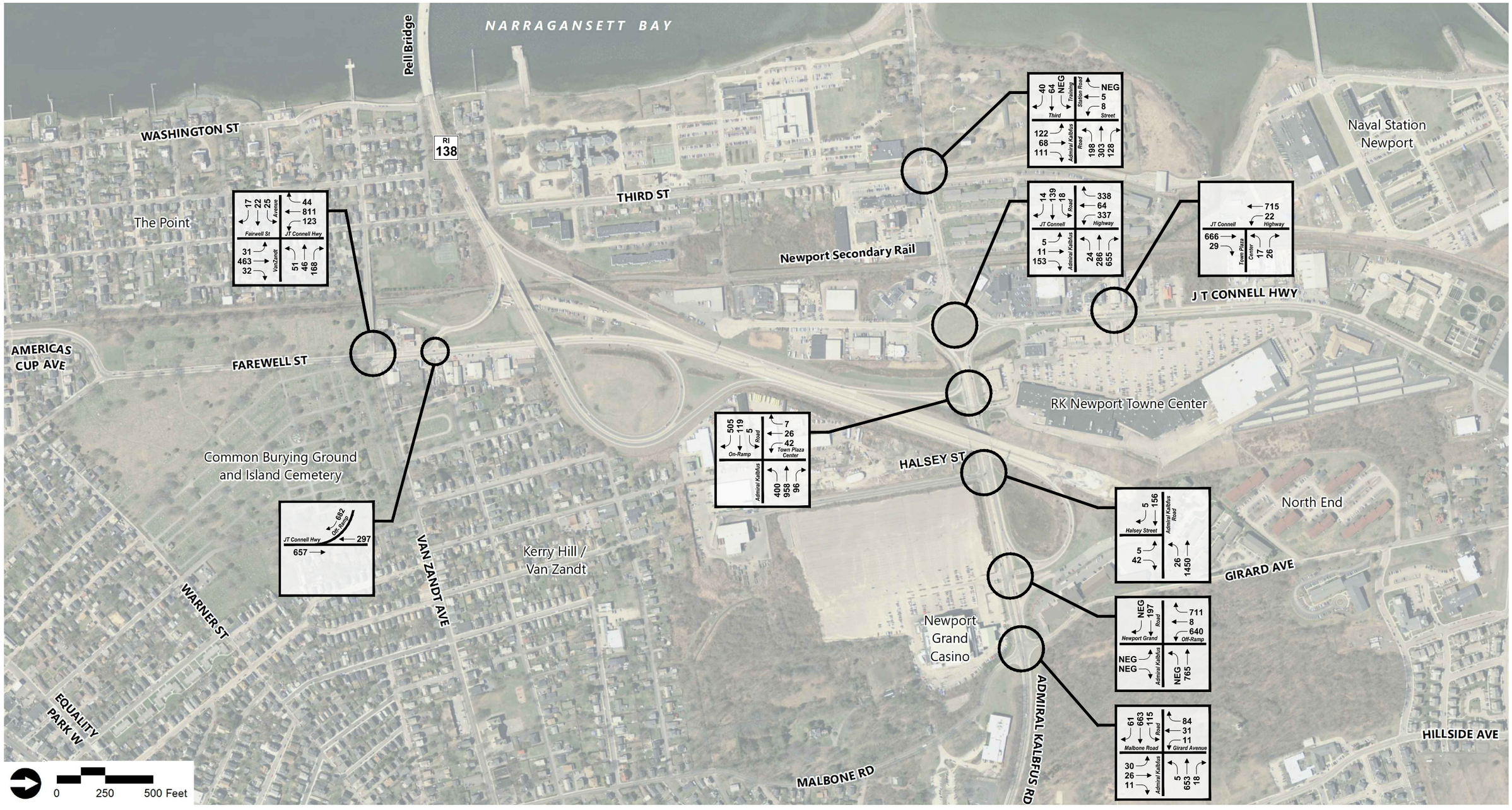

Aerial Source: RIGIS

Figure 6-1

2040 No-Action Condition
Weekday Morning
Peak Hour Traffic Volumes

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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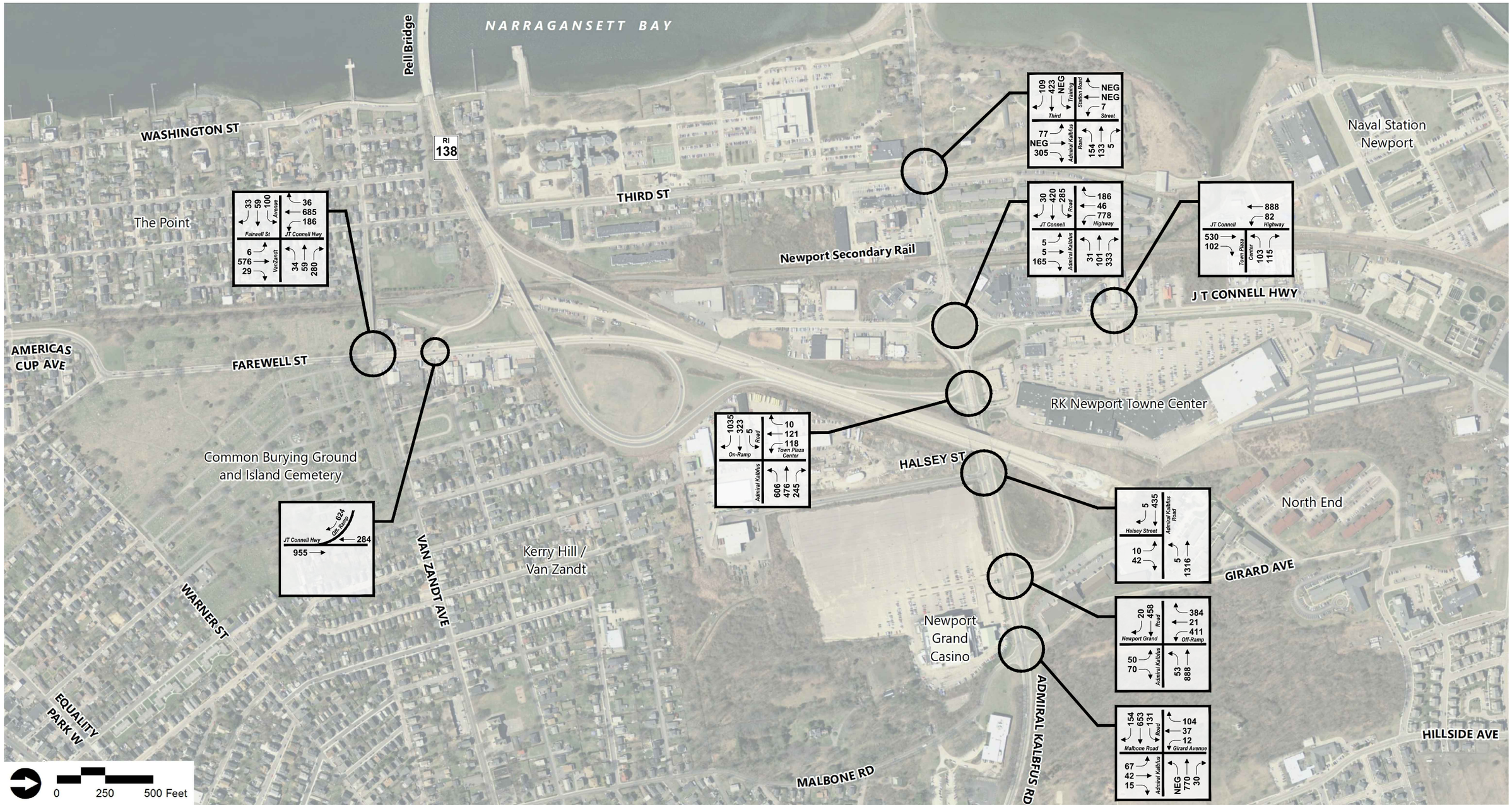

Aerial Source: RIGIS

Figure 6-2

2040 No-Action Condition
Weekday Evening
Peak Hour Traffic Volumes

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\FIG 6-3 Network Operations (NB-Weekday AM).mxd

Aerial Source: RIGIS
Source: VISSIM 8 Node Evaluation. Compiled VHB Based on Average of 10 VISSIM Model Runs.

Intersection Operations

- Level of Service A/B
- Level of Service C/D
- Level of Service E/F

No-Action Morning Average Speeds

- 0-10 MPH
- 10-15 MPH
- 16-25 MPH
- >25 MPH

Figure 6-3

Network Operations
No-Action Conditions
Weekday Morning

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\FIG 6-4 Network Operations (NB-Weekday PM).mxd

Aerial Source: RIGIS
Source: VISSIM 8 Node Evaluation. Compiled VHB Based on Average of 10 VISSIM Model Runs.

Intersection Operations

- Level of Service A/B
- Level of Service C/D
- Level of Service E/F

No-Action Evening Average Speeds

- 0-10 MPH
- 10-15 MPH
- 16-25 MPH
- >25 MPH

Figure 6-4

Network Operations
No-Action Conditions
Weekday Evening

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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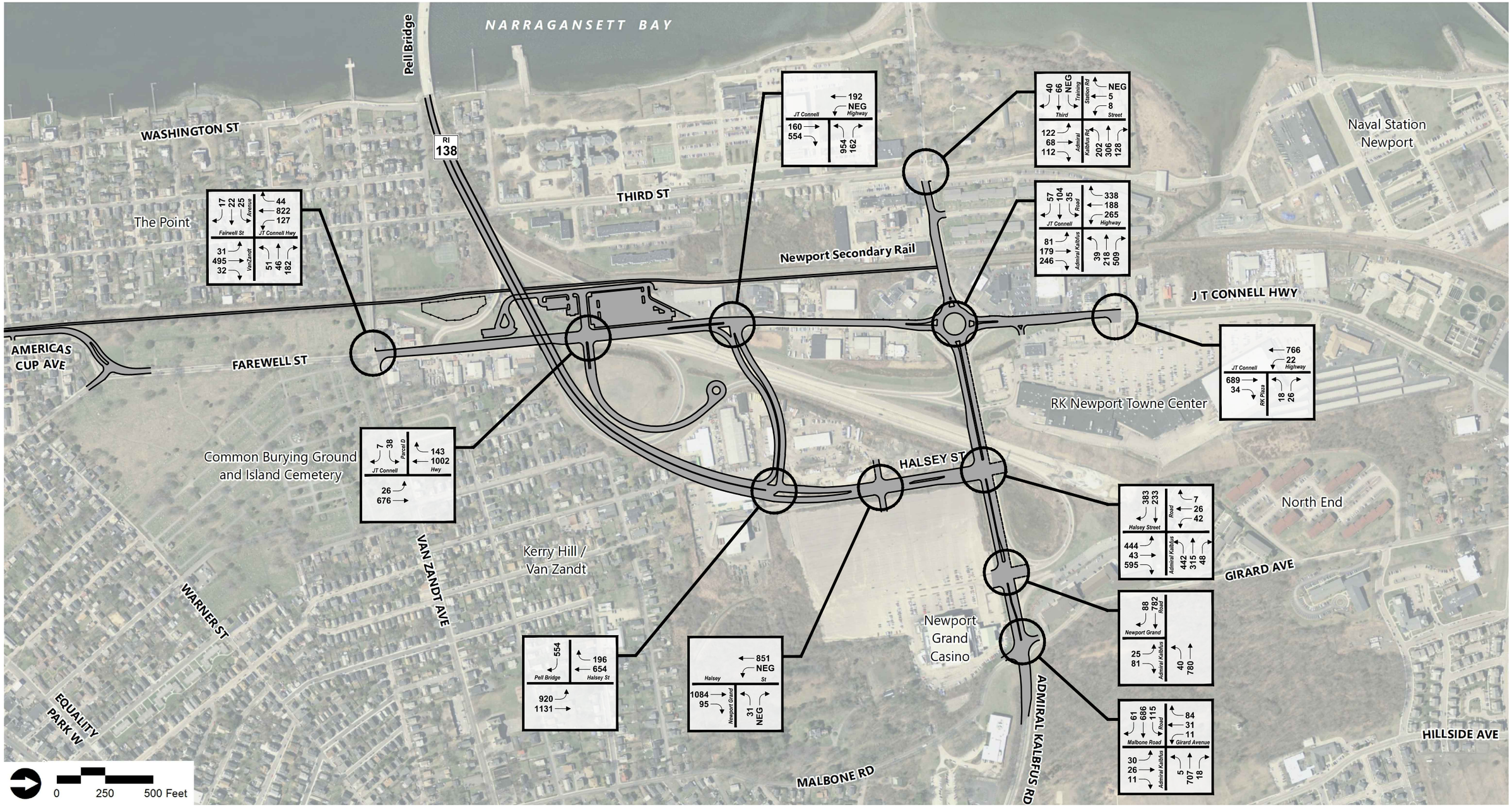

Aerial Source: RIGIS

Figure 6-5

2040 Proposed Action
Weekday Morning
Peak Hour Traffic Volumes

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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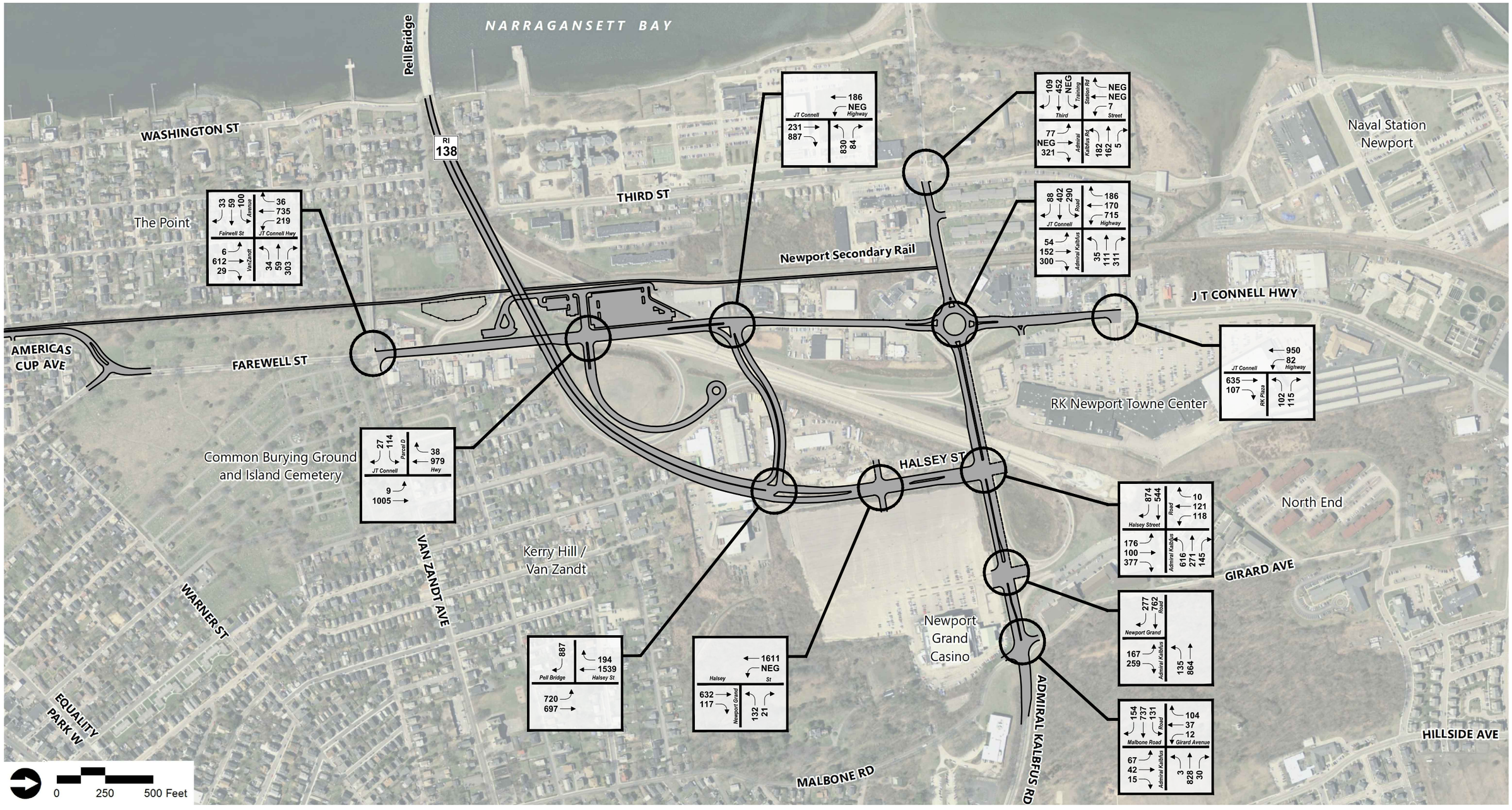

Aerial Source: RIGIS

Figure 6-6

2040 Proposed Action
Weekday Evening
Peak Hour Traffic Volumes

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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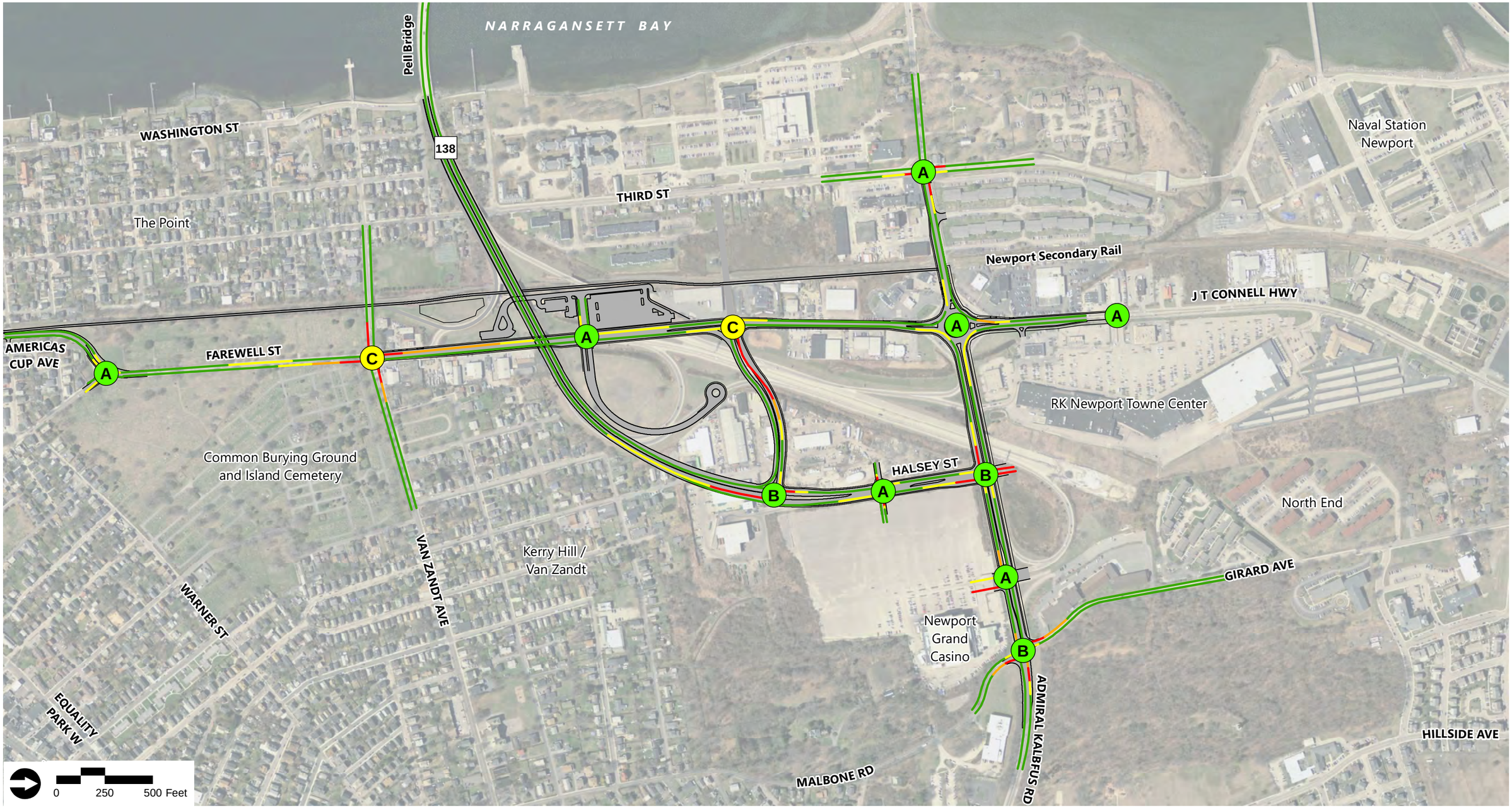

Aerial Source: RIGIS
Source: VISSIM 8 Node Evaluation. Compiled VHB Based on Average of 10 VISSIM Model Runs.

Intersection Operations

- Level of Service A/B
- Level of Service C/D
- Level of Service E/F

Proposed Action Phase 1 Morning Average Speeds

- 0-10 MPH
- 10-15 MPH
- 16-25 MPH
- >25 MPH

Figure 6-7

Network Operations
Proposed Action Conditions

Weekday Morning

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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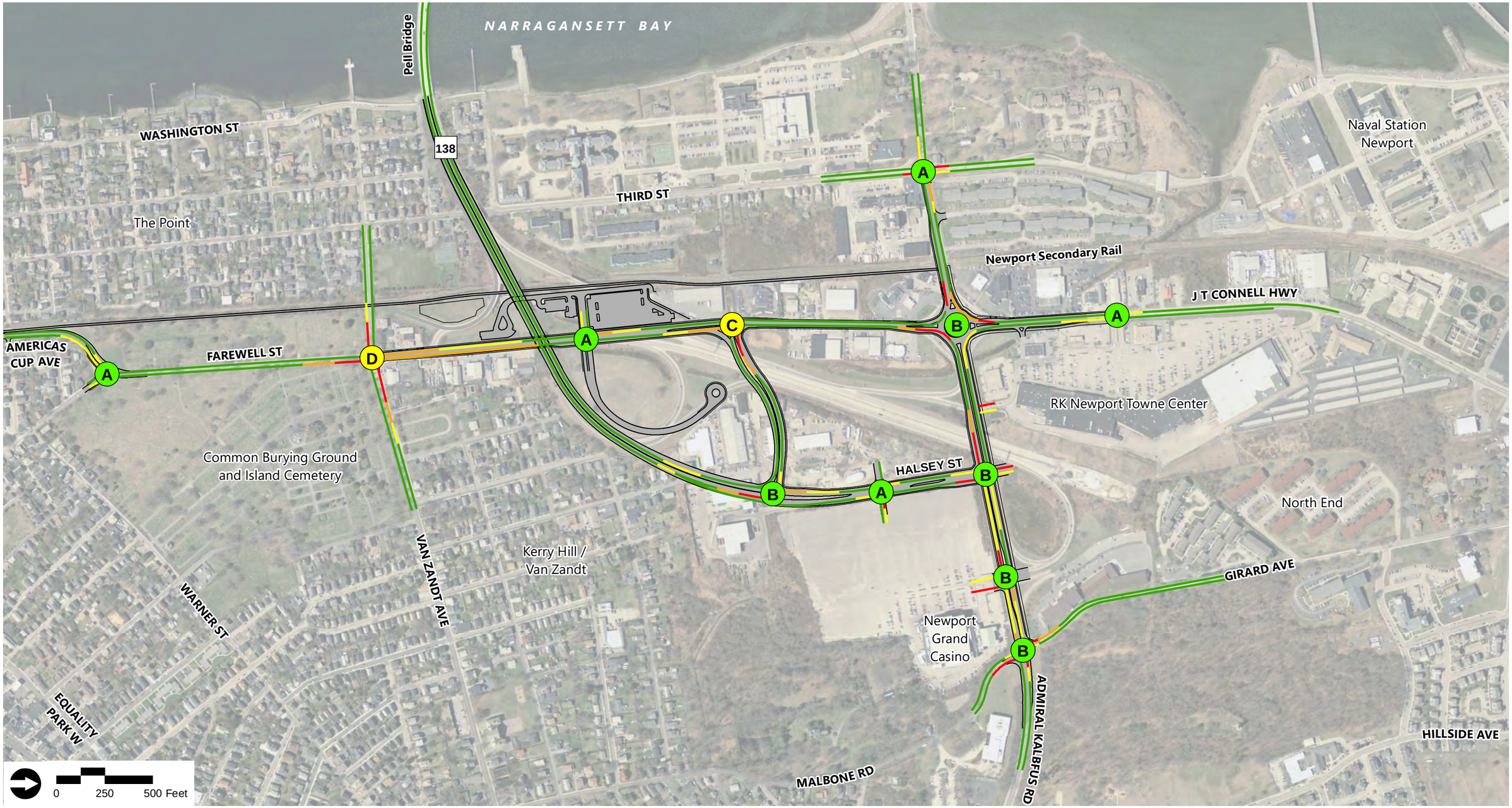

Aerial Source: RIGIS
Source: VISSIM 8 Node Evaluation. Compiled VHB Based on Average of 10 VISSIM Model Runs.

Intersection Operations

- Level of Service A/B
- Level of Service C/D
- Level of Service E/F

Proposed Action Phase 1 Evening Average Speeds

- 0-10 MPH
- 10-15 MPH
- 16-25 MPH
- >25 MPH

Figure 6-8

Network Operations
Proposed Action Conditions
Weekday Evening

Reconstruction of the Pell Bridge Approaches
Newport/Middletown, Rhode Island

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7

Mitigation

This section discusses potential mitigation measures for the impacts expected to remain after minimization and avoidance measures have been incorporated into the design of the Proposed Action.

7.1 Transportation Network

Mitigation for transportation impacts was not warranted, since the Proposed Action would provide positive benefits to the transportation network through reductions in congestion and improved circulation.

7.2 Land Use

Although the Proposed Action is anticipated to convert several residential, commercial, and public service properties to transportation right-of-way, these conversions are considered moderate impacts, as they are not anticipated to significantly change land use patterns within the Study Area or the City at large. RIDOT will work with property owners, including the City of Newport, to ensure fair compensation and relocation assistance.

The strip takings from the lots and reconfiguration of access makes maneuverability to and around 65 Halsey Street difficult such that RIDOT anticipates the need to restore parking spaces that they currently use off-site as well as enhanced access from the newly configured roadway network.

The redevelopment of property no longer needed for right-of-way may result in impacts during construction (noise, dust, visual clutter, vegetation removal) and operation (traffic, air

quality, changes in visual form and community character). Any significant adverse impacts are expected to be mitigated as part of land use and permitting approvals for individual future development projects.

Because construction activities may temporarily impact the use of properties within the Study Area due to noise generation, disruptions to traffic patterns, and vehicular and equipment emissions and inhalable dust concentrations, associated minimization and mitigation measures may be required.

7.3 Farmland/Soils

Because no adverse impacts are anticipated, no mitigation is required for farmlands.

7.4 Wetlands and Waters of the U.S and State

The loss of 0.5 acres of wetland would require compensatory mitigation to replace the lost wetland area and services provided by the impacted wetlands. The urbanized site context and the prevalence of wetlands dominated by invasive species presents a management challenge for on-site compensatory mitigation through wetland enhancement, restoration, or preservation. Once invasive wetland species are established, their control can be difficult, requiring extensive time to implement and fund. The urbanized site context is also space-constrained and not conducive to re-establishment of effective upland buffers or the landscape connectivity needed to create, restore, or enhance certain wetland functions such as wildlife habitat.

Notwithstanding these concerns, the potential for wetland restoration has been identified at a historically filled site on the west side of JT Connell Highway consisting of an abandoned restaurant property and an adjacent, undeveloped property that is mostly wetland (Wetland A-24). This site presents an opportunity for fill removal to restore a buried wetland and restore areas of Wetland A-24. While common reed is present in the existing wetland, it is a discreet population that could be controlled. The restored wetland replace the wetland area lost and the principal water quality functions lost by Proposed Action construction and operation at this site. The combined preserved/enhanced wetland area and restored wetland would also provide some wildlife habitat function.

To address the presence of invasive species at the mitigation site and comply with the requirements of Executive Order 13112, Invasive Species, an invasive plant survey will be conducted and an Invasive Plant Management Plan (IPMP) will be prepared to control invasive species. The plan will include the following:

- Description of treatment areas, including identification of targeted invasive plant species
- Proposed methods of treatment for each species or area along with herbicide application methods and rates (if applicable)
- Methods for disposing of invasive plant material
- Monitoring and retreatment schedule

- Proposed performance metrics

Mitigation may also be achieved through implementation of onsite post-construction stormwater management BMPs to further offset the loss of principal water quality maintenance wetland functions, including sediment/toxicant retention and nutrient removal/retention/transformation. The loss of wetland acreage and non-principal functions including groundwater discharge/recharge, flood flow alteration, and wildlife habitat, could also be addressed through offsite mitigation at appropriate locations where there is a high likelihood for success, habitat connectivity, and effective upland buffering. This could potentially be achieved through a permittee-sponsored mitigation project including restoration of degraded or filled wetlands, enhancement of existing wetlands, preservation of wetlands and upland buffers, or even the creation of wetland acreage. Mitigation of temporary construction-phase effects related to sedimentation within wetlands and waterways would be achieved through implementation of construction BMPs to control soil erosion and sediment transport.

Opportunities also exist to restore segments of the culverted and ditched stream that flows through the Study Area to restore stream ecology. Currently, this drainage discharges into the Study Area stream segment that drains into Coaster's Harbor. Stream channel restoration and daylighting may be best suited as a potential mitigation option for wetland and waterway impacts related to potential future redevelopment of land divested by RIDOT and the City of Newport that will be implemented by others. The restored stream could become an attractive and functional landscape feature within the future redevelopment areas.

Authorization for Proposed Action impacts to wetlands and waterways that are regulated 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, as the total impacts to federally regulated wetlands and waterways will exceed 5,000 square feet. 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 Indian Tribe. The mitigation will comply with Compensatory Mitigation for Losses of Aquatic Resources; Final Rule 4/10/08; 33 CFR Parts 325 and 332. Approval will also be required by the state agency with jurisdiction over freshwater wetlands, which may be the RIDEM and/or the CRMC.

7.5 Floodplains

Nearly the entire Proposed Action area is located within the existing 1% floodplain, and under proposed grading conditions a majority of the Study Area would remain within the 1% floodplain. The modeling indicates that there would be no predicted increase in the 1% floodplain elevation associated with the Proposed Action. Because the floodplain within the study area is associated with coastal flooding and not riverine flooding, any gain or loss of floodplain storage has no effect on flood elevations for adjacent properties. Therefore, no compensatory floodplain storage mitigation is required.

The Proposed Action would provide a route to access the Pell Bridge that is above the FEMA 50-year flood elevation with 1 foot of freeboard.

As discussed in Section 6.5, it is assumed that the new development parcels made available by completion of the Proposed Action would be graded to the same elevation as the surrounding roadway. Indirect and cumulative impacts related to development of these parcels can be mitigated or reduced by designing site grading, building floor elevations, and utility infrastructure to provide adequate freeboard above the current and predicted future 1% floodplain elevation.

7.6 Water Quality/Stormwater

Mitigation for water quality and stormwater impacts can be achieved through implementation of onsite post-construction stormwater management BMPs, which would reduce pollutant loadings and help to perform wetland functions, including sediment/toxicant retention and nutrient removal/retention/ transformation. Sedimentation within wetlands and waterways would be reduced through the use of construction BMPs to control erosion. The proposed mitigation includes Low Impact Development (LID) practices that may include grass swales, sedimentation forebays, and bioretention areas. Grass swales are well suited to treat highway road runoff due to their linear nature. Existing and proposed drainage plans have been developed based on conceptual plans. The preliminary plans have selected, sited, and sized BMPs based on the anticipated changes in impervious surface cover within the Study Area. All work will be in compliance with the RIDOT Stormwater Consent Decree.

7.7 Coastal Resources

Minor impacts to coastal resources will be mitigated through implementation of construction phase BMPs, use of LID measures where feasible, post-construction stormwater management, and by minimizing and mitigating unavoidable impacts to wetlands.

7.8 Federally Threatened or Endangered and State Natural Heritage Species/Biodiversity

The Proposed Action involves several stressors that have the potential to negatively impact NLEB. However, because no threatened or endangered species are expected to be present within the Study Area, no impacts are anticipated. However, coordination and consultation with USFWS would occur during construction to minimize the potential for impact. Measures potentially include:

- Modification of aspects of the Proposed Action (e.g., temporary work areas, alignments) to the extent practicable to avoid tree removal in excess of what is required to implement the Proposed Action safely.
- Apply time of year (TOY) restrictions for tree removal (during pupping season between June 1 and July 31), or limit tree removal to 10 or fewer trees at any time of year within 100 feet of the existing road/rail surface and outside of documented roosting/foraging

habitat or travel corridors; visual emergence survey must be conducted with no bats observed.

- Limit tree removal to that specified in project plans and educate contractors on restricted clearing limits and how they are marked in the field (e.g. install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).
- Do not remove trees that are documented NLEB roosts that are still suitable for roosting; or trees within 0.25 miles of roosts; or documented foraging habitat any time of year.
- Perform any bridge removal, replacement, and/or maintenance work during the winter hibernation period unless a hibernating colony of bats is present.
- If assuming presence of bats, or if bridge assessment or P/A surveys suggest presence of bats, safeguard suitable roosting habit so they are maintained. Suitable roosting sites may be incorporated into the design of a new bridge.
- Direct temporary lighting away from suitable habitat during the active season.
- When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, the goal is to be as close as possible to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

7.9 Cultural (Historic and Archeological) Resources

Because no direct, indirect, or cumulative adverse impacts are anticipated, mitigation is not anticipated for cultural resources, Should these findings change through the consultation process, mitigation will be investigated.

7.10 Environmental Justice & Socio-Economics

As the Noise subsection 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.

The Proposed Action would 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.

Construction activities may impact the use of properties within identified environmental justice geographies in the Study Area due to noise generation, disruptions to traffic patterns, and vehicular and equipment emissions and inhalable dust concentrations. Such impacts are temporary and not considered to be significantly adverse. However, RIDOT will continue to work with property owners and employ best management practices and other requirements to minimize or mitigate these impacts. RIDOT will provide outreach to minority and low-income communities in the Study Area, including informational handouts, translated materials, etc., as part of the NEPA process and during final design and project construction.

RIDEM's environmental justice policy will be followed for necessary and relevant outreach, communications, and involvement activities related to contaminated sites.

7.11 Visual Resources

The removal of the elevated roadway and ramps would be an improvement to visual resources in the Study Area; therefore, no mitigation is necessary. Indirect visual impacts would result from subsequent redevelopment of the land made available after completion of the Proposed Action. This new development should be designed to interface visually (and functionally) with the redevelopment of adjacent parcels (e.g. Newport Grand).

7.12 Air Quality

Because no significant adverse air quality impacts are anticipated, mitigation is not required.

7.13 Noise and Vibration

Design-year noise levels would approach or exceed the NAC, or would result in a substantial increase in noise of 10 dBA of greater, at a total of 31 residential receptors. Design-year noise levels are predicted to approach or exceed the NAC in several areas, including the Third Street, Cypress Street, JT Connell Highway/Van Zandt Avenue, and Bayview Park/King Road CNEs.

For the Third Street CNE, noise abatement would not be feasible and reasonable for residences on Third Street south of Van Zandt. It is not feasible to alter the alignment of Third Street or institute speed or truck restrictions to these local roads and noise barriers are not feasible due to pedestrian access needed for these residences.

Noise abatement would not be feasible and reasonable for residences on JT Connell Highway near Bayview 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.

For the remainder of the impacted CNEs, noise barriers would be feasible and would meet the requirements to provide at least 5 dBA of noise reduction to 100% of impacted receptors and some of the barriers could provide at least 10 dBA to 50% of benefited receptors. However, none of the noise barriers would be reasonable, as they would not meet the Cost

Effectiveness Index criterion of $30,000 per benefited receptor. Therefore, no mitigation for direct, indirect, or cumulative noise impacts is proposed.

7.14 Hazardous Materials

During construction activities, BMPs and other requirements would need to be followed to mitigate potential hazardous material impacts. From a regulatory perspective, RIDOT and any selected contractors/sub-contractors will 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, if needed. The measures outlined below have been provided as a general guideline and may change once the RAWP is written and submitted to the RIDEM for comment following the Site Investigation Report (SIR):

- During construction activities, the contractor will monitor construction to document that soil management activities are properly conducted. Operating logs and photo-documentation will be kept and submitted monthly and/or upon the completion of the Proposed Action These logs will be the primary documentation for compliance and mitigation of impacts.
- All excavated material which requires stockpiling will be temporarily stockpiled on 6-mil polyethylene sheeting and covered with 6-mil polyethylene sheeting in a contractor-designated stockpile area onsite. This procedure will reduce the possibility of entrainment of the soil by wind or erosion of the stockpile from precipitation. This procedure will also reduce the potential for contact with the stockpile by members of the public by restricting access to exposed soils.
- All reasonable precautions will be taken to prevent the excessive generation of dust during soil excavation, stockpiling, loading, and other soil handling activities. Work at the site must comply with all applicable federal, state, and local regulations, including the RIDEM Air Pollution Control Regulations, and specifically Regulation No. 5 regarding control of fugitive dust. Dust control measures must be implemented, as required, to prevent airborne particulate matter from leaving the site at all times. Dust control measures (e.g., wetting soils) shall be implemented on an as needed basis (i.e. visual evidence of airborne dust) throughout the Proposed Action. All stockpiles shall be inspected daily to ensure compliance with RIDEM Air Pollution Control Regulations. Periodic inspections of the site will be conducted to ensure all dust control measures are in place. This information will then be recorded in the Operating Log. Dust control measures will help to mitigate entrainment of impacted soils via wind to reduce potential impacts to nearby receptors.
- Prior to the start of excavation activities, installation of sediment and erosion controls will be required. A stabilized construction entrance, or entrances if multiple entrances to the Study Area are needed, to reduce the tracking of soils into the area roadways will also be installed. The construction entrance will be installed consistent with the Rhode Island Soil Erosion and Sediment Control Handbook (2014).
- Any remediation waste generated will be managed in accordance with state and federal requirements and disposal documentation will be provided to RIDEM. If excess soil is

generated, the material will be characterized via sampling for disposal parameters and disposed of at a permitted facility. Any disposal manifests, bills of lading, or other transportation documentation (e.g., disposal facility weight slips) will be included in the Remedial Action Closure Report (RACR).

- Upon completion of the Proposed Action, a RACR will be submitted to the RIDEM summarizing field activities that were completed and overall compliance with the RAWP.
- An Environmental Land Usage Restriction (ELUR) will be recorded for contaminated properties or portions of such properties as necessary. The ELUR and associated Soil Management Plan (SMP) will be finalized by RIDOT within 60 days following RIDEM's approval of the RACR. A recorded copy of the ELUR is expected to be forwarded to RIDEM within 15 days of filing, and successful completion of the soil management activities documented in the periodic Operating Logs will be used to demonstrate compliance with the work plan. All information associated with these actions will be submitted to RIDEM as required.

7.15 Climate Change/Resiliency

The Proposed Action will not have a measurable impact on changing climate conditions. Potential mitigation strategies, 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 structures away from the vulnerable coastal area. The Proposed Action provides a route to the Pell Bridge that is above the FEMA 50-year flood elevation with 1 foot of freeboard.

8

Section 4(f) Programmatic Evaluation for a Net Benefit to a Section 4(f) Property

8.1 Introduction

Section 4(f) of the U.S. Department of Transportation Act of 1966 (DOT Act) requires DOT agencies to consider certain properties when making transportation improvements. These properties, collectively referred to as Section 4(f) properties, include publicly-owned parks, recreation areas, wildlife or waterfowl refuges, and publicly- and privately-owned historic sites listed or eligible for listing on the National Register of Historic Places. In the event that a project requires the incorporation of land from a Section 4(f) property in order to meet its purpose and need, this incorporation is called a "use." The purpose of a Section 4(f) evaluation is to document and conclude that there are no "feasible and prudent" project alternatives that avoid the "use" of a Section 4(f) property while meeting the project purpose and need. According to 23 CFR 774.17, "a feasible and prudent avoidance alternative is one that avoids using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property."

The Proposed Action is a federally-assisted transportation improvement project on existing and new alignments that would use land from one Section 4(f) property, the Newport Dog Park. Upon consideration of the impacts of the Proposed Action, RIDOT and FHWA have determined that the project meets the criteria for a "Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property" (hereafter referred to as a "net benefit programmatic evaluation"). According to the FHWA, a net

benefit to a Section 4(f) property is achieved when "…the transportation use, the measures to minimize harm and the mitigation incorporated into the project results in an overall enhancement of the Section 4(f) property when compared to both the future do-nothing or avoidance alternatives and the present condition of the Section 4(f) property, considering the activities, features and attributes that qualify the property for Section 4(f) protection." The criteria for determining a net benefit are described in Section 8.3 below.

8.2 Study Area and Methodology

The value of parks and recreation areas to the City of Newport is described in the City's most recent land use plan: "The open spaces in Newport today play many important roles in the city, providing recreational, social, cultural, aesthetic, economic, environmental, and community benefits. The wide variety of open spaces available to City residents is one of the defining characteristics of Newport, well known for its scenic views." The plan attributes a similar value to the City's many historic sites, noting that they serve to "…enrich and maintain Newport's sense of place and authentic historic character, now and for future generations."

The Study Area was defined by the extent of the Proposed Action's anticipated noise impacts (i.e., areas where the day-night average sound level [DNL] would reach or exceed 60 decibels [dB]) (refer to Figure 8-1, Section 4(f) Properties Study Area). The Study Area was developed based on changes in noise levels because increased noise constitutes the largest geographic effect with the potential to impair the activities, features, or attributes that qualify a property for protection under Section 4(f). This Study Area encompasses the Project's limits of disturbance (LOD), which include all areas that would be physically impacted by construction activities such as grading and paving, plus an additional 200-foot buffer. Geographic Information Systems (GIS) mapping was used to identify properties where a Section 4(f) use (as defined in Section 8.3 below) could occur. In addition to GIS mapping, publicly available information provided on the City's website (e.g., planning documents and maps) were reviewed to develop a detailed understanding of these properties.

The evaluation of alternatives that avoid the "use" of Section 4(f) properties includes a determination of whether those alternatives meet the project's purpose and need. Chapter 2 of the EA provides a detailed discussion of the need for the Project. The purpose of the Project is to reconstruct the Pell Bridge approach ramps to provide:

- Improved traffic circulation, reduced queuing, and improved safety,
- Reconnection of the neighborhoods segmented by the current highway infrastructure, and
- Support of the City of Newport's economic development plan by maximizing land area for redevelopment.

8.3 Applicable Regulations and Criteria

Section 4(f) refers to a section within the U.S. Department of Transportation Act of 1966 that provides for consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development. When a project requires land from

a Section 4(f) property, the law describes it as a "use." Except as set forth in 23 CFR 774.11 and 774.13, a "use" of Section 4(f) property occurs:

(1) When land is permanently incorporated into a transportation facility;

(2) When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in 23 CFR 774.13(d); or

(3) When there is a constructive use of a Section 4(f) property as determined by the criteria in 23 CFR 774.15.

The statute, and subsequent Federal Highway Administration (FHWA) guidance, identifies three main types of "use" of Section 4(f) properties, as defined below:

Permanent incorporation/permanent easement: This involves a right-of-way acquisition of Section 4(f) land as part of a transportation project, or a permanent easement on the Section 4(f) property for transportation or related purposes. In the case of permanent incorporation, the transportation agency or project sponsor directly purchases the property, and the property sustains a permanent impact—typically, changing from a Section 4(f) property to a transportation facility. With a permanent easement, although the underlying ownership of the land may remain with the original owner, the transportation owner acquires a permanent interest in some portion of the property that disrupts its Section 4(f) function.

Temporary occupancy: During the construction of a highway project, a temporary occupancy of a Section 4(f) property may be necessary for activities such as regrading slopes or to provide staging or access areas. Depending upon conditions, such activities – even though temporary in nature – may be considered adverse in terms of the Section 4(f) statute's preservation purpose, and therefore would be considered a Section 4(f) "use." This could occur if the land is subject to temporary or permanent adverse changes, such as contour alterations, removal of mature trees and other vegetation, or disruption of facilities or activities on the property. Once the easement is no longer needed, the Section 4(f) property must be restored to the condition in which it was originally found.

Constructive use: Constructive use involves an indirect impact to the Section 4(f) property of such magnitude as to effectively act as a permanent incorporation. In this case, the project does not physically incorporate the resource but is close enough to it to severely impact important features, activities or attributes associated with it, and to substantially impair it. Constructive use may include impacts such as noise, access restrictions, vibration, ecological intrusions and visual impacts.

When a Federally funded transportation project will use Section 4(f) property, a Section 4(f) approval by the FHWA is required. If the "use" results in no adverse effect on the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f), or results in a Section 106 determination of "no adverse effect" for historic properties—then FHWA makes a *de minimis* determination. If the project would have a greater than *de minimis* impact on the property, a written evaluation must be prepared and submitted to FHWA for approval. There are two types of evaluations—an individual evaluation and a programmatic evaluation. An individual evaluation may be submitted either as an independent document (for categorical exclusions) or as a section of an Environmental

Impact Statement (EIS) or an Environmental Assessment (EA)/Finding of no Significant Impacts (FONSI). A programmatic evaluation may be used only for projects that meet the application criteria of one of the five nationwide programmatic evaluations that have been approved by FHWA. Both types of evaluations describe the Section 4(f) property, the proposed use of the property, avoidance and minimization alternatives, other impacts associated with the alternatives, coordination with the official(s) with jurisdiction, and measures to minimize harm.

As described in Section 8.1, the Proposed Action is being evaluated as a Section 4(f) net benefit programmatic evaluation. This programmatic evaluation applies under certain circumstances in which the following criteria are met:

- The proposed transportation project uses a Section 4(f) park.
- The proposed project includes all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and values of the property that originally qualified the property for Section 4(f) protection.
- The official(s) with jurisdiction over the Section 4(f) property agree in writing with the assessment of the impacts; the proposed measures to minimize harm; and the mitigation necessary to preserve, rehabilitate and enhance those features and values of the Section 4(f) property; and that such measures will result in a net benefit to the Section 4(f) property.
- The FHWA determines that the project facts match those set forth in the Applicability, Alternatives, Findings, Mitigation and Measures to Minimize Harm, Coordination, and Public Involvement sections of this programmatic evaluation.

Completion of this net benefit programmatic evaluation does not exempt the Project from compliance with NEPA, conducting public outreach and involvement, or other Federal or state environmental requirements that are applicable to the Project.

8.4 Baseline Conditions

The following section describes the Section 4(f) properties that are located within the 200-foot buffer Study Area (Figure 8-1 – Section 4(f) Properties Study Area). The properties include parks and recreational areas, historic properties, and historic cemeteries. According to the U.S. Fish and Wildlife Service's Information for Planning and Consultation Tool – National Wildlife Refuge Lands and Fish Hatcheries data layer, there are no wildlife or waterfowl refuges within or near the Study Area.

8.4.1 Parks and Recreational Areas

Newport Dog Park

The Newport Dog Park is an approximately 0.5-acre public recreational open space located on Rhode Island Department of Transportation (RIDOT)-owned land in an industrial area at the southern terminus of JT Connell Highway in the North End Commercial neighborhood.

Although the property is owned by RIDOT, it is managed by the City of Newport. According to the *City of Newport Comprehensive Land Use Plan*, this dog park is classified as "single use space," which is a fenced recreational open space that has a singular focus in mind (pp. 8-10). It is the only approved site in the City of Newport for dogs to be off-leash. The dog park also features a separate enclosed area that is restricted to dogs under 25 pounds. The dog park is only accessible to users from JT Connell Highway, where street parking is available in an area along the fence line. The Newport Dog Park lies entirely within the Proposed Action LOD.

Third Street Playground

The Third Street Playground is a 0.28-acre playground located in the North End Commercial neighborhood on state-owned land.[4] The playground is categorized as a "Mini Park" and includes a playground structure, multiple benches and picnic tables. The park is fenced in with an opening for sidewalk access off Third Street. There does not appear to be designated vehicle parking for users. This park is within a densely populated area of Newport, and is approximately 24 feet outside the Proposed Action LOD.

Harbor Walk

The City of Newport has a designated recreational trail that follows the border of Newport Harbor. This sidewalk trail, called the Harbor Walk, offers scenic water views and goes through Newport's Historic District. The Harbor Walk is just over 5 miles long; the portion that is closest to the Proposed Action LOD follows along Washington Street. The northernmost end of the trail stops approximately 260 feet from Pell Bridge at the corner of Cypress Street. The Harbor Walk is immediately adjacent to the Proposed Action LOD.

Hunter Park

Hunter Park, located on Van Zandt Avenue at the corner of 3rd Street, is classified as a "Neighborhood Park" and lies within The Point neighborhood. Parking is available to users on Dyers Gate Road off 3rd Street. There do not appear to be any pedestrian access points to the park from the sidewalk on Van Zandt Avenue. Because of its location, this nearly 2.5-acre park is a valuable recreational resource to northern Newport, which notably has a low supply of open space according to the City of Newport Comprehensive Land Use Plan (pp. 8-2). Hunter Park is classified as conservation land and is owned and maintained by the City of Newport (pp. 9-12). The park currently offers a playground, baseball field, basketball courts, picnic tables, soccer, tennis courts, and other large open fields. Planned upgrades to the park include improvements to meet Americans with Disabilities Act (ADA) regulations, restoration of the tennis courts, and conversion of another tennis court into three pickleball courts. Hunter Park is approximately 12 feet outside the Proposed Action LOD.

[4] Mini parks, or pocket parks as they are also referred to, are defined as less than one acre and may include traditional open spaces, traffic islands, waterfront parks, and driftways. These parks can help address the open space needs of those in dense urban areas.

Cardines Field and Playground

Cardines Field, located at 24 America's Cup Avenue, is believed to be one of the oldest ballparks in the United States and has been called "a small urban gem of a ballpark". The ballpark is located in the Downtown neighborhood of Newport and has been owned by the City since 1936. A summer collegiate baseball team, the Newport Gulls, moved to Newport in 2001 and currently uses Cardines Field as their home field. The 2.73-acre ballpark has the capacity to seat 3,000 people, has a concession stand and restrooms, and there is street parking available nearby, as well as access to public transportation facilities. Cardines Field is located within the Newport Historic Landmark District, which is discussed below under Historic Properties. Cardines Field is approximately 117 feet outside the Proposed Action LOD.

Immediately adjacent to the northeast of Cardines Field at the corner of Bridge Street and America's Cup Avenue, the Cardines Playground provides benches, handicap vehicle parking, and a fully wheelchair-accessible play structure. This public play area is entirely fenced in and parking is available along nearby streets. Cardines Playground is within the Downtown neighborhood and is easily accessible for residences in the nearby area. Cardines Playground is approximately 10 feet outside the Proposed Action LOD.

Edward G. Goldberg / Coddington Field

Edward G. Goldberg Field, located at 245 Maple Avenue, is an approximately 2.85-acre facility owned by the City of Newport. The Edward G. Goldberg Little League Field is also referred to as the Louis "Duke" Abruzzi Little League Complex, or Coddington Field. The facility consists of two Little League baseball fields, restrooms, bleachers, a field shed, and on-site parking. According to tax records, the property has been owned by the City of Newport since 1962. Edward G. Goldberg / Coddington Field is approximately 8 feet outside the Proposed Action LOD.

Lexington Street and Coddington Highway Playground

This unnamed property is located within Middletown, Rhode Island, at the junction of Lexington Street and Coddington Highway. The parcel is approximately 1.7 acres, and contains a large grassy field, benches, and a small playground. The property is immediately east of the U.S. Navy Center; according to the Middletown Office of Geographic Information System, the parcel is half owned by Newport Landings LLC and the United States. There is no designated vehicle parking for the playground; however, street parking is available. This property is located between two apartment complexes, Coddington Cove (Navy-owned service member housing) and Landings Apartment Community (privately-owned). Lexington Street and Coddington Highway Playground is approximately 7 feet outside the Proposed Action LOD.

8.4.2 Historic Properties

United States Naval Hospital Newport Historic District

The United States Naval Hospital Newport Historic District is located north of the project area, and partially overlaps the Proposed Action LOD. The 14.1-acre property is a waterfront site between 3rd Street and Coasters Harbor. This historic district has been determined eligible for listing in the National Register.[5] For additional information on the United States Naval Hospital Newport Historic District, see Appendix B9 to the EA for the Cultural Resources Technical Memorandum.

Newport Historic Landmark District

The Newport Historic Landmark District is located at the south end of the Study Area and is bounded by Van Zandt Avenue, Newport Harbor, Thames Street, Pope Street, William Street, Bellevue Avenue, Bull Street, Broadway, and Kingston Street. This historic district is listed in the National Register, and partially overlaps with the Proposed Action LOD. For additional information on this historic district, see Appendix B9 to the EA for the Cultural Resources Technical Memorandum.

Van Zandt Avenue Historic Railroad Bridge

The Van Zandt Avenue Bridge spans Van Zandt Avenue between 3rd Street and Farewell Street and is located within the southern portion of the Study Area. The bridge forms the northern boundary of the Newport Historic Landmark District and was constructed in the early 1930s by the City of Newport to replace an earlier structure. The Van Zandt Avenue Bridge has been determined eligible for listing in the National Register. For additional information on this bridge, see Appendix B9 to the EA for the Cultural Resources Technical Memorandum. Van Zandt Avenue Bridge lies entirely within the Proposed Action LOD.

Miantonomi Memorial Park and World War I Memorial Tower

This 38.6-acre community park has a history dating back to the colonial era and was listed in the National Register on June 23, 1969. The park is approximately bounded by Girard Avenue on the west, Admiral Kalbfus Road on the south, Hillside Avenue on the east, and Sunset Boulevard on the north. It is the largest city-owned park in Newport, providing hillside bay views, a playground, trails, picnic tables, grills, volleyball, and other recreational activities. It is also a spot for large community cookouts and dog walking. The park also features a World War I stone tower memorial, dedicated in 1929 on the 150th anniversary of the Battle of Rhode Island. Miantonomi Memorial Park and World War I Memorial Tower is immediately adjacent to the Proposed Action LOD.

[5] The National Historic Preservation Act of 1966 authorizes the National Park Service to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.

8.4.3 Historic Cemeteries

Two historic cemeteries are located within the Study Area. Common Burying Ground encompasses approximately 9 acres and was given to the City of Newport in 1640. It is the oldest public cemetery in the City. The City of Newport owns and maintains the Common Burying Ground under the direction of the Building and Grounds Supervisor with assistance from the Historic Cemetery Advisory Commission. Island Cemetery consists of approximately 22 acres and is privately owned. The two cemeteries are listed in the National Register under one listing and have a combined total of over 5,000 graves, many of which have colonial-era headstones. Both of these cemeteries are immediately adjacent to the Proposed Action LOD.

8.5 Impacts of the Proposed Action on Section 4(f) Properties

Under the Proposed Action, existing highway infrastructure and associated ramps would be removed to reconnect existing roadways and create a new local roadway network (refer to Figure 8-2). This work would require the "use" of one Section 4(f) property: the Newport Dog Park. The reconfiguration of Farewell Street (Route 238) and JT Connell Highway would result in a permanent conversion of the entire 0.5-acre Newport Dog Park to roadway right-of-way use, as the dog park lies partially within the LOD and any remainder would not have sufficient access to maintain the property's use as a park. This would constitute a direct "use" of this Section 4(f) property, because park land would be permanently incorporated into a transportation facility.

To mitigate for elimination of the park, it would be replaced at a new location with a similar facility. RIDOT has coordinated with the City of Newport on the replacement park's location and features, and the City has concurred that the new facility would satisfactorily replace the activities, features, and attributes of the existing park. Section 1.7, Mitigation, provides information on the location and amenities of the proposed replacement facility.

The Proposed Action was also evaluated for its potential to result in a constructive use of Section 4(f) properties, as defined above in Section 1.3. For noise to be considered as a contributing factor to a constructive use determination, the noise level must be high enough to substantially impair the use and enjoyment of the Section 4(f) property. The types of situations in which the FHWA has determined that a noise-related constructive use would occur include:

1. If a project would affect the ability to hear a performance at an outdoor amphitheater,
2. To sleep in a campground,
3. To enjoy a historic site where quiet is a recognized attribute of the site's significance,
4. To enjoy an urban park where serenity and quiet are significant attributes, or
5. To view wildlife in an area intended for such.

The FHWA has determined that a noise-related constructive use does not occur:

1. If the predicted noise levels with the proposed project do not exceed the FHWA Noise Abatement Criteria (NAC), or

2. If the increase in noise due to the proposed project (compared to the No Build condition) is 3 A-weighted decibels (dBA) or less, even if the noise levels do exceed the FHWA NAC.

Appendix B13, Noise Technical Report, includes a quantitative evaluation of noise levels for existing conditions, the No Action Alternative, and the Proposed Action. Noise levels under the Proposed Action would not approach or exceed the NAC, and noise levels would not increase by more than 3 dBA relative to the No Action Alternative at any Section 4(f) properties. Therefore, there would be no constructive use related to noise under the Proposed Action, and no other aspects of the Proposed Action would have the potential to substantially impair the use and enjoyment of any Section 4(f) properties in the Study Area.

8.6 Alternatives Analysis

8.6.1 Requirements for Evaluating Avoidance Alternatives

As described above, the "use" of Section 4(f) property is prohibited unless there is no feasible and prudent avoidance alternative. Because the Proposed Action would require the "use" of the Newport Dog Park, this net benefit programmatic evaluation must analyze potential avoidance alternatives. An avoidance alternative is considered prudent and feasible if it avoids using the Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property. An avoidance alternative is not feasible if it cannot be built as a matter of sound engineering judgement. According to 23 CFR 774.17, an alternative is not prudent if:

(i) it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;

(ii) it results in unacceptable safety or operational problems;

(iii) after reasonable mitigation, it still causes:

(A) Severe social, economic, or environmental impacts;

(B) Severe disruption to established communities;

(C) Severe disproportionate impacts to minority or low-income populations;

(D) Severe impacts to environmental resources protected under other Federal statutes;

(iv) it results in additional construction, maintenance, or operational cost of an extraordinary magnitude;

(iv) it causes other unique problems or unusual factors; or

(vi) it involves multiple factors in paragraphs (i) through (v) of this definition, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

FHWA requires that a net benefit programmatic evaluation consider the following three alternatives to avoid the "use" of Section 4(f) property:

› Do nothing.

- Improve the transportation facility in a manner that addresses the project's purpose and need without a use of the Section 4(f) property.
- Build the transportation facility at a location that does not require use of the Section 4(f) property.

The analysis of the Proposed Action and the three avoidance alternatives is presented in the following sections.

8.6.2 Avoidance Alternatives

In accordance with FHWA's guidance, this section analyzes the required list of three avoidance alternatives.

No Action (Do-Nothing) Alternative

Under the No Action Alternative, the existing infrastructure would be maintained, and no "use" of Section 4(f) properties would occur. However, the No Action Alternative would not meet the Project's purpose and need. The northern and southern portions of JT Connell Highway would remain disconnected, and the existing elevated highway would remain unaltered. As a result, traffic flow would not be improved, and congestion would remain an issue, as a significant amount of traffic would queue from the Downtown Newport off-ramp onto the Pell Bridge (Route 138), a distance of nearly 1.25 miles. The ramps would continue to serve as barriers to reconnection of the severed street grid, and the surrounding neighborhoods would remain segmented by the highway infrastructure. In addition, the No Action Alternative would not create developable land and would not provide any pedestrian and bicycle improvements to project roadways. Because it fails to meet the Project's purpose and need, the No Action Alternative is not feasible and prudent, and is not a viable avoidance alternative.

Improvements That Address Purpose and Need Without Use of Section 4(f) Property

Due to the fact that the Project is designed to improve existing infrastructure, alleviate congestion, and process vehicles efficiently, any alternative that met the Project's purpose and need would require the construction of roadway and bridge improvements within a geographically constrained area. The Pell Bridge ramps serve as the entrance to Aquidneck Island from the west; the surrounding area is fully developed with urban land uses, including residences, businesses, and parks. The constraints posed by these surrounding land uses, coupled with the roadway geometry needed to achieve the Project's transportation objectives, limits the potential to avoid Section 4(f) properties through engineering design measures. In addition, because Route 138 provides the island's sole access and egress to and from the west, traffic diversions or other traffic management measures are not practicable as a means of alleviating the need for new infrastructure.

Under the Proposed Action, relocation of the dog park is required due to the realignment and southward extension of the JT Connell Highway and the eastward extension of Dyres Street. The two extended streets would intersect in the approximate location of the existing park. These improvements are essential to one of the project's purposes: reconnecting the

neighborhoods segmented by the current highway infrastructure. Shifting these roadways to avoid the dog park would result in the need to acquire multiple properties for right-of-way, resulting in substantial adverse community impacts and potentially requiring the use of other Section 4(f) resources:

- A westward shift of JT Connell Highway would displace commercial businesses to the north of the Dyres Street alignment, place traffic in close proximity to the proposed bicycle/pedestrian path, and require the use of land from the Third Street Playground and Hunter Park, two Section 4(f) properties located west and southwest of the existing loop ramp.
- An eastward shift of JT Connell Highway would require the displacement of commercial properties east of the existing alignment, and would also reduce the amount of land available for redevelopment. This would be contrary to another of the project purposes, which is to maximize land area for redevelopment in support of the City's economic goals.
- In addition to these adverse impacts, avoidance of the existing dog park would represent a substantial missed opportunity to benefit a Section 4(f) property, as described in Sections 1.7 and 1.8 below.

Based on the considerations above, avoidance of the Newport Dog Park by using engineering design or transportation system management techniques is not considered feasible and prudent.

Construction At a New Location That Does Not Require Use of the Section 4(f) Property

As described above, any alternative that met the Project's purpose and need would require the construction of roadway and bridge improvements within a geographically constrained area. The existing ramps provide the connection between the Pell Bridge—a significant piece of infrastructure that cannot be moved without substantial cost and impact—and a densely developed portion of downtown Newport. Residential neighborhoods lie immediately southeast of the existing southern loop ramp, while commercial businesses surround other portions of the ramps. Hence, the existing RIDOT right-of-way is the only area in which the ramps can be relocated without displacement of a substantial number of residences and/or businesses, disruption of community cohesion, and greater potential for impacts to Hunter Park, the Third Street Playground, and a portion of the Harbor Walk, which are other Section 4(f) properties. Constructing the transportation facility at a new location that does not require use of the Newport Dog Park would therefore result in substantial adverse social and economic impacts.

8.6.3 Findings

The alternatives analysis demonstrates that there are no feasible and prudent avoidance alternatives to the "use" of the Newport Dog Park, which is located within RIDOT-owned property. To meet current design standards, provide appropriate roadway geometry, and minimize impacts to environmental, cultural, and community resources, all feasible and prudent action alternatives would require that the replacement ramps be located within the

RIDOT-owned property surrounding the existing ramps. The avoidance alternatives either would not meet the purpose and need, or would result in greater adverse impacts to environmental, cultural, and community resources. They would also forego the opportunity to provide a benefit to a Section 4(f) property by moving the dog park to a new and improved location. Therefore, the Proposed Action is the only feasible and prudent alternative, and will result in a clear net benefit to the Section 4(f) property.

8.7 Mitigation and Measures to Minimize Harm

To meet the requirements codified in 23 CFR 774.17, all possible planning to minimize harm or mitigate for adverse impacts has been incorporated into the Proposed Action. In coordination with the City of Newport, RIDOT has determined that the Newport Dog Park would be replaced in kind at a location south of Route 138, just east of Hunter Park and adjacent to the Old Colony and Newport Railroad, where the eastbound off-ramp to JT Connell Highway is currently located. Preliminary design plans are depicted in Figure 8-3, Section 4(f) Mitigation: Newport Dog Park Relocation. The parcel of land is owned by the State of Rhode Island and would be maintained by the City of Newport.

The new dog park would be slightly larger than the existing Newport Dog Park, with approximately 0.64 acre of fenced-in space, as compared to 0.54 acre for the existing facility. User access to the new dog park would be improved compared to the existing Newport Dog Park location, which is only accessible via the northernmost portion of JT Connell Highway and only offers unmarked street parking. The new location would be closer to The Point and Kerry Hill/Van Zandt neighborhoods, and closer to Downtown Newport. Ample, free parking of over 300 spaces total would be available at the three "park and ride" lots. In addition, bicycle racks would be installed near the relocated dog park to accommodate bicyclists. The proposed shared-use path that would be constructed along the Old Colony and Newport Railroad line would provide pathway users with access to the dog park as well. Further detail of the dog park features and amenities, such as benches, landscaping, pathway locations connecting the dog park to the shared use path and parking lots, and a separate enclosure for small dogs, will be determined at a later date, through continued coordination between RIDOT and the City of Newport.

On July 31, 2019, the Newport City Manager, the official with jurisdiction over the Section 4(f) resource, concurred with the Section 4(f) use and confirmed that, based on the advantages described above, the proposed replacement location and amenities for the Newport Dog Park will enhance the significant features and values of the park and will result in a net benefit to the park when compared to the existing conditions. A copy of this concurrence is included in **Attachment A**. The required coordination and public involvement efforts that support the City's concurrence are described in Section 1.9.

8.8 Comparison of Park Function and Value With and Without the Proposed Action

In addition to determining that there are no feasible and prudent avoidance alternatives, a net benefit programmatic evaluation must also consider the function and value of the Section 4(f) property before and after implementation of the Proposed Action. This section

describes the physical and functional relationship of the Section 4(f) property to the community in order to demonstrate the net benefit, or enhancement, to the Newport Dog Park.

The Newport Dog Park is a significant resource to the community, as it is the only approved site in the City of Newport for dogs to be off-leash. On December 5, 2018, the City of Newport formally confirmed the significance of the Newport Dog Park as a resource under Section 4(f); a copy of the letter is included in **Attachment A**. Despite its significance, however, the park suffers from circuitous access, limited parking, and a location directly adjacent to the busy ramp.

The Proposed Action would relocate the Newport Dog Park to mitigate for the loss of the existing facility. The activities, attributes, and features of the new dog park would be enhanced and upgraded from those of the existing park. The relocation would provide a number of benefits to the surrounding area or community:

- The new dog park location would be more accessible to park users, with access provided from a through street (the realigned JT Connell Highway) rather than a dead-end street.
- Access for pedestrians and bicyclists would be greatly enhanced compared to current conditions because the park would be adjacent to the proposed bicycle/pedestrian path along the Old Colony Railroad line.
- There would be increased parking availability, with approximately 300 spaces available at the adjacent park-and-ride facilities.
- The new dog park would be larger than the existing park, comprising approximately 0.64 acre compared to 0.54 acre for the existing facility.

Overall, relocation of the existing Newport Dog Park under the Proposed Action would enhance the current features of the park and its value to users.

8.9 Public Involvement and Regulatory Coordination

Several federal, state, and local agencies, as well as other stakeholders, are providing input on the Project. The FHWA, as the lead Federal agency, is responsible for the NEPA process and compliance with Section 4(f). RIDOT, as the applicant, is responsible for managing and preparing the EA. Cooperating Agencies for the Project include the Rhode Island Turnpike and Bridge Authority, the City of Newport, and the U.S. Environmental Protection Agency. The applicant has coordinated with several other agencies and with local stakeholders to discuss alternatives and measures to minimize harm to Section 4(f) properties.

Meetings have been held periodically throughout the development and planning process for the Project, with various federal, state, and local agencies, as well as with the general public. Table 8-2 below summarizes the public workshops held to date.

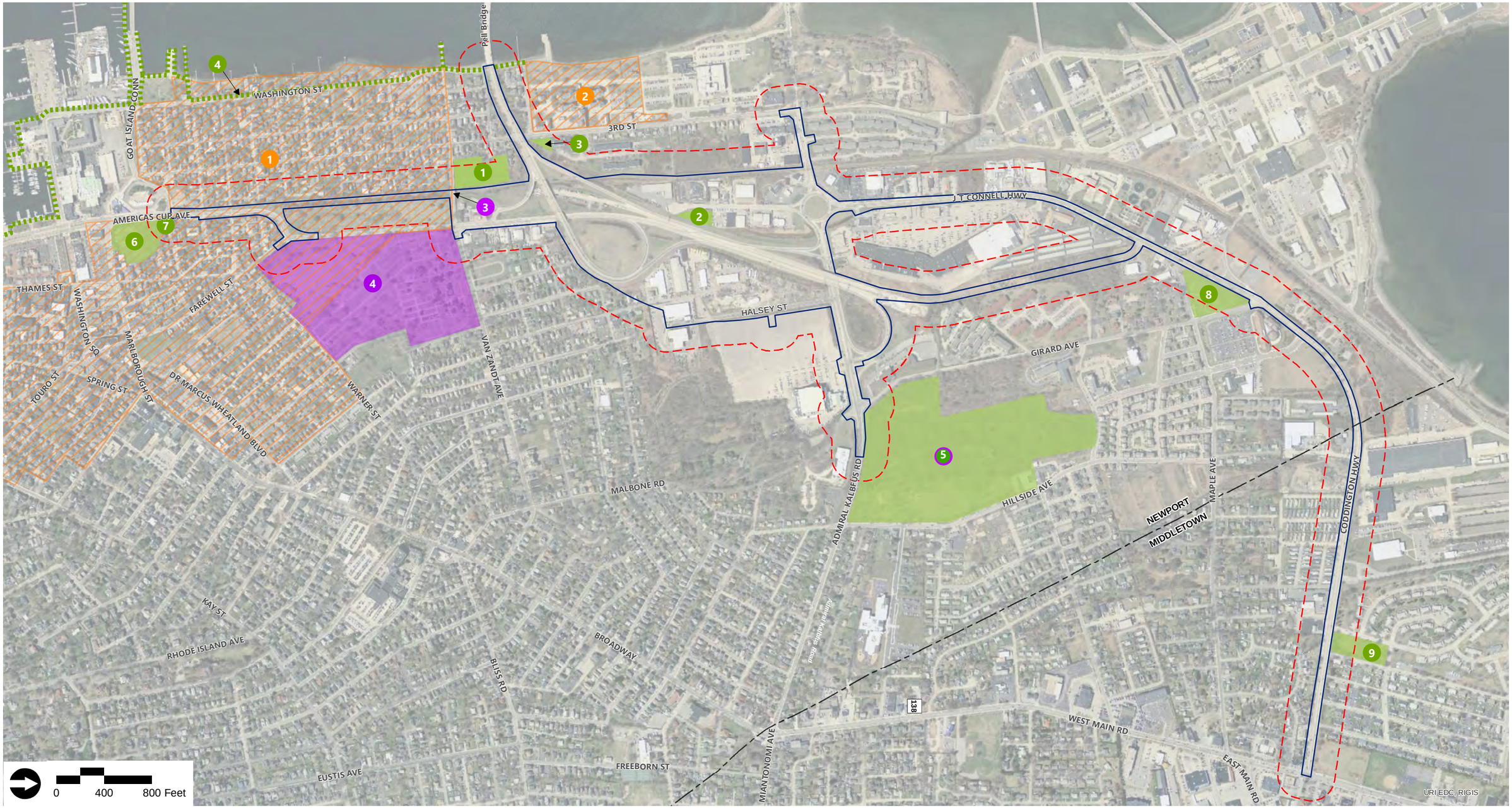
Table 8-2 Public Workshops on Reconstruction of Pell Bridge Approaches

Date	Topic	Location	Attendance
March 1, 2018	**Workshop #1** Reconstruction of the Pell Bridge Approaches	Newport City Hall	150 people
July 17, 2018	**Workshop #2** Reconstruction of the Pell Bridge Approaches	Newport City Hall	125 people

These two workshops afforded the public the opportunity to hear details on the Project and submit comments to RIDOT. In addition, on April 2, 2019, RIDOT representatives met with users of the Newport Dog Park at the Newport Public Library and discussed their needs for the relocated park. RIDOT also accepted comments throughout the Project planning process by U.S. mail and an online portal on the Project website.

Comments on Section 4(f) properties generally included:

- Questions and suggestions regarding plans for the Old Colony and Newport Railroad, bicycle and pedestrian path;
- Protection of the historic districts, specifically the potential for increased vehicular traffic to impact these Section 4(f) properties;
- Relocation of the Newport Dog Park, with suggestions to move the park to a safer area with limited traffic access, and create a larger dog park that is well maintained;
- Suggestions to install a linear park along the proposed bicycle and pedestrian path; and
- Preserving pedestrian and bicycle access to and from Section 4(f) properties, specifically those within The Point neighborhood.



Source: RIDOT, RIGIS, National Register of Historic Places Database (NRHP Database), Historic American Building Survey (HABS)

Legend

- Limit of Disturbance
- Study Area
- Parks/Recreation
- Harbor Walk
- Historic Districts
- Historic Cemeteries

Section 4 (f) Properties

Parks/Recreation

1. Hunter Park
2. Newport Dog Park
3. 3rd Street Playground
4. Harbor Walk
5. Miantonomi Memorial Park and World War I Memorial Tower
6. Cardines Field
7. Cardines Playground
8. Edward G. Goldberg/ Coddington Field
9. Lexington Street and Coddington Highway Playground

Historic

1. Newport Historic District
2. United States Naval Hospital Newport Historic District (Eligible for listing in National Register)
3. Van Zandt Avenue Historic Railroad Bridge (Eligible for listing in National Register)
4. Common Burying Ground and Island Cemetery
5. Miantonomi Memorial Park and World War I Memorial Tower

Figure 8-1

Section 4(f) Properties Study Area

Reconstruction at Pell Bridge Ramps
Newport/Middletown, Rhode Island

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\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\Oct 2019\FIG 8-2 Section 4(f) Impacts.mxd

Source: RIDOT, RIGIS, National Register of Historic Places Database (NRHP Database), Historic American Building Survey (HABS)

Legend

Section 4(f) Property

Newport Dog Park

Figure 8-2

Proposed Action
Section 4(f) Impact

Reconstruction at Pell Bridge Ramps
Newport/Middletown, Rhode Island

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\\vhb\gbl\proj\Providence\72900.00\graphics\FIGURES\EA Draft\Oct 2019\FIG 8-3 Dog Park.dwg

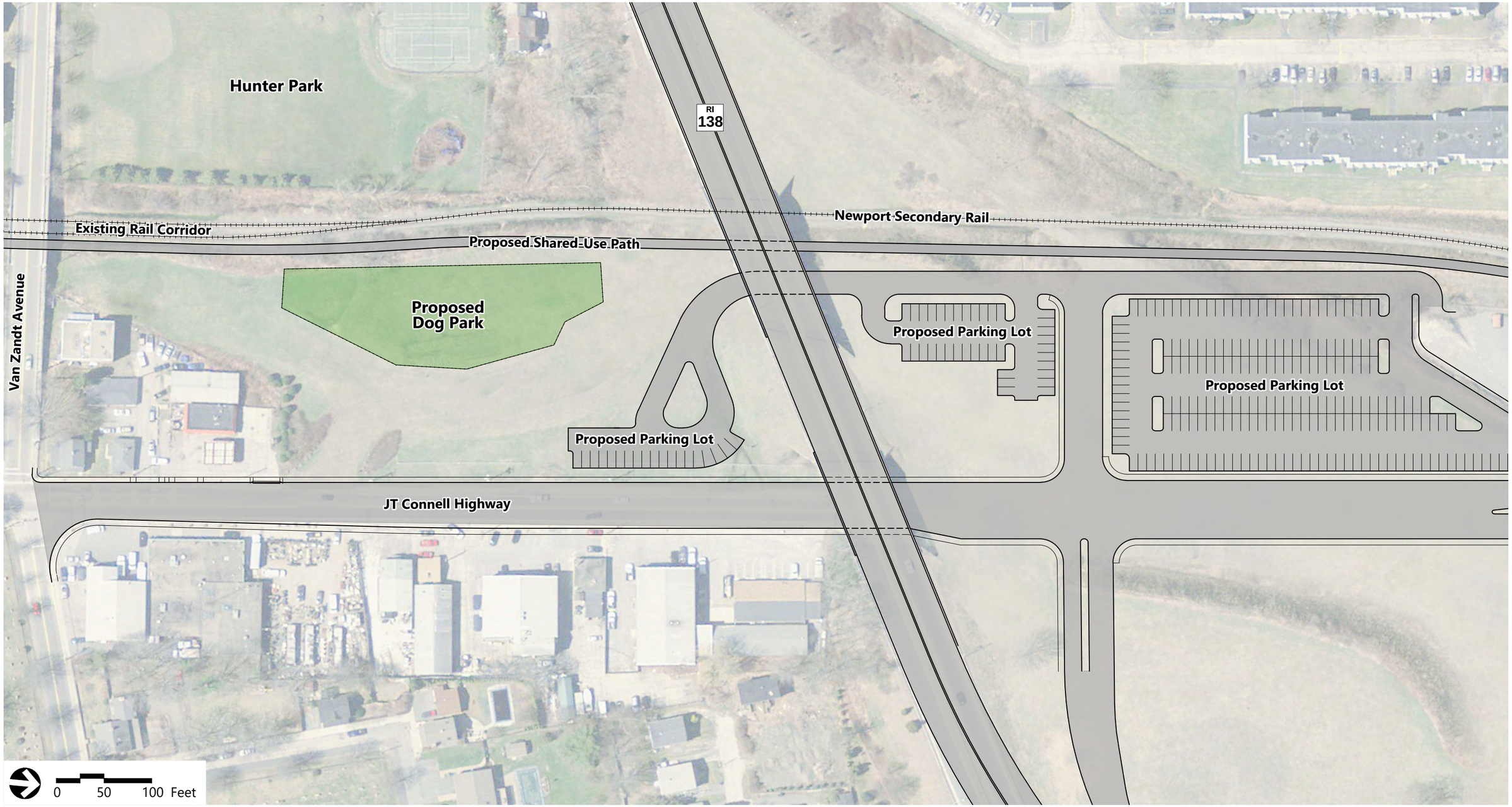

Figure 8-3

Section 4(f) Mitigation:
Newport Dog Park Relocation

Reconstruction of Pell Bridge Ramps
Newport/Middletown, Rhode Island

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9

Public Involvement

Major transportation actions that require documentation of NEPA compliance must include early coordination and public involvement efforts in accordance with 23 CFR 771.111, and, in the case of Environmental Assessments, must comply with the applicable requirements of 23 CFR 771.119. For this EA, the public and agency coordination has included the efforts discussed below and in the following sections.

RIDOT identifies outreach goals and objectives for public involvement based on the specific circumstances of a particular transportation project. The public involvement that has been developed for this Project focuses on information exchange and discussion of the Project through its various stages.

Early outreach activities to date have focused on understanding the existing and ongoing stakeholder issues and concerns. A list of key stakeholders and other interested or potentially affected parties is updated regularly on the status of the project. In addition to this targeted outreach, two public workshops were held in the City of Newport to discuss the Project with officials and residents, including residents of neighborhoods with environmental justice (EJ) populations as described in Section 5.10. In addition, RIDOT has coordinated with several business and properties owners within the Project study area.

Organizations and Associations

- Bike Newport
- Discover Newport
- Halsey Tradesman Condominium Association

- Kerry Hill Neighborhood Association
- Newport North End Neighborhood Association
- Off-Broadway Neighborhood Association
- Point Neighborhood Association

Key early, ongoing, and future public involvement activities in support of the Project include:

- Initial Project Notification (Press Release): January 2017
- Project Notification and Informational Letter: An outreach effort by RIDOT was intended to provide outreach and project information to abutters (tenants) to the Project Area.
- Project Webpage: A website was prepared to provide information on the project background, EA process, key stakeholders and cooperating agencies, public workshop documents, and project status. A comment form was provided on the site to allow the public to submit feedback on the project.
- Public Workshops: RIDOT hosted four public workshops to discuss the project (two on existing conditions evaluation and two on alternatives analysis) in March and July 2018.
- EA Summary: RIDOT will produce and distribute a summary of the EA and its findings to officials and stakeholders.
- Public and Agency Review of EA: The Draft EA will be made available for agency and public review and comment. Comments will be responded to in the Final EA.

Appendix A provides the public involvement materials from the four public workshops, including presentation slides, attendees, and comments received.

10

Agency Coordination

As the project sponsor, RIDOT reached out to federal, state, and local agencies as well as local organizations that may have interest in the Project. The agencies listed below have been involved in the development of this Environmental Assessment. Agency correspondence is included in Appendix C.

Federal Agencies

- Federal Highway Administration (Lead Agency)
- Environmental Protection Agency (EPA) Region 1
- United States Navy – Naval Station Newport
- U.S. Fish and Wildlife Service

State Agencies

- Rhode Island Coastal Resources Management Council
- Rhode Island Department of Environmental Management
- Rhode Island Historical Preservation and Heritage Commission
- Rhode Island Public Transit Authority
- Rhode Island Turnpike and Bridge Authority

City Agencies

- Newport City Council
- Newport City Planning & Engineering Departments
- Newport Department of Public Works
- Newport Historic Preservation Commission

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11

Permitting and Regulatory Review

11.1 Compliance with Section 106 of the National Historic Preservation Act

State-level review is required by the RIHPHC under 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 NHPA of 1966, as amended, and the implementing regulations of the ACHP (36 CFR 800). In the event that the potential exists for any adverse effects to aboveground and subsurface resources, RIDOT will consult with the Executive Director of the RIHPHC/RISHPO to identify measures that would avoid, minimize, or mitigate any adverse effects of the Project pursuant to 36 CFR 800.5(e) and 800.9.

11.2 Compliance with Section 4(f) of the Department of Transportation Act

The Section 4(f) evaluation for the Proposed Action is provided in Chapter 8 of this EA. One Section 4(f) property, the Newport Dog Park, would be acquired for transportation right of way and replaced in a new location. RIDOT has coordinated with the City of Newport on the replacement of the Newport Dog Park's location and features, and the City has concurred that the new facility would satisfactorily replace the activities, features, and attributes of the existing park.

11.3 Endangered Species Act Section 7 Consultation

An Official Species List was obtained pursuant to Section 7 of the Endangered Species Act (ESA) on October 9, 2018 via a request through the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Tool. The Official Species List was generated by the USFWS New England Ecological Services Field Office, located in Concord, New Hampshire and indicated that there are two listed species with the potential to occur within the Study Area: the northern long-eared bat (NLEB), which is federally threatened, and the roseate tern which is federally endangered. Roseate tern habitat is not present within the Study Area and an acoustic survey targeting the NLEB resulted in the probable absence of this species within the Study Area.

On January 2, 2019, RIDOT requested concurrence from the U.S. Fish and Wildlife Service (USFWS) that the Project may affect, but is not likely to adversely affect, the NLEB and roseate tern. USFWS concurred with this determination on March 18, 2019. The concurrence letter is included in Appendix C to this EA.

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

11.4 EPA Sole Source Aquifer Program

The Sole Source Aquifer Program is authorized by Chapter 1424(e) of the Safe Drinking Water Act of 1974. Projects that receive federal financial assistance and propose work which may contaminate a groundwater resource that the USEPA has designated as a Sole Source Aquifer are required to notify the USEPA Sole Source Aquifer Coordinator to assess the risk the project proposes to groundwater contamination. The RIGIS maintains a coverage for USEPA-designated sole source aquifers in Rhode Island.

The public water on Aquidneck Island is provided by a network of surface water reservoirs and there are no Sole Source Aquifers on Aquidneck Island. Therefore, this regulation is not applicable.

11.5 Wild, Scenic and Recreational Rivers

The National Wild and Scenic Rivers System was created in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) and establishes methods for evaluating and providing Federal protection to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition.

Rhode Island has approximately 1,392 miles of river, but no designated wild and scenic rivers and none within the project study area.

11.6 Clean Water Act Section 401

Section 401 of the CWA specifies additional requirements for permit review on the state level. Any applicant for a federal license or permit to conduct any activity that may result in a

discharge into navigable waters must provide a certification from the state in which the discharge originates (401 Certification). Interstate water pollution control agencies having jurisdiction over navigable waters at the point where the discharge originates may issue a permit in lieu of the state. In Rhode Island, Water Quality Certification (WQC) is obtained via application to the Rhode Island Department of Environmental Management (RIDEM) Office of Water Resources.

11.7 Clean Water Act Section 404

The Proposed Action proposes direct impacts to wetlands and waterways that are protected under Section 404(b) of the federal CWA and will require federal authorization from the USACE. The Project proposes impacts greater than 5,000 square feet and less than 1 acre and is eligible under the USACE's State of Rhode Island General Permit 18 under Preconstruction Notification. 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.

Impacts to state-protected freshwater wetlands for Project impacts will require authorization from the Rhode Island Department of Environmental Management. As a linear project located on both sides of the CRMC and RIDEM jurisdictional boundary, the CRMC determined that the RIDEM shall serve as the freshwater wetland review agency for the Project. An Application to Alter a Freshwater Wetland will be filed with the RIDEM for this Project. .

11.8 Executive Order 11990, Protection of Wetlands

Executive Order 11990 requires that each Federal agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. Given the geometric requirements for ramp construction, the boundaries of the existing right-of-way, and the need to minimize property acquisition and displacement, no practicable alternative exists that would completely avoid wetland impacts. Section 7.4 of this EA describes a variety of measures to minimize harm to wetlands affected by the Project. Compliance with Section 404 of the Clean Water Act will also ensure that wetland impacts are avoided, minimized, and/or mitigated to the greatest extent feasible.

11.9 Clean Water Act Section 402

The USEPA, in 1972, created the National Pollution Discharge Elimination System (NPDES) program. The CWA prohibits anybody from discharging "pollutants" through a "point source" into a "water of the United States" unless they have an NPDES permit. Authorization for states, tribes, and territories is through a process that is defined by CWA Section 402 (b) and 40 CFR Part 123.

USEPA authorized Rhode Island to implement the National Pollution Discharge Elimination System Program through the Clean Water Act (CWA) Section 402 (b) and 40 CFR Part 123 on September 17, 1984. The Rhode Island Pollution Discharge Elimination System (RIPDES) Program is the backbone of the state's water pollution control strategy, which includes developing and enforcing permit limitations for municipal and industrial wastewaters, storm water, and combined sewer overflows discharged directly to the waters of the state, as well as industrial wastewaters discharged to municipally-owned treatment facilities.

11.10 Coastal Zone Management Act

The Project will have to file for federal consistency certification under Coastal Zone Management (CZM) Section 307 of the Coastal Zone Management Act of 1972, as amended. To certify that the activity complies with the state's CZM program for activities affecting the state's coastal area.

11.11 Environmental Justice

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.

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.

11.12 Executive Order 13112, Invasive Species

Executive Order 13112 of February 3, 1999 (Invasive Species), calls upon Federal departments and agencies to take steps to prevent the introduction and spread of invasive species, and to support efforts to eradicate and control invasive species that are established. Section 5.4.4 of this EA discusses the presence of invasive non-native species, including *Phragmites australis,* in wetlands within the Project study area. Section 7.4 describes how the restoration of existing degraded wetlands in order to mitigate for Project impacts may help to reduce the prevalence of invasive species. Section 7.4 also identifies the use of an Invasive Species Management Plan (IPMP) to address the existing populations of invasive species during wetland restoration.

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Distribution List

The EA was made available in hard copy at various locations within the City of Newport. The EA was also posted on the Project website which includes a comment form for the agency and public review. Notice of the public comment period and public hearing was made by public notice in several newspapers and on various local websites, including *The Newport Daily News, Newport This Week, Providence Journal*, and *Providence en Espanol, during the* 30-day comment period. The list below contains the locations where the hard copies of the EA were available for review.

- RI Department of Transportation, 2 Capitol Hill, Providence
- US Department of Transportation, Federal Highway Administration – RI Division, 380 Westminster Street, Suite 601, Providence
- Newport City Hall, 43 Broadway, Newport
- Newport City Library, 300 Spring Street, Newport
- Florence Gray Center, 1 York Street, Newport

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References Cited

"Guideline for Modeling Carbon Monoxide from Roadway Intersections", United States Environmental Protection Agency, Office of Air Quality Planning and Standards, EPA-454/R-92-005, November 1992.

"Rhode Island 2017 Annual Monitoring Network Plan" Rhode Island Department of Environmental Management. Office of Air Resources. July 5, 2017.

United States Environmental Protection Agency Laws and Regulations, US Code of Federal Regulations 40 Title 40: Protection of Environment. http://www2.epa.gov/laws-regulations/regulations#find.

U.S. Department of Transportation Federal Highway Administration, Air Quality Transportation Conformity website: http://www.fhwa.dot.gov/environment/air_quality/conformity/policy_and_guidance/cmcf/intersection_form.cfm

"Guideline for Modeling Carbon Monoxide from Roadway Intersections", US Environmental Protection Agency, Office of Air Quality Planning and Standards, Technical Support Division; Research Triangle Park, NC; EPA-454/R-92-006 (Revised); September 1995.

MOVES2014a (Motor Vehicle Emission Simulator), November 2016, US EPA, Office of Mobile Sources, Ann Arbor, MI.

The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 9 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/).

National Air Toxics Assessment, Environmental Protection Agency. Accessed at http://www.epa.gov/ttn/atw/nata1999/.

U.S. Department of Transportation, Federal Highway Administration. October 18, 2016. Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Accessed from https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/.

"Rhode Island 2017 Annual Monitoring Network Plan" Department of Environmental Management. Office of Air Resources. July 5, 2017.

FHWA. (2015). Federal *Highway Administration Environmental Justice Reference Guide*. Retrieved 6 November 2018, from https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/fhwahep15035..pdf

CEQ. (1997). *Environmental Justice Guidance Under the National Environmental Policy Act*. Retrieved 6 November 2018, from https://www.epa.gov/sites/production/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf

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

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

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

HHS. (2018). *HHS Poverty Guidelines for 2018*. Retrieved 8 November 2018, from https://aspe.hhs.gov/poverty-guidelines

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

Esri. (2018). *Updated Demographics*. Community Analyst (Version 6.0). https://communityanalyst.arcgis.com/esriCA/login/index.html

FHWA. (1999). *Part 24 - Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally-Assisted Programs*. Retrieved 10 November 2018, from https://www.fhwa.dot.gov/legsregs/directives/fapg/cfr4924a.htm

City of Newport. (2018). *Utilities*. Retrieved 12 November 2018, from http://www.cityofnewport.com/departments/utilities

City of Newport. (2017). *Newport Innovation Hub*. Retrieved 10 October 2018, from http://www.cityofnewport.com/home/showdocument?id=5448

IPCC. (2007). *Land Use, Land-Use Change and Forestry*. Retrieved 10 October 2018, from http://www.ipcc.ch/ipccreports/sres/land_use/index.php?idp=45

City of Richmond v. Board of Supervisors of Henrico County, 199 Va. 679, 686, 101 S.E.2d 641, 646 (1958).

State of Rhode Island. (2014). *Rhode Island General Laws related to Land Use and Planning*. Retrieved 10 October 2018, from http://www.planning.ri.gov/documents/local/RIGeneral_Laws_Land_Use%20_Planning.pdf

City of Newport. (2018). *GIS Public Portal – Property Information*. Retrieved 10 October 2018, from http://www.cityofnewport.com/departments/civic-investment-planning/gis-mapping-services/gis-public-portal

State of Rhode Island. (2018). *State Guide Plan*. Retrieved 10 October 2018, from http://www.planning.ri.gov/publications/state-guide-plan.php

City of Newport. (2018). *Code of Ordinances – Title 17. Zoning*. Retrieved 10 October 2018, from https://library.municode.com/ri/newport/codes/code_of_ordinances?nodeId=COOR_TIT17ZO

United States Census Bureau. (2010). *2010 Census Urban and Rural Classification and Urban Area Criteria*. Retrieved 10 October 2018, from https://www.census.gov/geo/reference/ua/urban-rural-2010.html

City of Newport. (2017). *City of Newport Comprehensive Land Use Plan*. Retrieved 10 October 2018, from http://www.cityofnewport.com/home/showdocument?id=16539

RIGIS. (2018). *Local Conservation Areas*. Accessed 17 October 2018, from http://www.rigis.org/datasets/local-conservation-areas?geometry=-71.394%2C41.5%2C-71.239%2C41.522

City of Newport. (2017). *City of Newport Comprehensive Land Use Plan*. Retrieved 10 October 2018, from http://www.cityofnewport.com/home/showdocument?id=16539

City of Newport. (2017). *Newport Innovation Hub*. Retrieved 10 October 2018, from http://www.cityofnewport.com/home/showdocument?id=5448

City of Newport. (2018). *Code of Ordinances – Title 17. Zoning*. Retrieved 10 October 2018, from https://library.municode.com/ri/newport/codes/code_of_ordinances?nodeId=COOR_TIT17ZO

City of Newport. (2014). *Innovation Hub: Questions & Answers*. Accessed 17 October 2018, from https://www.engagenewport.com/wp-content/uploads/2014/09/1-NPT-InnovationHub_QA_9.12.14.pdf

City of Newport. (2018). *Code of Ordinances – Chapter 8.12. Noise Abatement*. Retrieved 10 October 2018, from https://library.municode.com/ri/newport/codes/code_of_ordinances?nodeId=COOR_TIT8HESA_CH8.12NOAB

State of Rhode Island. (2006). *Land Use 2025* – State Guide Plan Element 121, Report Number 109. Retrieved 10 October 2018, from http://www.planning.ri.gov/documents/guide_plan/landuse2025.pdf

State of Rhode Island. (2017). *Transportation 2037* – Interim Report. Retrieved 10 October 2018, from http://www.planning.ri.gov/documents/trans/2017/LRTP-37.pdf

State of Rhode Island. (2014). *Rhode Island Rising*, Rhode Island State Guide Plan – Report #121, Economic Development Element. Retrieved 10 October 2018, from http://www.planning.ri.gov/documents/Econdev/2015/RhodeIslandRisingFinalwReport121.pdf

City of Newport. (2017). *Newport Innovation Hub*. Retrieved 10 October 2018, from http://www.cityofnewport.com/home/showdocument?id=5448

City of Newport. (2017). *City of Newport Comprehensive Land Use Plan*. Retrieved 10 October 2018, from http://www.cityofnewport.com/home/showdocument?id=16539

Google earth V 7.1.8.3036. (1995). City of Newport, Rhode Island. Retrieved 10 October 2018.

Measurement of Highway-Related Noise, US Department of Transportation, Federal Highway Administration, FHWA-PD-96-046, May 1996.

The "Date of Public Knowledge" is the date of approval of the Categorical Exclusion (CE), the Finding of No Significant Impact (FONSI), or the Record of Decision (ROD), as defined in 23 CFR part 771.

Rhode Island Department of Administration, "Vulnerability of Municipal Transportation Assets to Sea Level Rise and Storm Surge". Technical Paper 167. September 28, 2016. http://www.planning.ri.gov/documents/sea_level/2016/TP167.pdf

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

U.S. Department of Transportation, Federal Highway Administration, FHWA Order 5520, *Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*. December 2014. https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm

Rhode Island Department of Administration, "Vulnerability of Municipal Transportation Assets to Sea Level Rise and Storm Surge". Technical Paper 167, September 28, 2016. http://www.planning.ri.gov/documents/sea_level/2016/TP167.pdf

Rhode Island Department of Administration, "Vulnerability of Transportation Assets to Sea Level Rise". Technical Paper 164, January 2015.

U.S. Department of Transportation, Federal Highway Administration, *Highways in the Coastal Environment: Assessing Extreme Events*, October 2014. https://www.fhwa.dot.gov/engineering/hydraulics/pubs/nhi14006/nhi14006.pdf

U.S. Global Change Research Program, National Climate Assessment. 2014. https://nca2014.globalchange.gov/report/regions/northeast

Climate Central and ICF International, *States at Risk Report Card* http://reportcard.statesatrisk.org/

EPA Climate Change Indicators: Sea Surface Temperature. https://www.epa.gov/climate-indicators/climate-change-indicators-sea-surface-temperature

IPCC 2013, Fifth Assessment Report: Climate Change 2013: The Physical Science Basis, Chapter 11: Near-term Climate Change: Projections and Predictability https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter11_FINAL.pdf

IPCC 2007, Fourth Assessment Report: Climate Change 2007: The Physical Science Basis, Summary for Policymakers https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf

NOAA National Centers for Environmental Information, Rhode Island State Summary, http://climatechange.ri.gov/documents/noaa-climate-rhode-island-state-summary.pdf

HistoricAerials.com (1995, 2003, 2006, 2008-2012, 2014). City of Newport, Rhode Island. Retrieved 18 October 2018.

Creating a Model for National Resilience: Newport, Rhode Island. http://garthsolutions.com/wp-content/uploads/2017/11/InfraLinx-Newport-RI-Brochure-.pdf. Accessed August 26, 2018.

City of Newport Comprehensive Land Use Plan. February 2017. http://www.cityofnewport.com/departments/planning-development/comprehensive-land-use-plan. Accessed August 26, 2018.

The Rhode Island Statewide Planning Program. 2003. http://www.planning.ri.gov/documents/comp/Rhode%20Island%20Travel%20Corridors.pdf. Accessed August 26, 2018.

Aquidneck Island Transportation Study (AITS).Aquidneck Island Planning Commission. http://www.vhb.com/aquidneck/finalreport.asp. Accessed October 17, 2018.

City of Newport Comprehensive Land Use Plan. February 2017. http://www.cityofnewport.com/departments/planning-development/comprehensive-land-use-plan. Accessed August 26, 2018.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. *City of Newport Comprehensive Land Use Plan*, pp. 3-8. Accessed on November 27, 2017.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. City of Newport *Comprehensive Land Use Plan*, pp. 8-1. Accessed on November 27, 2017.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. *City of Newport Comprehensive Land Use Plan*, pp. 8-2. Accessed on November 27, 2017.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. *City of Newport Comprehensive Land Use Plan*, pp. 8-7. Accessed on October 30, 2018.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. *City of Newport Comprehensive Land Use Plan*, pp. 8-5. Accessed on November 29, 2017.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. *City of Newport Comprehensive Land Use Plan*, pp. 8-6. Accessed on November 29, 2017.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. *City of Newport Comprehensive Land Use Plan*, pp. 9-12. Accessed on November 29, 2017.

City of Newport, Zoning & Inspections Department, Planning Division. 2017. *City of Newport Comprehensive Land Use Plan*, pp. 9-13 and Map 8-3 "Park Ownership". Accessed on November 29, 2017.

23 CFR 774.15. Federal Highway Administration. Accessed from https://www.govregs.com/regulations/23/774.15. Accessed on November 29, 2017.

U.S. Fish and Wildlife Service. *Information for Planning and Consultation Tool - National Wildlife Refuge Lands and Fish Hatcheries Layer*. Accessed from https://ecos.fws.gov/ipac/. Accessed on January 30, 2018.

City of Newport Rhode Island. 2014. *Neighborhoods*. Accessed from http://www.cityofnewport.com/home/showdocument?id=4259. Accessed on November 28, 2017.

Engage Newport. 2015. *Parks and Open Spaces, Newport Dog Park*. Accessed from http://engagenewport.com/openspace/types/dog-park. Accessed on November 28, 2017.

Engage Newport. 2015. *Parks and Open Spaces, Hunter Park*. Accessed from http://engagenewport.com/openspace/types/picnic-tables-grills. Accessed on November 29, 2017.

Engage Newport. 2015. *Parks and Open Spaces, Miantonomi Park*. Accessed from http://engagenewport.com/openspace/types/playfield. Accessed on November 30, 2017.

Newport Harbor Walk. 2010. "*Did you know the City of Newport has a Harbor Walk?*". Accessed from http://www.newportwaterfront.org/PDF_Files/HarborWalkPoster.pdf. Accessed on November 29, 2017.

City of Newport, Department of Public Services. 2018. *Current Projects – Hunter Park Tennis Courts and ADA Improvements*. Accessed from http://www.cityofnewport.com/departments/public-services/projects. Accessed on November 28, 2017.

Newport Gulls. Cardines Field. Accessed from http://newportgulls.pointstreaksites.com/view/newportgulls/cardines-field. Accessed on October 31, 2018.

Newport, Rhode Island. Tax Map Data – 245 Maple Avenue. Accessed from http://gis.vgsi.com/newportri/Parcel.aspx?pid=11. Accessed on October 30, 2018.

Middletown, Rhode Island. Geographic Information System Portal. Accessed from http://hosting.tighebond.com/MiddletownRI_Public/. Accessed on October 30, 2018.

Rhode Island Historical Preservation Commission. 1997. *The West Broadway Neighborhood, Newport, Rhode Island: Statewide Historical Preservation Report*, pp. 4. Accessed from

http://www.preservation.ri.gov/pdfs_zips_downloads/survey_pdfs/newport_wbway.pdf. Accessed on November 29, 2017.

National Park Service. 1969. *National Register of Historic Places Inventory Form for Miantonomi Memorial Park and World War I Memorial Tower*. Accessed from https://npgallery.nps.gov/NRHP/GetAsset/b64ac547-d3ab-493f-8342-1a5f678f9a5e/?branding=NRHP. Accessed on November 29, 2017.

City of Newport, Department of Public Services. *Historic Burying Grounds and Cemeteries in Newport, Rhode Island*. Accessed from http://www.cityofnewport.com/home/showdocument?id=16283. Accessed on November 29, 2017.

National Park Service. 1974. *National Register of Historic Places Inventory Form for Common Burying Ground and Island Cemetery*. Accessed from https://npgallery.nps.gov/AssetDetail/NRIS/74000044. Accessed on November 29, 2017.

Rhode Island Coastal Resources Management Council (RICRMC). 2018. Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast. http://www.crmc.ri.gov/regulations.html.

Rhode Island Department of Environmental Management (RIDEM). 2018. Environmental Resource Map – RIDEM Water Quality Standards. http://ridemgis.maps.arcgis.com/apps/webappviewer/index.html?id=87e104c8adb449eb9f905e5f18020de5.

RIDEM. 2014. Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act. Codified as 250-RICR-150-15-1. http://www.dem.ri.gov/documents/regulations/index.php

Rhode Island Soil Erosion and Sediment Control Handbook. Updated 2016.

Braun, M. 1994. Tuned hair cells for hearing, but tuned basilar membrane for overload protection: Evidence from dolphins, bats, and desert rodents. *Hearing Research* 78(1):98–114.

Cornell Lab of Ornithology. Roseate tern species overview. Available at: https://www.allaboutbirds.org/guide/Roseate_Tern/overview. Accessed October 9, 2018.

Downs, N.C., Beaton, V., Guest, J., Polanski, J., Robinson, S.L. & Racey, P.A. (2003) The effects of illuminating the roost entrance on the emergence behaviour of Pipistrellus pygmaeus. Biological Conservation, 111, 247-252.

Fenton, M. B. 1997. Science and the conservation of bats. *Journal of Mammalogy* 78:1-14.

Ferrara, F. J., and Leberg, P. L. 2005. Influence of investigator disturbance and temporal variation on surveys of bats roosting under bridges. *Wildlife Society Bulletin 33*(3):1113–1122.

Gochfield, M., J. Burger and I.C.T. Nisbet. Roseate Tern, Sterna dougallii. In A. Poole and F. Gill, (eds.) The Birds of North America, No. 370. The Academy of National Sciences, Philadelphia and the American Ornithologists' Union, Washington DC. 1998.

Henson, O. W., Jr., 1965. The activity and function of the middle ear muscles in echolocating bats. *J. Physiol.* (London) 180:871–887.

Humphrey, S. R., and Kunz, T. H. 1976. Ecology of a Pleistocene relict, the western big-eared bat (*Plecotus townsendii*) in the southern Great Plains. *Journal of Mammalogy* 57:470–494.

Jung K, Kalko EKV (2010) Where forest meets urbanization: foraging plasticity of aerial insectivorous bats in an anthropogenically altered environment. J Mammal 91:144–153.

Jung K, Threlfall CG (2016) Urbanisation and its effects on bats—a global meta-analysis approach. In: Bats in the Anthropocene: conservation of bats in a changing world. Springer International AG, Cham, pp. 13–28.

Keeley, B.W. and M.D. Tuttle. 1999. Bats in American bridges. Bat Conservation International, Austin, Texas.

Kunz, T. H., and Martin, R. A. 1982. Plecotus townsendii. *Mammalian Species* 175:1–6.

Kunz T. H. Lumsden L. F. 2003. Ecology of cavity and foliage roosting bats. Pp. 3–89 in Bat ecology (Kunz T. H. Fenton M. B., eds.). University of Chicago Press, Chicago, Illinois.

Levin, A., A. Wortzel, R. Pepper. April 9, 2018. Major Rollbacks of USFWS Regulations on the Way. Environmental Law and Policy Monitor. Available at: https://www.environmentallawandpolicy.com/2018/04/major-rollbacks-usfws-regulations-way/. Accessed October 9, 2018.

Lewis SE (1995) Roost fidelity of bats: a review. J Mammal 76: 481–496

Mann, S. L., Steidl. R. J., and Dalton, Y. M. 2002. Effects of cave tours on breeding *Myotis velifer*. *Journal of Wildlife Management* 66:618–624.

Neuweiler G (1989) Foraging ecology and audition in echolocating bats. Trends Ecol Evol 6:160–166

National Ocean and Atmosphere Administration. Endangered Species Conservation. Available at: https://www.fisheries.noaa.gov/topic/endangered-species-conservation. Accessed September 14, 2018.

New York Department of Environmental Conservation. Roseate Tern Fact Sheet. http://www.dec.ny.gov/animals/7084.html. Accessed October 9, 2018.

Norberg UM, Rayner JMV (1987) Ecological morphology and flight in bats (Mammalia; Chiroptera): wing adaptations, flight performance, foraging strategy and echolocation. Phil Trans R Soc Lond B 316:335–427

Owen, S. F., M. Menzel, W. M. Ford, B. R. Chapman, K. V. Miller, J. W. Edwards, P. B. Wood. 2002. Roost tree selection by maternity colonies of northern long-eared myotis in an intensively managed forest. Gen. Tech. Rep. NE-292. Newtown Square, PA: U.S. Department of Agriculture, Forest service, Northeastern Research Station. 6 p.

Patriquin, K. J., M. L. Leonard, H. G. Broders, C. J. Garroway. 2010. Do social networks of female northern-long eared bat vary with reproductive period and age? Behav Ecol Sociobiol (2010) 64:899–913.

Pearson, O. P., Koford, M. P., and Pearson, A. K. 1952. Reproduction of the lump-nosed bat (*Corynorhinus rafinesquei*) in California. *Journal of Mammalogy* 33:273–320.

Perry, R. W. and R. E. Thill. 2007. Roost selection by male and female northern long-eared bats in a pine-dominated landscape. Forest Ecology and Management 247 (2007) 220–226.

Rhode Island Department of Environmental Management. July 10, 2018. Natural Heritage Area Item Details. Available at: http://ridemgis.maps.arcgis.com/home/item.html?id=82c03a587a4a408d99d0afb1b6edde5a. Accessed September 14, 2018.

Rhode Island Department of Environmental Management, The Nature Conservancy, and the University of Rhode Island. 2015. Rhode Island Wildlife Action Management Plan. Available at: http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php. Access September 14, 2018.

Rhode Island Department of Environmental Management. 2018. Environmental Resource Map. http://www.dem.ri.gov/maps/. Accessed September 14, 2018.

Rhode Island Geographic Information Systems. 2016. Natural Heritage Areas. Available at: http://www.rigis.org/datasets?q=natural%20heritage%20areas. Accessed September 14, 2018.

Rhode Island Natural Heritage Program. 2006. Rare Native Animals of Rhode Island. Available at: http://rinhs.org/wp-content/uploads/2012/05/ri_rare_animals_2006.pdf. Accessed September 16, 2018.

Rowse, E. G., E. L. Lewanzik,, E. L. Stone, S. Harris, G. Jones. 2016. Dark Matters: The Effects of Artificial Lighting on Bats.

Rydell J. 2006. Bats and their insect prey at streetlights. In: Rich C, Longcore T (eds) Ecological consequences of artificial night lighting. Island Press, Washington, DC, pp 43–60

Shirley, M. D. F., Armitage, V. L., Barden, T. L., Gough, M., Lurz, P. W. W., Oatway, D. E., and Rushton, S. P. 2001. Assessing the impact of a music festival on the emergence behaviour of a breeding colony of Daubenton's bats (*Myotis daubentonii*). *Journal of Zoology* 254(3):367–373.

Stone, E.L., Jones, G. & Harris, S. 2009. Street lighting disturbs commuting bats. Current Biology, 19, 1123-1127.

Stone, E.L. 2011. Bats and development: with a particular focus on the impacts of artificial lighting. PhD, PhD Thesis, School of Biological Sciences, University of Bristol.

Stone, E.L., Jones, G. & Harris, S. 2012. Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. Global Change Biology, Vol. 18, No. 8, 08.2012, p. 2458-2465.

Stone, E. L. 2013. Bats and lighting: Overview of current evidence and mitigation guidance.

U.S. Fish and Wildlife Service. Information for Planning and Consultation. Available at: https://ecos.fws.gov/ipac/. Accessed October 9, 2018.

U.S. Fish and Wildlife Service, White-Nose Response Team. What is White-nose syndrome? Available at: https://www.whitenosesyndrome.org/static-page/what-is-white-nose-syndrome. Accessed October 9, 2018.

United States Fish and Wildlife Service. March 2001. Roseate Tern Habitat Model. Available at: http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/roseate_tern_model.htm. Accessed October 9, 2018.

U.S. Fish and Wildlife Service. 2011. Roseate tern: North American Subspecies Fact Sheet. Available at: https://www.fws.gov/northeast/pdf/Roseatetern0511.pdf. Accessed October 9, 2018.

U.S. Fish and Wildlife Service. 2015a. Northern-Long-Eared Bat Fact Sheet. Available at: https://www.fws.gov/midwest/endangered/mammals/nleb/nlebfactsheet.html. Accessed October 9, 2018.

U.S. Fish and Wildlife Service. 2015b. Birds of Conservation Concern. Available at: https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php. Accessed September 16, 2018.

U.S. Fish and Wildlife Service, 2016. Northern Long-eared Bat Final 4(d) Rule – Questions and Answers. Available at: https://www.fws.gov/midwest/endangered/mammals/nleb/FAQsFinal4dRuleNLEB.html. Accessed September 26, 2018.

U.S. Fish and Wildlife Service. 2017a. Endangered species act: A history of the endangered species act of 1973. Available at: https://www.fws.gov/endangered/laws-policies/esa-history.html. Accessed September 14, 2018.

U.S. Fish and Wildlife Service. 2017b. Migratory Bird Treaty Act: Birds Protected. Available at: https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php. Accessed September 14, 2018.

U.S. Fish and Wildlife Service. 2017c. 90-day Findings for Five Species (including tri-colored bat). Federal Register Vol. 82, Number 423. FR Doc No: 2017-27389. Available at: https://www.fws.gov/policy/library/2017/2017-27389.html. Accessed October 10, 2018.

U.S. Fish and Wildlife Service. 2018a. Bald and Golden Eagle Protection Act. Available at: https://www.fws.gov/birds/policies-and-regulations/laws-legislations/bald-and-golden-eagle-protection-act.php. Accessed October 9, 2018.

U.S. Fish and Wildlife Service. 2018b. Range-wide Indiana Bat [and Northern Long-eared Bat] Survey Guidelines. Available at: https://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/2018RangewideIBatSurveyGuidelines.pdf. Accessed June 1, 2018.

U.S. Fish and Wildlife Service. 2018c. Key to the Northern Long-Eared Bat 4(d) Rule for Federal Actions that May Affect Northern Long-Eared Bats. Available at: https://www.fws.gov/midwest/endangered/mammals/nleb/KeyFinal4dNLEBFedProjects.html. Accessed October 9, 2018.

U.S. Fish and Wildlife Service. 2018d. Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat. Available at: https://www.fws.gov/midwest/endangered/section7/fhwa/pdf/BORevised02052018forIbatNLEB_FHWA_FRA_%20FTA.pdf. Accessed October 9, 2018.

Veit, Richard R. and Wayne R. Petersen. Bird of Massachusetts. Massachusetts Audubon Society, 1993. 161-162, 233-234.

West, E. W. 2016. Technical Guidance for the Assessment and Mitigation of the Effects of Traffic Noise and Road Construction Noise on Bats. California Department of Transportation, Division of Environmental Analysis.

Wever, E. G., and Vernon, J. A. 1961. The protective mechanisms of the bat's ear. *Annals of Otology, Rhinology, and Laryngologyl*. 70:5 –18.

Trip General Manual. Institute of Transportation Engineers. 10th Edition. 2018.

American Association of State Highway and Transportation Officials. Highway Capacity Manual. Washington, DC, 2016.

American Association of State Highway and Transportation Officials (AASHTO). Highway Safety Manual. Washington, DC, 2010.

"NCHRP Report 572: Applying Roundabouts in the United States." Washington, D.C., Transportation Research Board, National Research Council, 2007.

15 CFR Part 930 Subparts C, D, F. Federal Consistency with Approved Coastal Management Programs.

16 USC §§ 3501-3510. Public Law 97-348. Congressional statement of findings and purpose - Coastal Barrier Resources Act.

16 USC §§ 1451-1464. 16 U.S. Code Chapter 33 – Coastal Zone Management.

16 USC §§ 1451-1464. Public Law 92-583. Congressional statement of findings and purpose – Coastal Zone.

Rhode Island Coastal Resources Management Council (RICRMC). 2018a. 650-RICR-20-00-1. Title 650 Coastal Resources Management Council. Chapter 20 Coastal Management Program. http://www.crmc.ri.gov/regulations.html. Accessed March 21, 2018.

CRMC. 2009. Aquidneck Island Special Area Management Plan Coastal Development Regulations http://www.crmc.ri.gov/regulations.html. Accessed March 21, 2018.

CRMC. 2018b. Federal Consistency Manual. http://www.crmc.ri.gov/regulations.html. Accessed March 21, 2018.

U.S. Fish and Wildlife Service (USFWS). 2018. Coastal Barrier Resources System. https://www.fws.gov/CBRA/. Accessed March 21, 2018. 33 CFR Part 328. Definition of Waters of the United States.

EO 11990. 1977. Executive Order 11990 – Protection of wetlands. Federal Register – Codification of Presidential Proclamations and Executive Orders.

https://www.archives.gov/federal-register/codification/executive-order/11990.html. Accessed March 25, 2018.

Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FDGC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.

Rhode Island Coastal Resources Management Council (RICRMC). 2018. Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast. http://www.crmc.ri.gov/regulations.html. Accessed March 21, 2018.

Rhode Island Department of Environmental Management (RIDEM). 2018. Environmental Resource Map – RIDEM Water Quality Standards. http://ridemgis.maps.arcgis.com/apps/webappviewer/index.html?id= 87e104c8adb449eb9f905e5f18020de5. Accessed March 25, 2018.

RIDEM. 2014. Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act. http://www.dem.ri.gov/documents/regulations/index.php. Accessed March 25, 2018.

RIDEM. 2015. State of Rhode Island 2014 303(d) List of Impaired Waters, Final, May 2015.

Rhode Island Geographic Information System (RIGIS). 1993. Wetlands (1993).

RIGIS. 2002. 1939 Digital Aerial Photographs. Rhode Island Statewide Planning Program.

RIGIS. 2015. Flood Hazard Areas, Version 1.1.1.0. Federal Emergency Management Agency.

University of California Davis California Soil Resource Lab. Soil Web. https://casoilresource.lawr.ucdavis.edu/gmap/. Accessed March 25, 2018.

U.S. Army Corps of Engineers (USACE) Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual.

USACE New England District. 1999. The Highway Methodology Workbook Supplement. NAEEP-360-1-30a.

USACE Wetlands Regulatory Assistance Program. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). EDRC/EL TR-12-1.

U.S. Environmental Protection Agency. 2018. Clean Water Act, Section 401 Certification. https://www.epa.gov/cwa-404/clean-water-act-section-401-certification. Accessed March 25, 2018.

Appendix A Public Involvement (Under Separate Cover)

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Appendix A: Public Involvement (Under Separate Cover)

Includes:

- A1: Public Meeting #1, March 2018
  - Presentation
  - Attendees
  - Comments Received

- A2: Public Meeting #2, July 2018
  - Presentation
  - Attendees
  - Comments Received

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Appendix B Technical Memos (Under Separate Cover)

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Appendix B: Technical Memos (Under Separate Cover)

Includes:

- B1: Transportation
- B2: Land Use
- B3: Farmland/Soils
- B4: Wetland and Waters of the U.S and State
- B5: Floodplains
- B6: Water Quality/Stormwater
- B7: Coastal Resources
- B8: Federally Threatened and Endangered Species/Biodiversity
- B9: Cultural (Historic and Archaeological) Resources
- B10: Environmental Justice & Socioeconomics
- B11: Visual Resources
- B12: Air Quality
- B13: Noise and Vibration
- B14: Hazardous Materials
- B15: Climate Change/Resiliency
- B16: Secondary and Cumulative Impacts
- B17: Property Acquisition Analysis

Note: *Analysis in the Technical Appendices was completed prior to the development of the EA and is based on an earlier version of the project design. Subsequent to the appendices being finalized, the project design changed, resulting in rerouting of traffic anreducing the limits of disturbance (LOD) and impacts to wetlands. The EA analysis is based on the updated design.*

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