Draft Environmental Impact Statement for the Disposal and Reuse of Surplus Property at Naval Station Newport, Rhode Island

March 2016

Prepared by:

Department of the Navy

Guide to this EIS

This EIS presents an analysis of the Navy's proposed action to dispose of surplus property at NAVSTA Newport, Rhode Island. The surplus property comprises four non-contiguous Navy properties:

- Former Navy Lodge (Town of Middletown)
- Former Naval Hospital (City of Newport)
- Tank Farms 1 and 2 (Town of Portsmouth)
- Midway Pier/Greene Lane (Town of Middletown)

Since these properties are located in three separate municipalities, the document is organized by presenting the existing conditions and environmental consequences for the four properties individually. Therefore, some text is intentionally repetitive in order to provide a balanced amount of data, analysis, and context for each property.

The first three chapters of this EIS discuss the alternatives, background, and methodology that apply to all four of the properties. Then, the existing conditions and environmental consequences are presented in two individual chapters for each of the four properties.

Introduction, Proposed Action and Alternatives….....Chapters 1 & 2

Background Information and Methodology for Resource Area Assessments……...Chapter 3

Former Navy Lodge…….....Chapters 4 & 5

Former Naval Hospital….....….Chapters 6 & 7

Tank Farms 1 and 2…….....Chapters 8 & 9

Midway Pier/Greene Lane…….....….Chapters 10 & 11

Chapters 12 through 18 apply to all four properties.

Lead Agency:
United States Department of the Navy

In accordance with Office of the Chief of Naval Operations M-5090.1

DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE DISPOSAL AND REUSE OF SURPLUS PROPERTY AT NAVAL STATION NEWPORT, RHODE ISLAND
March 2016

Abstract

This draft environmental impact statement (EIS) presents an analysis of the U.S. Department of the Navy's (Navy's) proposed action to dispose of surplus property at Naval Station (NAVSTA) Newport, located in Newport County, Rhode Island. Public Law 101-510, the Defense Base Closure and Realignment Act of 1990, as amended in 2005 (BRAC Law), has directed the Navy to realign NAVSTA Newport. As a result of this action, the Navy has declared approximately 158 acres of property at NAVSTA Newport to be surplus to the needs of the federal government. The purpose and need for the proposed action is to comply with the BRAC Law and provide for the disposal and reuse of surplus property at NAVSTA Newport. The draft EIS examines the potential human and natural environmental consequences of the proposed action and any impacts associated with the reasonably foreseeable reuse of the property.

Two redevelopment alternatives and the No Action alternative were considered. Alternative 1, the preferred alternative, is the disposal of the surplus property and reuse in accordance with the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (Redevelopment Plan), which has been prepared and approved by the Aquidneck Island Reuse Planning Authority. Alternative 1 includes mixed land use types and densities for each of four non-contiguous surplus properties as well as open space and natural areas. Alternative 2 provides for the disposal of the surplus property at NAVSTA Newport and redevelopment at a higher density and with a different mix of uses than Alternative 1. The No Action alternative is the retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. The Navy is the lead agency for the proposed action. The surplus properties to be redeveloped are located in three separate municipalities on Aquidneck Island: the City of Newport, the Town of Portsmouth, and the Town of Middletown.

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Draft
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Executive Summary

ES.1 Introduction and Description of the Proposed Action

This draft environmental impact statement (EIS) evaluates the potential human and natural environmental consequences of the disposal of surplus property at Naval Station (NAVSTA) Newport, Rhode Island, by the Navy and its subsequent redevelopment by the respective municipalities in which the surplus property is geographically located. Public Law (P.L.) 101-510, the Defense Base Closure and Realignment Act of 1990, as amended in 2005 (BRAC Law), has directed the Navy to realign NAVSTA Newport. As a result of this action, the Navy has declared approximately 158 acres of property at NAVSTA Newport to be surplus to the needs of the federal government.

This EIS was prepared in accordance with the requirements of the BRAC Law, the National Environmental Policy Act (NEPA) of 1969, as amended (P.L. 91-190, 42 United States Code [U.S.C.] 4321-4370f); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); Navy procedures for implementing NEPA (32 CFR 775), Office of the Chief of Naval Operations (OPNAV) Manual M-5090.1; and other applicable Department of Defense (DOD) and Navy policies and guidance. The Navy is the lead agency for the proposed action. There are no cooperating agencies for the preparation of this EIS.

The purpose of the proposed action is to comply with BRAC Law and provide for the disposal and reuse of surplus property at NAVSTA Newport in a manner consistent with the Aquidneck Island Reuse Planning Authority's (AIRPA) *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (Redevelopment Plan; RKG Associates, Inc. et al. 2011). The proposed action is needed to provide the local community an opportunity for economic development and job creation.

ES.2 Background

ES2.1 BRAC Process and Surplus Property Overview

Base closure and realignment is the process used by the DOD to reorganize its installation infrastructure to more efficiently and effectively support its forces, increase operational readiness, and facilitate new ways of doing business. There are three primary phases of the BRAC process:

- **Phase 1: Disposal Planning – Federal Transfer** – For NAVSTA Newport surplus property, Phase 1 began on November 9, 2005, when the recommendation to realign portions of the installation became law, leading to the declaration of certain lands and facilities to be excess to the Navy's needs. The first step in the planning involved offering the property to federal agencies for reuse through a federal transfer process, which occurred in early January 2009. However, no other federal users indicated an interest in the surplus property at that time[1].
- **Phase 2: Surplus Property Notice and Designation as Surplus** – The Navy's notice on February 9, 2010, stating that approximately 225 acres of property at NAVSTA Newport were surplus set into motion a series of events and initiatives to plan and redevelop the property for higher and better uses. Subsequent to that notification, a portion of one of the properties was determined to no longer be surplus, such that the acreage of the surplus property is currently estimated to be 158 acres. The Navy is in the process of withdrawing its determination that Defense Highway is excess property.

[1] The Bureau of Indian Affairs (BIA) later indicated an interest in the property, although it followed the Navy's notice of surplus property.

On May 25, 2010, the DOD Office of Economic Adjustment (OEA) recognized AIRPA as the Local Redevelopment Authority (LRA) responsible for the planning and redevelopment of surplus property at NAVSTA Newport. AIRPA then began preparing the Redevelopment Plan, discussed in more detail below.

- **Phase 3: Property Disposal** – Upon completion of the NEPA process, the Navy will issue its final disposal decisions and will convey the surplus property to the local governments. Mechanisms identified for property disposal, include negotiated sale, economic development conveyance, and public benefit conveyance.

NAVSTA Newport is located on the western shore of Aquidneck Island in Newport County, Rhode Island. The surplus property of NAVSTA Newport is located in three separate municipalities on Aquidneck Island: the City of Newport, the Town of Portsmouth, and the Town of Middletown. Collectively, the surplus property comprises four non-contiguous Navy properties (see Figure ES-1):

- Former Navy Lodge – Approximately 3 acres at the corner of Coddington Highway and West Main Road in the Town of Middletown, Rhode Island
- Former Naval Hospital – Approximately 15.2 acres, consisting of 8.3 acres of land and 6.9 acres of offshore riparian rights (access to water only), located on the western shore of Aquidneck Island, on Narragansett Bay, in the City of Newport, Rhode Island
- Tank Farms 1 and 2 – Tank Farm 1 consists of approximately 62 acres of land, and Tank Farm 2 consists of approximately 74 acres of land in the Town of Portsmouth, Rhode Island
- Midway Pier/Greene Lane – This approximately 10.7-acre parcel is located along the western portion of Aquidneck Island in the Town of Middletown.

ES2.2 Redevelopment Planning Process Summary

As indicated above, AIRPA was recognized as the LRA responsible for developing a redevelopment plan for the surplus property at NAVSTA Newport. The planning process was guided by previously completed plans, namely, the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005), the draft *Portsmouth Tank Farm Redevelopment Plan* (Town of Portsmouth 2008b), and the *West Main/Coddington Development Center Master Plan* (Vanasse Hangen Brustlin Inc. and RKG Associates 2011) as well as specific redevelopment goals that were established for each surplus property.

Following the establishment of publicly acceptable redevelopment goals and an evaluation of the environmental conditions of each property, AIRPA developed different scenarios for each property. A series of public events were held over an 18-month period to introduce the planning process to the public, present alternatives for redevelopment, and to select a preferred reuse scenario, referred to as the Preferred Reuse Plan for each site. The Preferred Reuse Plans for each site were collectively incorporated into the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (RKG Associates, Inc. et al. 2011). The Redevelopment Plan was officially adopted on August 8, 2011.

Following the completion of the Redevelopment Plan in 2011, the AIRPA became the Aquidneck Island Reuse Implementation Authority (AIRIA) to oversee the acquisition of the surplus property and implement the Redevelopment Plan. However, in early 2014, the three municipalities that comprised the AIRIA determined that the organization be dissolved. Each municipality would pursue acquisition of surplus property or properties and implement the Redevelopment Plan for the property or properties within its jurisdiction, and in some instances, refine and/or re-evaluate the reuse plan for the individual property or properties. Following the transfer of property, any changes to the reuse plan would require the

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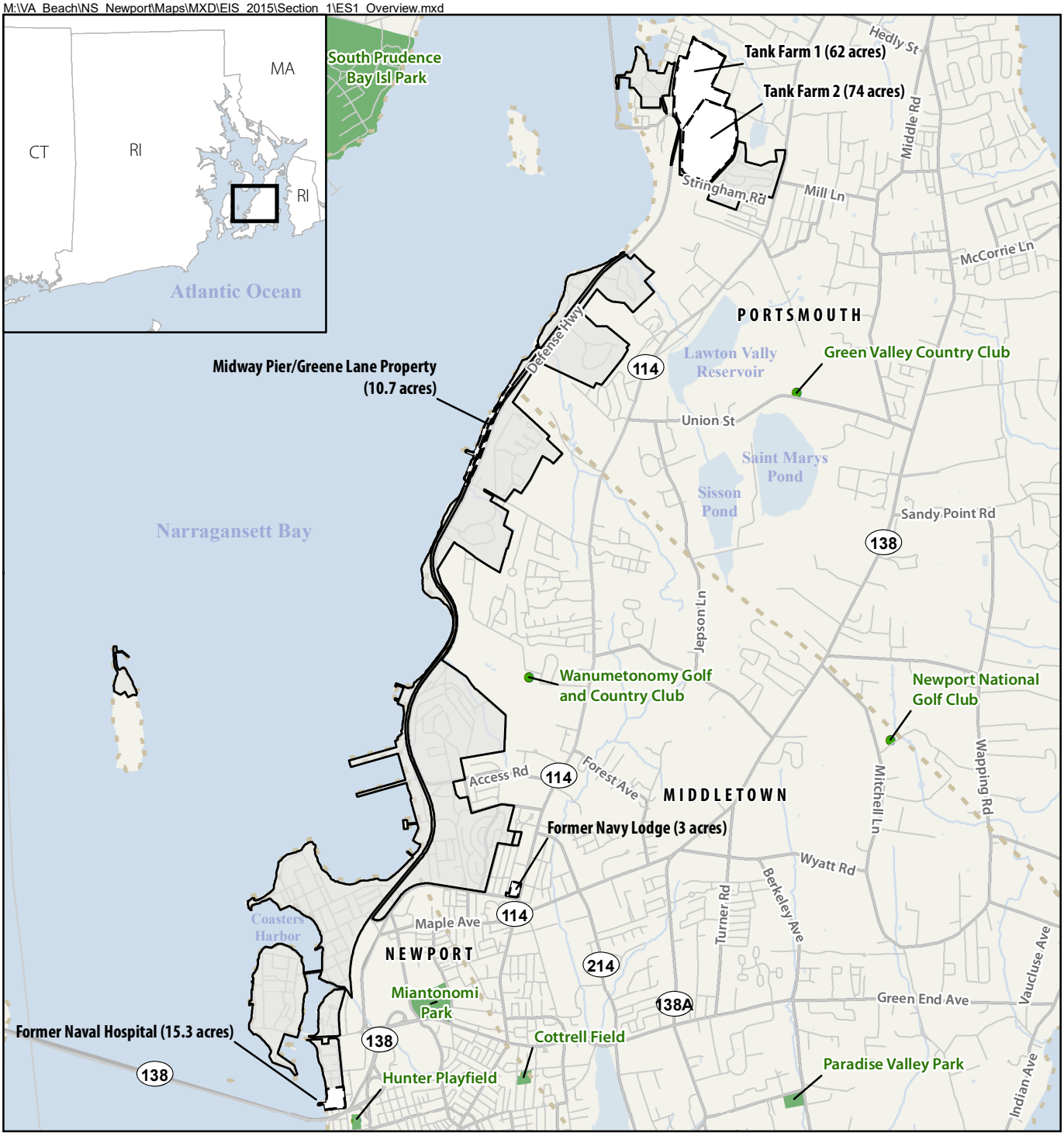

SCALE

0 0.5 1 Miles

Legend

- Street
- Major Road
- Surplus Properties
- Installation Boundary
- Municipality Boundary
- Recreation Areas
- Parks

Figure ES-1

Location of Surplus Property

NAVSTA Newport, Rhode Island

SOURCE: U.S. Department of the Navy 2009

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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developer/municipality to follow applicable regulations, laws, and procedures and obtain all necessary permits and approvals.

ES.3 Scope of the EIS

This EIS evaluates the potential human and natural environmental consequences of the disposal and subsequent redevelopment of the surplus property. The resource areas examined in this EIS and potentially impacted are land use, zoning, and coastal zone management; socioeconomics; community facilities and services; transportation; environmental management; air quality; noise; infrastructure and utilities; cultural resources; topography, geology, and soils; water resources; and biological resources. The EIS also addresses potential cumulative impacts that may result from reasonably foreseeable projects in the region, including both federal (Navy) and local projects.

This EIS addresses impacts based on the construction and full build-out timeframes of the approved Redevelopment Plan and assumptions regarding foreseeable reuses of the property.

ES.4 Alternatives Considered in the EIS

The proposed action is the disposal of surplus property at NAVSTA Newport by the Navy and subsequent redevelopment of the surplus property by the three municipalities. The primary approach to development of the proposed action and alternatives was to (1) focus on the Navy's disposal of surplus property with the Redevelopment Plan as the reasonably foreseeable reuse of the property and then (2) consider a range of reasonable disposal and reuse alternatives.

To assess the potential impacts of the proposed action, the Navy evaluated two property disposal and reuse alternatives—Alternative 1 and Alternative 2—and the No Action alternative. These alternatives are described below and summarized in Table ES-1.

Alternative 1 (Preferred Alternative)

Alternative 1 is the disposal of surplus property at NAVSTA Newport by the Navy and reuse in accordance with the Redevelopment Plan. This alternative has been identified as the preferred alternative by the Navy. Full build-out is proposed to be implemented over a 20-year period but may differ for each of the properties. The Redevelopment Plan includes a mix of land use types and densities for each surplus property as well as open space and natural areas. Details of the proposed redevelopment at each surplus property are summarized below.

Former Navy Lodge. The 3-acre former Navy Lodge property is proposed for redevelopment as retail space[2]. The site is currently vacant, except for a small telephone utility shed and a water feed vent and concrete pad, so no demolition is proposed. Two one-story buildings on a total of approximately 0.7 acres are proposed. Retail use would total approximately 30,500 square feet. These structures are proposed on the northeast and southeast corners of the site, with approximately 0.8 acres (or approximately 145 spaces) of parking adjacent to the buildings. In addition, 0.3 acres would be used to access the site from Coddington Highway. A total of 1.8 acres (60 percent) of the 3-acre site would be redeveloped; approximately 1.2 acres would be maintained as open space. The former Navy Lodge property is encumbered by several easements, which will transfer with the property. The Landings Real Estate Group owns an easement across the northeastern portion of the property for a water line to the apartment housing development adjacent to the former Navy Lodge. In addition, the Rhode Island Department of

[2] The former Navy Lodge property is proposed to be part of the Town of Middletown's West Main/Coddington Development Center, a large mixed use development totaling approximately 14 acres. The development center would consist of four parcels: the former Navy Lodge, the town's recreation complex, Middletown Public Library, and the former JFK Elementary School (see Sections 4.1.3 and 13.2.3.1).

Transportation (RIDOT) holds a "perpetual easement" along the eastern edge of the property that was acquired in 2004 for the construction of a turning lane on West Main Road for right-hand turns onto Coddington Highway. No easement currently exists for the small telephone utility shed.

The Navy also holds an easement on property owned by the Landings Real Estate Group that provides access from the former Navy Lodge property to Lake Erie Street, located on the western edge of the former Navy Lodge property, which connects to Coddington Highway. Upon transfer of the former Navy Lodge property, this easement would pass to the new owners.

Additionally, the Navy would retain an easement on the former Navy Lodge property to allow for continued use of a water line that provides service to NAVSTA Newport.

Former Naval Hospital. Proposed redevelopment at the approximately 15.2-acre former Naval Hospital property includes a three-story hotel (120 rooms) with additional space on the first floor for retail and a restaurant comprising approximately 1.3 acres and parking at the northeast corner of the site; a three-story 36-unit residential building with a ground level footprint of approximately 0.60 acres over at-grade parking in the southeast corner of the site; and a waterfront park of approximately 2.4 acres that would include a pier, pedestrian path, water taxi dockage, and a boat storage facility. The residential building would contain 36 two-bedroom units. Parking and access throughout the site would total 2.2 acres of developed land under Alternative 1; including the existing road (Riggs Road) that bisects the site. A total of approximately 54 percent of the overall site (inclusive of land-based and pier development) would be developed under Alternative 1. The redeveloped site would be accessed from Third Street, similar to current conditions. Cypress Street may also serve as an additional access point to/from the site.

The waterfront park would include a boat storage facility of approximately 1,300 square feet. The existing pier would be re-used as-is, with the addition of two concrete floating docks on each side. Each floating dock would be 8 feet by 90 feet. These floating docks would be supported by pontoons and anchored in place with pilings and cables. It is assumed that the pilings would be square, pre-stressed concrete piles measuring 1 foot by 1 foot, which would be constructed off-site. Piles would be installed using an impact hammer on a barge and a crane.

Under Alternative 1, all six existing buildings listed in Table 1-1 would be demolished. The existing pier would remain as-is, as described above.

The 6.9 acres of offshore riparian rights of the former Naval Hospital property will not transfer with the property. The riparian rights will remain under the control of the Coastal Resources Management Council for determining future use.

Tank Farms 1 and 2. Tank Farms 1 and 2 would be redeveloped as an approximately 136-acre site with office, light industrial and boat storage space, multi-modal parking uses, and the potential for a solar array. The plan for the tank farms includes a multi-modal parking facility with 400 parking spaces (a total of 4 acres) on the west side of the site, adjacent to the railroad; 45,000 square feet (1 acre) light industrial or boat storage also along the railroad; 145,000 square feet of light industrial with 55,000 square feet (1.3 acres) along the rail line and 90,000 square feet (2.1 acres) off of Bradford Avenue; 110,000 square feet (2.5 acres) of office space at the south end of the site (south end of Tank Farm 2).

The solar array would comprise approximately 155,000 square feet (3.6 acres) and would be located near the center of Tank Farm 2. Parking and access roads would comprise approximately 20.6 acres of newly redeveloped area. A total of 31.1 acres or 23 percent of the 136-acres would be redeveloped; 104.9 acres (77 percent) would remain as open space. Access to the redeveloped site would be from new access points along Stringham Road and Bradford Avenue.

Under a separate project (unrelated to this EIS), the Navy plans to demolish the underground storage tanks (USTs) and associated facilities at Tank Farm 1 in accordance with the Rhode Island Department of Environmental Management (RIDEM) UST closure program (under Rule 13, entitled Closure, of RIDEM's Rules and Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials). This project is scheduled to be completed in 2016 and before transfer of the property. The Navy similarly intends to demolish the USTs and associated facilities at Tank Farm 2 under the same RIDEM UST closure program, although the schedule for this demolition has not been established; the Tank Farm 2 demolition will be scheduled once funding is available. Therefore, for the purposes of the analysis in this EIS, the USTs and associated facilities at Tank Farm 2 are assumed to be transferred in place as part of the property transfer for this proposed action. Tank Farm 2 will be remediated prior to redevelopment.

Midway Pier/Greene Lane. Recreational/open space use is proposed at this approximately 10.7-acre property. A shoreline park would be included with a fishing pier, kayak launch, restrooms, playgrounds, a 0.3-acre parking lot, picnic areas, and pathways. The restrooms, playground, and picnic area would comprise 0.09 acres. The existing pier would be rebuilt to be a 15-foot wide and 250-foot long concrete pier. Access to the proposed park would be provided directly from Defense Highway. In addition to the shoreline park, a multi-use pathway would be constructed in a greenbelt on the opposite side of the railroad tracks, next to the water. The pathway would be 12 feet wide and would be surfaced with bituminous concrete. In areas constrained by topography or other factors, the width may be reduced to 10 feet.

In-water activities would include removing the existing pier, which is assumed to include dredging with a clamshell bucket or similar equipment, and excavation of the existing pier. Piles that formerly supported the pier were previously removed. Pile-driving to construct the new pier and construction vessels as described above (see Former Naval Hospital section above) would also be necessary.

With the exception of the demolition/removal of the existing pier, no further demolition activities would occur at this property under Alternative 1.

Alternative 2 (High-Density Redevelopment)

Alternative 2 provides for the disposal of the surplus property at NAVSTA Newport and redevelopment at a higher density, with a larger footprint and a different mix of uses than Alternative 1. Although there are several similar land uses considered, Alternative 2 is not consistent with the Redevelopment Plan. As with Alternative 1, most of the existing facilities at the surplus property would be demolished. This alternative also includes a mix of land uses, including commercial, industrial, and active and passive recreation space. Full build-out would be implemented over a 20-year period but may differ for each of the properties. Specific redevelopment details for each surplus property are discussed below.

Former Navy Lodge. Proposed redevelopment at the former Navy Lodge property (the 3-acre Navy-owned parcel only) would be as described under Alternative 1 with the following modifications. Under Alternative 1, the two retail buildings are single-story, and under Alternative 2, the two retail buildings would be two stories. Under both alternatives, the retail buildings would have the same footprint (0.70 acres); however, under Alternative 2, the retail buildings would have a total of 61,000 square feet of retail space compared with 30,500 square feet of retail space under Alternative 1. To accommodate the increase in retail space, additional parking is proposed under Alternative 2. A total of 1.4 acres of parking/access would be developed under Alternative 2, resulting in redevelopment of a total of approximately 2.1 acres or 70 percent of the overall site. No demolition would occur prior to redevelopment and access would be from Coddington Highway, similar to Alternative 1. The transfer of

and retainment of easements on the former Navy Lodge property as discussed above under Alternative 1 would also occur under Alternative 2.

Former Naval Hospital. Redevelopment of the former Naval Hospital property would be as described under Alternative 1, with the following modifications: The residential use proposed under Alternative 1 would be replaced by commercial use, and a conference center would be added to the proposed hotel. The commercial use would have the same footprint as the residential use under Alternative 1 (0.6 acres). The 0.2-acre conference center would be developed behind the hotel, along Third Street. Under Alternative 2, the shore-based boat storage facility and two concrete floating docks associated with the waterfront park would be developed as described for Alternative 1. However, under Alternative 2, an additional concrete floating dock approximately 8 feet wide by 70 feet long would be constructed at the end of the existing pier with concrete mooring piles (assumed here to be the same as described under Alternative 1). A yacht club/office would also be constructed next to the boat storage facility, within the footprint of the former chapel.

In-water construction activities would include pile-driving equipment and various construction vessels, as described above under Alternative 1.

At 4.8 acres (58 percent) the development footprint is slightly larger than under Alternative 1. The intensity of use also is higher under Alternative 2.

Lastly, similar to Alternative 1, the current buildings would be demolished to facilitate redevelopment of the site. Access to the redeveloped property would be via Third Street, with the potential use of Cypress Street.

Tank Farms 1 and 2. Under Alternative 2, Tank Farms 1 and 2 would be redeveloped with the same mix of uses as under Alternative 1. However, under Alternative 2, the amount of office space would increase by 25 percent from 110,000 square feet (2.5 acres) to 137,600 square feet (3.2 acres), and light industrial uses along the rail line would increase by 25 percent, from 55,000 square feet (1.3 acres under Alternative 1) to 68,750 square feet (1.6 acres) for a total of 205,000 square feet. The other two areas of industrial development are the same as described under Alternative 1: 2.1 acres of light industrial off of Bradford Avenue and 1.0 acres of boat storage, totaling 4.7 acres of industrial uses under Alternative 2. The parking/access would be increased to approximately 22.5 acres. That acreage coupled with the office, industrial, and boat storage uses would result in a total of 34 acres or 25 percent of the overall site under Alternative 2. Lastly, similar to Alternative 1, the USTs and associated facilities would be demolished at Tank Farm 1 before transfer and redevelopment through a separate and unrelated project. The Navy also intends to demolish the USTs and associated facilities at Tank Farm 2; however, the schedule for this demolition has not been established. For the purposes of analysis in the EIS, the USTs and associated facilities at Tank Farm 2 are assumed to be transferred in place to the developer and remediated prior to development.

Midway Pier/Greene Lane. Similar to Alternative 1, Alternative 2 includes the same multi-use pathway in a greenbelt on the opposite side of the railroad tracks, next to the water. Alternative 2 would include greater expansion of the former Midway Pier area, including two areas of cut-and-fill for parking totaling 0.6 acres in addition to the recreation/open space use that is proposed and the shoreline park described under Alternative 1. Under Alternative 2, the playground would be increased to 0.1 acre and an expanded pier footprint would allow approximately 0.1 acre for use as a public pier. In addition to the rebuilt pier discussed under Alternative 1, Alternative 2 would include a floating concrete pier at the end of the pier (in a T-formation), which would be 8 feet wide and 50 feet long. Approximately 0.9 acres would be redeveloped at the shoreline park under Alternative 2, including parking, restrooms, playground, picnic

area, and the pier. In-water activities would be the same as those described for the shoreline park under Alternative 1.

With the exception of the demolition/removal of the existing pier, no further demolition activities would occur at this property under Alternative 2.

No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. No reuse or redevelopment would occur on any of the property. The No Action alternative is evaluated in this EIS as prescribed by CEQ regulations. Navy environmental restoration activities at Tanks Farms 1 and 2 would continue. Facilities would be maintained in accordance with the *BRAC Program Management Office (PMO) Building Vacating, Facility Layaway, and Caretaker Maintenance Guidance* (March 2007). In accordance with the *BRAC PMO Building, Vacating, Facility Layaway, and Caretaker Maintenance Guidance*, only conditions adversely affecting public health, the environment, and safety would be corrected in nonresidential areas.

Comparison of Alternatives

Table ES-1 provides a comparison of land uses upon full build-out for the surplus property proposed under Alternatives 1 and 2 and analyzed in the EIS.

Table ES-1 Summary Comparison of Action Alternatives

Land Use Upon Full Build-Out[1]	Alternative 1 Preferred Alternative		Alternative 2 High-Density Redevelopment	
Former Navy Lodge				
Retail	0.7 acres	30,500 square feet	0.7 acres	61,000 square feet
Open Space	1.2 acres	52,300 square feet	0.9 acres	39,200 square feet
Parking	0.8 acres	145 spaces	1.1 acres	185 spaces
Access	0.3 acres	13,100 square feet	0.3 acres	13,100 square feet
Former Naval Hospital				
Hotel	1.3 acres	120[2] rooms	1.3 acres	120[3] rooms
Restaurant	28,300 square feet		28,300 square feet	
Retail	28,300 square feet		28,300 square feet	
Residential	0.6 acres	36[4] units	--	
Commercial	--		0.6 acres	26,000 square feet
Conference Center	--		0.2 acres	8,500 square feet
Open Space	1.8 acres	79,300 square feet	1.6 acres	69,700 square feet
Waterfront Park (acres) includes path, pier, boat storage facility, and floating dock	2.4 acres	102,780 square feet	2.6 acres	113,680 square feet
Parking	0.9 acres	161 spaces	1.2 acres	204 spaces
Access	1.3 acres	56,600 square feet	1.1 acres	47,900 square feet
Tank Farms 1 and 2				
Light Industrial[5]	4.4 acres	190,000 square feet	4.7 acres	205,000 square feet
Office[5]	2.5 acres	110,000 square feet	3.2 acres	137,600 square feet
Solar Array[5]	3.6 acres	155,000 square feet	3.6 acres	155,000 square feet
Parking	18.4 acres	2,900 spaces	20 acres	3,196 spaces
Open Space	104.9 acres	4,569,444 square feet	102 acres	4,443,120 square feet
Access to Parking	2.2 acres	95,800 square feet	2.5 acres	110,000 square feet

Table ES-1 Summary Comparison of Action Alternatives

Land Use Upon Full Build-Out[1]	Alternative 1 Preferred Alternative		Alternative 2 High-Density Redevelopment	
Midway Pier/Greene Lane				
Open Space	4.6 acres	200,380 square feet	4.6 acres	200,380 square feet
Parking	0.3 acres	52 spaces	0.6 acres	107 spaces
Multi-Use Pathway	0.9 acres	39,200 square feet	0.9 acres	39,200 square feet
Shoreline Park (includes pier)	5.6 acres	243,940 square feet	5.6 acres	243,940 square feet

Notes:

[1] Land use upon build-out is approximate and is estimated based on property boundaries that have been developed using existing documents and figures as reference and may conflict with the acreages indicated for property transfer. Prior to property transfer a survey grade property boundary will be prepared.

[2] Total area for the hotel under Alternative 1 is 169,800 square feet based on a total of three stories with 56,600 square feet at ground level. Two stories would be hotel rooms. The first floor would be divided into retail and restaurant uses.

[3] Total area for the hotel under Alternative 2 is the same as under Alternative 1.

[4] Total area for residential use is 78,100 square feet based on three stories, with 26,000 square feet at ground level, and 12 two-bedroom units on each floor (approximately 2,100 square feet each).

[5] These areas do not represent a direct conversion from the acreage because they represent specific areas noted in the Redevelopment Plan; acreages were derived from geographic information system (GIS) digitizing the features from the Redevelopment Plan.

*All area square footage has been rounded.

ES.5 Summary of Potential Environmental Consequences

The EIS examines the potential human and natural environmental consequences of the proposed action and any impacts associated with the reasonably foreseeable reuse of the property. Table ES-2 provides a summary comparison of the total environmental impacts of all surplus properties. Table ES-3 provides a comparison of the potential environmental impacts, by property, for Alternative 1, Alternative 2, and the No Action alternative.

ES.6 Public Involvement/Agency Coordination

ES6.1 Public Scoping

The first step in the NEPA process was the publication of a Notice of Intent (NOI) in the Federal Register on October 31, 2012 (see Appendix A). The NOI formally opens the public scoping period and includes a description of the proposed action and alternatives, locations to be affected, and how scoping comments may be provided. Scoping is an early and open process for determining the scope of the proposed action and the significant issues the EIS will analyze in depth. During the scoping process, the public assists the Navy in defining and prioritizing issues through meaningful participation, including submitting written comments. The public scoping period began on October 31, 2012 and concluded on December 2, 2012, and included two public scoping meetings. The meetings were held on November 14 and November 15, 2012 in Middletown and Newport, Rhode Island, respectively. A public scoping notification letter was mailed to approximately 68 federal, state, and local agencies and members of the public. Media announcements for the public scoping period and public meetings dates and locations were published in regional newspapers (Providence Journal, Newport Daily News, and Newport This Week), on public radio (Rhode Island Public Broadcast Network Radio), and on local public access television (PEG RI-TV).

Table ES-2 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Land Use, Zoning, and Coastal Resources			
Land Use	Minor to moderate impact. Redevelopment of 48.1 acres of unused land.	Minor to moderate impact. Redevelopment of 51.6 acres of unused land.	No impact.
Consistency with Local Planning	Primarily consistent with local planning for the Navy Lodge, Tank Farms 1 and 2, and Midway Pier/Greene Lane properties. Redevelopment of Former Naval Hospital is not fully consistent with local planning. Some zoning variances would be required by the developer.	Primarily consistent with local planning for the Navy Lodge, Tank Farms 1 and 2, and Midway Pier/Greene Lane properties. Redevelopment of Former Naval Hospital is not fully consistent with local planning. Some zoning variances would be required.	Not consistent with local planning. Consistent with existing city zoning since the property remains under Navy ownership.
Coastal Resources	Reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to comply with Coastal Resources Management Council (CRMC) permit and Aquidneck Island Special Area Management Plan (SAMP) development standards. Not reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Navy Lodge or Tank Farms 1and 2).	Reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to comply with CRMC permit and Aquidneck Island SAMP development standards. Not reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Navy Lodge or Tank Farms 1 and 2).	No impact.
Socioeconomics and Environmental Justice			
Economy, Employment, and Income	Beneficial impact. $73 million in total construction expenditures, 637 short-term jobs. 827 direct and 252 indirect/induced long-term jobs would be created.	Beneficial impact. $88 million in total construction expenditures with 741 short-term jobs. 1,072 direct and 316 indirect/induced long-term jobs would be created.	No impact.
Population	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. Increased employment opportunities and some residential housing may slightly increase population. No population change is anticipated for redevelopment at Midway Pier/Greene Lane.	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. Increased employment opportunities may slightly increase population. No population change is anticipated for redevelopment at Midway Pier/Greene Lane.	No impact.
Housing and Commercial Property	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. Minimal increase of 36 residential units. Increase in commercial space. No impact on housing or commercial property due to redevelopment at Midway Pier/Greene Lane.	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. No residential land use is proposed. Increase in commercial space. No impact on housing or commercial property due to redevelopment at Midway Pier/Greene Lane.	No impact.
Taxes and Revenue	Beneficial impact due to redevelopment of all properties except Midway Pier/Greene Lane. Estimated annual property tax from redevelopment: $334,000 in Middletown; $412,000 in Newport; and $421,000 in Portsmouth. Taxes and revenues would not be impacted due to redevelopment at Midway Pier/Greene Lane, which would be non-taxable public land.	Beneficial impact due to redevelopment of all properties except Midway Pier/Greene Lane. Estimated annual property tax from redevelopment: $668,000 in Middletown; $260,000 in Newport; and $494,000 in Portsmouth. Taxes and revenues would not be impacted due to redevelopment at Midway Pier/Greene Lane, which would be non-taxable public land.	No impact.
Environmental Justice	No disproportionately high or adverse human health or environmental effects on minority, Hispanic/Latino or low-income populations would occur.	No disproportionately high or adverse human health or environmental effects on minority, Hispanic/Latino or low-income populations would occur.	No disproportionately high or adverse human health or environmental effect.

Table ES-2 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Community Facilities and Services			
Community Facilities and Services	No increase to a minor increase in demand for community facilities and services (to be offset by increased property tax revenue). Positive impact by creation of waterfront park (Former Naval Hospital, Midway Pier/Greene Lane).	No increase to a minor increase in demand for community facilities and services (to be offset by increased property tax revenue). Positive impact by creation of waterfront park (Former Naval Hospital, Midway Pier/Greene Lane).	No impact.
Transportation			
Traffic Volume and Level of Service	Significant and unavoidable increase in traffic associated with redevelopment of the Navy Lodge, the Former Naval Hospital, and Tank Farms 1 and 2, primarily due to annual growth in population and traffic over 20-year build-out period unrelated to proposed action. Projected 5,319 daily trips associated with the proposed redevelopment would be added to existing transportation network. The developer/local municipalities would be responsible for roadway improvements. Traffic volume increase at Midway Pier/Greene Lane property would be minor.	Significant and unavoidable increase in traffic associated with redevelopment of the Navy Lodge, the Former Naval Hospital, and Tank Farms 1 and 2 primarily due to annual growth in population and traffic over 20-year build-out period unrelated to proposed action. Projected 7,346 daily trips associated with the proposed redevelopment would be added to existing transportation network. The developer/local municipalities would be responsible for roadway improvements. Traffic volume increase at Midway Pier/Greene Lane property would be minor.	Significant and unavoidable increase in traffic due to background growth. Reduced maintenance may affect conditions of roadways.
Environmental Management			
Hazardous Waste and Materials	Minor impact. Hazardous waste/materials during construction and operation/maintenance would be managed by the developer and occupants in accordance with local, state and federal requirements.	Minor impact. Hazardous waste/materials during construction and operation/maintenance would be managed by the developer and occupants in accordance with local, state and federal requirements.	Minor long-term impact from presence of ACM, LBP, and lead-containing soil.
Environmental Restoration Program	No impact. Remediation under RIDEM/CERCLA will be completed prior to property transfer (Tank Farms 1 and 2). Land use controls may be warranted.	No impact. Remediation under RIDEM/CERCLA will be completed prior to property transfer (Tank Farms 1 and 2). Land use controls may be warranted.	No impact.
Air Quality			
Construction/ Operational Emissions	Minor impact. Air emissions would result from construction activities, building use, and vehicle use.	Minor impacts and mitigation would further reduce impacts.	No impact.
Greenhouse Gas (GHG) Emissions	Minor impact. Total GHG emissions would be 14,716 metric tons of carbon dioxide equivalents. Change in GHG emissions would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis.	Minor impact. Total GHG emissions would be 19,833 metric tons of carbon dioxide equivalents. Change in GHG emissions would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis.	No impact.
Noise			
Construction Noise	Minor impact. Noise from construction activities, which would occur during daytime hours only in accordance with local ordinances.	Minor impact. Noise from construction activities, which would occur during daytime hours only in accordance with local ordinances.	No impact.
Operational and Traffic Noise	Minor impact. Largest estimated increase in noise due to traffic would be 6.4 dB; this increase translates to a sound level of 49.5 dBA.	Minor impact. Largest estimated increase in noise due to traffic would be 5.1 dB; this increase translates to a sound level of 48.2 dBA.	Minor impact from background growth.

Table ES-2 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Infrastructure and Utilities			
Water Demand	Negligible to minor impact on water treatment capacity and moderate impact on distribution system. Estimated demand of 47,236 gpd is within projected capacity of Newport Water Division's treatment plants in 2033, which would supply all sites. The developer would be responsible for new distribution systems for redevelopment sites.	Negligible to minor impact on water treatment capacity and moderate impact on distribution system. Estimated demand of 53,355 gpd is within projected capacity of Newport Water Division's treatment plants in 2033, which would supply all sites. The developer would be responsible for new distribution systems for redevelopment sites.	No impact.
Wastewater	Negligible to minor impact on capacity of City of Newport's treatment system (Former Navy Lodge, Former Naval Hospital, Midway Pier/Greene Lane properties). Potentially significant impact (Tank Farms 1 and 2); Portsmouth currently has no wastewater treatment infrastructure. The developer would be responsible for new collection systems for redevelopment sites.	Negligible to minor impact on capacity of City of Newport's treatment system (Former Navy Lodge, Former Naval Hospital, Midway Pier/Greene Lane properties). Potentially significant impact (Tank Farms 1 and 2); Portsmouth currently has no wastewater treatment infrastructure. The developer would be responsible for new collection systems for redevelopment sites.	No impact.
Storm Water	Minor to potentially significant impact. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	Minor to potentially significant impact. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	No impact.
Other Utility Systems	Negligible impact. The developer would be required to obtain new electric and gas connections/infrastructure.	Negligible impact. The developer would be required to obtain new electric and gas connections/infrastructure.	No impact.
Solid Waste	Minor to moderate short-term impact; minor long-term impact. Estimated 67,870 cubic yards of construction and demolition wastes.	Minor to moderate short-term impact; minor long-term impact. Estimated 68,140 cubic yards of construction and demolition wastes.	No impact.
Cultural Resources			
Archaeological Resources	No direct impacts. Significant, negative, indirect impacts on NRHP-eligible 18th century shipwreck underwater archaeological site outside APE could potentially occur (Former Naval Hospital). No direct or indirect impact at other properties.	No direct impacts. Significant, negative, indirect impacts on NRHP-eligible 18th century shipwreck underwater archaeological site outside APE could potentially occur (Former Naval Hospital). No direct or indirect impact at other properties.	No impact.
Architectural Resources	Significant, negative, indirect and direct impacts on NRHP-eligible architectural resources would potentially occur (Former Naval Hospital and Tank Farms 1 and 2). No direct or indirect impact at other properties.	Significant, negative, indirect and direct impacts on NRHP-eligible architectural resources would potentially occur (Former Naval Hospital and Tank Farms 1 and 2). No direct or indirect impact at other properties.	Significant, negative direct impacts on NRHP-eligible architectural resources would potentially occur (Former Naval Hospital).
Native American Resources	Consultation to determine potential impacts is ongoing.	Consultation to determine potential impacts is ongoing.	Consultation to determine potential impacts is ongoing.
Historic Properties	Adverse effects on historic properties that will be mitigated. Potential adverse effects on the NRHP-eligible Naval Hospital Historic District from disposal and demolition (Former Naval Hospital). Potential adverse effects on the NRHP-eligible Melville Naval Historic District (Tank Farms 1 and 2). No direct or indirect effects at other properties.	Adverse effects on historic properties that will be mitigated. Potential adverse effects on the NRHP-eligible Naval Hospital Historic District from disposal and demolition (Former Naval Hospital). Potential adverse effects on the NRHP-eligible Melville Naval Historic District (Tank Farms 1 and 2). No direct or indirect effects at other properties.	Adverse effects on historic properties that will be mitigated. Potential adverse effects on the NRHP-eligible Naval Hospital Historic District resulting from neglect in a manner that causes their deterioration.

Table ES-2 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Topography, Geology, and Soils			
Topography, Geology and Soils	Minor impact on topography and soils. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. No impact on geology.	Minor impact on topography and soils. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. No impact on geology.	No impact.
Bathymetry and Marine Sediment	Minor impact (Former Naval Hospital and Midway Pier/Greene Lane).	Minor impact (Former Naval Hospital and Midway Pier/Greene Lane).	No impact.
Water Resources			
Surface Water and Water Quality	Minor impact. Short-term sedimentation and turbidity in Narragansett Bay during pile driving for piers (Former Naval Hospital, Midway Pier/Greene Lane properties). Storm water runoff during construction and associated with increase in impervious surfaces (38.6 acres). The developer will implement erosion and sediment control measures and storm water management in accordance with local and state laws and the Construction General Permit.	Minor impact. Minor impact. Short-term sedimentation and turbidity in Narragansett Bay during pile driving for piers (Former Naval Hospital, Midway Pier/Greene Lane properties). Storm water runoff during construction and associated with increase in impervious surfaces (42.6 acres). The developer will implement erosion and sediment control measures and storm water management in accordance with local and state laws and the Construction General Permit.	No impact.
Groundwater	Minor impact. The developer would use standard dewatering techniques, comply with storm water permits and management plans, and implement best management practices (BMPs).	Minor impact. The developer would use standard dewatering techniques, comply with storm water permits and management plans, and implement BMPs.	No impact.
Floodplains	Moderate impact. 1.8 acres of 100-year floodplain would be permanently affected (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to minimize or offset impacts from redevelopment. No impact at other properties.	Moderate impact. 1.8 acres of 100-year floodplain would be permanently affected (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to minimize or offset impacts from redevelopment. No impact at other properties.	No impact.
Wetlands	Minor impact. 0.12 acres of permanent impact and 0.4 acres of direct impact on perimeter wetlands (Former Naval Hospital, Tank Farms 1 and 2). The developer would be required to avoid, minimize and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. No impact at other properties.	Minor impact. 0.14 acres of permanent impact and 0.5 acres of direct impact on perimeter wetlands (Former Naval Hospital, Tank Farms 1 and 2 and Midway Pier/Greene Lane). The developer would be required to avoid, minimize and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. No impact at other properties.	No impact.

Table ES-2 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Biological Resources			
Vegetation	Minor to moderate impact. Proposed developments would be primarily located in previously developed areas. Permanent conversion of 2.7 acres mixed oak/white pine; 14.5 acres ruderal forest; and 11.3 acres old field and grassed areas.	Minor to moderate impact. Proposed developments would be primarily located in previously developed areas. Permanent conversion of 2.7 acres mixed oak/white pine; 16.4 acres ruderal forest; and 11.5 acres old field and grassed areas.	No impact.
Wildlife	Minor impact. Fish and marine mammals could be exposed to noise during pile driving for pier construction (Former Naval Hospital, Midway Pier/Greene Lane properties). Measures to reduce impacts would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	Minor impact. Fish and marine mammals could be exposed to noise during pile driving for pier construction (Former Naval Hospital, Midway Pier/Greene Lane properties). Measures to reduce impacts would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	No impact.
Threatened and Endangered Species	May affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, green sea turtle (Former Naval Hospital and Midway Pier/Greene Lane), and northern long-eared bat (Former Naval Hospital, Tank Farms 1 and 2 and Midway Pier/Greene Lane). No effect at other properties.	May affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, green sea turtle (Former Naval Hospital and Midway Pier/Greene Lane), and northern long-eared bat (Former Naval Hospital, Tank Farms 1 and 2 and Midway Pier/Greene Lane). No effect at other properties.	No effect.
Significant Wildlife Habitat	The Navy determined that no adverse effects to designated essential fish habitat (EFH) in Narragansett Bay would occur. The National Marine Fisheries Service (NMFS) will review the proposed action upon completion of the project design through the state and federal permitting processes of the CRMC/SAMP, and Section 404 of the CWA. No impact at other properties that do not contain significant wildlife habitat.	The Navy determined that no adverse effects to designated EFH in Narragansett Bay would occur (Former Naval Hospital and Midway Pier/Greene Lane). The NMFS will review the proposed action upon completion of the project design through the state and federal permitting processes of the CRMC/SAMP, and Section 404 of the CWA. No impact at other properties that do not contain significant wildlife habitat.	No impact.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 1.8 acres would occur. • Moderate impact on on-site land use associated with change from undeveloped open space to retail uses. • No direct impact on surrounding land uses. • Moderate indirect impacts on adjacent residential land due to increased traffic; moderate indirect impact on other surrounding land uses due to potential to contribute to and influence other commercial redevelopment in the area. • Proposed retail would be consistent with nearby commercial uses. • The Town of Middletown would be responsible for implementing transportation improvements associated with the development of the larger 14-acre property, as outlined in the *West Main/Coddington Development Center Master Plan.*	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 2.1 acres would occur. • Moderate impact on on-site land use associated with change from undeveloped open space to retail uses. • No direct impact on surrounding land uses. • Moderate indirect impacts on adjacent residential land due to increased traffic; moderate indirect impact on other surrounding land uses due to potential to contribute to and influence other commercial redevelopment in the area. • Proposed retail would be consistent with nearby commercial uses. • The Town of Middletown would be responsible for implementing transportation improvements associated with the development of the larger 14-acre property, as outlined in the *West Main/Coddington Development Center Master Plan.*	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore, no impact on on-site or surrounding land uses.
	Consistency with Local Planning/Zoning: ***Primarily consistent with local planning/zoning.*** • Consistent with *West Main/Coddington Development Center Master Plan*, *Comprehensive Community Plan*, and *Aquidneck Island West Side Master Plan*. • Consistent with existing zoning if redevelopment remains in public ownership; proposed use is also consistent with watershed protection district, Zone 2. • Town of Middletown proposes to implement proposed Coddington Center Overlay District to facilitate implementation.	**Consistency with Local Planning/Zoning:** ***Primarily consistent with local planning/zoning.*** • Consistent with *West Main/Coddington Development Center Master Plan*, *Comprehensive Community Plan*, and *Aquidneck Island West Side Master Plan*. • Consistent with existing zoning if redevelopment remains in public ownership; proposed use is also consistent with watershed protection district, Zone 2. • Town of Middletown proposes to implement proposed Coddington Center Overlay District to facilitate implementation.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with local zoning.*** • Not consistent with *West Main/Coddington Development Center Master Plan*, *Comprehensive Community Plan*, or *Aquidneck Island West Side Master Plan*, which recommend development of the site. • Consistent with existing town zoning.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Coastal Resources: ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Navy Lodge for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island Coastal Resources Management Program (CRMP) and the Aquidneck Island Special Area Management Plan (SAMP). • The Rhode Island Coastal Resources Management Council (CRMC) concurred with the Navy's determination. • The developer would be required to comply with the Aquidneck Island SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Navy Lodge for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the Aquidneck Island SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable at this site as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***No impact.*** • No development would occur; therefore, no uses or natural resources of the coastal zone would be affected.
Socioeconomics and Environmental Justice	**Economy, Employment, and Income:** ***Beneficial impact.*** • $8.5 million in total construction expenditures would have a beneficial impact on the economy. • 72 direct, indirect, and induced jobs would be created during construction. • 46 direct and 13 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***Beneficial impact.*** • $17 million in total construction expenditures would have a beneficial impact on the economy. • 143 direct, indirect, and induced jobs would be created during construction • 91 direct and 26 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***No impact.*** • No new economic activity would be generated, and no increased employment opportunities would occur.
	Population: ***Minor impact***. • Increased employment opportunities may potentially result in a slight increase in regional population.	**Population:** ***Minor impact***. • Increased employment opportunities may potentially result in a slight increase in regional population.	**Population:** ***No impact.*** • Regional population would not change as a result of development because no development would occur.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Housing and Commercial Property: ***Minor impact.*** • No increase in residential housing in the Town of Middletown; no significant impact on housing prices or availability. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property:** ***Minor impact.*** • No increase in residential housing in the Town of Middletown; no significant impact on housing prices or availability. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property:** ***No impact.*** • No development would occur; therefore, no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***Beneficial impact.*** • Estimated $334,000 in annual property tax revenue would have a positive impact on government revenues in the Town of Middletown.	**Taxes and Revenue:** ***Beneficial impact.*** • Estimated $260,000 in annual property tax revenue would have a positive impact on government revenues in the Town of Middletown.	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the property would retain its current tax-exempt status.
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Low-income populations exist within the study area. • No disproportionately high or adverse human health or environmental effects would occur to these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high or adverse human health or environmental effect.*** • Low-income populations exist within the study area. • No disproportionately high or adverse human health or environmental effects would occur to these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.
Community Facilities and Services	• Minor impact on community facilities and services in the Town of Middletown. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• Minor impact on community facilities and services in the Town of Middletown. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Transportation	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 1,309 daily trips added to the surrounding road network. • Projected 3,390 vehicle trips during the evening peak hour at the intersection of West Main Road and Coddington Highway (increase of 662 trips over existing conditions). • Projected 3,749 vehicle trips during the evening peak hour at the intersection of West Main Road and Valley Road (increase of 714 trips over existing conditions). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Middletown would be responsible for reviewing sight lines at proposed driveway location to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 2,619 daily trips added to the surrounding road network. • Projected 3,452 vehicle trips during the evening peak hour at the intersection of West Main Road and Coddington Highway (increase of 724 trips over existing conditions). • Projected 3,795 vehicle trips during the evening peak hour at the intersection of West Main Road and Valley Road (increase of 760 trips over existing conditions). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Middletown would be responsible for reviewing sight lines at proposed driveway location to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth***. • Significant and unavoidable increase in traffic volume would occur due to regional growth and other proposed developments not specifically identified.
	Level of Service: ***Significant and unavoidable decrease in level of service (LOS), even with implementation of proposed mitigation measures.*** • The intersection of West Main Road and Coddington Highway would operate at LOS D during evening peak hour (existing LOS C). • The intersection of West Main Road and Valley Road would operate at LOS C during evening peak hour (existing LOS B). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • The intersection of West Main Road and Coddington Highway would operate at LOS D during evening peak hour (existing LOS C). • The intersection of West Main Road and Valley Road would operate at LOS C during evening peak hour (existing LOS B). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer, and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Middletown requirements.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and hazardous materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer, and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Middletown requirements.	**Hazardous Waste and Materials:** ***No impact.*** • No development would occur; therefore, no impact on the environment from new sources of hazardous waste and hazardous materials management.
	Environmental Restoration Program: ***No impact.*** • The nearest Environmental Restoration (ER) Program site is 0.5 miles from the former Navy Lodge property and no further action is recommended for the site.	**Environmental Restoration Program:** ***No impact.*** • The nearest ER Program site is 0.5 miles from the former Navy Lodge property no further action is recommended for the site.	**Environmental Restoration Program:** ***No impact.*** • The nearest ER Program site is 0.5 miles from the former Navy Lodge property no further action is recommended for the site.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operation would result in increased vehicle emissions. • The developer could utilize (BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operation would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.
	Greenhouse Gas (GHG) Emissions: ***Minor impact.*** • The change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the Council on Environmental Quality (CEQ) to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impact.*** • The change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of GHG emissions would be created.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Noise	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise*: Minor impact*. • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic noise would be 1 dBA at nearby receptors. The 1 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact***. • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic noise would be 1.2 dBA at nearby receptors. The 1.2 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact.*** • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.
Infrastructure and Utilities	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. The estimated demand of 3,813 gallons per day (gpd) is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. The estimated demand of 7,625 gpd is within projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***No impact.*** • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.
	Wastewater: ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on capacity of City of Newport's treatment system. The estimated 3,630 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on capacity of City of Newport's treatment system. The estimated 7,259 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***No impact.*** • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Storm Water: ***Minor impact.*** • 78,400 square feet of impervious surface would be constructed at the site, which is currently undeveloped. • The developer would be required to construct new storm water infrastructure. • The Town of Middletown will require the developer to prepare a storm water management plan before issuing a building permit, which will include measures to control volume and quality of storm water runoff. • The developer would implement appropriate erosion and sediment control measures and storm water management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Minor impact.*** • 91,500 square feet of impervious surface would be constructed at the site, which is currently undeveloped. • The developer would be required to construct new storm water infrastructure. • The Town of Middletown will require the developer to prepare a storm water management plan before issuing a building permit, which will include measures to control volume and quality of storm water runoff. • The developer would implement appropriate erosion and sediment control measures and storm water management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on the volume of storm water would occur because there would be no change from existing conditions.
	Other Utility Systems: ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 438,036 kilowatt-hours (kWh). The developer would be required to obtain new electric connections/infrastructure for the proposed development. <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 1,018,700 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 876,071 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 2,037,400 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Solid Waste: ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 270 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial land use.	**Solid Waste:** ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 540 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial land use.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.
Cultural Resources	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at the former Navy Lodge property.	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present within APE at the former Navy Lodge property.	**Archaeological Resources:** ***No impact.***
	Architectural Resources: ***No impact.*** • No impact on architectural resources; existing utility shed and concrete pad would remain on the property.	**Architectural Resources:** ***No impact.*** • No impact on architectural resources; existing utility shed and concrete pad would remain on the property.	**Architectural Resources:** ***No impact.***
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.
	Historic Properties: ***No effect.*** • No effect on historic properties because none have been identified within the Area of Potential Effect (APE) at the former Navy Lodge property.	**Historic Properties:** ***No effect.*** • No effect on historic properties because none have been identified within the APE at the former Navy Lodge property.	**Historic Properties:** ***No effect.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Topography, Geology, and Soils	**Topography:** ***Minor impact.*** • Site is flat as a result of previous development at the site.	**Topography:** ***Minor impact***. • Site is flat as a result of previous development at the site.	**Topography:** ***No impact.***
	Geology: ***No impact.***	**Geology:** ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact***.
Water Resources	**Surface Water:** ***Minor impact.*** • No direct impacts; no surface waters on-site. • Negligible indirect impacts on Bailey's Brook from construction activities. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***Minor impact.*** • No direct impacts; no surface waters on-site. • Negligible indirect impacts on Bailey's Brook from construction activities. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***No impact.***
	Water Quality: ***Minor impact.*** • 1.8 acres of impervious surface area. • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new stormwater system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • 2.1 acres of impervious surface area. • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new stormwater system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater**: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater:** ***No impact.***
	Floodplains: ***No impact.*** • No floodplains on-site.	**Floodplains**: ***No impact***. • No floodplains on-site.	**Floodplains**: ***No impact.***
	Wetlands: ***No impact***. • No wetlands occur on-site.	**Wetlands**: ***No impact***. • No wetlands occur on-site.	**Wetlands:** ***No impact.*** • No wetlands occur on-site, and no development is proposed.
Biological Resources	**Vegetation**: ***Minor impact.*** • 1.8 acres of grassed areas permanently removed and 1.2 acres maintained as open space. • The developer would restore temporarily disturbed areas retained as open space to grass or conventional landscaping.	**Vegetation**: ***Minor impact.*** • 2 acres of grassed areas permanently removed and 1 acre maintained as open space. • The developer would restore temporarily disturbed areas retained as open space to grass or conventional landscaping.	**Vegetation:** ***No impact.*** • No development would occur; therefore, vegetation would not be impacted.
	Wildlife: ***Minor impact.*** • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase.	**Wildlife**: ***Minor impact.*** • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase.	**Wildlife:** ***No impact.*** • No development would occur; therefore, wildlife would not be impacted.
	Threatened and Endangered Species: ***No impact.*** • No federally listed or state-listed threatened or endangered species occur.	**Threatened and Endangered Species:** ***No impact.*** • No federally listed or state-listed threatened or endangered species occur.	**Threatened and Endangered Species:** ***No impact.*** • No federally listed or state-listed threatened or endangered species occur.
	Significant Wildlife Habitat: ***No impact***. • No significant wildlife habitat exists on-site.	**Significant Wildlife Habitat:** ***No impact***. • No significant wildlife habitat exists on-site.	**Significant Wildlife Habitat:** ***No impact.*** • No significant wildlife habitat exists on-site.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 4.5 acres would occur. • Moderate impact on on-site land use associated with change from vacant, former institutional to mixed use, including waterfront park. • No direct impact on surrounding land use. • Moderate indirect impact on surrounding land use due to increased traffic and potential to contribute to and influence other area development.	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 4.8 acres would occur. • Moderate impact on on-site land use associated with change from vacant, former institutional to mixed use, including waterfront park. • No direct impact on the surrounding land use. • Moderate indirect impact on surrounding land use due to increased traffic and potential to contribute to and influence other area development.	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore, no impact on on-site or surrounding land use.
	Consistency with Local Planning/Zoning: ***Not fully consistent with local planning/zoning.*** • Consistent with the *2006 North End Master Plan* and the *Aquidneck Island West Side Master Plan.* • Not consistent with the *City of Newport Comprehensive Land Use Plan,* which does not provide for any commercial uses of the land. • Proposed hotel and commercial uses not consistent with existing zoning and would require rezoning or a variance. • The City of Newport would rezone property or the developer would be required to obtain a variance.	**Consistency with Local Planning/Zoning:** ***Not fully consistent with local planning/zoning.*** • Consistent with the *Aquidneck Island West Side Master Plan.* • Not consistent with the *City of Newport Comprehensive Land Use Plan*, which does not provide for any commercial uses of the land, or the *2006 North End Master Plan* because it does not include housing as recommended in the master plan. • Proposed hotel and commercial uses not consistent with existing zoning and would require rezoning or a variance. • The City of Newport would rezone the property or the developer would be required to obtain a variance.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with zoning.*** • Not consistent with the *City of Newport Comprehensive Land Use Plan*, the *2006 North End Master Plan*, or the *Aquidneck Island West Side Master Plan*, which recommend development of the site and public access to the waterfront. • Consistent with existing city zoning.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Coastal Resources: ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Naval Hospital for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Rhode Island CRMC concurred with the Navy's determination. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Naval Hospital for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***No impact.*** • No development would occur; therefore, the use or natural resources of the coastal zone would not be affected.
Socioeconomics and Environmental Justice	**Economy, Employment, and Income:** ***Beneficial impact.*** • $24.8 million in total construction expenditures would have a beneficial impact on the economy. • 226 direct, indirect, and induced jobs would be created during construction. • 189 direct and 69 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***Beneficial impact***. • $27 million in total construction expenditures would have a beneficial impact on the economy. • 226 direct, indirect, and induced jobs would be created during construction. • 279 direct and 92 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***No impact*** • No new economic activity would be generated, and no increased employment opportunities would occur.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Population: ***Minor impact.*** • Proposed new residential housing and increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population:** ***Minor impact***. • Increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population**: ***No impact.*** • Regional population would not change as a result of development because no development would occur.
	Housing and Commercial Property: ***Minor impact.*** • Increase of 36 residential units in the City of Newport would have a minor impact on housing market; no discernable impact on housing availability or prices. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property:** ***Minor impact.*** • Increase in residential housing in the City of Newport would have a minor impact on housing market; no significant impact on housing prices or availability. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property**: ***No impact***. • No development would occur; therefore no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***Beneficial impact.*** • Estimated $412,000 in annual property tax revenue would have a positive impact on government revenues in the City of Newport.	**Taxes and Revenue:** ***Beneficial impact.*** • Estimated $260,000 in annual property tax revenue would have a positive impact on government revenues in the City of Newport	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the property would retain its current tax-exempt status.
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high and adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Community Facilities and Services	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue. • Positive impact by the creation of a waterfront park.	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue. • Positive impact by the creation of a waterfront park.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.
Transportation	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 1,248 daily trips added to existing transportation network. • Projected 1,507 vehicle trips during evening peak hour on the existing intersection of Admiral Kalbfus Road/Training Station Road and Third Street (increase of 314 trips over existing conditions). • Between 605 and 609 projected new trips during evening peak hours at the intersections with the three driveways. • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network. • The developer/City of Newport would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 1,576 daily trips added to existing transportation network. • Projected 1,549 vehicle trips during the evening peak hour on the existing intersection of Admiral Kalbfus Road/Training Station Road and Third Street (increase of 356 trips over existing conditions). • Between 648 and 697 projected new trips during evening peak hours at the intersections with the three driveways. • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network. • The developer/City of Newport would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth.*** • Significant and unavoidable increase in traffic volume due to regional growth and other proposed developments not specifically identified.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Level of Service: ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • Admiral Kalbfus Road/Training Station Road and Third Street would operate at LOS C during evening peak hour (existing LOS B). • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • Admiral Kalbfus Road/Training Station Road and Third Street would operate at LOS C during evening peak hour (existing LOS B). • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified.
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future activities would use hazardous materials and generate hazardous wastes. • Potential for radioactive materials to be found during demolition due to previous use as a hospital. • Large quantities of asbestos-containing materials (ACM) and lead-based paint (LBP) require removal prior to demolition. • Some areas of lead-containing soil require remediation before redevelopment. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and City of Newport requirements.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future activities would use hazardous materials and generate hazardous wastes. • Potential for radioactive materials to be found during demolition due to previous use as a hospital. • Large quantities of ACM and LBP require removal prior to demolition. • Some areas of lead-containing soil require remediation before redevelopment. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and City of Newport requirements.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous materials on-site.*** • Minor, long-term impact from the presence of ACM, LBP, and lead-containing soil.
	Environmental Restoration Program: ***No impact.*** • No ER Program sites are located near the former Naval Hospital property.	**Environmental Restoration Program:** ***No impact.*** • No ER Program sites are located near the former Naval Hospital property.	**Environmental Restoration Program:** ***No impact.*** • No ER Program sites are located near the former Naval Hospital property.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.
	GHG Emissions: ***Minor impacts.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impacts.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of GHG emissions would be created.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Noise	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with City of Newport zoning regulations on the timing of construction activities.	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with City of Newport zoning regulations on the timing of construction activities.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise: ***Minor impact.*** • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic would be 1 dBA at nearby receptors. The 1 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact.*** • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic noise would be 1.3 dBA at nearby receptors. The 1.3 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact.*** • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.
Infrastructure and Utilities	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 25,243 gpd is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require new a distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 23,400 gpd is within projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***No impact.*** • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.
	Wastewater: ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on the capacity of City of Newport's treatment system. Estimated 23,670 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on the capacity of City of Newport's treatment system. Estimated 22,253 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater**: ***No impact***. • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Storm Water: ***Moderate impact.*** • 195,243 square feet of impervious surface (4% increase) would be constructed at the site. • The developer would be required to construct new stormwater infrastructure. • The City of Newport would require the developer to prepare a stormwater management plan as part of the development plan review, which would include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Moderate impact*** • 210,410 square feet of impervious surface (12% increase) would be constructed at the site. • The developer would be required to construct new stormwater infrastructure. • The City of Newport would require the developer to prepare a stormwater management plan as part of the development plan review, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on volume of stormwater would occur because there would be no change from existing conditions.
	Other Utility Systems: ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 2,470,529 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 8,335,116 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 2,832,468 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 9,594,120 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Solid Waste: ***Moderate short-term impact; minor long-term impact.*** • Moderate short-term impact on solid waste management through demolition of existing structures and generation of construction and demolition wastes; estimated 64,200 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial and residential land uses.	**Solid Waste:** ***Moderate short-term impact; minor long-term impact.*** • Moderate short-term impact on solid waste management through demolition of existing structures and generation of construction and demolition wastes; estimated 63,800 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial land uses.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.
Cultural Resources	**Archaeological Resources:** ***Potential significant negative indirect impact that would be mitigated.*** • No direct impact on terrestrial archaeological resources because none are present at the former Naval Hospital property. • Potential significant, negative, indirect impact on one underwater archaeological site outside the APE that is eligible for the National Register of Historic Places (NRHP). • Potential significant, negative, indirect on one underwater NRHP-eligible archaeological site outside the APE would be mitigated as discussed below for historic properties.	**Archaeological Resources:** ***Potential significant negative indirect impact that would be mitigated.*** • No direct impact on terrestrial archaeological resources because none are present at the former Naval Hospital property. • Potential significant, negative, indirect impact on one underwater NRHP-eligible archaeological site outside the APE. • Potential significant, negative, indirect on one underwater NRHP-eligible archaeological site outside the APE would be mitigated as discussed below for historic properties.	**Archaeological Resources:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Architectural Resources: ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of demolition of buildings or structures that are contributing resources to the NRHP-eligible Naval Hospital Historic District. • Significant, negative, direct impact on architectural resources that are contributing resources to the NRHP-eligible Naval Hospital Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of demolition of buildings or structures that are contributing resources to the NRHP-eligible Naval Hospital Historic District. • Significant, negative, direct impact on architectural resources that are contributing resources to the NRHP-eligible Naval Hospital Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of neglect of buildings or structures that are contributing resources to the NRHP-eligible Naval Hospital Historic District in a manner that causes their deterioration. • Significant, negative, direct impact on architectural resources that are contributing resources to the NRHP-eligible Naval Hospital Historic District would be mitigated as discussed below for historic properties.
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Historic Properties: ***Adverse effect on historic properties that would be mitigated.*** • Adverse effect on an underwater NRHP-eligible archaeological site that is outside, but in the vicinity of, the underwater portion of the APE. Adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from on-site sediment disruption caused by underwater waves, currents, or sediments dispersed through or carried by water during demolition, construction, and/or alteration of Pier 71. • Adverse effect on buildings or structures within the APE that are contributing elements of the NRHP-eligible Naval Hospital Historic District. Direct adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from demolition of contributing resources to the historic district. Indirect adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from alteration of contributing resources and the character-defining features that contribute to the integrity and significance of the historic district. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within and outside but in the vicinity of the APE.	**Historic Properties:** ***Adverse effect on historic properties that would be mitigated.*** • Adverse effect on an underwater NRHP-eligible archaeological site that is outside, but in the vicinity of, the underwater portion of the APE. Adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from on-site sediment disruption caused by underwater waves, currents, or sediments dispersed through or carried by water during demolition, construction, and/or alteration of Pier 71. • Adverse effect on buildings or structures within the APE that are contributing elements of the NRHP-eligible Naval Hospital Historic District. Direct adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from demolition of contributing resources to the historic district. Indirect adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from alteration of contributing resources and the character-defining features that contribute to the integrity and significance of the historic district. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within and outside but in the vicinity of the APE.	**Historic Properties:** ***Adverse effect on historic properties that would be mitigated.*** • Adverse effect on buildings and structures within the APE that are contributing elements of the NRHP-eligible Naval Hospital Historic District. Adverse effect could result from neglect in a manner that causes their deterioration. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding the potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Topography, Geology, and Soils	**Topography:** ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography from grading and associated cut-and-fill activities necessary to accommodate the new buildings.	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography from grading and associated cut-and-fill activities necessary to accommodate the new buildings.	**Topography**: ***No impact.***
	Geology: ***No impact.***	**Geology**: ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact.***
	Bathymetry: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***No impact.***
	Marine Sediment: ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Water Resources	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact in the form of erosion, sedimentation, and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact in the form of erosion, sedimentation and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***No impact.***
	Water Quality: ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, stormwater runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 4.5 acres of impervious surface area (increase of 0.2 acres above existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, storm water runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 4.8 acres of impervious surface area (increase of 0.5 acres above existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater**: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater:** ***No impact.***
	Floodplains: ***Moderate impact.*** • 1.6 acres of 100-year floodplain would be permanently affected by construction of the hotel, residential units, and paved access, portions of which are currently developed. • 0.09 acres of new development in the floodplain would not result in the loss of floodplain storage capacity or rise in the 100-year floodplain. • The developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through local building permit process.	**Floodplains**: ***Moderate impact.*** • 1.6 acres of 100-year floodplain would be permanently affected by construction of the hotel, commercial use, conference center, and paved access. • No new loss of floodplain storage capacity anticipated; area is currently developed. • Developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through local building permit process.	**Floodplains:** ***No impact.***
	Wetlands: ***Minor impact.*** • 0.02 acres of permanent impact from the fill needed for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands**: ***Minor impact.*** • 0.04 acres of permanent impact from the fill needed for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Biological Resources	**Vegetation:** ***Minor impact.*** Upland • Proposed development would be located primarily in previously developed areas. • 1.8 acres maintained as open space and 2.0 acres maintained as waterfront park. • 0.10 acre of grassed areas would be permanently removed for path through the waterfront park and boat storage facility. Wetland • 0.02 acres of permanent impact on marine/estuarine wetlands. • The developer would restore temporarily disturbed areas following construction; wetland mitigation is discussed above.	**Vegetation:** ***Minor impact.*** Upland • Proposed development would be located primarily in previously developed areas. • 1.8 acres maintained as open space and 2.0 acres maintained as waterfront park. • 0.10 acre of grassed areas would be permanently removed for path through the waterfront park and boat storage facility. Wetland • 0.04 acres of permanent impact on marine/estuarine wetlands. • The developer would restore temporarily disturbed areas following construction; wetland mitigation is discussed above.	**Vegetation:** ***No impact.*** • No development would occur; therefore, vegetation would not be impacted.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Wildlife: ***Minor impact on terrestrial mammals and avian species. Not likely to result in takes of marine mammals.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise from pile-driving activities associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the Marine Mammal Protection Act (MMPA), the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. • Measures to reduce impacts on marine mammals would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***Minor impact on terrestrial mammals and avian species. Not likely to result in takes of marine mammals.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise from pile-driving activities associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal • Measures to reduce impacts on marine mammals would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***No impact.*** • No development would occur; therefore, wildlife would not be impacted.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Avian Species • Short-term displacement during construction. • Minimal habitat loss as site is largely developed. • No significant adverse effects on, or harm to, a population of migratory birds.	Avian Species • Short-term displacement during construction. • Minimal habitat loss as site is largely developed. • No significant adverse effects on, or harm to, a population of migratory birds.	
	Threatened and Endangered Species: ***No effect on North Atlantic right whale, humpback whale, or fin whale; may affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic Distinct Population Segment (DPS) of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, or green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No effect on North Atlantic right whale, humpback whale or fin whale; may affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, or green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Significant Wildlife Habitat: ***Minor impact.*** • 0.04 acres of the 0.3 acres of marine/estuarine wetlands would be filled for pilings used to anchor the floating dock in place. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. • No adverse effects on essential fish habitat (EFH), including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities. • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***Minor impact.*** • 0.04 acres of the 0.3 acres of marine/estuarine wetlands would be filled for pilings used to anchor the floating dock in place. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. • No adverse effects on EFH, including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities. • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • A total of 31.1 acres would be redeveloped, and 104.9 acres would remain as open space. • Moderate impact on on-site land use associated with change from primarily vacant and industrial to mixed use. • Developer may need to comply with land use controls upon completion of environmental remediation at site. • No direct impact on surrounding land use. • Moderate indirect impacts on surrounding land use with potential increased traffic contributing to and influencing other area redevelopment (i.e., Melville area).	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • A total of 34 acres would be redeveloped, and 102 acres would remain as open space. • Moderate impact on on-site land use associated with change from primarily vacant and industrial to mixed use. • Developer may need to comply with land use controls upon completion of environmental remediation at site. • No direct impact on surrounding land use. • Moderate indirect impacts on surrounding land use with potential increased traffic contributing to and influencing other area redevelopment (i.e., Melville area).	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore no impact on on-site or surrounding land use.
	Consistency with Local Planning/Zoning: ***Primarily consistent with local planning/zoning.*** • Consistent with the *Aquidneck Island West Side Master Plan,* the draft *Portsmouth Tank Farm Redevelopment Plan*, and the *Town of Portsmouth Comprehensive Community Plan.* • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; the variance would not result in a significant impact on surrounding land uses.	**Consistency with Local Planning/Zoning:** ***Primarily consistent with local planning/zoning.*** • Consistent with the *Aquidneck Island West Side Master Plan,* the draft *Portsmouth Tank Farm Redevelopment Plan*, and the *Town of Portsmouth Comprehensive Community Plan.* • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; the variance would not result in a significant impact on surrounding land uses.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with local zoning.*** • Not consistent with the *Town of Portsmouth Comprehensive Community Plan*, draft Portsmouth *Tank Farm Redevelopment Plan*, or *Aquidneck Island West Side Master Plan*, which recommend development of the site. • Consistent with existing town zoning.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Coastal Resources: ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of Tank Farms 1 and 2 for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Rhode Island CRMC concurred with the Navy's determination. • The developer would be required to comply with the SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of Tank Farms 1 and 2 for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***No impact*** • No development would occur; therefore, the use or natural resources of the coastal zone would not be affected.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Socioeconomics and Environmental Justice	**Economy, Employment, and Income:** ***Beneficial impact.*** • $33.7 million in total construction expenditures would have a beneficial impact on the economy. • 289 direct, indirect, and induced jobs would be created during construction. • 592 direct and 170 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***Beneficial impact.*** • $37.7 million in total construction expenditures would have a beneficial impact on the economy. • 322 direct, indirect, and induced jobs would be created during construction. • 702 direct and 198 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***No impact.*** • No new economic activity would be generated associated with redevelopment of the surplus properties, and no increased employment opportunities would occur.
	Population: ***Minor impact.*** • Increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population**: ***Minor impact.*** • Increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population**: ***No impact.*** • Regional population would not change as a result of development because no development would occur.
	Housing and Commercial Property: ***Minor impact*** • No increase in residential housing in the Town of Portsmouth; no significant impact on housing prices or availability. • Increase in supply of industrial and office space may result in downward pressure on prices at existing office buildings and industrial space.	**Housing and Commercial Property**: ***Minor impact*** • No increase in residential housing in the Town of Portsmouth; no significant impact on housing prices or availability. • Increase in supply of industrial and office space may result in downward pressure on prices at existing office buildings and industrial space.	**Housing and Commercial Property**: ***No impact.*** • No development would occur; therefore, no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***Beneficial impact.*** • Estimated $421,000 increase in annual property tax revenue would have a positive impact on government revenues in the Town of Portsmouth.	**Taxes and Revenue:** ***Beneficial impact.*** • Estimated $494,000 increase in annual property tax revenue would have a positive impact on government revenues in the Town of Portsmouth.	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the properties would retain their current tax-exempt status.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Minority or Hispanic/Latino populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high or adverse human health or environmental effect.*** • Minority and Hispanic/Latino populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.
Community Facilities and Services	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Transportation	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 2,762 daily trips added to the existing transportation network. • Projected 3,599 vehicle trips during the evening peak hour at the intersection of West Main Road and Stringham Road (increase of 828 trips over existing conditions). • Projected 3,461 vehicle trips during the evening peak hour at the intersection of West Main Road and Bradford Avenue (increase of 857 trips over existing conditions). • Projected 1,185 vehicle trips during the evening peak hour at the intersection of Defense Highway and Stringham Road (increase of 315 trips over existing conditions). • Minor impacts on streets and intersections surrounding the property. • Increase in traffic is mainly due to regional growth and other proposed developments not specifically identified. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Portsmouth would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists. • If the developer proposes use of Bradford Avenue as an access point, signalization/roadway improvements would need to be considered to improve safety in the vicinity of the Melville School.	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 3,151 daily trips added to the existing transportation network. • Projected 3,631 vehicle trips during the evening peak hour at the intersection of West Main Road and Stringham Road (increase of 860 trips over existing conditions). • Projected 3,496 vehicle trips during the evening peak hour at the intersection of West Main Road and Bradford Avenue (increase of 892 trips over existing conditions). • Projected 1,209 vehicle trips during the evening peak hour at the intersection of Defense Highway and Stringham Road (increase of 339 trips over existing conditions). • Minor impacts on streets and intersections surrounding the property. • Increase in traffic is mainly due to regional growth and other proposed developments not specifically identified. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Portsmouth would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists. • If the developer proposes use of Bradford Avenue as an access point, signalization/roadway improvements would need to be considered to improve safety in the vicinity of the Melville School.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth.*** • Significant and unavoidable increase in traffic due to regional growth and other proposed developments not specifically identified.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Level of Service: ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • West Main Road and Stringham Road intersection would operate at an LOS of D during evening peak hour (existing LOS C). • West Main Road and Bradford Avenue intersection would operate at an LOS of B for northbound traffic and F for eastbound traffic during evening peak hour (existing LOS A and F, respectively). • Defense Highway and Stringham Road intersection would operate at an LOS of A for northbound traffic and LOS F for northeast approach traffic during evening peak hour (existing LOS A and D, respectively). • Stringham Road and Tank Farm 2 proposed driveway would operate at an LOS of C for southbound traffic during the evening peak hour, and LOS A for eastbound traffic. • Stringham Road and Tank Farm 1 proposed driveway would operate at an LOS of B during morning and evening peak hours for westbound traffic. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • West Main Road and Stringham Road intersection would operate at an LOS of D during evening peak hour (existing LOS C). • West Main Road and Bradford Avenue intersection would operate at an LOS of B for northbound traffic and F for eastbound traffic during evening peak hour (existing LOS A and F, respectively). • Defense Highway and Stringham Road intersection would operate at an LOS of A for northbound traffic and F for northeast approach traffic during evening peak hour (existing LOS A and D, respectively). • Stringham Road and Tank Farm 2 proposed driveway would operate at an LOS of C for southbound traffic during the evening peak hour and LOS A for eastbound traffic. • Stringham Road and Tank Farm 1 proposed driveway would operate at an LOS of B during morning and evening peak hours for westbound traffic. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Portsmouth requirements. • ACM and LBP require removal before demolition. • Some areas of lead-containing soil require remediation prior to development.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Portsmouth requirements. • ACM and LBP require removal before demolition. • Some areas of lead-containing soil require remediation prior to development.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous materials on-site.*** • Minor long-term impact from the presence of ACM, LBP, and lead-containing soil. • Tank farms will be closed under RIDEM's UST regulations and remediated under CERCLA.
	Environmental Restoration Program: ***No impact.*** • Tank farms would be closed under RIDEM's UST regulations and remediated under CERCLA before property is redeveloped. The developer may need to comply with land use controls upon completion of environmental remediation at the site. • The types of businesses and land uses that are planned (light industrial, office, and boat storage space and solar array) would likely be consistent with any land use controls that accompany the final remedies.	**Environmental Restoration Program:** ***No impact.*** • Tank farms would be closed under RIDEM's UST regulations and remediated under CERCLA before property is redeveloped. The developer may need to comply with land use controls upon completion of environmental remediation at the site. • The types of businesses and land uses that are planned (light industrial, office, and boat storage space and solar array) would likely be consistent with any land use controls that accompany the final remedies.	**Environmental Restoration Program:** ***No impact***. • Tank farms will be closed under RIDEM's UST regulations and remediated under CERCLA.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards, etc.	**Construction/Operational Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.
	GHG Emissions: ***Minor impact.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impact.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Noise	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction.	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise: ***Minor impact.*** • A minor noise impact would result from the light industrial land uses (these areas are not near residential areas). • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; to obtain a variance, the developer would be required to conduct a noise assessment. • A minor impact would result from traffic noise. The largest estimated increase in traffic noise would be 6.4 dBA at Bradford Avenue; this increase would be perceptible, but the resultant sound level of 49.5 dBA is acceptable according to Federal Highway Administration (FHWA) criteria.	**Operational Noise:** ***Minor impact.*** • A minor noise impact would result from the light industrial land uses (these areas are not near residential areas). • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; to obtain a variance, the developer would be required to conduct a noise assessment. • A minor impact would result from traffic noise. The largest estimated increase in traffic noise would be 5.1 dBA at Bradford Avenue; this increase would be perceptible, but the resultant sound level of 48.2 dBA is acceptable according to FHWA criteria.	**Operational Noise:** ***Minor impact***. • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.
Infrastructure and Utilities	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 18,000 gpd is within the projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 22,150 gpd is within the projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply** ***No impact.*** • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Wastewater: ***Potentially significant impact on wastewater treatment infrastructure.*** • The Town of Portsmouth currently has no centralized wastewater treatment/collection infrastructure. The estimated 17,170 gpd generation would require connection to a new treatment facility or the City of Newport's treatment system. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***Potentially significant impact on wastewater treatment infrastructure.*** • The Town of Portsmouth currently has no centralized wastewater treatment/collection infrastructure. The estimated 21,126 gpd generation would require connection to a new treatment facility or the City of Newport's treatment system. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***No impact***. • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.
	Storm Water: ***Significant increase in impervious surface (130% increase).*** • 1,352,300 square feet of impervious surface (130% increase) would be constructed at the site. • The developer would be required to construct new storm water infrastructure or modify the existing system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Significant increase in impervious surface (151% increase).*** • 1,478,800 square feet of impervious surface (151% increase) would be constructed at the site. • The developer would be required to construct new storm water infrastructure or modify the existing system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on volume of stormwater would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Other Utility Systems: ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 2,012,362 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. Natural Gas • Negligible impact on regional demand; estimated annual demand of 7,944,000 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 2,590,198 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. Natural Gas • Negligible impact on regional demand; estimated annual demand of 9,151,853 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems would occur because there would be no change from existing conditions.
	Solid Waste: ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 2,600 cubic yards of waste. • Minor long-term impact on solid waste management from operation of industrial and commercial uses.	**Solid Waste:** ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 3,000 cubic yards of waste. • Minor long-term impact on solid waste management from operation of industrial and commercial uses.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Cultural Resources	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at Tank Farms 1 and 2.	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at Tank Farms 1 and 2.	**Archaeological Resources:** ***No impact.***
	Architectural Resources: ***Significant negative indirect impact that would be mitigated.*** • No direct physical impact on architectural resources because all buildings and structures at Tank Farm 1 would be removed as part of a separate action and all of the extant buildings and structures at Tank Farm 2 would remain in place and would not be directly impacted by redevelopment. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District. Indirect impacts would occur as a result of transfer of the buildings and structures at the Tank Farms 1 and 2 property out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the historic district's historic significance. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant negative indirect impact that would be mitigated.*** • No direct physical impact on architectural resources because all buildings and structures at Tank Farm 1 would be removed as part of a separate action and all of the extant buildings and structures at Tank Farm 2 would remain in place and would not be directly impacted by redevelopment. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District. Indirect impacts would occur as a result of transfer of the buildings and structures at the Tank Farms 1 and 2 property out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the historic district's historic significance. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of neglect of buildings or structures that are contributing resources to the NRHP-eligible Melville Naval Historic District in a manner that causes their deterioration. • Significant, negative, direct impact on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District would be mitigated as discussed below for historic properties.
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Historic Properties: ***Adverse effect, including cumulative effect, on historic properties that would be mitigated.*** • Potential adverse effects on historic properties within the APE from disposal of the Tank Farms 1 and 2 property that would result from transfer of the buildings or structures at Tank Farm 2 that are contributing elements of the NRHP-eligible Melville Naval Historic District out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure the long-term preservation of the property's historic significance. • Potential cumulative adverse effects on historic properties within the APE from the transfer of the Tank Farms 1 and 2 property when considered in conjunction with the proposed demolition of abandoned facilities at Tank Farm 1 as part of a separate action. • Potential cumulative adverse effects would result from physical destruction of contributing resources to the NRHP-eligible Melville Naval Historic District, changes to the physical features (e.g., removal of buildings and structures) within the historic district's setting that contribute to its historic significance, and transfer of property out of federal ownership or control (i.e., the disposal of the Tank Farms 1 and 2 property) without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects, including any cumulative effects, on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.	**Historic Properties:** ***Adverse effects, including cumulative effect, on historic properties that would be mitigated.*** • Potential adverse effects on historic properties within the APE from disposal of the Tank Farms 1 and 2 property that would result from transfer of the buildings or structures at Tank Farm 2 that are contributing elements of the NRHP-eligible Melville Naval Historic District out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure the long-term preservation of the property's historic significance. • Potential cumulative adverse effects on historic properties within the APE from the transfer of the Tank Farms 1 and 2 property when considered in conjunction with the proposed demolition of abandoned facilities at Tank Farm 1 as part of a separate action. • Potential cumulative adverse effects would result from physical destruction of contributing resources to the NRHP-eligible Melville Naval Historic District, changes to the physical features (e.g., removal of buildings and structures) within the historic district's setting that contribute to its historic significance, and transfer of property out of federal ownership or control (i.e., the disposal of the Tank Farms 1 and 2 property) without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects, including any cumulative effects, on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.	**Historic Properties:** ***Adverse effects on historic properties that would be mitigated.*** • Potential adverse effects on historic properties within the APE that are contributing elements of the NRHP-eligible Melville Naval Historic District resulting from neglect in a manner that causes their deterioration. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Topography, Geology, and Soils	**Topography:** ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new buildings.	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new buildings.	**Topography**: ***No impact.***
	Geology: ***No impact.***	**Geology**: ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact.***
Water Resources	**Surface Water:** ***Minor impact.*** • No direct impact; no surface waters on-site. • Minor indirect impacts on Melville Ponds and an unnamed stream north of the property from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***Minor impact.*** • No direct impact; no surface waters on-site. • Minor indirect impacts on Melville Ponds and an unnamed stream north of the property from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Water Quality: ***Minor impact.*** • 31.0 acres of impervious surface area (130% increase over existing conditions). • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new storm water system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • 33.9 acres of impervious surface (151% increase over existing conditions). • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new stormwater system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater:** ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater:** ***No impact.***
	Floodplains: ***No impact***. • No floodplains occur on-site.	**Floodplains**: ***No impact.*** • No floodplains occur on-site.	**Floodplains:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Wetlands: ***Minor impact.*** • 0.08 acre of permanent potential wetland fill on Tank Farm 1. • 0.4 acres of perimeter wetland would be directly impacted. • Negligible indirect impacts on on-site potential wetlands and Melville Ponds, adjacent to the Tank Farms. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands**: ***Minor impact.*** • 0.09 acre of permanent potential wetland fill on Tank Farm 1. • 0.5 acres of perimeter wetland would be directly impacted. • Negligible indirect impacts on on-site potential wetlands and Melville Ponds, adjacent to the Tank Farms. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands:** ***No impact***.
Biological Resources	**Vegetation:** ***Moderate impact.*** Mixed Oak/White Pine • Permanent conversion of 2.7 acres to parking/access and office. Old Field • Permanent conversion of 9.2 acres of old field to parking/access and solar array. Ruderal Forest • Permanent conversion of 14.5 acres of ruderal forest to parking access, office, and light industrial.	**Vegetation:** ***Moderate impact.*** Mixed Oak/White Pine • Permanent conversion of 2.7 acres to parking/access and office. Old Field • Permanent conversion of 9.2 acres of old field to parking/access and solar array. Ruderal Forest • Permanent conversion of 16.4 acres of ruderal forest to parking/access, office, and light industrial.	**Vegetation:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Wildlife: ***Minor impact.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Habitat loss from conversion of vegetation types. Avian Species • Short-term displacement during construction. • Habitat loss from conversion of vegetation types. • No significant adverse effects on a population of migratory birds.	**Wildlife:** ***Minor impact.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Habitat loss from conversion of vegetation types. Avian Species • Short-term displacement during construction. • Habitat loss from conversion of vegetation types. • No significant adverse effects on a population of migratory birds.	**Wildlife:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Threatened and Endangered Species: ***May affect but is not likely to adversely affect the northern long-eared bat.*** • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 14.5 acres of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer. (i.e., 0.25 mile buffer around known, occupied hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	**Threatened and Endangered Species:** ***May affect but is not likely to adversely affect the northern long-eared bat.*** • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 16.4 acres of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer (i.e., 0.25 mile buffer around known occupied, hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	**Threatened and Endangered Species:** ***No impact.***
	Significant Wildlife Habitat: ***No impact***. • 0.48 acres of freshwater wetlands would be filled for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Significant Wildlife Habitat:** ***No impact*** • 0.59 acres of freshwater wetlands would be filled for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Significant Wildlife Habitat:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Minor impact due to changes in land use.*** • A total of 10.7 acres would be redeveloped, primarily as recreational/open space. • Minor impact on on-site land use associated with change from undeveloped open space to a shoreline park. • No direct impact on surrounding land use. • Minor indirect impact on surrounding land use due to slight increase in use of Defense Highway.	**On-site/Surrounding Land Use:** ***Minor impact due to changes in land use.*** • A total of 10.7 acres would be redeveloped, primarily as recreational/open space. • Minor impact on on-site land use associated with change from undeveloped open space to a shoreline park. • No direct impact on surrounding land use. • Minor indirect impact on surrounding land use due to slight increase in use of Defense Highway.	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore, no impact on on-site or surrounding land use.
	Consistency with Local Planning/Zoning ***Primarily consistent with local planning/zoning.*** • Consistent with the *Town of Middletown Comprehensive Community Plan*, the *Shoreline Master Plan,* and the *Aquidneck Island Transportation Study.* • Not consistent with the *Aquidneck Island West Side Master Plan* recommendations for upgrading Defense Highway into a scenic byway. • Consistent with Town of Middletown zoning.	**Consistency with Local Planning/Zoning:** ***Primarily consistent with local planning/zoning.*** • Consistent with the *Town of Middletown Comprehensive Community Plan*, the *Shoreline Master Plan,* and the *Aquidneck Island Transportation Study.* • Not consistent with the *Aquidneck Island West Side Master Plan* recommendations for upgrading Defense Highway into a scenic byway. • Consistent with Town of Middletown zoning.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with local zoning.*** • Not consistent with redevelopment elements of the *Town of Middletown Comprehensive Community Plan*, the *Shoreline Master Plan,* the *Aquidneck Island Transportation Study,* or the *Aquidneck Island West Side Master Plan.* • Consistent with Town of Middletown zoning.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Coastal Resources: ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the Midway Pier/Greene Land property for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Rhode Island CRMC concurred with the Navy's determination. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, and within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the Midway Pier/Greene Land property for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, and within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***No impact.*** • No development would occur; therefore, the use or natural resources of the coastal zone would not be affected.
Socioeconomics and Environmental Justice	**Economy, Employment, and Income:** ***Beneficial impact.*** • $6 million in total construction expenditures would have a beneficial impact on the economy. • 50 direct, indirect, and induced jobs would be created during construction. • No long-term direct, indirect, or induced jobs would be created following construction.	**Economy, Employment, and Income:** ***Beneficial impact.*** • $6 million in total construction expenditures would have a beneficial impact on the economy • 50 direct, indirect, and induced jobs would be created during construction. • No long-term direct, indirect, or induced jobs would be created following construction.	**Economy, Employment, and Income:** ***No impact.*** • No new economic activity would be generated associated with redevelopment of the surplus properties, and no increased employment opportunities would occur.
	Population: ***No impact*** • No population growth-inducing development is proposed.	**Population**: ***No impact***. • No population growth-inducing development is proposed.	**Population**: ***No impact.*** • Regional population would not change as a result of development because no development would occur.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Housing and Commercial Property: ***No impact***. • No residential or commercial land use is proposed. Proposed shoreline park is not anticipated to impact regional housing or commercial property market.	**Housing and Commercial Property:** ***No impact***. • No residential or commercial land use is proposed. Proposed shoreline park is not anticipated to impact regional housing or commercial property market.	**Housing and Commercial Property**: ***No impact.*** • No development would occur; therefore, no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***No impact*** • The proposed shoreline park would be tax-exempt; therefore, the proposed redevelopment would not generate tax revenue.	**Taxes and Revenue:** ***No impact***. • The proposed shoreline park would be considered tax-exempt; therefore, the proposed redevelopment would not generate tax revenue.	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the property would retain its current tax-exempt status.
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high or adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.
Community Facilities and Services	• Positive impact by the creation of a waterfront park.	• Positive impact by the creation of a waterfront park.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.
Transportation	**Traffic Volume:** ***Minor impact.*** • Negligible number of new daily vehicle trips added to existing transportation network would have a minor impact on traffic volume. • Increase in morning and evening peak hour trips on the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Traffic Volume:** ***Minor impact.*** • Negligible number of new daily vehicle trips added to existing transportation network would have minor impact on traffic volume. • Increase in morning and evening peak hour trips on the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth.*** • Significant and unavoidable increase in traffic due to regional growth and other proposed developments not specifically identified.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Level of Service: ***No impact*** • Negligible number of new daily vehicle trips added to existing transportation network would have no impact on existing LOS. • Decrease in LOS at the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Level of Service:** ***No impact*** • Negligible number of new daily vehicle trips added to existing transportation network would have no impact on existing LOS. • Decrease in LOS at the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified. • Under caretaker status, Navy would reduce overall maintenance of Defense Highway and Stringham Road.
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Hazardous materials/waste will be managed by the developer and/or the management/service contractors of the property in accordance with state, federal, and Town of Middletown requirements. • Minor impact associated with unknown contamination in underground fuel pipeline and presence of ACM on underground steam line. • The Navy would provide appropriate notifications in the deed or real estate instrument transferring the property to alert property owner to the presence of hazardous material.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Hazardous materials/waste will be managed by the developer and/or the management/service contractors of the property in accordance with state, federal, and Town of Middletown requirements. • Minor impact associated with unknown contamination in underground fuel pipeline and presence of ACM on underground steam line. • The Navy would provide appropriate notifications in the deed or real estate instrument transferring the property to alert property owner to the presence of hazardous material.	**Hazardous Waste and Materials:** ***Minor impact.*** • Minor impact associated with unknown contamination in underground fuel pipeline and presence of ACM on underground steam line.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Environmental Restoration Program: ***No impact.*** • The nearest ER Program site is IRP Site 13, Tank Farm 5, across Defense Highway from the Midway Pier/Greene Lane property. Remedial activities and long-term groundwater monitoring are not expected to restrict redevelopment of Midway Pier/Greene Lane property.	**Environmental Restoration Program:** ***No impact.*** • The nearest ER Program site is IRP Site 13, Tank Farm 5, across Defense Highway from the Midway Pier/Greene Lane property. Remedial activates and long-term groundwater monitoring are not expected to restrict redevelopment of Midway Pier/Greene Lane property.	**Environmental Restoration Program:** ***No impact***.
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** <u>Construction Emissions</u> • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. <u>Operational Emissions</u> • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for hot water, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in very minor increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** <u>Construction Emissions</u> • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. <u>Operational Emissions</u> • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for hot water, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in very minor increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***No impact***. • No development would occur; therefore, no new sources of air emissions would be created.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	GHG Emissions: ***Minor impact.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impact.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**Greenhouse Gas Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of GHG emissions would be created.
Noise	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise: ***Minor impact.*** • A negligible increase in noise would result from use of the shoreline park and multi-use parkway (i.e., children playing and recreational activities). • Only 1 to 2 peak hour trips would be generated from the shoreline park; therefore, noise levels from traffic are assumed to be insignificant and were not modeled.	**Operational Noise:** ***Minor impact.*** • A negligible increase in noise would result from use of the shoreline park and multi-use parkway (i.e., children playing and recreational activities). • Only 1 to 2 peak hour trips would be generated from the shoreline park; therefore, noise levels from traffic are assumed to be insignificant and were not modeled.	**Operational Noise:** ***Minor impact.*** • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Infrastructure and Utilities	**Water Supply:** ***Negligible impact on water treatment capacity and moderate impact on distribution system.*** • Negligible impact on City of Newport water treatment plant capacity. The estimated demand of 180 gpd is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Negligible impact on water treatment capacity and moderate impact on distribution system.*** • Negligible impact on City of Newport water treatment plant capacity. The estimated demand of 180 gpd is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** No impact. • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.
	Wastewater: ***Negligible impact on treatment capacity and moderate impact on collection system.*** • Negligible impact on capacity of City of Newport's treatment system. The estimated 144 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection system; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater**: ***Negligible impact on treatment capacity and moderate impact on collection system.*** • Negligible impact on capacity of City of Newport's treatment system. The estimated 144 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection system; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Wastewater:** ***No impact.*** • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.
	Storm Water: ***Minor impact.*** • 56,180 square feet of impervious surface would be constructed at the site, resulting in a 41% decrease from existing conditions. • The developer would be required to construct new stormwater infrastructure. • The Town of Middletown will require the developer to prepare a stormwater management plan before issuing a building permit, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Minor impact.*** • 76,610 square feet of impervious surface would be constructed at the site, resulting in a 20% decrease from existing conditions. • The developer would be required to construct new stormwater infrastructure. • The Town of Middletown will require the developer to prepare a stormwater management plan before issuing a building permit, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on the volume of stormwater would occur because there would be no change from existing conditions.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Other Utility Systems: ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 9,452 kWh. The developer would be required to obtain new electric connections/infrastructure. Natural Gas • Negligible impact on regional demand; estimated annual demand of 47,067 cubic feet for restroom hot water. The developer would be required to obtain new gas connections/infrastructure.	**Other Utility Systems:** ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 9,452 kWh. The developer would be required to obtain new electric connections/infrastructure. Natural Gas • Negligible impact on regional demand; estimated annual demand of 47,067 cubic feet for restroom hot water. The developer would be required to obtain new gas connections/infrastructure.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems would occur because there would be no change from existing conditions.
	Solid Waste: ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 800 cubic yards of waste. • Negligible long-term increase in solid waste from public use of shoreline park and multi-use pathway.	**Solid Waste:** ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 800 cubic yards of waste. • Negligible long-term increase in solid waste from public use of shoreline park and multi-use pathway.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.
Cultural Resources	**Archaeological Resources:** ***No impact***. • No impact on archaeological resources because none are present at the Midway Pier/Greene Lane property.	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at the Midway Pier/Greene Lane property.	**Archaeological Resources:** ***No impact.***
	Architectural Resources: ***No significant impact.*** • One architectural resource at the Midway Pier/Greene Lane property, the existing Midway Pier, will be demolished. However, demolition of the pier would not be considered a significant impact on architectural resources because the Midway Pier was previously determined not NRHP-eligible.	**Architectural Resources:** ***No significant impact.*** • One architectural resource at the Midway Pier/Greene Lane property, the existing Midway Pier, will be demolished. However, demolition of the pier would not be considered a significant impact on architectural resources because the Midway Pier was previously determined not NRHP-eligible.	**Architectural Resources:** ***No impact.***
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Historic Properties: ***No effect.*** • No effect on historic properties because none have been identified within the APE at the Midway Pier/Greene Lane property.	**Historic Properties:** ***No effect.*** • No effect on historic properties because none have been identified within the APE at the Midway Pier/Greene Lane property.	**Historic Properties:** ***No effect.***
Topography, Geology, and Soils	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new building (i.e., restrooms).	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new building (i.e., restrooms).	**Topography:** ***No impact.***
	Geology: ***No impact.***	**Geology**: ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact***.
	Bathymetry: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***No impact.***
	Marine Sediment: ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Water Resources	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact on Gomes Brook and Narragansett Bay in the form of erosion, sedimentation, and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact on Gomes Brook and Narragansett Bay in the form of erosion, sedimentation, and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***No impact.***
	Water Quality: ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, stormwater runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 1.3 acres of impervious surface area (decrease of 41% from existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, stormwater runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 1.8 acres of impervious surface area (decrease of 20% from existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • Developer will use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater**: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • Developer will use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater***: No impact.*
	Floodplains: ***Moderate impact.*** • 0.17 acres of 100-year floodplain would be permanently affected by construction of the shoreline park (picnic area, restrooms, a portion of the playground, a small segment of the pier, small portion of the multi-use pathway). • No loss of floodplain storage capacity anticipated. • The developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through the local building permit process.	**Floodplains**: ***Moderate impact.*** • 0.19 acres of 100-year floodplain would be permanently affected by construction of the shoreline park (picnic area, restrooms, a portion of the playground, a small segment of the pier, small portion of the multi-use pathway). • No loss of floodplain storage capacity anticipated. • The developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through the local building permit process.	**Floodplains:** ***No impact.***
	Wetlands: ***No impact.***	**Wetlands:** ***Minor impact.*** • Less than 0.01 acre of permanent impact from the fill needed for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Biological Resources	**Vegetation:** ***Minor impact.*** Old field • Permanent conversion of 0.2 acres of old field habitat.	**Vegetation:** ***Minor impact.*** Old field • Permanent conversion of 0.2 acres of old field habitat.	**Vegetation:** ***No impact.***
	Wildlife: ***Minor impact on terrestrial mammals and avian species. Minor impact on marine mammals and fish .*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Minimal habitat loss from conversion of vegetation types. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise during pile driving associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal • Measures to reduce impacts on marine mammals would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***Minor impact on terrestrial mammals and avian species. Minor impact on marine mammals and fish.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Minimal habitat loss from conversion of vegetation types. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise during pile driving associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. • Measures to reduce impacts on marine mammals would be implemented by the developer, as necessary, through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Avian Species • Short-term displacement during construction. • Minimal habitat loss from conversion of vegetation types. • No significant adverse effects on, or harm to, a population of migratory birds.	Avian Species • Short-term displacement during construction. • Minimal habitat loss from conversion of vegetation types. • No significant adverse effects on, or harm to, a population of migratory birds.	
	Threatened and Endangered Species: ***No effect on North Atlantic right whale or humpback whale; may affect but is not likely to adversely affect Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, and green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No effect on North Atlantic right whale or humpback whale; may affect but is not likely to adversely affect Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, and green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. • The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No impact.***

Table ES-3 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	May affect but is not likely to adversely affect the northern long-eared bat. • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 0.2 acre of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer. (i.e., 0.25 mile buffer around known, occupied hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	***May affect but is not likely to adversely affect the northern long-eared bat.*** • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 0.2 acre of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer. (i.e., 0.25 mile buffer around known, occupied hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	.
	Significant Wildlife Habitat: ***Minor impact.*** • No wetlands would be impacted under Alternative 1. • No adverse effects would occur to EFH, including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities. • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***Minor impact.*** • Less than 0.01 acre coastal wetlands would be filled for pilings used to anchor the floating dock in place. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. • No adverse effects would occur to EFH, including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***No impact.***

During the public scoping period, comments were invited from federal, state, and local agencies and members of the public on the scope of the issues to be addressed in the EIS. A total of 32 comments were received during the scoping period.

ES6.2 Agency Consultation

Consultation letters were sent to the RIDEM Division of Planning and Development, Natural Heritage Program; the Rhode Island CMRC; the USFWS; and the NMFS. The letters were sent to initiate a consultation process to identify populations of federally listed and state-listed or candidate rare, threatened, or endangered species, unique natural communities, or other significant wildlife communities at or near the surplus property as well as to solicit guidance on applicable coastal management policies. Consultation has also been initiated with the State Historic Preservation Office (SHPO) in accordance with the Section 106 process as required by the National Historic Preservation Act (NHPA). Correspondence was also sent to the Advisory Council for Historic Preservation (ACHP). In addition, government-to-government consultation has been initiated and followed up with the following federally recognized tribes: Narragansett Indian Tribe, Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A).

ES6.3 Draft EIS Distribution

The Draft EIS was distributed to a variety of stakeholders, including congressional representatives, federal agencies, state elected officials, state agencies, local representatives and agencies, federally recognized tribes, other entities, and interested residents (see Chapter 18, Distribution List).

ES.7 Summary of Potential Cumulative Impacts

ES.7.1 Alternative 1 (Preferred Redevelopment)

Land Use, Zoning and Coastal Resources. Approximately 158 acres of federal land would be transferred to local governments. When considered with the other nearby development and redevelopment projects, the proposed action could have long-term changes and potential cumulative impacts on land use. Local planning processes are in place to ensure that changes in land use associated with the proposed development and redevelopment projects would be consistent with local land use controls and compatible with existing surrounding land use or planned land uses. Multiple private, local government, and federal projects would occur in the 200-foot contiguous zone of Narragansett Bay. While development and redevelopment projects would increase the built area along the Narragansett Bay shoreline, maintaining consistency with the RI CRMP and the Aquidneck Island SAMP would ensure this development occurs in a way that maintains public access to the shoreline and avoids or mitigates impacts on coastal resources.

Transportation. Projected traffic volumes and the level of service of surrounding roadways would be affected. Cumulative impacts on traffic from the combined proposed action and proposed projects could be expected. However, the use of public transportation routes, maximizing visibility for motorists at driveway locations, and improving roadways would help to address and mitigate cumulative impacts.

Environmental Management. The transfer and redevelopment of the surplus properties would be compatible with the Navy's ongoing Environmental Restoration (ER) Program at NAVSTA Newport. Tank Farms 1 and 2 are ER Program sites that would be remediated under CERCLA before redevelopment would take place. As a result, these two projects under remediation would pose beneficial cumulative impacts resulting from site cleanup.

Air Quality. There could be potential cumulative impacts associated with an increase in construction, building use, mobile source, and greenhouse gas emissions.

Infrastructure and Utilities. When considered with the other nearby development and redevelopment projects, the proposed action could have cumulative impacts on wastewater, water supplies, and other utilities, and minor cumulative impacts on storm water. The Newport wastewater treatment facility is currently near capacity and the majority of the Town of Portsmouth relies on on-site treatment or storage for wastewater. Virtually any new development on Aquidneck Island would require upgrades to infrastructure and/or capacity. It is assumed National Grid would be able to meet the increased electricity and natural gas demand, although some infrastructure improvements may be needed in some areas. Cumulative impacts on construction and demolition (C&D) waste management and non-C&D solid waste management would be anticipated. These impacts could be partially offset by recycling and waste minimization practices. Cumulative impacts on infrastructure and utilities would be offset with the 20-year build-out period and the ability of private service providers to upgrade and expand services, as needed.

Cultural Resources. One of the other past, present, or future actions considered for cumulative impact analysis, the proposed demolition of abandoned facilities at Tank Farm 1 as part of a separate future undertaking, overlaps a portion of the APE for the proposed action at Tank Farms 1 and 2. Therefore, disposal of the Tank Farms 1 and 2 property out of federal ownership, considered in conjunction with the proposed demolition of abandoned facilities at Tank Farm 1, represents a cumulative long-term negative impact on architectural resources and a cumulative adverse effect on historic properties. This is because the buildings and structures comprising Tank Farms 1 and 2 are considered contributing resources to the NRHP-eligible Melville Naval Historic District (originally called "Melville Fuel and Naval Net Depot Historic District"). None of the other past, present, or future actions considered for cumulative impact analysis overlap the APE for the proposed action. Therefore, there will be no potential cumulative impacts or cumulative effects on any other cultural resources or historic properties within the APE for the proposed action, including the U.S. Naval Hospital Newport Historic District.

Water Resources. Cumulative impacts on water quality of the Narragansett Bay would be anticipated but would not likely be significant. Although potential cumulative impacts on wetlands could occur, the requirement to avoid, minimize, and mitigate impacts on wetlands under federal and state permit programs would prevent significant cumulative impacts on wetlands. Although potential cumulative impacts on water resources could occur, impacts would be expected to be minor.

Biological Resources.
Vegetation. When considered with other nearby development and redevelopment projects, cumulative impacts on vegetation and habitat would be considered minor because the foreseeable projects proposed are in previously developed areas and these habitat types occur throughout Aquidneck Island.

Wildlife. There is a potential for temporary and long-term cumulative impacts on terrestrial wildlife due to disturbance and displacement during construction and direct habitat loss. Potential cumulative impacts on marine mammals and fish would be minimized by avoidance and minimization measures during all planned in-water construction projects. Temporary short-term cumulative impacts could result from disturbance during in-water construction.

Threatened and Endangered Species. It is not anticipated that implementation of Alternatives 1 or 2 would impact the North Atlantic right, humpback, or fin whales. Similar to marine mammals and fish, in-water noise may also be audible to sea turtles within the vicinity of the project area. Impacts on sea turtles would be temporary and result in temporary displacement during demolition, pile driving, and construction. Impacts on the Atlantic sturgeon from operation of construction equipment, including pile driving equipment, and resulting increased turbidity levels would not be significant. Nearby sturgeon may be able to detect pile-driving noises which, as a result, may elicit an avoidance response to the waters

around the surplus property. Temporary short-term cumulative impacts could result from the proposed in-water construction of MILCON P469, considering the in-water work also proposed for the Navy surplus properties. Installing the marina would result in increased boat traffic in the water, which could result in a minor but long-term cumulative impact on threatened and endangered species due to vessel strikes.

Federally listed species. While the proposed action and other projects will permanently remove shrubland and forested habitats, given the amount of total forest cover in the state, coupled with remaining forested areas around Aquidneck Island, cumulative impacts on these habitats may affect, but are not likely to adversely affect northern long-eared bats in the state.

Significant wildlife habitat. Overall cumulative impacts on EFH would be short-term and minor.

ES.7.2 Alternative 2 (High-Density Redevelopment)

Potential cumulative impacts under Alternative 2 would be similar to those described under Alternative 1 as the mix of land uses for redevelopment are similar.

ES.7.3 No Action Alternative

There would be no cumulative impact on land use, socioeconomics, community facilities, transportation, air quality, infrastructure and utilities, or water resources under the No Action Alternative since no redevelopment would occur.

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Acronyms and Abbreviations

%g	acceleration due to gravity
AASHTO	American Association of State Highway and Transportation Officials
ACM	asbestos-containing materials
ACHP	Advisory Council on Historic Preservation
ADT	average daily traffic
AHERA	Asbestos Hazard Emergency Response Act
AIPC	Aquidneck Island Planning Commission
AIRIA	Aquidneck Island Reuse Implementation Authority
AIRPA	Aquidneck Island Reuse Planning Authority
amsl	above mean sea level
ANS	aquatic nuisance species
AOC	area of concern
APE	area of potential effect
AST	aboveground storage tank
ATR	automatic traffic recorder
BIA	Bureau of Indian Affairs
BMP	best management practice
BRAC	Base Realignment and Closure
BRACCON	BRAC construction
BTEX	benzene, toluene, ethylbenzene, xylene
C&D	construction and demolition
CAA	Clean Air Act
CCD	coastal consistency determination

CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	CERCLA Information System
cf	cubic feet
CFR	Code of Federal Regulations
CH_4	methane
CHAPS	Chaplain's school
CHMRIMP	Consolidated Hazardous Material Reutilization Implementation Management Program
CNIC	Commander, Navy Installations Command
CMRC	Coastal and Marine Resources Center
CNO	Chief of Naval Operations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRMC	Coastal Resources Management Council
CRMP	Coastal Resources Management Program
CSO	combined sewer outflow
CSS	Center for Service Support
CWA	Clean Water Act
cy	cubic yards
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted decibel
DEC	direct exposure criterion
DERP	Defense Environmental Restoration Program
DESC	Defense Energy Support Center

DFSC	Defense Fuel Supply Center
DFSP	Defense Fuel Support Point
DLA	Defense Logistics Agency
DO	dissolved oxygen
DOD	U.S. Department of Defense
DPS	distinct population segment
DRO	diesel range organics
EA	environmental assessment
EBP	ethyl blending plant
EDC	economic development conveyance
EFH	essential fish habitat
EIA	Energy Information Act/Energy Information Administration
EIS	environmental impact statement
EISA	Energy Independence and Security Act
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know
ER	Environmental Restoration (Program)
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FFA	Federal Facility Agreement
FHWA	Federal Highway Administration
FHWG	Fisheries Hydroacoustic Working Group
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FMP	fishery management plan
FONSI	finding of no significant impact

FOSET	finding of suitability for early transfer
FOST	finding of suitability to transfer
FPPA	Farmland Protection Policy Act
FR	Federal Register
FRP	facility response plan
FY	fiscal year
GHG	greenhouse gas
GIS	geographic information system
G.L.	General Laws of Rhode Island
gpd	gallons per day
GRO	gasoline range organics
GWP	global warming potential
HAP	hazardous air pollutants
HAPC	habitat area of particular concern
HMC&M	hazardous material control and management
HUC	hydrologic unit code
HUD	U.S. Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
HWM	hazardous waste management
IBA	important bird area
INRMP	integrated natural resource management plan
IRP	Installation Restoration Program
ITE	Institute of Transportation Engineers
IWR	Institute of Water Research
JEDI	Jobs and Economic Development Impacts (model)
kWh	kilowatt-hour

L_{90}	level of sound exceeded 90 percent of the time
LBP	lead-based paint
L_{eq}	continuous equivalent sound
LID	low-impact development
LNAPL	light non-aqueous phase liquid
LOS	level of service
LRA	local redevelopment authority
µPa	micro Pascal
MARDET	Marine Detachment
MBTA	Migratory Bird Treaty Act
MEC	munitions and explosives of concern
mgd	million gallons per day
mg/kg	milligrams per kilogram
MILCON	military construction
MMPA	Marine Mammal Protection Act
mph	miles per hour
MRP	Munitions Response Program
MSAT	mobile source air toxic
MSFCMA	Magnuson-Stevens Fishery Conservation Management Act
MWR	morale, welfare, and recreation
NAAQS	National Ambient Air Quality Standards
NAPS	Naval Academy Preparatory School
NATSC	Navy Array Technical Support Center
NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Navy Radon Assessment and Mitigation Program
NAVSTA	Naval Station

Navy	U.S. Department of the Navy
NBNERR	Narragansett Bay National Estuarine Research Reserve
NEPA	National Environmental Policy Act
NESHAPS	National Emission Standards for Hazardous Pollutants
NHCNE	Naval Health Clinic New England
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
nm	nautical miles
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	nitrous oxides
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge and Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NUWC	Naval Undersea Warfare Center
NREL	National Renewable Energy Laboratory
NSCS	Navy Support Corps School
NUSC	Naval Undersea Systems Center
NWC	Naval Warfare Center
NWDC	Navy Warfare Development Command
NWI	National Wetland Inventory
O_3	ozone

OAR	Office of Air Resources
OCRM	Office of Ocean and Control Resource Management
OEA	(U.S. Department of Defense) Office of Economic Adjustment
OFFTA	Old Fire-Fighting Training Area
OPNAVINST	Office of the Chief of Naval Operations Instruction
OSHA	Occupational Safety and Health Act/Administration
OTC	Officer Training Command
OWS	oil/water separator
P2	pollution and prevention
PA/SI	preliminary assessment/site investigation
Pb	lead
PBC	public benefit conveyance
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PAH	polycyclic aromatic hydrocarbon
P. L.	Public Law
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PMO	(Naval Facilities Engineering Command BRAC) Program Management Office
POL	petroleum, oil, and lubricants
ppm	parts per million
PPV	public-private venture
PSD	prevention of significant deterioration
PTS	permanent threshold shift
PUDS	planned unit developments
RAB	Restoration Advisory Board

REDCOM	Naval Reserve Readiness Command
RCRA	Resource Conservation and Recovery Act
RD	remedial design
Redevelopment Plan	Redevelopment Plan for Surplus Properties at NAVSTA Newport
RISBC	Rhode Island State Building Code
RI CRMP	Rhode Island Coastal Resources Management Program
RIDEM	Rhode Island Department of Environmental Management
RIDOH	Rhode Island Department of Health
RIDOT	Rhode Island Department of Transportation
RIFWWA	Rhode Island Fresh Water Wetlands Act
RI GIS	Rhode Island Geographic Information System (database)
RINHS	Rhode Island Natural History Survey
RIMS II	Regional Input-Output Modeling System (model)
RI/FS	remedial investigation/feasibility study
RIPDES	Rhode Island Pollutant Discharge Elimination System
RIPTA	Rhode Island Public Transit Authority
RISBC	Rhode Island State Building Code
RMS	root mean squared
ROD	Record of Decision
SAMP	special area management plan
SARA	Superfund Amendments and Reauthorization Act
SAV	submerged aquatic vegetation
SEL	sound exposure level
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SO_2	sulfur dioxide

SOP	standard operating procedures
SPCC	spill prevention, control, and countermeasures
SPL	sound pressure level
SR	state route
SSURGO	Soil Survey Geographic Database
STP	sewage treatment plant
SVOC	semi-volatile organic compound
SWPPP	storm water pollution prevention plan
TCLP	toxic characteristic leaching procedure
T&E	threatened and endangered
THPO	Tribal Historic Preservation Officer
TNM	traffic noise model
TPH	total petroleum hydrocarbons
tpy	tons per year
TS	transmission loss
TSCA	Toxic Substances Control Act
TTS	temporary threshold shift
USACE	U.S. Army Corps of Engineers
U.S.C.	U. S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VIN	vehicle identification number
VOC	volatile organic compound
WTP	water treatment plant

WWTP	wastewater treatment plant
XRF	x-ray fluorescence

1 Introduction

Public Law 101-510, the Defense Base Closure and Realignment Act of 1990, as amended in 2005 (BRAC Law), has directed the Navy to realign NAVSTA Newport. As a result of this action, the Department of the Navy (Navy) has declared approximately 158 acres of property at Naval Station (NAVSTA) Newport, Rhode Island, to be surplus to the needs of the federal government.

This environmental impact statement (EIS) evaluates the potential human and natural environmental consequences of the disposal of surplus property at NAVSTA Newport by the Navy and its subsequent redevelopment by the respective municipalities in which the surplus property is geographically located.

This EIS was prepared in accordance with the requirements of the BRAC Law, the National Environmental Policy Act (NEPA) of 1969, as amended (P.L. 91-190, 42 United States Code [U.S.C.] 4321-4370f); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); Navy procedures for implementing NEPA (32 CFR 775), Office of the Chief of Naval Operations (OPNAV) Manual M-5090.1; and other applicable Department of Defense (DOD) and Department of the Navy policies and guidance. The Navy is the lead agency for the proposed action. There are no cooperating agencies for the preparation of this EIS.

1.1 Background

In 2005, portions of NAVSTA Newport were designated for realignment under the authority of the BRAC Law (discussed further in Section 1.5 below). As a result of implementation of the BRAC Law, on January 5, 2009, certain land and facilities at NAVSTA Newport were declared excess to the needs of the Department of the Navy and made available to other DOD components and other federal agencies. The Navy evaluated all federal requests and made a decision on property required by the federal government. The Navy declared approximately 225 acres of property at NAVSTA Newport as surplus to the needs of the federal government on February 9, 2010 (75 Federal Register [FR] 6360). Subsequent to that notification, a portion of one of the properties was determined to no longer be surplus. Therefore, for purposes of analysis in this EIS, the acreage of the surplus property was estimated to be 158 acres, based on property boundaries noted in existing documents and figures and changes to the area of one of the properties deemed to be surplus. This estimate is less than the acreage stated in the Federal Register; the exact acreage of the surplus property will be determined by a survey of the property boundary of each surplus property, which will be performed prior to property transfer.

1.2 Proposed Action

The proposed action is the disposal of surplus property at NAVSTA Newport by the Navy and subsequent redevelopment of the surplus property by the respective municipalities in which the surplus property is geographically located.

1.3 Study Area Location and Description

NAVSTA Newport is located on the western shore of Aquidneck Island in Newport County, Rhode Island (see Figure 1-1). The surplus property of NAVSTA Newport is located in three separate municipalities on Aquidneck Island: the City of Newport, the Town of Portsmouth, and the Town of Middletown (see Figure 1-2). The surplus property includes the former Navy Lodge, the former Naval Hospital, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property.

Former Navy Lodge. The former Navy Lodge property consists of 3 acres located at the corner of Coddington Highway and West Main Road (State Route [SR] 114) in the Town of Middletown, Rhode Island. The Navy Lodge consisted of one building that was constructed in 1971 and demolished in 2004. The site is currently vacant and covered with grass (see Figure 1-3). A small telephone utility shed is in

the southwestern corner of the site, and a water feed vent and concrete pad are located in the northeastern corner of the site (U.S. Department of the Navy 2009). Additionally, a chlorine/water meter vent and an associated 16-inch water main are located along the southern boundary of the site, along Coddington Highway (see Figure 1-3).

The former Navy Lodge property is encumbered by several easements. The Landings Real Estate Group owns an easement across the northeastern portion of the property for a water line to the apartment housing development adjacent to the former Navy Lodge property. In addition, the Rhode Island Department of Transportation (RIDOT) holds a "perpetual easement" along the eastern edge of the property that was acquired in 2004 for the construction of a turning lane on West Main Road for right-hand turns onto Coddington Highway. No easement currently exists for the small telephone utility shed or the water main along the southern boundary of the site.

The Navy also holds an easement on property owned by the Landings Real Estate Group that provides access from the former Navy Lodge property across the Landings Real Estate Group property to Lake Erie Street, located on the western edge of the former Navy Lodge property, and that connects to Coddington Highway.

Additionally, when the property transfers out of Navy ownership, the meter vent and associated water main will be retained in an easement (15 feet on either side of the pipe centerline) by the Navy.

Former Naval Hospital. The former Naval Hospital property is located on the western shore of Aquidneck Island, on Narragansett Bay, just southeast of Coasters Island in the City of Newport. The Naval Hospital property is approximately 15.2 acres, consisting of 8.3 acres of land and 6.9 acres of offshore riparian rights. The riparian rights refer to the right of access to use Narragansett Bay offshore of the former Naval Hospital property and will not transfer with the property; the riparian rights will remain under the control of the Coastal Resources Management Council (CRMC) for determining future use. The Naval Hospital provided outpatient services for naval shore activities and fleet operating forces at NAVSTA Newport, dependents of armed service personnel, and others authorized for treatment from 1913 through 2007. Construction of the Naval Hospital began in 1913 and continued through World War II. When the New England Naval Medical Center was built in 1993, the main building, Building 1, was converted to administrative use. By 2007, all the buildings in the Naval Hospital parcel had been vacated. Table 1-1 provides an overview of the six buildings and one pier located on the Naval Hospital parcel; the structures are shown on Figure 1-4.

Table 1-1 Facilities on the Former Naval Hospital Property

Building or Structure	Description	Approximate Size (square feet)
Building 1	Former main hospital building (including Buildings A72 and 1189)	147,566
Building 7	Former morgue, housekeeping, storage	4,500
Building 45	Former nurses quarters, drug and alcohol rehabilitation	30,700
Building 63	Detached garages	450
Building 993	Emergency generator	875
Quarters A and B	Housing units	6,900
Pier 71	Berthing pier	490 (square yards)

U.S. Department of the Navy 2009

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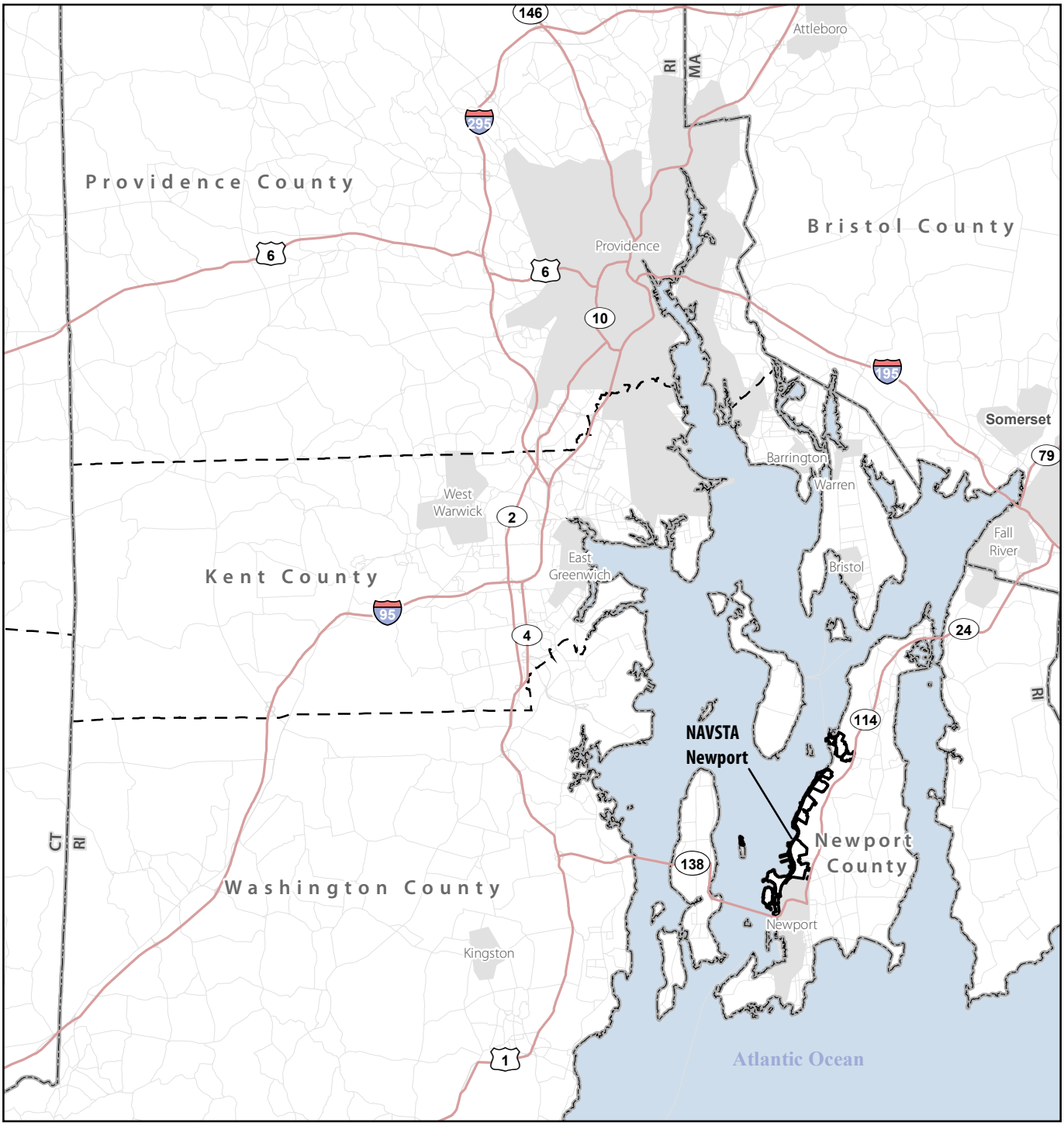

SCALE

0 2.5 5 Miles

Legend

- Road
- Major Road
- County Boundary
- NAVSTA Newport
- State Boundary
- Urban Area

Figure 1-1
Regional Location Map
NAVSTA Newport
NAVSTA Newport, Rhode Island

SOURCE: U.S. Department of the Navy 2009

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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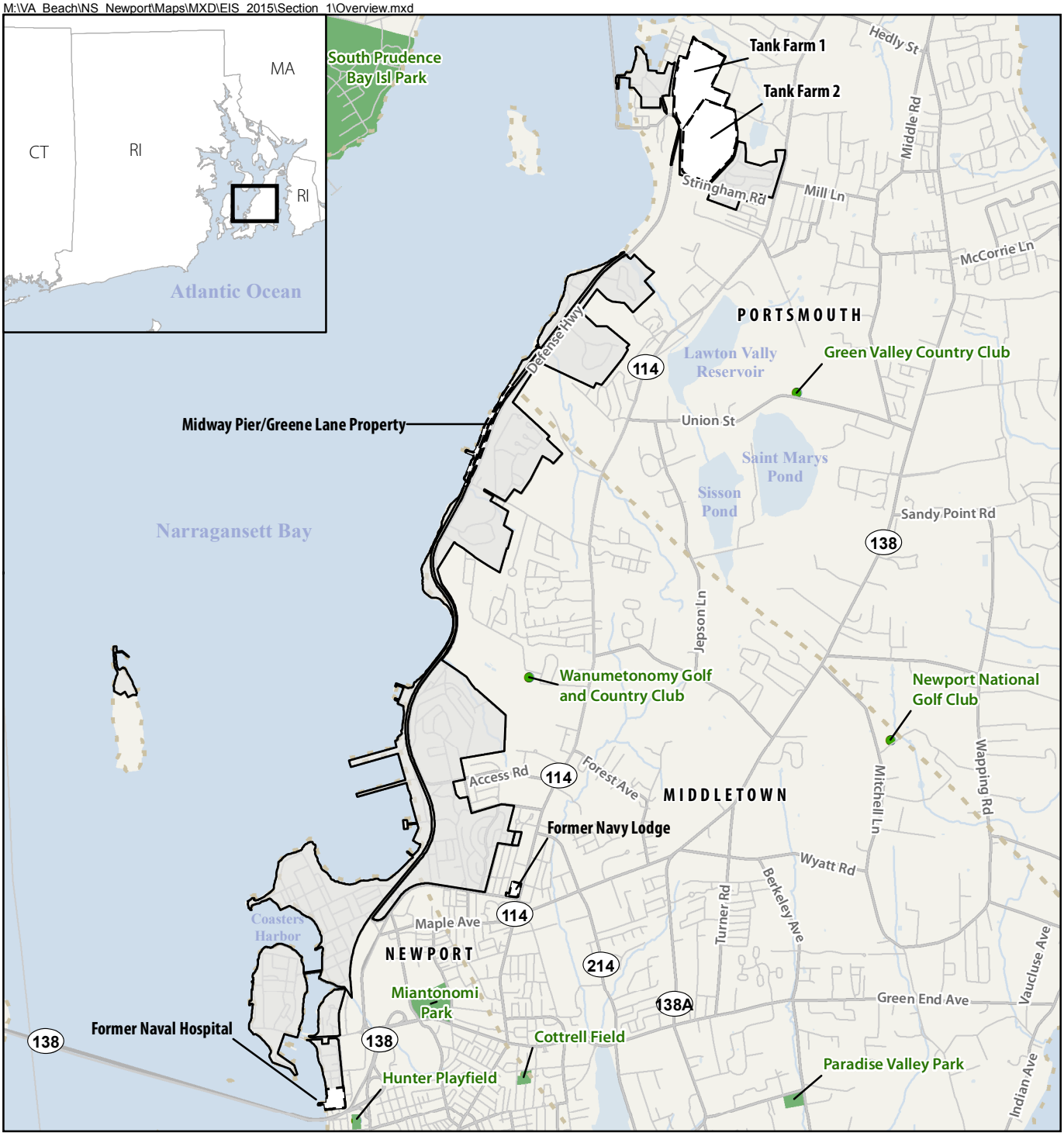

SCALE

0 0.5 1 Miles

Legend

- Street
- Major Road
- Surplus Properties
- Installation Boundary
- Municipality Boundary
- Recreation Areas
- Parks

Figure 1-2

Location of Surplus Property

NAVSTA Newport, Rhode Island

SOURCE: U.S. Department of the Navy 2009

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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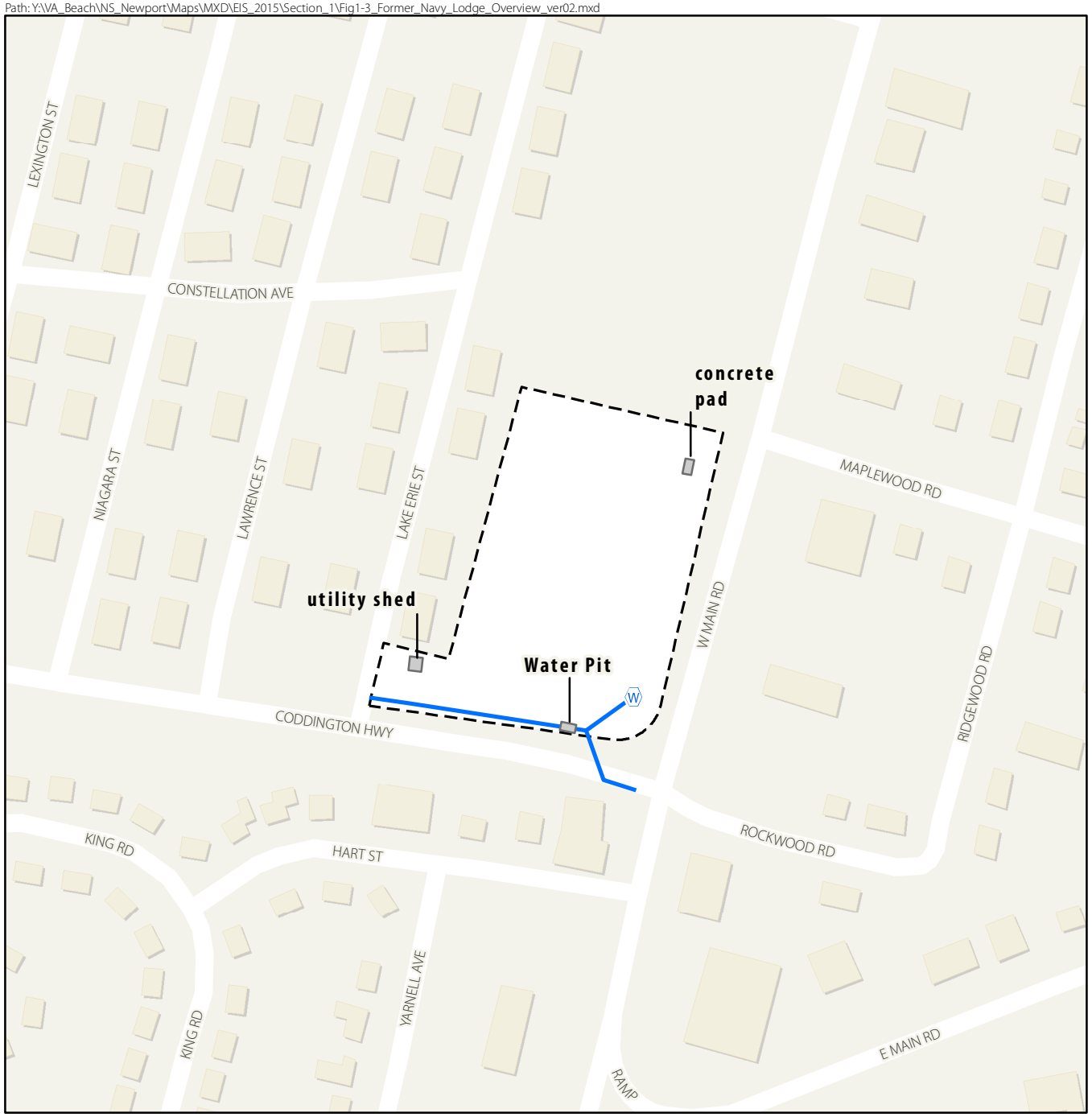

Figure 1-3
Former Navy Lodge Property Overview
NAVSTA Newport, Rhode Island

Legend

- Water Meter
- WaterMain
- Structure
- Property Boundary

SCALE
0 150 300 Feet

SOURCE: U.S. Department of the Navy 2009, Landings Group 2006.

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Figure 1-4

Former Naval Hospital Property Overview

NAVSTA Newport, Rhode Island

Legend

Property Boundary

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: U.S. Department of the Navy 2009

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Building 993 houses the emergency generator, which provides backup electricity to the Naval Health Clinic New England, the installation's medical clinic and dental clinic. When the property transfers out of Navy ownership, the Navy will need to retain an easement for the emergency generator and associated electrical system to the Naval Health Clinic New England, or the emergency electrical system will need to be modified, requiring additional funding. In addition, a fence will be constructed separating the Navy-retained property from the surplused property, and a 10-foot buffer along the fenceline will be needed. An on-site chapel (Building 62) was demolished in 2011 (Groesbeck and Bedford 2014).

Tank Farms 1 and 2. Tank Farms 1 and 2 are located in the Town of Portsmouth. Tank Farm 1, consisting of 62 acres of land, was used by the Navy from the 1940s to 1974 to store diesel oil, fuel oil, jet fuel (JP-4, JP-5, or JP-8), gasoline, and aviation fuel. Tank Farm 2, consisting of 74 acres of land, was also operated by the Navy from the 1940s to 1974. It was used to store fuel oil, distillate fuel, and marine diesel fuel. In 1974, the Navy leased Tank Farms 1 and 2 and associated facilities to the Defense Energy Support Center (DESC) to store and distribute petroleum fuel; those operations ceased in 1998. Since ceasing the operations, the DESC has hired contractors to conduct the environmental closure of the facility and to determine their operating permits. This action is ongoing, with the anticipated remedy in place in the 2020 timeframe.

An existing COX Cable facility is located in the southeastern corner of Tank Farm 2. No existing easement is associated with this facility.

Table 1-2 provides an overview of some of the key facilities at each tank farm (see Figure 1-5).

Table 1-2 Key Facilities at Tank Farms 1 and 2

Building or Structure	Description
Tank Farm 1[1]	
Tank 9	• Each tank is a 2.56-million-gallon partially buried concrete UST/OWS • Stored fuel and fuel oil and currently stores storm water and groundwater from detention basins
Tank 10	
Tank 11	• Each tank is a former 2.35-million-gallon steel AST • Stored jet fuel or fuel oil • Demolished and removed in 2012
Tank 12	
Tank 13	• Each tank is a 1.12-million-gallon steel UST • Stored jet fuel, diesel, aviation gasoline, or motor gasoline • Cleaned in 1996/1997, repaired, and then ballasted in 2001
Tank 14	
Tank 15	
Tank 16	
Tank 17	
Tank 18	
Building 30	Pump house
Feature 30	1,000-gallon underground water reservoir
Building 49	Foam pump house
Former Building 77	• Former Community Center • Demolished in 2011/2012
Building 199	Transformer building; part of electrical substation
Building 1158	Valve house, demolished in 2012
Building B60	Ethyl blending plant
Building S63	Pump house, demolished in 2012
Electric Vaults 2 and 3	Transformer vaults

Table 1-2 Key Facilities at Tank Farms 1 and 2

Building or Structure	Description
Tank Farm 2	
Tank 19	• Each tank is a 2.5-million-gallon concrete UST • Stored fuel oil, distillate fuel, or marine diesel fuel • Cleaned in 1996/1997, repaired, and then ballasted in 2001
Tank 20	
Tank 21	
Tank 22	
Tank 23	
Tank 24	
Tank 25	
Tank 26	
Tank 27	
Tank 28	
Tank 29	
Building 48	Former Navy fire station
1,000-gallon fuel-oil UST	Removed in 2009
Building 218	Electrical substation 19
Building 219	Electrical distribution (transformer building)
Building 220	Electrical distribution (transformer building)

Source: U.S. Department of the Navy 2009; Shaw Environmental 2010; Tetra Tech, Inc. 2012a, 2012b.

Note:
[1] The USTs, associated piping, and buildings/facilities at Tank Farm 1 are scheduled for demolition in 2016 under a separate project that includes Tanks 9 and 10, 13 through 18, associated piping, Buildings 30, 49, and B60, and Electric Vaults 2 and 3 (NAVSTA Newport 2015).

Key:
AST = Aboveground storage tank
OWS = Oil/water separator
UST = Underground storage tank

Midway Pier/Greene Lane. This approximately 10.7-acre parcel is located along the western portion of Aquidneck Island in the Town of Middletown (see Figure 1-6). The property includes the site of former Buildings 70, 71, and 111, as well as the former Midway Pier, located near the intersection of Defense Highway and Greene Lane. Buildings 70, 71, and 111 were demolished before 1999, and the area where the former buildings stood is now vacant and covered with grass and gravel (U.S. Department of the Navy 2009). The RIDOT railroad right-of-way (ROW) adjacent to the Defense Highway is not included in the surplus property boundaries.

The Midway Pier/Greene Lane property is a portion of the property originally declared surplus by the Navy in 2010, that is, the Defense Highway/Stringham Road Corridor. The Defense Highway/Stringham Road Corridor encompassed approximately 69 acres along the western portion of Aquidneck Island. In addition to the Midway Pier/Greene Lane property described above, the original Defense Highway/Stringham Road Corridor surplus property included 3.6 miles of Defense Highway, 1 mile of Stringham Road, a 508-foot portion of Greene Lane, and vacant property along the roadways and near the former Midway Pier. The portion of Defense Highway, including the ROW and the former Middletown Transfer Station originally declared surplus, extended from a point just north of Gate 32 and the Naval Undersea Warfare Center (NUWC) on NAVSTA Newport in Middletown to the intersection of Stringham Road in Portsmouth and included, for the most part, land on both sides of the highway. Approximately 1 mile of the two-lane Stringham Road, which extends from Tank Farm 1 east to West

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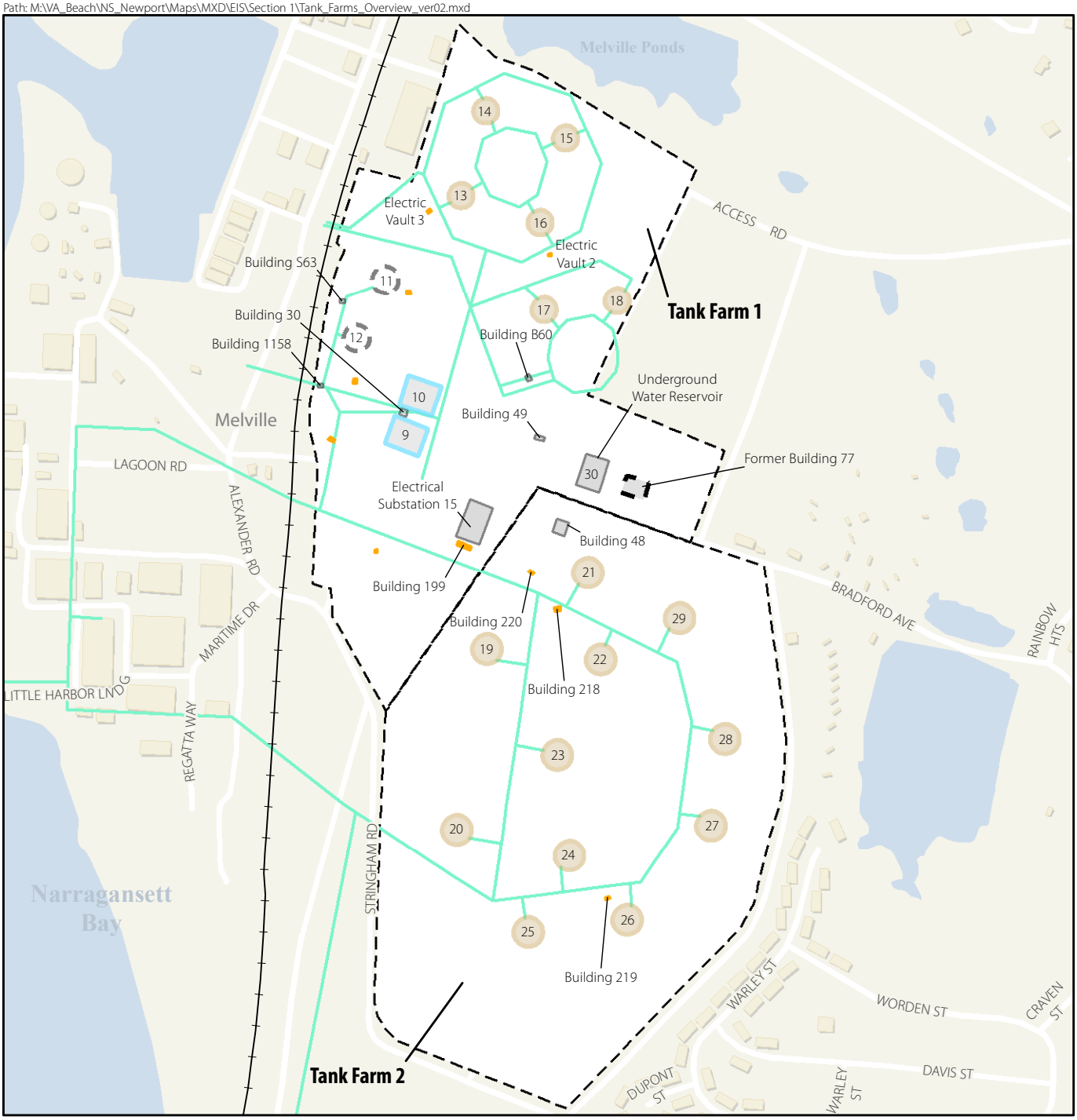

Legend

- Rail Road
- Fuel Line
- Property Boundary
- Underground Storage Tank (UST)
- Partially Buried UST/OWS (oil/water separator)
- Former Aboveground Storage Tank
- Structure
- Former Structure
- Transformer Location
- Waterbody

N

SCALE

0 300 600 Feet

SOURCE: U.S. Department of the Navy 2009

Figure 1-5

Tank Farms 1 and 2 Overview

NAVSTA Newport, Rhode Island

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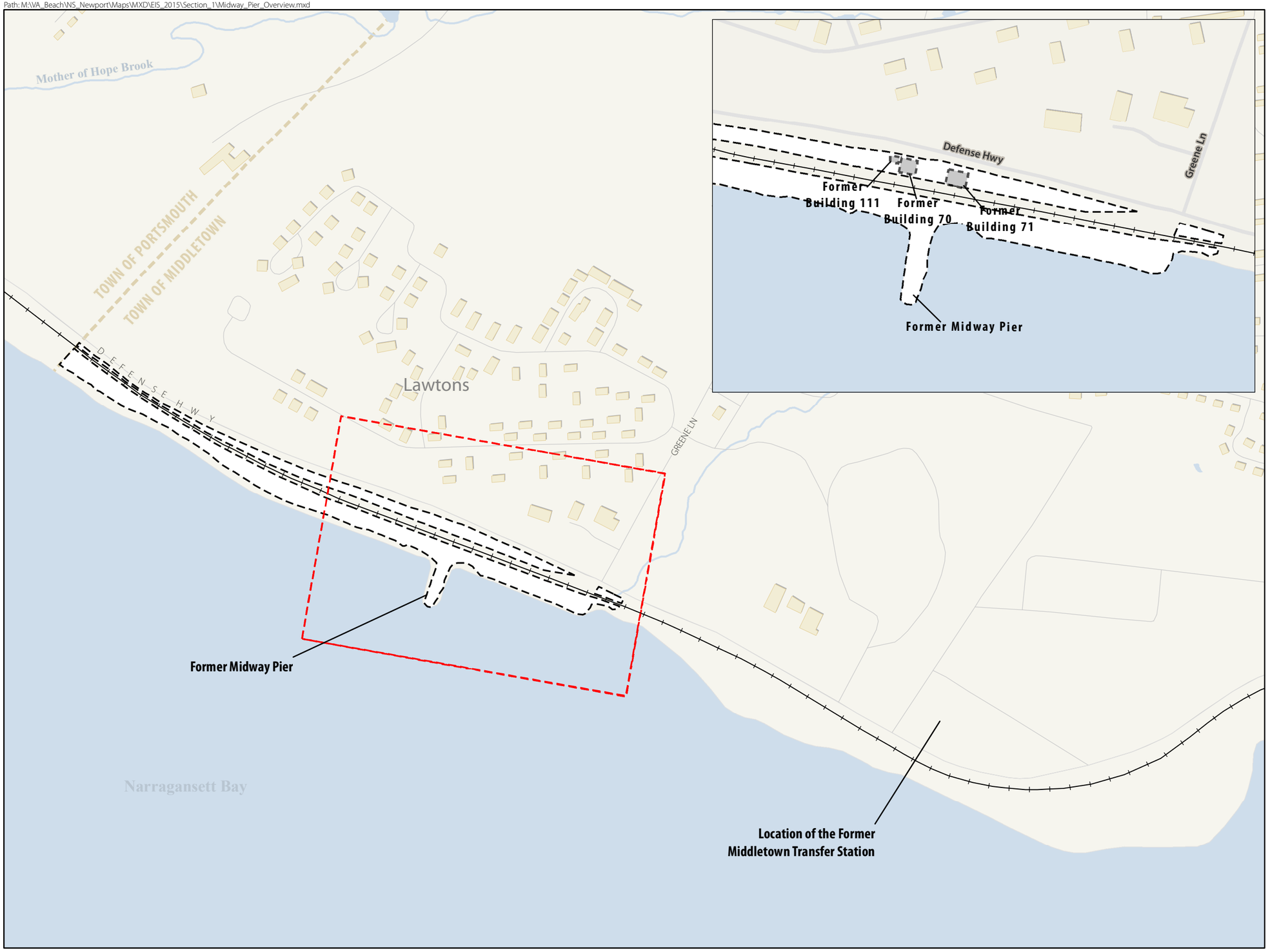

Figure 1-6
Midway Pier/Greene Lane Property Overview
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Waterbody
- Property Boundary

SCALE

0 0.1 0.2 Miles

SOURCE: U.S. Department of the Navy 2009

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Main Road, also was declared surplus. The southern portion of the Defense Highway/Stringham Road Corridor property also included a 1-acre parcel that was leased to the Town of Middletown and used as a municipal solid waste collection and transfer station (the former Middletown Transfer Station), which was decommissioned in 2008 (U.S. Department of the Navy 2009).

However, because of a lack of interest in assuming ownership of the roadways (i.e., Defense Highway, Stringham Road, and Greene Lane) by both state and municipal entities, the Navy determined these roadways to no longer be surplus and will continue to be responsible for their maintenance. However, the portion of the property encompassing Midway Pier as described above remains surplus as it supports the proposed redevelopment project.

1.4 Purpose and Need

The purpose of the proposed action is to comply with BRAC Law and provide for the disposal and reuse of surplus property at NAVSTA Newport in a manner consistent with the Aquidneck Island Reuse Planning Authority's (AIRPA) *Redevelopment Plan for Surplus Properties at NAVSTA Newport*, i.e., the Redevelopment Plan (RKG Associates, Inc. et al. 2011). Any subsequent plans by the AIRPA or local jurisdictions since the approval of the 2011 Redevelopment Plan are not considered in this EIS. The proposed action is needed to provide the local community an opportunity for economic development and job creation.

1.5 BRAC Process

Base closure and realignment is the process used by the DOD to reorganize its installation infrastructure to more efficiently and effectively support its forces, increase operational readiness, and facilitate new ways of doing business. The BRAC process is established by the provisions of Title II of the Defense Authorization Amendments and Base Closure and Realignment Act, P.L. 100-526, and the BRAC Law.

1.5.1 BRAC Commission Recommendations

Congress authorized a 2005 round of BRAC by amending the BRAC Law of 1990. The amendment created the 2005 BRAC Commission and a timetable for the 2005 BRAC decision-making process. The Commission conducted its analysis of DOD recommendations, held public meetings, and made recommendations to the president for closures and realignments, including the realignment of NAVSTA Newport. The president approved and forwarded the recommendations to Congress on September 15, 2005. The recommended closures and realignments became public law on November 9, 2005.

Seven 2005 BRAC Commission recommendations affect NAVSTA Newport. These recommendations are as follows:

Realign NAVSTA Newport by relocating the Navy Warfare Development Command (NWDC) to NAVSTA Norfolk, VA.

Realign NAVSTA Newport and the Washington Navy Yard, Washington, D.C., by consolidating Naval Reserve Readiness Command Northeast with Naval Reserve Readiness Command Mid-Atlantic and relocating the consolidated commands to NAVSTA Norfolk, VA.

Realign Maxwell Air Force Base, AL; Naval Air Station Meridian, MS; and NAVSTA Newport by relocating religious training and education to Fort Jackson, SC, establishing a Joint Center of Excellence for religious training and education.

Close the naval installation at Athens, GA. Relocate the Navy Supply Corps School and the Center for Service Support to NAVSTA Newport. Disestablish the Supply Corps Museum.

Realign NAVSTA Pensacola, FL, by relocating Officer Training Command Pensacola, FL, to NAVSTA Newport, and consolidating with Officer Training Command Newport, RI.

Realign Naval Air Station Patuxent River, MD, by relocating Subsurface Maritime Sensors, Electronic Warfare, and Electronics Research, Development, and Acquisition, and Test and Evaluation of the Naval Air Warfare Center, Aircraft Division, to NAVSTA Newport, RI.

Close the Bristol Army Reserve Center, Bristol, RI, the Harwood Army Reserve Center, Providence, RI, the Warwick Army Reserve Center, and the Organizational Maintenance Shop, Warwick, RI. Relocate all units to a new Army Reserve Center on Newport Naval Base, RI.

As a result of implementing the realignments under the BRAC Law, certain land and facilities were declared excess to the needs of the Navy on January 5, 2009, and available to other DOD components and other federal agencies. Following the Navy's evaluation of all federal requests, the Navy declared approximately 225 acres of property at NAVSTA Newport as surplus on February 9, 2010 (75 FR 6360). (As discussed above, a portion of one of the properties was determined to no longer be surplus. Therefore, the acreage of the surplus property is estimated to be 158 acres. The Navy is in the process of withdrawing its determination that Defense Highway is excess property.)

Realignments of activities with other Navy installations are outside the scope of this NEPA document; any necessary environmental analysis would be performed by the Navy entity taking on the new activity.

1.5.2 Phases of the BRAC Process

The Navy established the BRAC Program Management Office (PMO) to oversee and manage the implementation of BRAC actions throughout the Navy. Under BRAC, the Navy acts as the disposal agency and employs the following procedures.

Phase 1: Disposal Planning – Federal Transfer

Transfer and redevelopment planning is a multi-phase process, most of which is specified by law. For NAVSTA Newport surplus property, Phase 1 began on November 9, 2005, when the recommendation to realign portions of the installation became law. The first step in the planning involved offering the property to federal agencies for reuse through a federal transfer process, which occurred in early January 2009. At the time, no other federal users indicated an interest in the surplus property.

However, in January 2014, at the request of the Narragansett Indian Tribe, the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), requested the BRAC properties under the federal property transfer process. Because the request occurred subsequent to the Navy's notice that the properties were surplus to the needs of the federal government (75 FR 6360), as described in Section 1.1, the Navy notified the local communities involved in preparing the Redevelopment Plan for the properties, allowing them to comment on the request (Preston 2014). In addition, the Navy stated that as a condition of the federal transfer, the BIA would be responsible for all present and future environmental issues, including financial responsibility for clean-up and any potential future claims. In August 2014, the Navy made a final decision to deny the BIA's application for transfer of any of the surplus properties due, in part, to the late request and because the BIA would not agree to accept liability for environmental clean-up and any potential future claims (Ludovici 2014). There has been no response to date from the BIA following the Navy's decision.

Phase 2: Surplus Property Notice and Designation as Surplus

The Navy's notice on February 9, 2010, stating that approximately 225 acres of property at NAVSTA Newport were surplus set into motion a series of events and initiatives to plan and redevelop the property

for higher and better uses. On May 25, 2010, the DOD Office of Economic Adjustment (OEA) recognized AIRPA as the local redevelopment authority (LRA) responsible for planning and redeveloping surplus property at NAVSTA Newport. Although later dissolved, AIRPA represented the municipalities of Newport, Middletown, and Portsmouth. AIRPA consisted of a board of directors and ex-officio members appointed through council resolutions of each of the municipalities. The board met in public session during regular meetings held on the first Tuesday of each month and sought input from the community on the redevelopment of the surplus property.

After the DOD officially designated the property as surplus, AIRPA began preparing the Redevelopment Plan. The Redevelopment Plan was officially adopted on August 8, 2011. Since the completion of the Redevelopment Plan in 2011, AIRPA became the Aquidneck Island Reuse Implementation Authority (AIRIA) to oversee the acquisition of the surplus property and implement the Redevelopment Plan. However, in early 2014, the three municipalities that composed the AIRIA decided to dissolve the organization. Each municipality would pursue acquisition of surplus property or properties and implement the Redevelopment Plan for the property or properties within its jurisdiction, as discussed further below under Phase 3: Property Disposal (Howington, Brown, and Klimm 2014). In some instances, the individual municipalities are refining and/or re-evaluating their plans for the proposed reuse of the respective property or properties within their jurisdiction.

Following adoption of the Redevelopment Plan (see Section 2 below), the Navy began the NEPA process, in this case, the preparation of an EIS.

Phase 3: Property Disposal

Upon completion of the NEPA process, as described below, the Navy will issue its final disposal decisions, and redevelopment will enter the implementation phase. This phase includes the Navy's conveyance of surplus installation property (i.e., property disposal) subject to fulfillment of any environmental restoration and National Historic Preservation Act (NHPA) requirements. Any future development of property not transferred to other federal agencies would fall under the jurisdiction of the local government(s) upon transfer and would be subject to the Redevelopment Plan. The use of land, the reuse of existing buildings and facilities, and the development of new buildings on the surplus NAVSTA Newport property would be regulated by the local government, its zoning ordinances, and other applicable plans and regulations.

As indicated above, in early 2014, AIRIA was dissolved and, therefore, the Navy would dispose of property directly to the respective municipality. Each of the surplus properties is discussed below with respect to the mechanism of property disposal:

- Former Navy Lodge property: The Navy would transfer this property to the Town of Middletown through a negotiated sale. A negotiated sale can be made to public bodies or other entities and requires a payment of not less than half the fair market value. Negotiated sales to public bodies can only be completed if a benefit, which would not be realized from competitive sale or authorized public benefit conveyance, will result from the negotiated sale (U.S. Department of Defense 2006)
- Former Naval Hospital: The Navy would transfer this property to the City of Newport through a negotiated sale, similar to that discussed above for the former Navy Lodge property.
- Tank Farms 1 and 2: The Navy would transfer these properties to the Town of Portsmouth through an economic development conveyance (EDC). This type of property transfer is made for the purpose of generating jobs (U.S. Department of Defense 2006).

- Midway Pier/Greene Lane: The Navy would transfer this property to the Town of Middletown through a public benefit conveyance (PBC) due to the nature of the future use of the property as parks and recreation.

The BRAC PMO East would continue to work with each of the three municipalities to complete the property transfer through the methods identified above.

1.6 Environmental Review Process

1.6.1 The National Environmental Policy Act

NEPA requires the consideration of potential environmental consequences of federal actions. The CEQ established regulations for federal agency implementation of NEPA (40 CFR 1500-1508). Under NEPA, federal agencies must prepare an environmental assessment (EA) or an EIS for any major federal action, except those actions that are determined to be "categorically excluded" from further analysis.

An EIS is prepared for those federal actions that may significantly affect the quality of the human environment. Thus, if the Navy were to determine that the proposed action would have a significant impact on the quality of the human environment, an EIS would be prepared, leading to a Record of Decision (ROD).

An EA/EIS should include brief discussions of the purpose and need for the proposed action, the alternatives, the affected environment, the environmental impacts of the proposed action and alternatives, a listing of agencies and persons consulted, and a discussion of the cumulative impacts associated with the alternatives. The FONSI/ROD should summarize the issues presented in the accompanying EA/EIS. The FONSI/ROD would be signed by the Navy, and a Notice of Availability would be published in local newspapers and, for an EIS, in the Federal Register.

In this EIS, environmental impacts have been assessed individually for each surplus property for the following reasons:

- **Timeframe for redevelopment:** The timeframe for redevelopment of each of the surplus properties may differ due to several factors, most notably the completion of any environmental restoration requirements before transfer. Addressing impacts on a property-specific basis acknowledges this. Separating the properties provides the resource-specific information in a more streamlined fashion that will aid in the redevelopment review process (i.e., obtaining clearances and permits from local and state-level authorities, etc.) because the review process is expected to occur on a property-by-property basis. The future property owners/developers will be able to refer to two specific chapters rather than having to parse out the information if the properties were to be addressed collectively throughout the EIS.

- **Geographic location of properties:** The surplus property is located in three different municipalities. Therefore, providing a more user-friendly document, organized by property, allows the various stakeholders, specifically municipal leaders, to focus on the property of interest to them and to review and comment more easily on the information presented herein. Additionally, as discussed above, one municipality may move forward with redevelopment faster than others; thus, the property-specific EIS format will facilitate the identification of property-specific information needed for permit applications and other documentation.

1.6.2 Scoping and Public Involvement

1.6.2.1 Public Notification and Scoping

The first step in the NEPA process was the publication of a Notice of Intent (NOI) in the Federal Register on October 31, 2012. The NOI formally opens the public scoping period and includes a description of the proposed action and alternatives, locations to be affected, and how scoping comments may be provided. Scoping is an early and open process for determining the scope of the proposed action and the significant issues the EIS will analyze in depth. During the scoping process, the public assists the Navy in defining and prioritizing issues through meaningful participation, including the submission of written comments.

The public scoping period began on October 31, 2012, and concluded on December 2, 2012, and included public scoping meetings. A public scoping notification letter was mailed to approximately 68 federal, state, and local agencies and members of the public. Media announcements for the public scoping period and public meetings dates and locations were published in regional newspapers (*Providence Journal, Newport Daily News,* and *Newport This Week*), on public radio (i.e., the Rhode Island Public Broadcast Network Radio), and on local public access television (PEG RI-TV). A newspaper display notice was published in the above-noted newspapers on the following dates:

- *Newport Daily News:* November 2, 11, 12, and 13, 2012
- *Providence Journal:* November 2, 11, 12, and 13, 2012
- *Newport This Week:* Week of November 8-14, 2012.

During the public scoping period, comments were invited from federal, state, and local agencies and members of the public on the scope of issues to be addressed in this EIS.

The public scoping meetings held for this EIS were conducted in an open house format. The scoping meetings were used to inform the public about the EIS process, enable community members to ask questions, and solicit written comments regarding issues to be addressed in the EIS. The meetings featured displays, fact sheets, and interaction between Navy staff and the public. The meetings were scheduled as follows:

- Wednesday, November 14, 2012 (4 p.m. to 8 p.m.), Joseph H. Gaudet Middle School Cafeteria, 1113 Aquidneck Avenue, Middletown, RI
- Thursday, November 15, 2012 (1 p.m. to 5 p.m.), Newport Public Library Program Room, 300 Spring Street, Newport, RI.

1.6.2.2 Issues of Concern

All comments received during the formal scoping period were identified and tabulated by topic. Table 1-3 categorizes the issues of concern received, organized by frequency and topic.

Table 1-3 Frequency of Comments, by Topic

Topic	Number of Comments
Proposed Action and Alternatives	2
Land Use, Zoning, and Coastal Resources	7
Socioeconomics / Community Facilities and Services	1
Transportation	5
Environmental Management	4

Table 1-3 Frequency of Comments, by Topic

Topic	Number of Comments
Air Quality	3
Infrastructure/Energy	4
Cultural Resources	4
Biological Resources	1
Miscellaneous	1
Total	**32**

1.6.3 Agency Coordination and Permit Requirements

NEPA requires that federal agencies responsible for preparing NEPA analyses and documentation do so "in cooperation with State and local governments" and other agencies with jurisdiction by law or special expertise (42 U.S.C. §§ 4331(a) and 4332(2)). The Navy worked closely with the community, local and state agencies, and other federal agencies during the preparation of this EIS.

Consultation letters were sent to the Rhode Island Department of Environmental Management (RIDEM) Division of Planning and Development, Natural Heritage Program; the U.S. Fish and Wildlife Service (USFWS); and the National Marine Fisheries Service (NMFS). The letters were sent to USFWS and NMFS to request information on populations of federally listed and state-listed or candidate rare, threatened, or endangered species, unique natural communities, or other significant wildlife communities at or near the surplus property. The Navy is continuing to coordinate with the USFWS on the potential effects of the proposed action on protected species. The Navy has concluded an informal consultation process with NMFS in regards to the ESA, as outlined in Table 1-4. The Navy provided a Coastal Consistency Determination to the CRMC and has received concurrence on the consistency of the proposed action with enforceable coastal management policies (Table 1-4) (Willis 2014). Consultation has been initiated with the State Historic Preservation Office (SHPO) in accordance with the Section 106 process as required by the National Historic Preservation Act (NHPA). Correspondence was also sent to the Advisory Council for Historic Preservation (ACHP). Government-to-government consultation has been initiated with the federally recognized Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah). Copies of the letters sent to these tribes to initiate and follow up on government-to-government consultation are provided in Appendix A. In addition, a copy of this EIS was filed with the U.S. Environmental Protection Agency (EPA). Copies of correspondence between the Navy and federal and state agencies are included in Appendix A.

Table 1-4 summarizes the applicable regulatory requirements and approvals. Consistency with other federal, state, and local plans, policies, and regulations is further described in Section 15 (Other Considerations Required by NEPA) of this EIS.

1.7 Organization of Document

This EIS evaluates the potential direct, indirect, short-term, and long-term impacts on the human and natural environments resulting from the disposal of surplus property at NAVSTA Newport and its reuse in accordance with the Redevelopment Plan.

The resources and factors examined in this EIS include land use, zoning, and coastal resources; socioeconomics and environmental justice; community facilities and services; transportation; environmental management; air quality; noise; infrastructure and utilities; cultural resources; topography, geology and soils; water resources; and biological resources. This EIS also addresses potential cumulative impacts resulting from past, present, and reasonably foreseeable projects in the region, including other realignment actions at NAVSTA Newport.

Table 1-4 Applicable Regulatory Requirements and Approvals

Regulation	Agency	Permit/Application	Regulated Activity	Responsible Party/Status
National Environmental Policy Act (42 U.S.C. § 4321 et seq.)	Navy	Record of Decision	Federal actions	Navy/ Ongoing.
Clean Air Act (42 U.S.C. § 7401 et seq.)	U.S. Environmental Protection Agency	Compliance with National Ambient Air Quality Standards Conformity Determination	Federal actions that result in air emissions Compliance with the General Conformity Rule	Navy completed analysis; General Conformity Rule does not apply to actions beyond federal control and Navy completed a Record of Non-Applicability for Clean Air Act Conformity.
Clean Water Act (33 U.S.C § 1251 et seq.)	U.S. Army Corps of Engineers	Section 404	Impacts on jurisdictional wetlands and/or other waters of the United States	Developer/ To be initiated following transfer of property and before redevelopment.
Clean Water Act (33 U.S.C § 1251 et seq.)	Rhode Island Department of Environmental Management (Regulations for the Rhode Island Pollutant Discharge Elimination System)	Rhode Island Pollutant Discharge Elimination System, Section 401 Water Quality Certification	Construction activities on areas equal to or larger than 1 acre	Developer/ To be initiated following transfer of property and before redevelopment.
Rivers and Harbors Act of 1899 (33 U.S.C. § 403 et seq.)	U.S. Army Corps of Engineers	Permit for Work in Navigable Waters (Section 10 Permit)	Obstruction or alteration of any navigable water of the United States	Developer/ To be initiated following transfer of property and before redevelopment.
National Historic Preservation Act of 1966 as amended (16 U.S.C. § 470 and amendments)	• Advisory Council on Historic Preservation • State Historic Preservation Office	Section 106 consultation	Federal undertakings that may affect potentially eligible or listed resources on the National Register of Historic Places	Navy to conduct and complete Section 106 process/ Ongoing. Following property transfer, developer to adhere to terms established by the State Historic Preservation Office.

Table 1-4 Applicable Regulatory Requirements and Approvals

Regulation	Agency	Permit/Application	Regulated Activity	Responsible Party/Status
American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act of 1979, and Native American Graves Protection and Repatriation Act of 1990	Appropriate representative of the affected tribes	Consultation with affected tribes	Presence of cultural resources on federal land	Navy to conduct and complete consultation process prior to property transfer/ Consultation ongoing.
Endangered Species Act (16 U.S.C. §§ 1531-1544)	• U.S. Fish and Wildlife Service • National Marine Fisheries Service	Agency consultation for presence of threatened and endangered species	Federal actions could potentially impact threatened and endangered species or result in the destruction or adverse modification of the designated critical habitat of such species	The Navy is consulting under Section 7 with the U.S. Fish and Wildlife Service regarding the northern long-eared bat, a federally listed as threatened species, predominantly because of the threat of white-nose syndrome. This consultation is ongoing. The NMFS concurred with the Navy's determination that the project would not likely adversely affect any listed species under NMFS jurisdiction. No further consultation with NMFS pursuant to Section 7 of the Endangered Species Act is required. Following property transfer, developer to implement best management practices (BMPs) or mitigation measures identified during the consultation process.

Table 1-4 Applicable Regulatory Requirements and Approvals

Regulation	Agency	Permit/Application	Regulated Activity	Responsible Party/Status
Coastal Zone Management Act (16 U.S.C §§1451-1464)	Rhode Island Coastal Management Resources Council	Rhode Island Coastal Management Program – Coastal Consistency Determination	Action by federal or state agencies that may affect coastal resources in Rhode Island. This consultation will be completed to ensure the Navy is complying to the maximum extent practicable with the enforceable policies of the state's coastal zone management plan identified as the Rhode Island Coastal Resources Management Program.	The Navy completed a Coastal Consistency Determination; in March 2014, the Coastal Resources Management Council provided concurrence that the disposal of surplus properties for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island Coastal Resources Management Program. Following property transfer, developer to conduct separate and appropriate environmental documentation and obtain all the necessary permits and approvals before redevelopment.

Table 1-4 Applicable Regulatory Requirements and Approvals

Regulation	Agency	Permit/Application	Regulated Activity	Responsible Party/Status
Marine Mammal Protection Act of 1972 (16 U.S.C. § 1361 et seq.)	National Marine Fisheries Service	Agency consultation for presence of marine mammals	Actions that involve "taking" of marine mammals	NMFS provided concurrence that projected noise levels and habitat disturbance is not expected to result in significant impacts on listed marine mammals, sea turtles, and Atlantic sturgeon. In the noise analysis for this Draft EIS, the Navy provided general BMPs to minimize the potential for noise-related effects on marine mammals and other marine wildlife. As the future developer would need to consult with NMFS regarding MMPA through the USACE CWA process, BMPs would be developed to minimize adverse impacts on marine mammals. Following property transfer, developer to implement BMPs and mitigation measures identified during the consultation process.

Table 1-4 Applicable Regulatory Requirements and Approvals

Regulation	Agency	Permit/Application	Regulated Activity	Responsible Party/Status
Magnuson Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)	National Marine Fisheries Service	Agency consultation on essential fish habitat (EFH)	Actions that may adversely affect EFH	The NMFS responded to the Navy EFH Assessment that consultation regarding impacts on EFH would need to be completed in the future when, more detail was available in regards to: project designs (engineering plans); dredging quantities and locations; specific plans regarding minimization of noise-related impacts during pile driving activities; and the locations of eelgrass beds and distance to project footprint. The future developer will need to provide project-specific details following property transfer in order for a determination to be made regarding impacts on EFH. Following property transfer, developer to provide project-specific details and construction plans to NMFS and will be required to implement mitigation measures identified during the consultation process.

Table 1-4 Applicable Regulatory Requirements and Approvals

Regulation	Agency	Permit/Application	Regulated Activity	Responsible Party/Status
Migratory Bird Treaty Act (16 U.S.C. § 703-712)	U.S. Fish and Wildlife Service	Agency consultation on migratory birds	Activities with the potential to take, capture, kill, or attempt to take a migratory bird	Navy does not anticipate any significant impacts on migratory birds.
Comprehensive Environmental Response, Compensation, and Liability Act, as amended (42 U.S.C. § 9601 et seq.)	U.S. Environmental Protection Agency	Cleanup of hazardous waste contamination from abandoned hazardous waste disposal sites or accidental spills	Ongoing responsibility for the investigation and cleanup of environmental restoration (ER) program sites and other sites	Navy responsible for cleanup of property before transfer; clean-up activities ongoing. Developer responsible for adhering to restrictions and/or land use controls resulting from remedial process.
Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.)	U.S. Environmental Protection Agency	Procedures for hazardous waste management and corrective action	Ongoing responsibility for waste management and corrective actions	Navy responsible for hazardous waste management and corrective actions prior to transfer; ongoing. Developer responsible for hazardous waste management following transfer.

Impacts addressed are based on the complete implementation of the approved Redevelopment Plan—a full build-out (over the course of 20 years)—and assumptions made regarding foreseeable reuses of the surplus property, current property use, existing and proposed land use and zoning regulations, and the build-out timeline and development mix.

The information and data used in the preparation of this EIS were obtained by reviewing existing documents and studies, including literature, maps, and planning documents, government agency Web sites, and communication and coordination with local, state, and federal stakeholders, officials, agencies, and other organizations and the public.

This EIS has been organized as follows:

- **Chapter 2, Proposed Action and Alternatives,** provides a detailed description of each alternative developed for analysis in this EIS and a summary comparison of the alternatives.
- **Chapter 3, Background Information and Methodology for Resource Area Assessments,** provides a resource overview for each resource that is addressed in this EIS. This overview includes resource descriptions and definitions, regulatory context, and the methodology used to assess the existing environment and environmental consequences.
- **Chapter 4, Former Navy Lodge Existing Conditions,** provides a detailed assessment of each existing resource at the former Navy Lodge property.
- **Chapter 5, Former Navy Lodge Environmental Consequences,** provides a detailed assessment of the impacts on resources at the former Navy Lodge property as a result of implementation of the alternatives.
- **Chapter 6, Former Naval Hospital Existing Conditions,** provides a detailed assessment of each existing resource at the former Naval Hospital property.
- **Chapter 7, Former Naval Hospital Environmental Consequences,** provides a detailed assessment of the impacts on resources at the former Naval Hospital property as a result of implementation of the alternatives.
- **Chapter 8, Tank Farms 1 and 2 Existing Conditions,** provides a detailed assessment of each existing resource at Tank Farms 1 and 2.
- **Chapter 9, Tank Farms 1 and 2 Environmental Consequences,** provides a detailed assessment of the impacts on resources at Tank Farms 1 and 2 as a result of implementation of the alternatives.
- **Chapter 10, Midway Pier/Greene Lane Existing Conditions,** provides a detailed assessment of each existing resource at the Midway Pier/Greene Lane property.
- **Chapter 11, Midway Pier/Greene Lane Environmental Consequences,** provides a detailed assessment of the impacts on resources at the Midway Pier/Greene Lane property as a result of implementation of the alternatives.
- **Chapter 12, Regional Air Quality Analysis,** provides an assessment of potential impacts on air quality on a regional basis, taking into account all of the surplus property redevelopment.

- **Chapter 13, Cumulative Impacts,** provides the cumulative impacts assessment for all pertinent resources, taking into account the proposed action coupled with other regional actions.
- **Chapter 14, Best Management Practices, Mitigation, and Monitoring,** provides a summary list of the measures that will be implemented to minimize impacts.
- **Chapter 15, Other Considerations Required by NEPA,** discusses consistency with other federal, state, and local land use plans, policies and controls.
- **Chapter 16, References,** provides the list of references cited throughout this EIS.
- **Chapter 17, List of Preparers,** provides the names of primary authors, reviewers, and other supporting staff, along with an indication of their specific role and education.
- **Chapter 18, Distribution List,** provides the names of government agencies, elected representatives, and organizations identified to receive a copy of the Draft and Final EIS.

2 Proposed Action and Alternatives

This section provides a detailed description of the proposed action and alternatives. This EIS evaluates two action alternatives for reuse of the surplus property and the No Action alternative. The preferred reuse alternative (Alternative 1) is use of the surplus property consistent with AIRPA's Redevelopment Plan. Alternative 2 is redevelopment of the property at a higher density with a larger footprint and a different mix of land uses.

In accordance with NEPA regulations, the EIS also addresses a No Action alternative. The No Action alternative is the retention of surplus property at NAVSTA Newport by the U.S. government in caretaker status. Under this scenario, no reuse or redevelopment would occur at the surplus property.

2.1 Establishment of the Redevelopment Plan

On May 25, 2010, AIRPA was recognized as the LRA responsible for developing a redevelopment plan for the surplus property at NAVSTA Newport (75 FR 29322). The Redevelopment Plan took into account previously completed or ongoing planning efforts and the goals and objectives that those plans had outlined for the use of the surplus property; the existing condition of the surplus property and the region; other properties available for redevelopment; the needs of the homeless; local zoning; infrastructure needs and availability; and public participation. The framework for the Redevelopment Plan was largely built on previously completed plans, namely, the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005), the draft *Portsmouth Tank Farm Redevelopment Plan* (Town of Portsmouth 2008b), and the *West Main/Coddington Development Center Master Plan* (Vanasse Hangen Brustlin Inc. and RKG Associates 2011).

AIRPA established redevelopment goals for each property, as summarized below:

- Former Navy Lodge Property: Return to the town's tax roll; economic development.
- Former Naval Hospital Property: Economic development with public use along the waterfront.
- Tank Farms 1 and 2: Economic development with public uses that connect to the open spaces currently to the north, east, and west.
- Midway Pier/Greene Lane Property: Public use.

2.1.1 Public and Agency Outreach

After identifying the redevelopment goals that were accepted by the public, AIRPA evaluated the environmental conditions of each property, existing infrastructure, transportation networks, housing and commercial markets, and local and regional demographics. Restrictions needed to protect human health and the environment also were identified.

Outreach to local providers of services for the homeless was part of AIRPA's property screening. A list of area homeless service providers was obtained from the U.S. Department of Housing and Urban Development (HUD). This list included five local homeless assistance providers and other agencies that support the homeless. Each of these entities was contacted. Additionally, A *Notice of Availability of Surplus Federal Property to State and Local Eligible Parties, Including Homeless Service Providers* was published by AIRPA on June 22, 2010, in the *Newport Daily News*, and informational meetings were held on July 23 and July 26, 2010. Two additional notices were published in the *Newport Daily News* within a week of the public informational meetings. No Notices of Interest were received from homeless assistance providers (Vanasse Hangen Brustlin Inc. and RKG Associates 2011). The Homeless Assistance

Application was submitted to HUD in August 2011, and HUD approval of the Redevelopment Plan was received on August 31, 2011 (Johnston 2011).

AIRPA accepted Notices of Interest for requests for PBCs of the available parcels. Through the PBC process, surplus military property may be conveyed to public agencies and not-for-profit organizations to provide public goods and services. Four viable PBC requests were received by AIRPA and have been incorporated into the reuse scenarios. These are summarized below (RKG Associates, Inc. et al. 2011):

- City of Newport: Request for recreation/open space use at the former Naval Hospital property.
- Town of Middletown: Request for recreation/open space use along the Defense Highway (e.g., Midway Pier area).
- Town of Portsmouth: Request for transportation use on a portion of Tank Farm 1.
- Rhode Island Department of Transportation: A request for transportation use along the Defense Highway/Stringham Road Corridor that was previously designated as surplus and has since been withdrawn.

2.1.2 Public Participation during the Planning Process

To engage the public in reuse planning, AIRPA held a series of public events over a two-year period from July 2010 through July 2011. In February 2011, AIRPA held a public meeting to introduce the planning team and the planning process to the public. The redevelopment goals for each property were presented to the public at a meeting on July 14, 2011.

AIRPA held three public-participation workshops and also addressed the planning process during the regular monthly board meetings at the town of Middletown police station, which were open to the public. Additional public outreach efforts included a public website, press releases, and newspaper inserts.

2.1.3 Redevelopment Plan Selection

A preferred reuse plan was presented during AIRPA public meetings and public meetings with each municipality. On July 14, 2011, AIRPA held a public hearing to decide on a preferred reuse scenario. After presentation of the alternatives, AIRPA selected a development alternative for each site, referred to as the Preferred Reuse Plan. The Preferred Reuse Plan targets the specific types of development on each site based on each site's physical and environmental setting and location.

Former Navy Lodge Property. Two scenarios were developed by AIRPA for the former Navy Lodge property. Scenarios 1 and 2 were both mixed use development alternatives with retail. Scenario 2 included a larger mix of uses with the addition of residential use and transportation improvements at the adjacent West Main/Coddington and West Main/East Main intersections. Scenario 1 was selected by AIRPA through a public hearing as the preferred reuse plan for this site.

Former Naval Hospital Property. Four scenarios were developed by AIRPA for the former Naval Hospital property. Scenarios 1 and 2 were mixed-use alternatives that included a hotel and commercial and waterfront park uses. Scenario 2 also included residential uses (a total of 36 units) as part of the mixed-use alternative. Scenario 3 included residential uses (a total of 90 units) and a waterfront park only, and Scenario 4 included a research/office use and a waterfront park. Scenario 2 was selected by AIRPA through a public hearing as the preferred reuse plan for this site.

Tank Farms 1 and 2. AIRPA considered using the tanks at Tank Farms 1 and 2 to store solid or liquid materials. However, reusing the tank farms was not deemed feasible because the tanks are no longer in

serviceable condition. Therefore, AIRPA determined that Tank Farms 1 and 2 would be redeveloped as a combination of office, light industrial, and boat storage space and multimodal parking.

Defense Highway/Stringham Road Corridor. Two scenarios were developed by AIRPA as part of the ongoing Aquidneck Island Transportation Study for the previously designated Defense Highway/Stringham Road Corridor. (Note: As stated in Section 1.5.1, the Navy is in the process of withdrawing its determination that Defense Highway is excess property. Therefore, only the Midway Pier/Greene Lane portion of the Defense Highway/Stringham Road Corridor originally identified for redevelopment is considered to be surplus property in this EIS.) A subset of Scenario 1 is the preferred reuse plan—a two-lane roadway with the addition of a multi-use pathway and open-space ribbons. Scenario 2 was a four-lane roadway with the same multi-purpose path. Because of roadway width constraints, the road portion of the Defense Highway/Stringham Road Corridor cannot be widened to allow additional lanes. Therefore, Scenario 1 was selected by AIRPA through a public hearing as the preferred reuse plan for this site.

2.2 Identification of Alternatives

To assess the potential impacts of the proposed action, the Navy identified and evaluated two property disposal and reuse alternatives—Alternative 1 (Redevelopment Plan), Alternative 2 (High-Density Development)—and the No Action alternative. Alternative 1, the preferred alternative, is the reuse of the property in accordance with the Redevelopment Plan, as adopted by AIRPA. The shoreline park concept and applicable portions of the open space identified in the Redevelopment Plan have been incorporated into Alternative 1 under the Midway Pier/Greene Lane property. The Navy developed Alternative 2 to identify potential impacts if a higher density and larger footprint with a different mix of development were to occur at the sites. Alternative 2 includes more commercial uses, including office and retail, as well as industrial development. It was not chosen as the preferred reuse of the surplus property by AIRPA; however, it serves as an appropriate alternative for consideration and comparison for this analysis. The No Action alternative is required by statute and establishes a baseline by which to compare and identify the potential environmental consequences of redevelopment of the surplus property at NAVSTA Newport. The No Action alternative is evaluated in detail in this EIS as prescribed by CEQ regulations.

Both build alternatives, Alternative 1 and Alternative 2, are assumed to be implemented over a 20-year period, but the timeframe for redevelopment of the separate properties may differ due to factors such as the completion of environmental restoration requirements before transfer (see Section 3.5.1.4), economic drivers for development, and the ability of future developers to obtain financing and requisite permits.

2.2.1 Alternative 1 (Preferred Alternative)

Alternative 1 includes the disposal of surplus property at NAVSTA Newport by the Navy and its reuse in accordance with the Redevelopment Plan. This alternative has been identified as the preferred alternative by the Navy. Full build-out is proposed to be implemented over a 20-year period but may differ for each of the properties. The Redevelopment Plan includes a mix of land use types and densities for each surplus property as well as open space and natural areas. The Redevelopment Plan emphasizes the importance of best management practices (BMPs) to enhance storm water quality for the redeveloped areas.

Estimates included in the Redevelopment Plan indicate that implementing the plan at full build-out could result directly in the addition of up to 980 new jobs in the regional economy. The total projected cost associated with preparation of the sites for development (including building demolition at the Naval Hospital property and Tank Farms 1 and 2), upgrading utilities and infrastructure, building construction, etc., are estimated to be approximately $116.8 million.

Figures 2-1 through 2-4 illustrate the Redevelopment Plan at full build-out at each surplus property. A detailed description of the Redevelopment Plan for each surplus property is provided below, and a summary of the redevelopment under Alternative 1 is included in Section 2.5 (Table 2-1).

Former Navy Lodge Property. The 3-acre former Navy Lodge property is proposed for redevelopment as retail space[3]. The site is currently vacant, except for a small telephone utility shed and a water feed vent and concrete pad, so no demolition is proposed. Two buildings are proposed, each one-story, on a total of approximately 0.7 acres. Retail use would total approximately 30,500 square feet. These structures are proposed on the northeast and southeast corners of the site, with approximately 0.8 acres (or approximately 145 spaces) of parking adjacent to the buildings (see Figure 2-1). In addition, 0.3 acres would be used to access the site from Coddington Highway. A total of 1.8 acres, or 60 percent, of the 3-acre site would be redeveloped; approximately 1.2 acres would be maintained as open space.

The former Navy Lodge property is encumbered by several easements, which will transfer with the property. The Landings Real Estate Group owns an easement across the northeastern portion of the property for a water line to the apartment housing development adjacent to the former Navy Lodge property. In addition, the RIDOT holds a "perpetual easement" along the eastern edge of the property that was acquired in 2004 for the construction of a turning lane on West Main Road for right-hand turns onto Coddington Highway. No easement currently exists for the small telephone utility shed.

The Navy also holds an easement on property owned by the Landings Real Estate Group that provides access from the former Navy Lodge property to Lake Erie Street, located on the western edge of the former Navy Lodge property and that connects to Coddington Highway. Upon transfer of the former Navy Lodge property, this easement would pass to the new owners. Additionally, the Navy would retain an easement on the property to allow for continued use of a water line that provides service to NAVSTA Newport.

The site would be accessed from Coddington Highway; Lake Erie Street may also serve as an additional access/egress point for the site.

Former Naval Hospital Property. Proposed redevelopment at the approximately 15.2-acre former Naval Hospital property includes a three-story hotel (120 rooms) with additional space on the first floor for retail and a restaurant comprising approximately 1.3 acres and parking at the northeast corner of the site; a three-story 36-unit residential building with a ground-level footprint of approximately 0.60 acres over at-grade parking in the southeast corner of the site; and a waterfront park of approximately 2.4 acres that would include a pier, pedestrian path, water taxi dockage, and boat storage facility (see Figure 2-2). The residential building would contain 36 two-bedroom units. Parking and access throughout the site would total 2.2 acres of developed land under Alternative 1, including the existing road (Riggs Road) that bisects the site. Approximately 54 percent of the overall site (inclusive of land-based and pier development) would be developed under Alternative 1. The redeveloped site would be accessed from Third Street, similar to current conditions. Cypress Street may also serve as an additional access/egress point for the site. (Note: Three gates previously provided access to the former Naval Hospital when it was in use, one of which was former Gate 1 located on Cypress Street.)

[3] The former Navy Lodge property is proposed to be part of the Town of Middletown's West Main/Coddington Development Center, a large mixed use development totaling approximately 14 acres. The development center would consist of four parcels: the former Navy Lodge, the town's recreation complex, Middletown Public Library, and the former JFK Elementary School (see Sections 4.1.3 and 13.2.3.1).

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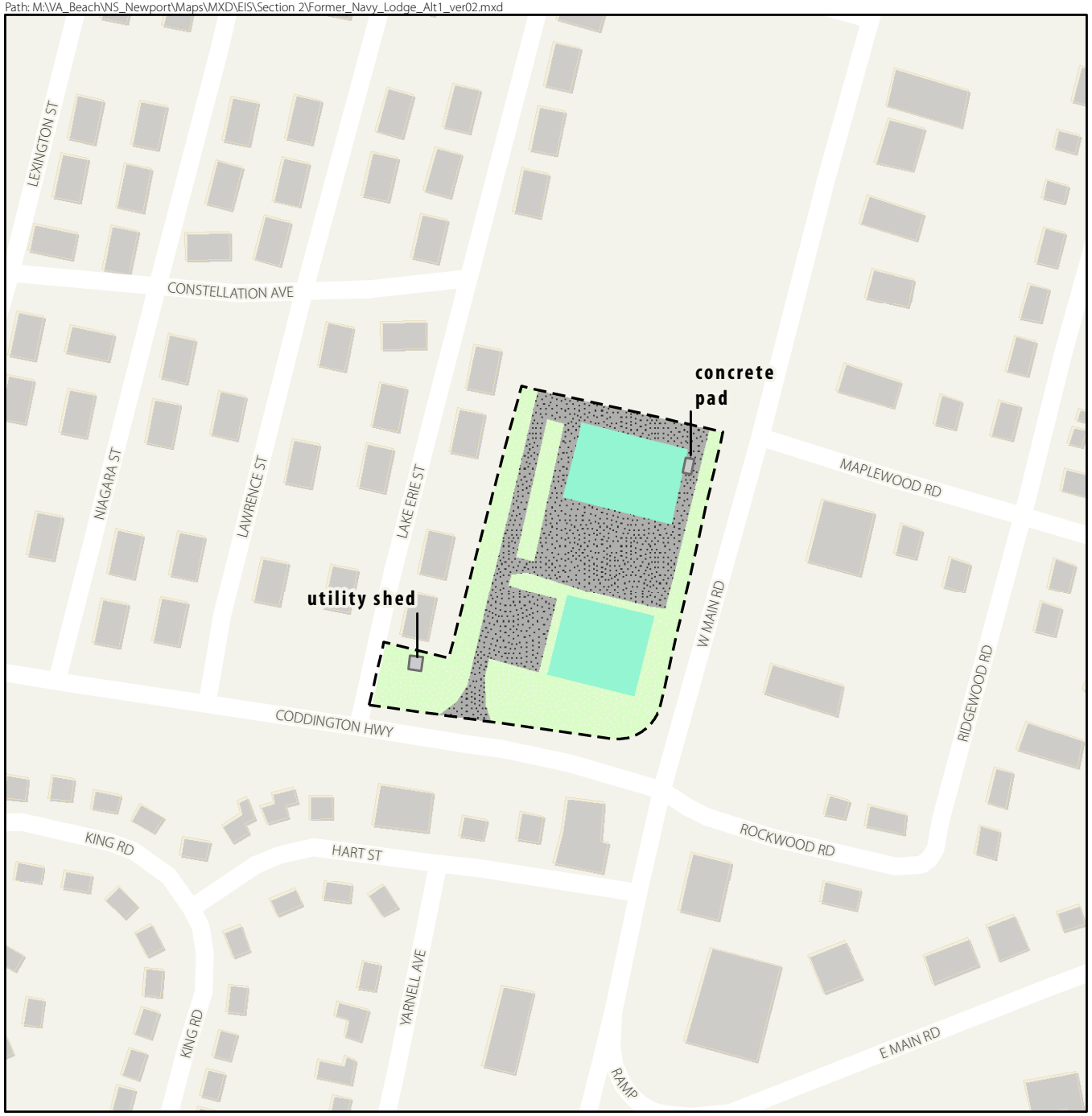

Figure 2-1

Former Navy Lodge Property

Alternative 1 – Preferred Redevelopment

NAVSTA Newport, Rhode Island

Legend

- Property Boundary
- Structure

Proposed Land Use

- Open Space
- Parking/Access
- Retail

SCALE

0 150 300 Feet

SOURCE: RKG Associates et al. 2011

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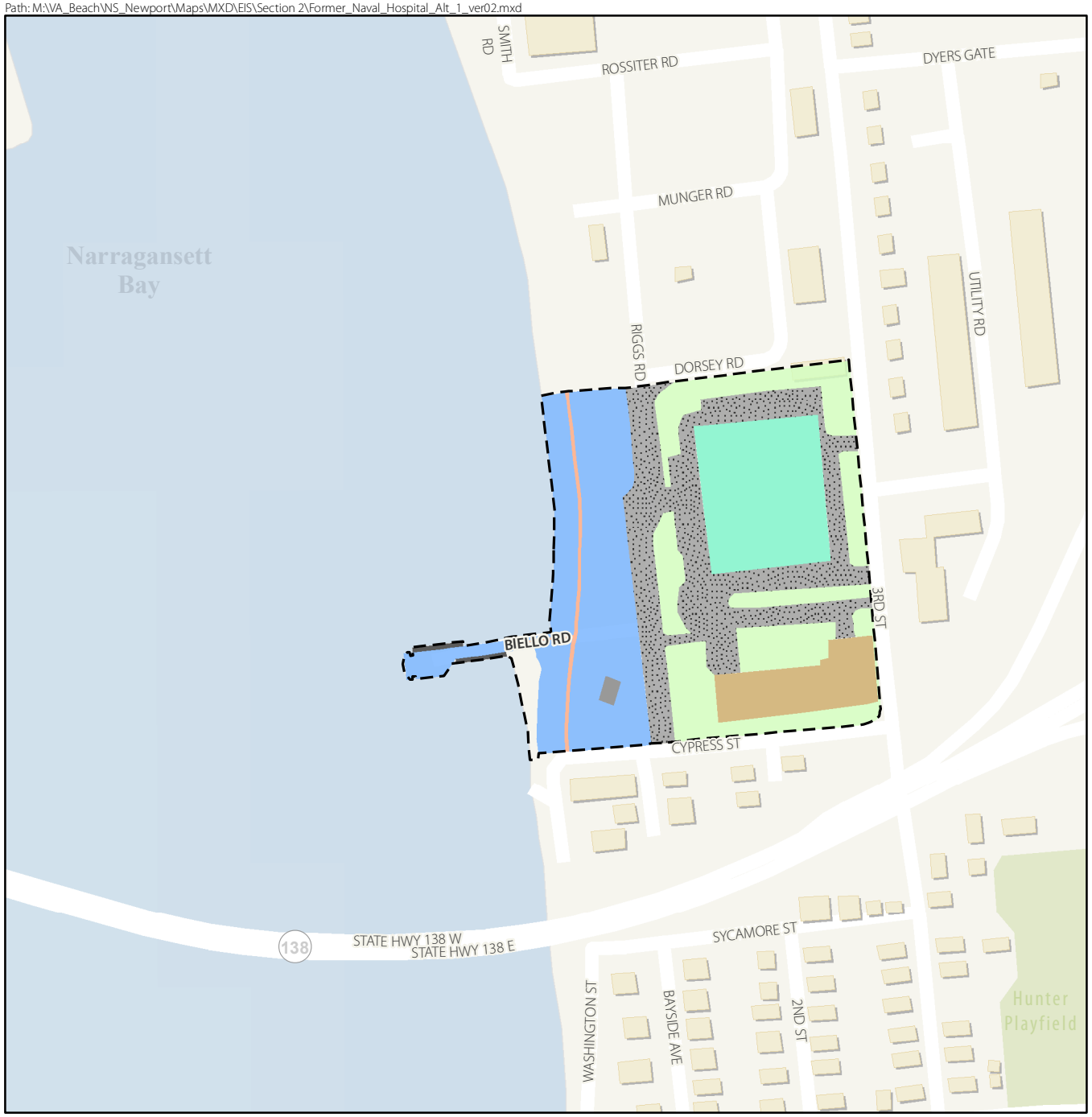

Figure 2-2

Former Naval Hospital Property

Alternative 1 – Preferred Redevelopment

NAVSTA Newport, Rhode Island

Legend

- Property Boundary

Proposed Land Use

- Boat Storage Facility
- Floating Dock
- Hotel/Retail/Restaurant
- Open Space
- Parking/Access
- Path
- Residential
- Waterfront Park

N

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: RKG Associates et al. 2011

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The waterfront park would include a boat storage facility of approximately 1,300 square feet[4] constructed in the footprint of the former chapel. The existing pier would be re-used, with the addition of two concrete floating docks on each side. Each floating dock would be 8 feet by 90 feet.[5] These floating docks would be supported by pontoons and anchored in place with pilings and cables. It is assumed that the pilings would be square, pre-stressed concrete piles measuring 1 foot by 1 foot, which would be constructed off-site. Pile installation would be completed using an impact hammer on a barge and a crane. To construct the floating docks, various construction vessels would be necessary, including barges, tugs, and floating cranes.

Under Alternative 1, all six existing buildings listed in Table 1-1 would be demolished. The existing pier would remain, as described above.

The 6.9 acres of offshore riparian rights of the former Naval Hospital property will not transfer with the property. The riparian rights will remain under the control of the CRMC for determining future use.

Tank Farms 1 and 2. Tank Farms 1 and 2 would be redeveloped as a combined approximately 136-acre site with office, light industrial and boat storage space; multi-modal parking uses; and the potential for a solar array (see Figure 2-3). The plan for the tank farms includes a multi-modal parking facility with 400 parking spaces (a total of 4 acres) on the west side of the site, adjacent to the railroad; 45,000 square feet (approximately 1 acre) of light industrial or boat storage, also along the railroad; 145,000 square feet of light industrial, with 55,000 square feet (approximately 1.3 acres) along the rail line and 90,000 square feet (approximately 2.1 acres) off of Bradford Avenue; and 110,000 square feet (approximately 2.5 acres) of office space at the south end of the site (south end of Tank Farm 2).

The solar array would comprise approximately 155,000 square feet (approximately 3.6 acres) and would be located near the center of Tank Farm 2. Parking and access roads would comprise approximately 20.6 acres of newly redeveloped area (total takes into account the 4 acres of multi-modal parking). A total of 31.1 acres, or 23 percent, of the 136-acre site would be redeveloped; 104.9 acres (77 percent) would remain as open space. Access to the redeveloped site would be from new access points along Stringham Road and Bradford Avenue.

The proposed redevelopment at the tank farms is based on a 300-foot setback from the existing tank locations, as specified in the Redevelopment Plan (RKG Associates, Inc. et al. 2011).

Under a separate project (unrelated to this EIS), the Navy plans to demolish the underground storage tanks (USTs) and associated facilities at Tank Farm 1. This project is scheduled to be completed in 2016 and before transfer of the property. The Navy similarly intends to demolish the USTs and associated facilities at Tank Farm 2, although the schedule for this demolition has not been established. Therefore, for the purposes of the analysis in this EIS, the USTs and associated facilities at Tank Farm 2 are assumed to be transferred in place as part of the property transfer for this proposed action.

Midway Pier/Greene Lane. Recreational/open space use is proposed at this property. A shoreline park would include a fishing pier, kayak launch, restrooms, playgrounds, a 0.3-acre parking lot, picnic areas,

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[4] These dimensions were not specified in the Redevelopment Plan. For purposes of the EIS analysis, dimensions were assumed to be similar to those of the existing Providence Community Boating Center, a shore-based structure.

[5] These dimensions were not specified in the Redevelopment Plan. For purposes of the EIS analysis, dimensions were assumed to be similar to those provided in plans for the Ann Street Pier provided in a Notice to Bidders for the Ann Street Pier Design-Build Project, as issued by the City of Newport. The Ann Street Pier is located approximately 1.2 miles south of the former Naval Hospital, along Narragansett Bay.

and pathways (see Figure 2-4). The restrooms, playground, and picnic area would comprise 0.09 acres. The existing pier would be rebuilt to be a 15-foot-wide, 250-foot-long concrete pier. Access to the proposed park would be provided directly from Defense Highway. In addition to the shoreline park, a multi-use pathway would be constructed in a greenbelt on the opposite side of the railroad tracks, next to the water. The pathway would be 12 feet wide and would be surfaced with bituminous concrete. In areas constrained by topography or other factors, the width may be reduced to 10 feet.[3]

In-water activities would include removing the existing pier, which is assumed to include dredging with a clamshell bucket or similar equipment, and excavation of the existing pier. Piles that formerly supported the pier have been previously removed. Pile driving to construct the new pier and construction vessels as described above (see Former Naval Hospital section above) would also be necessary.

With the exception of the demolition/removal of the existing pier, no further demolition activities would occur at this property under Alternative 1.

2.2.2 Alternative 2 (High-Density Redevelopment)

Alternative 2 also provides for the disposal and redevelopment of the surplus property at NAVSTA Newport, but at a higher density and with a larger footprint and different mix of uses than Alternative 1. As with Alternative 1, the existing facilities at the surplus property would be demolished. This alternative also proposes a mix of land uses, including commercial, industrial, and active and passive recreation space. Full build-out would be implemented over a 20-year period, but may differ for each of the properties. Specific redevelopment details for each surplus property are discussed below. Figures 2-5 through 2-8 illustrate the proposed redevelopment at each property.

Former Navy Lodge Property. Proposed redevelopment at the former Navy Lodge property (the 3-acre Navy-owned parcel only) would be as described under Alternative 1 but with the following modifications. Under Alternative 1, the two retail buildings are single story, and under Alternative 2, the two retail buildings would be two stories. Under both alternatives, the retail buildings would have the same footprint (0.70 acres) (see Figure 2-5); however, under Alternative 2, the retail buildings would have a total of 61,000 square feet of retail space compared with 30,500 square feet of retail space under Alternative 1. To accommodate the increase in retail space, additional parking space is proposed under Alternative 2. A total of 1.4 acres of parking/access would be developed under Alternative 2, resulting in redevelopment of a total of approximately 2.1 acres, or 70 percent, of the overall site. No demolition would occur before redevelopment, and access would be from Coddington Highway, similar to Alternative 1. The transfer of and retention of easements on the former Navy Lodge property, as discussed above under Alternative 1, would also occur under Alternative 2. Access would also be as discussed above under Alternative 1.

Former Naval Hospital Property. Redevelopment of the former Naval Hospital property would be as described under Alternative 1 but with the following modifications. The residential use proposed under Alternative 1 would be replaced by commercial use, and a conference center would be added to the proposed hotel. The commercial use would have the same footprint as the residential use under Alternative 1 (0.6 acres). The 0.2-acre conference center would be developed behind the hotel, along Third Street (see Figure 2-6). Under Alternative 2, the shore-based boat storage facility and two concrete floating docks associated with the waterfront park would be developed as described for Alternative 1. However, under Alternative 2, an additional concrete floating dock measuring approximately 8 feet wide by 70 feet long would be constructed at the end of the existing pier with concrete mooring piles (assumed here to be the same as described under Alternative 1). A yacht club/office would also be constructed next to the boat storage facility within the footprint of the former chapel.

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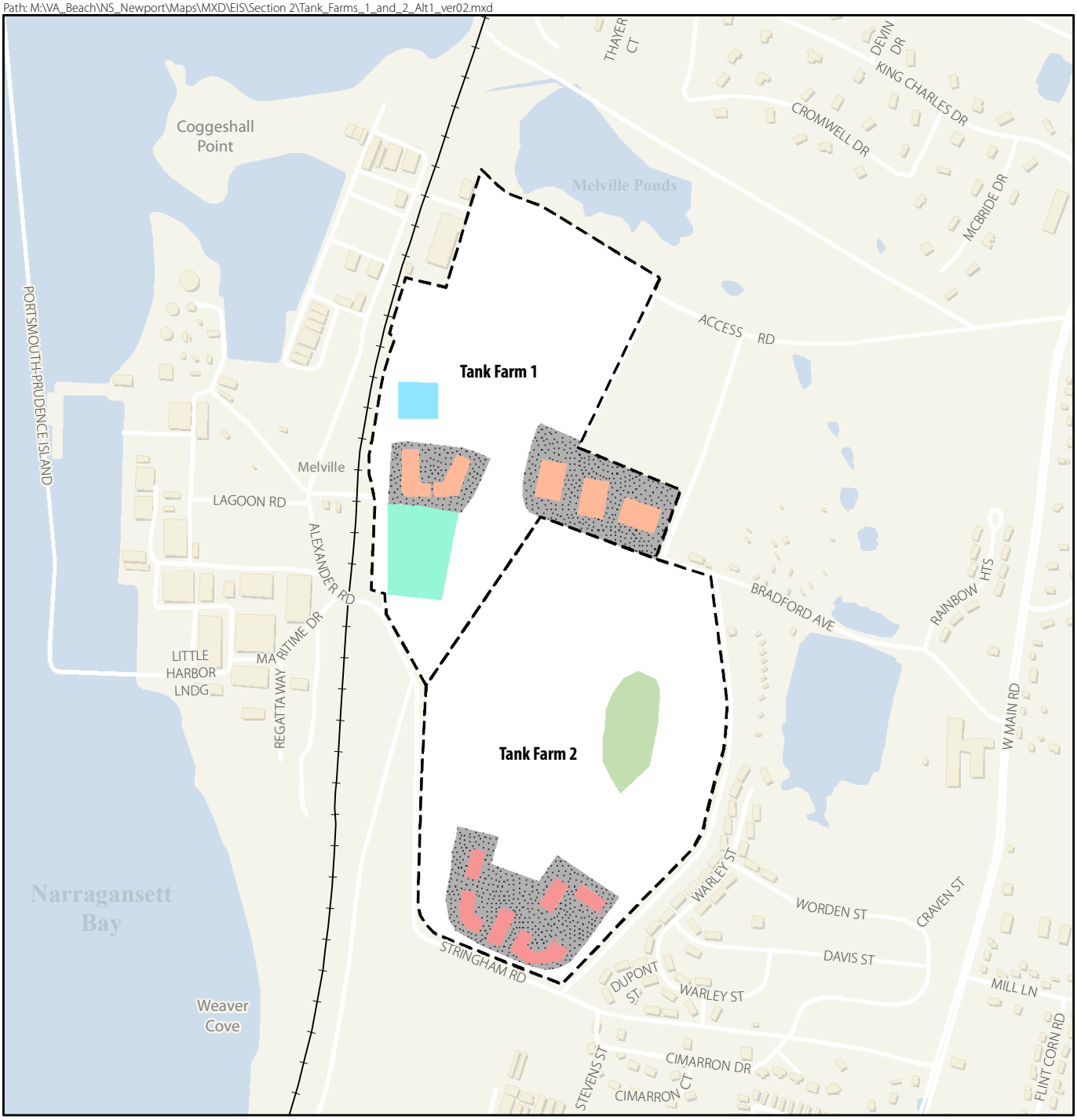

SCALE

0 300 600 Feet

Legend

Rail Road

Property Boundary

Proposed Land Use

Light Industrial

Light Industrial/Boat Storage

Multi Modal Parking

Office Space

Parking/Access

Potential Solar Array

Figure 2-3

Tank Farm 1 and 2 Properties

Alternative 1 – Preferred Redevelopment

NAVSTA Newport, Rhode Island

SOURCE: RKG Associates et al. 2011

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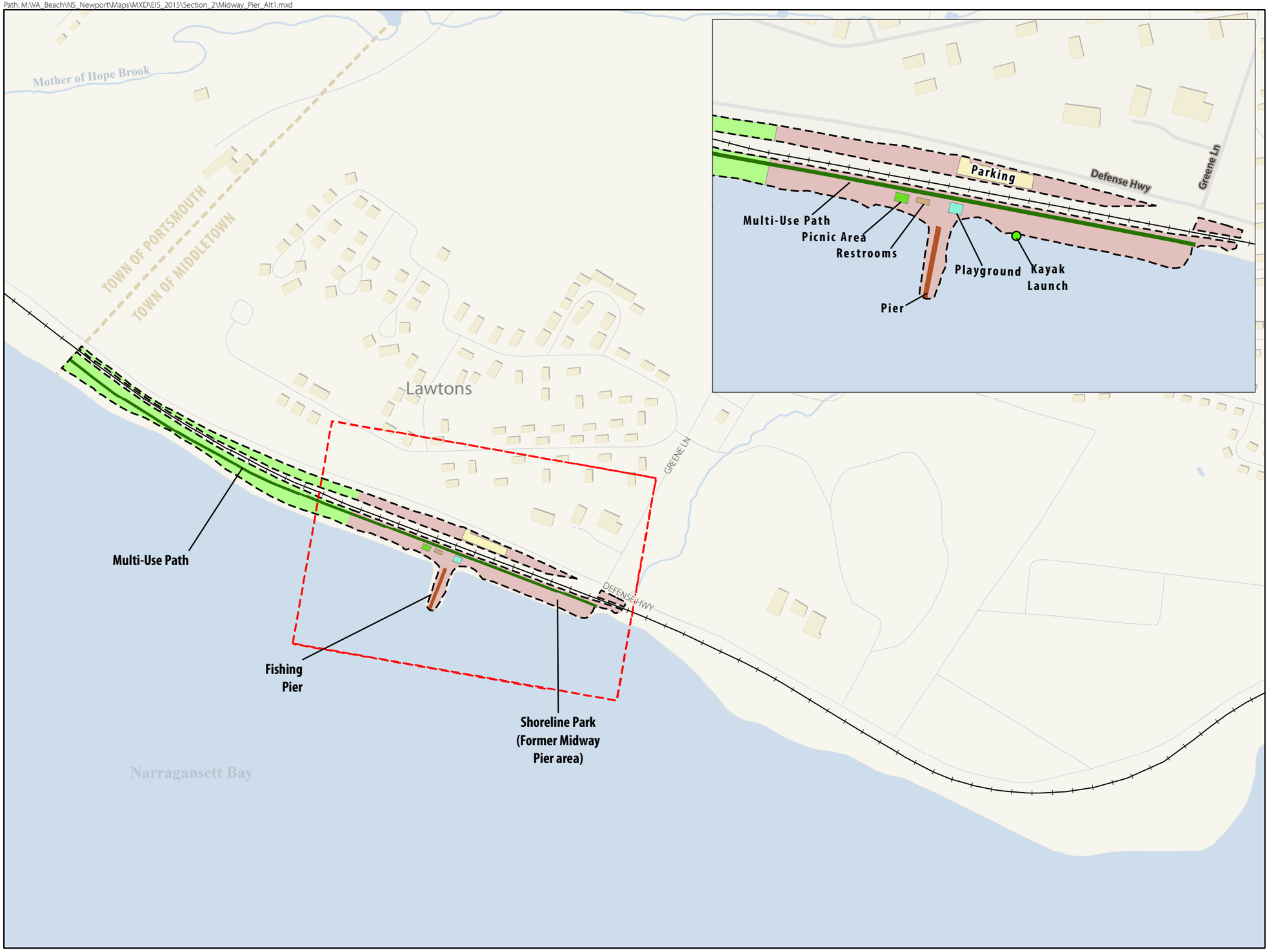

Figure 2-4
Midway Pier/Greene Lane Property Alternative 1
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Waterbody
- Property Boundary

Proposed Land Use

- Open Space
- Multi-Use Path
- Shoreline Park

SCALE

0 0.1 0.2 Miles

SOURCE: RKG Associates et al. 2011

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Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Section 2\Former_Navy_Lodge_Alt2_ver02.mxd

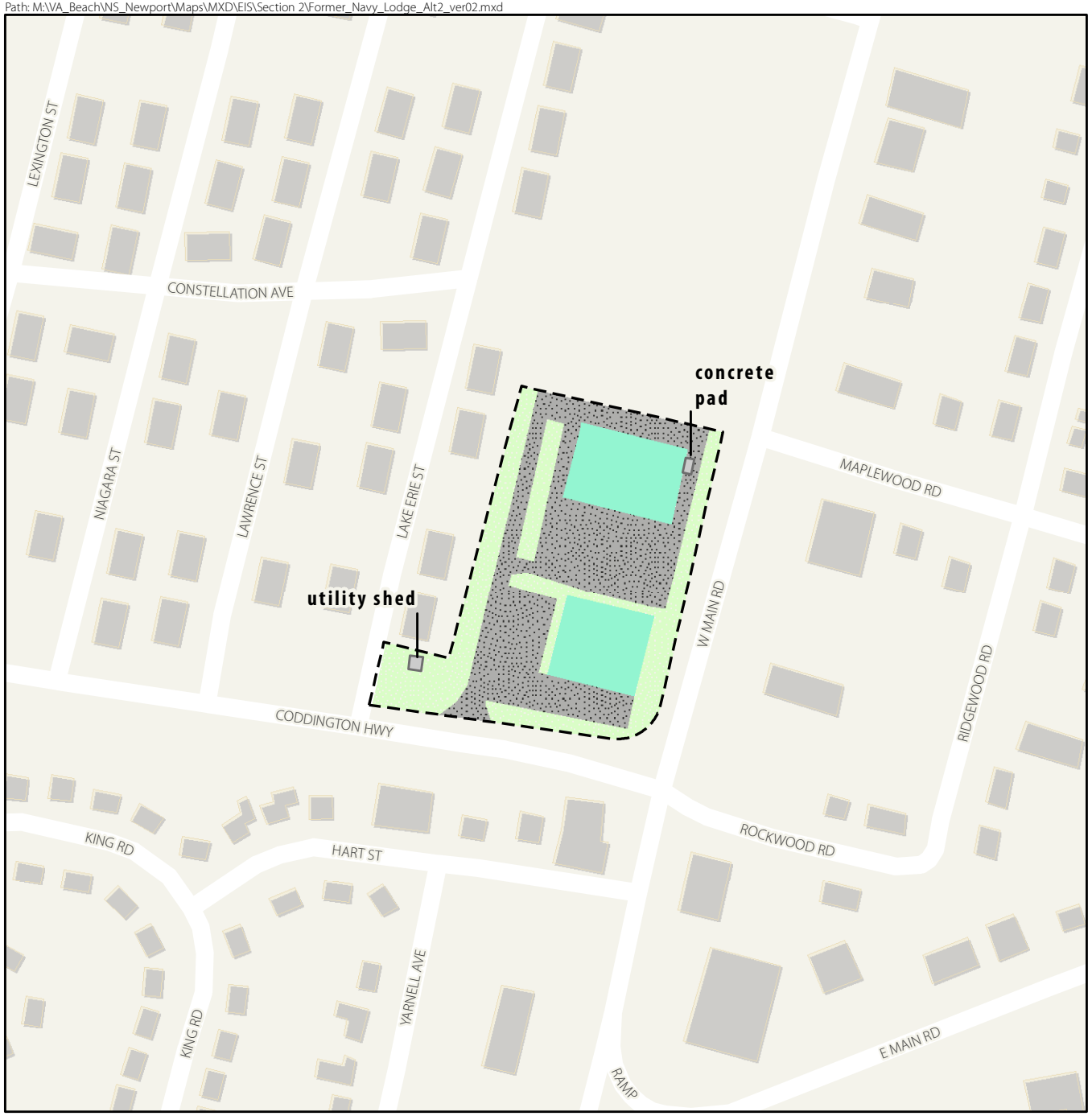

Figure 2-5

Former Navy Lodge Property

Alternative 2 – High Density Redevelopment

NAVSTA Newport, Rhode Island

Legend

- Property Boundary
- Structure

Proposed Land Use

- Open Space
- Parking/Access
- Retail

SCALE

0 150 300 Feet

SOURCE: RKG Associates et al. 2011

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Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Section 2\Former_Naval_Hospital_Alt_2_ver02.mxd

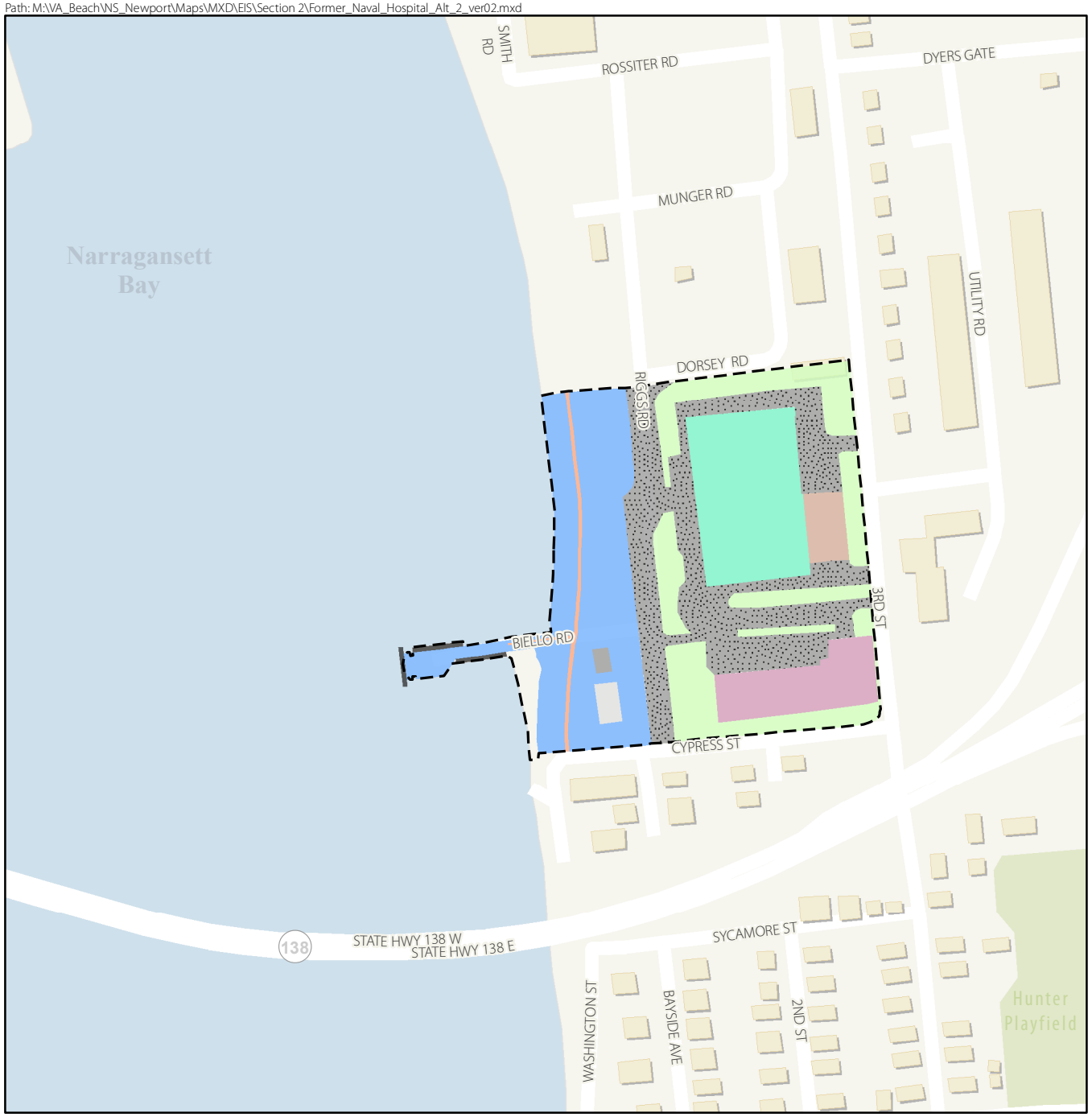

Figure 2-6

Former Naval Hospital Property

Alternative 2 – High Density Redevelopment

NAVSTA Newport, Rhode Island

Legend

- Property Boundary

Proposed Land Use

- Boat Storage Facility
- Commercial
- Conference Center
- Yacht Club/Office
- Floating Dock
- Hotel/Retail/Restaurant
- Open Space
- Parking/Access
- Path
- Waterfront Park

N

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: RKG Associates et al. 2011

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In-water construction activities would involve the use of pile-driving equipment and various construction vessels, as described above under Alternative 1.

At 4.8 acres (58 percent), the development footprint is slightly larger than under Alternative 1. The intensity of use also is higher under Alternative 2.

Lastly, similar to Alternative 1, the current buildings would be demolished to facilitate redevelopment of the site. Access to the redeveloped property would be via Third Street, with the potential use of Cypress Street.

Tank Farms 1 and 2. Under Alternative 2, Tank Farms 1 and 2 would be redeveloped with the same mix of uses as under Alternative 1. However, under Alternative 2, the amount of office space would increase by 25 percent, from 110,000 square feet (approximately 2.5 acres) to 137,600 square feet (approximately 3.2 acres), and light industrial uses along the rail line would increase by 25 percent, from 55,000 square feet (approximately 1.3 acres) under Alternative 1, to 68,750 square feet (approximately 1.6 acres) for a total of 205,000 square feet (see Figure 2-7). The other two areas of industrial development are the same as described under Alternative 1: 2.1 acres of light industrial off of Bradford Avenue and 1.0 acre of boat storage, totaling 4.7 acres of industrial uses under Alternative 2. Parking/access would be increased to approximately 22.5 acres; that acreage, coupled with the office, industrial, solar array, and boat storage uses, would total 34 acres, or 25 percent of the overall site under Alternative 2. Lastly, similar to Alternative 1, the USTs and associated piping would be demolished at Tank Farm 1 before transfer and redevelopment through a separate and unrelated project. However, specific to Tank Farm 2, due to the preliminary nature of the proposed removal project, for the purposes of analysis in the EIS, the USTs and underground piping have been assumed to remain in place

Midway Pier/Greene Lane. Similar to Alternative 1, Alternative 2 includes the same multi-use pathway in a greenbelt on the opposite side of the railroad tracks, next to the water. Alternative 2 would include greater expansion of the former Midway Pier, including two areas of cut-and-fill for parking totaling 0.6 acres in addition to the recreation/open space use that is proposed and the shoreline park described under Alternative 1 (see Figure 2-8). Under Alternative 2, the playground would be increased to 0.1 acre and an expanded pier footprint would allow approximately 0.1 acre for use as a public pier. In addition to the rebuilt pier discussed under Alternative 1, Alternative 2 would include a floating concrete pier at the end of the pier (in a T-formation), which would be 8 feet wide and 50 feet long. Approximately 0.9 acres would be redeveloped at the shoreline park under Alternative 2, including parking, restrooms, playground, picnic area, and the pier.

In-water activities would be the same as those described for the shoreline park under Alternative 1.

With the exception of the demolition/removal of the existing pier, no further demolition activities would occur at this property under Alternative 2.

2.3.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. No reuse or redevelopment would occur on any part of the property. Navy environmental restoration activities at Tank Farms 1 and 2 would continue. Facilities would be maintained in accordance with the *BRAC Program Management Office (PMO) Building Vacating, Facility Layaway, and Caretaker Maintenance Guidance* (March 2007). In accordance with the *BRAC PMO Building, Vacating, Facility Layaway and Caretaker Maintenance Guidance*, only conditions adversely affecting public health, the environment, and safety would be corrected in non-residential areas.

The Navy would continue to incur costs to maintain these facilities, which no longer support the mission of NAVSTA Newport.

The No Action alternative, if implemented, would not satisfy the purpose of or need for action and would not provide the local community with an opportunity for economic development or tax generation. Although the No Action alternative would not meet the purpose of or need for the proposed action, it is evaluated as required by CEQ regulations (40 CFR Section 1502.14(d)) implementing NEPA. For the purposes of this EIS, the No Action alternative provides an environmental baseline against which the environmental consequences of the other alternatives can be measured.

2.3 Alternatives Considered and Not Further Evaluated

Alternatives that were considered but excluded from further analysis included reusing the property in a single land use rather than mixed use, such as only open space, residential, or industrial. These alternatives did not meet the goals of the AIRPA and were not considered reasonably foreseeable reuses of the property. Additionally, an alternative that would consider the disposal and redevelopment of each site in multiple phases was not considered due to the small size of the surplus properties.

2.4 Comparison of Alternatives

Table 2-1 provides a comparison of land uses upon full build-out for the surplus property proposed under Alternatives 1 and 2 and analyzed in the EIS.

Table 2-2 provides a summary comparison by land use of all surplus properties at build-out.

Table 2-3 provides a summary comparison of the total impacts of all surplus properties. The No Action alternative is considered the environmentally preferred alternative, as it results in the least amount of impacts on the environment. However, the No Action alternative does not meet the purpose and need of the proposed action. Alternative 1 does meet the purpose and need of the proposed action and is consistent with the Redevelopment Plan, and is therefore the preferred alternative.

Table 2-4 provides a comparison of the impacts, by property, of the two action alternatives and the No Action alternative.

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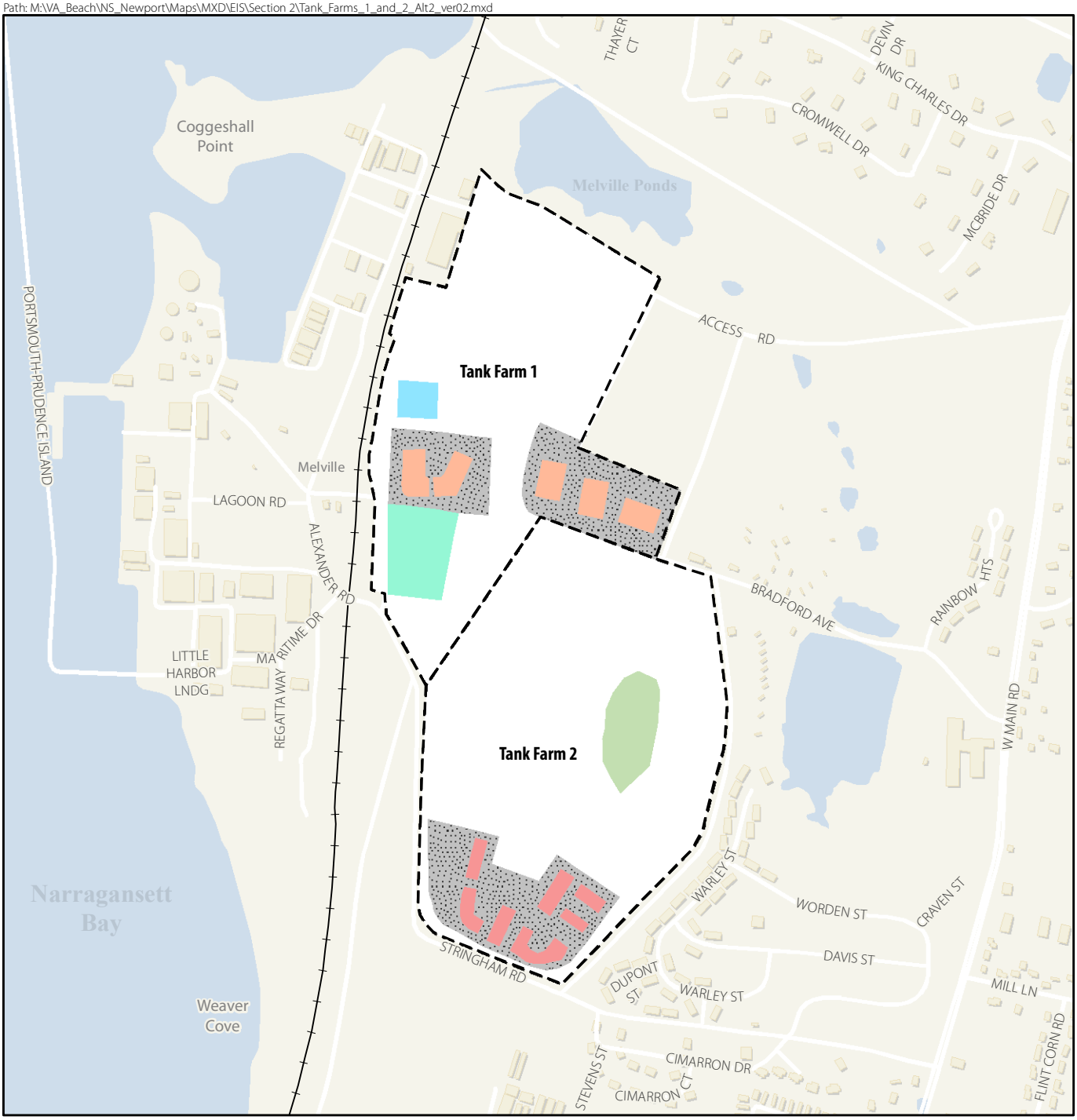

SCALE

0 300 600 Feet

Legend

Rail Road

Property Boundary

Proposed Land Use

- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Driveway/Parking Area
- Potential Solar Array

Figure 2-7

Tank Farm 1 and 2 Properties

Alternative 2 – High Density Redevelopment

NAVSTA Newport, Rhode Island

SOURCE: RKG Associates et al. 2011

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Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS_2015\Section_2\Midway_Pier_Alt2.mxd

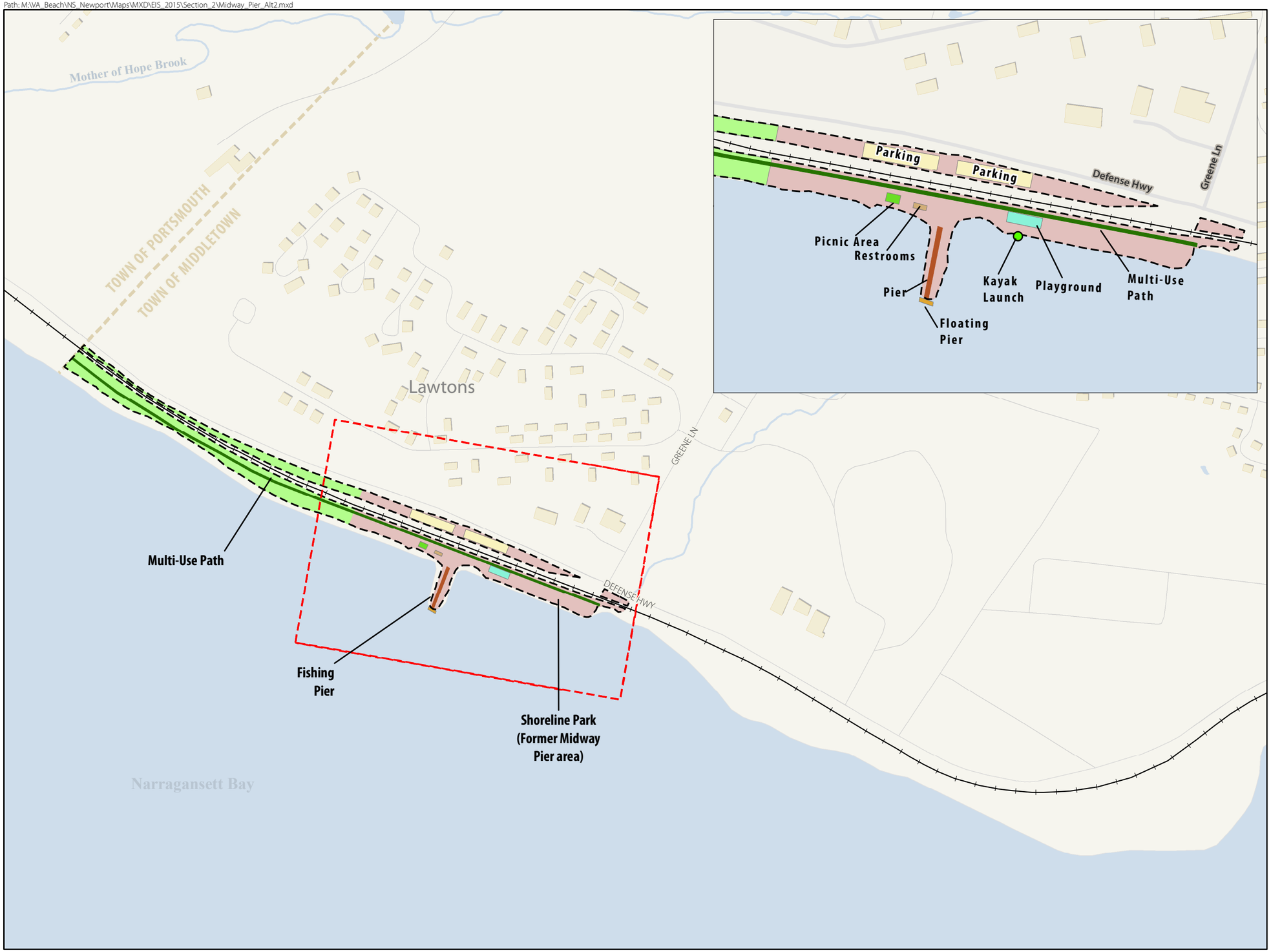

Figure 2-8
Midway Pier/Greene Lane Property
Alternative 2
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Waterbody
- Property Boundary

Proposed Land Use

- Open Space
- Multi-Use Path
- Shoreline Park

SCALE

0 0.1 0.2 Miles

SOURCE: RKG Associates et al. 2011

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Table 2-1 Summary Comparison of Action Alternatives

Land Use Upon Full Build-Out[1]	Alternative 1 Preferred Alternative		Alternative 2 High-Density Redevelopment	
Former Navy Lodge				
Retail	0.7 acres	30,500 square feet	0.7 acres	61,000 square feet
Open Space	1.2 acres	52,300 square feet	0.9 acres	39,200 square feet
Parking	0.8 acres	34,800 square feet 145 spaces	1.1 acres	47,900 square feet 185 spaces
Access	0.3 acres	13,100 square feet	0.3 acres	13,100 square feet
Former Naval Hospital				
Hotel	1.3 acres	169,800 square feet 120[2] rooms	1.3 acres	169,800 square feet 120[3] rooms
Restaurant	28,300 square feet		28,300 square feet	
Retail	28,300 square feet		28,300 square feet	
Residential	0.6 acres	78,100 square feet 36[4] units	--	
Commercial	--		0.6 acres	26,000 square feet
Conference Center	--		0.2 acres	8,500 square feet
Open Space	1.8 acres	79,300 square feet	1.6 acres	69,700 square feet
Waterfront Park (acres) includes path, pier, boat storage facility, and floating dock, and open space	2.4 acres	102,780 square feet	2.6 acres	113,680 square feet
Parking	0.9 acres	40,350 square feet 161 spaces	1.2 acres	52,270 square feet 204 spaces
Access	1.3 acres	56,600 square feet	1.1 acres	47,900 square feet
Tank Farms 1 and 2				
Light Industrial[5]	4.4 acres	190,000 square feet	4.7 acres	205,000 square feet
Office[5]	2.5 acres	110,000 square feet	3.2 acres	137,600 square feet
Solar Array[5]	3.6 acres	155,000 square feet	3.6 acres	155,000 square feet
Parking	18.4 acres	2,900 spaces	20 acres	3,196 spaces
Open Space	104.9 acres	4,569,444 square feet	102 acres	4,443,120 square feet
Access	2.2 acres	95,800 square feet	2.5 acres	110,000 square feet

Table 2-1 Summary Comparison of Action Alternatives

Land Use Upon Full Build-Out[1]	Alternative 1 Preferred Alternative		Alternative 2 High-Density Redevelopment	
Midway Pier/Greene Lane				
Open Space	4.6 acres	200,380 square feet	4.6 acres	200,380 square feet
Parking	0.3 acres	52 spaces	0.6 acres	107 spaces
Multi-Use Pathway	0.9 acres	39,200 square feet	0.9 acres	39,200 square feet
Shoreline Park (includes pier)	5.6 acres	243,940 square feet	5.6 acres	243,940 square feet

Notes:

[1] Land use upon build-out is approximate and is estimated based on property boundaries that have been developed using existing documents and figures as reference and may conflict with the acreages indicated for property transfer. Prior to property transfer a survey grade property boundary will be prepared.

[2] Total area for the hotel under Alternative 1 is 169,800 square feet based on a total of three stories with 56,600 square feet at ground level. Two stories would be hotel rooms. The first floor would be divided into retail and restaurant uses.

[3] Total area for the hotel under Alternative 2 is the same as under Alternative 1.

[4] Total area for residential use is 78,100 square feet based on three stories, with 26,000 square feet at ground level, and 12 two-bedroom units on each floor (approximately 2,100 square feet each).

[5] These areas do not represent a direct conversion from the acreage because they represent specific areas noted in the Redevelopment Plan; acreages were derived from geographic information system (GIS) digitizing the features from the Redevelopment Plan.

*All area square footage has been rounded.

Table 2-2 Roll-Up Summary of Land Uses upon Full Build-Out for All Surplus Properties

Land Use Upon Full Build-Out[1]	Alternative 1 Preferred Alternative	Alternative 2 High-Density Redevelopment
Commercial/ Retail Space (square feet)[2]	197,100	289,700
Industrial (square feet)[3]	345,000	360,000
Residential (number of units)[4]	36	0
Open Space/ Recreation (acres)[5]	129.9	125.6
Parking/Access (acres)[6]	24.2	26.8
Hotel (number of rooms)[7]	120	120

Notes:

[1] Land use upon build-out is approximate and is estimated based on property boundaries that have been developed using existing documents and figures as reference and may conflict with the acreages indicated for property transfer. Before property transfer a survey grade property boundary will be prepared.

[2] The summary of commercial and retail space includes the following land uses from the surplus properties: retail, commercial, restaurant, conference center, and office space land uses.

[3] The summary of industrial land use includes the following proposed land uses from the Tank Farms: solar array and light industrial. These areas are not a direct conversion from acreage numbers because they represent specific areas noted in the Redevelopment Plan.

[4] The summary for residential land uses includes the proposed residential uses at the former Naval Hospital property. The area for residential use is 78,100 square feet based on three stories, with 26,000 square feet at ground level and 12 two-bedroom units on each floor (approximately 2,100 square feet each).

[5] The summary for open space/recreation includes the following land uses from the surplus properties: open space, waterfront park, multi-use pathway, and shoreline park.

[6] The summary of parking/access land use includes the following land uses from the surplus properties: parking, access, and existing roads within surplus properties.

[7] The summary of hotel land use includes hotel redevelopment at the former Naval Hospital property; the number of rooms would be the same under Alternative 1 and Alternative 2.

*All square footage has been rounded.

Table 2-3 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Land Use, Zoning, and Coastal Resources			
Land Use	Minor to moderate impact. Redevelopment of 48.1 acres of unused land.	Minor to moderate impact. Redevelopment of 51.6 acres of unused land.	No impact.
Consistency with Local Planning	Primarily consistent with local planning for Navy Lodge, Tank Farms 1 and 2, and Midway Pier/Greene Lane properties. Redevelopment of Former Naval Hospital is not fully consistent with local planning. Some zoning variances would be required by the developer.	Primarily consistent with local planning for Navy Lodge, Tank Farms 1 and 2, and Midway Pier/Greene Lane properties. Redevelopment of Former Naval Hospital is not fully consistent with local planning. Some zoning variances would be required.	Not consistent with local planning. Consistent with existing city zoning since the property remains under Navy ownership.
Coastal Resources	Reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to comply with Coastal Resources Management Council (CRMC) permit and Aquidneck Island Special Area Management Plan (SAMP) development standards. Not reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Navy Lodge or Tank Farms 1and 2).	Reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to comply with CRMC permit and Aquidneck Island SAMP development standards. Not reasonably likely to affect uses or natural resources of Rhode Island's coastal zone (Navy Lodge or Tank Farms 1 and 2).	No impact.
Socioeconomics and Environmental Justice			
Economy, Employment, and Income	Beneficial impact. $73 million in total construction expenditures, 637 short-term jobs. 827 direct and 252 indirect/induced long-term jobs would be created.	Beneficial impact. $88 million in total construction expenditures with 741 short-term jobs. 1,072 direct and 316 indirect/induced long-term jobs would be created.	No impact.
Population	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. Increased employment opportunities and some residential housing may slightly increase population. No population change is anticipated for redevelopment at Midway Pier/Greene Lane.	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. Increased employment opportunities may slightly increase population. No population change is anticipated for redevelopment at Midway Pier/Greene Lane.	No impact.
Housing and Commercial Property	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. Minimal increase of 36 residential units. Increase in commercial space. No impact on housing or commercial property due to redevelopment at Midway Pier/Greene Lane.	Minor impact due to redevelopment of all properties except Midway Pier/Greene Lane. No residential land use is proposed. Increase in commercial space. No impact on housing or commercial property due to redevelopment at Midway Pier/Greene Lane.	No impact.
Taxes and Revenue	Beneficial impact due to redevelopment of all properties except Midway Pier/Greene Lane. Estimated annual property tax from redevelopment: $334,000 in Middletown; $412,000 in Newport; and $421,000 in Portsmouth. Taxes and revenues would not be impacted due to redevelopment at Midway Pier/Greene Lane which would be non-taxable public land.	Beneficial impact due to redevelopment of all properties except Midway Pier/Greene Lane. Estimated annual property tax from redevelopment: $668,000 in Middletown; $260,000 in Newport; and $494,000 in Portsmouth. Taxes and revenues would not be impacted due to redevelopment at Midway Pier/Greene Lane which would be non-taxable public land.	No impact.
Environmental Justice	No disproportionately high or adverse human health or environmental effects on minority, Hispanic/Latino or low-income populations would occur .	No disproportionately high or adverse human health or environmental effects on minority, Hispanic/Latino or low-income populations would occur.	No disproportionately high or adverse human health or environmental effect.

Table 2-3 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Community Facilities and Services			
Community Facilities and Services	No increase to a minor increase in demand for community facilities and services (to be offset by increased property tax revenue). Positive impact by creation of waterfront park (Former Naval Hospital, Midway Pier/Greene Lane).	No increase to a minor increase in demand for community facilities and services (to be offset by increased property tax revenue). Positive impact by creation of waterfront park (Former Naval Hospital, Midway Pier/Greene Lane).	No impact.
Transportation			
Traffic Volume and Level of Service	Significant and unavoidable increase in traffic associated with redevelopment of the Navy Lodge, the Former Naval Hospital and Tank Farms 1 and 2, primarily due to annual growth in population and traffic over 20-year build out period unrelated to proposed action. Projected 5,319 daily trips associated with the proposed redevelopment would be added to existing transportation network. The developer/local municipalities would be responsible for roadway improvements. Traffic volume increase at Midway Pier/Greene Lane property would be minor.	Significant and unavoidable increase in traffic associated with redevelopment of the Navy Lodge, the Former Naval Hospital and Tank Farms 1 and 2 primarily due to annual growth in population and traffic over 20-year build out period unrelated to proposed action. Projected 7,346 daily trips associated with the proposed redevelopment would be added to existing transportation network. The developer/local municipalities would be responsible for roadway improvements. Traffic volume increase at Midway Pier/Greene Lane property would be minor.	Significant and unavoidable increase in traffic due to background growth. Reduced maintenance may affect conditions of roadways.
Environmental Management			
Hazardous Waste and Materials	Minor impact. Hazardous waste/materials during construction and operation/maintenance would be managed by the developer and occupants in accordance with local, state and federal requirements.	Minor impact. Hazardous waste/materials during construction and operation/maintenance would be managed by the developer and occupants in accordance with local, state and federal requirements.	Minor long-term impact from presence of ACM, LBP, and lead-containing soil.
Environmental Restoration Program	No impact. Remediation under RIDEM/CERCLA will be completed prior to property transfer (Tank Farms 1 and 2). Land use controls may be warranted.	No impact. Remediation under RIDEM/CERCLA will be completed prior to property transfer (Tank Farms 1 and 2). Land use controls may be warranted.	No impact.
Air Quality			
Construction/ Operational Emissions	Minor impact. Air emissions would result from construction activities, building use, and vehicle use.	Minor impacts and mitigation would further reduce impacts.	No impact.
Greenhouse Gas (GHG) Emissions	Minor impact. Total GHG emissions would be 14,716 metric tons of carbon dioxide equivalents. Change in GHG emissions would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis.	Minor impact. Total GHG emissions would be 19,833 metric tons of carbon dioxide equivalents. Change in GHG emissions would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis.	No impact.
Noise			
Construction Noise	Minor impact. Noise from construction activities, which would occur during daytime hours only in accordance with local ordinances.	Minor impact. Noise from construction activities, which would occur during daytime hours only in accordance with local ordinances.	No impact.
Operational and Traffic Noise	Minor impact. Largest estimated increase in noise due to traffic would be 6.4 dB; this increase translates to a sound level of 49.5 dBA.	Minor impact. Largest estimated increase in noise due to traffic would be 5.1 dB; this increase translates to a sound level of 48.2 dBA.	Minor impact from background growth.

Table 2-3 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Infrastructure and Utilities			
Water Demand	Negligible to minor impact on water treatment capacity and moderate impact on distribution system. Estimated demand of 47,236 gpd is within projected capacity of Newport Water Division's treatment plants in 2033, which would supply all sites. The developer would be responsible for new distribution systems for redevelopment sites.	Negligible to minor impact on water treatment capacity and moderate impact on distribution system. Estimated demand of 53,355 gpd is within projected capacity of Newport Water Division's treatment plants in 2033, which would supply all sites. The developer would be responsible for new distribution systems for redevelopment sites.	No impact.
Wastewater	Negligible to minor impact on capacity of City of Newport's treatment system (Former Navy Lodge, Former Naval Hospital, Midway Pier/Greene Lane properties). Potentially significant impact (Tank Farms 1 and 2); Portsmouth currently has no wastewater treatment infrastructure. The developer would be responsible for new collection systems for redevelopment sites.	Negligible to minor impact on capacity of City of Newport's treatment system (Former Navy Lodge, Former Naval Hospital, Midway Pier/Greene Lane properties). Potentially significant impact (Tank Farms 1 and 2); Portsmouth currently has no wastewater treatment infrastructure. The developer would be responsible for new collection systems for redevelopment sites.	No impact.
Storm Water	Minor to potentially significant impact. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	Minor to potentially significant impact. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	No impact.
Other Utility Systems	Negligible impact. The developer would be required to obtain new electric and gas connections/infrastructure.	Negligible impact. The developer would be required to obtain new electric and gas connections/infrastructure.	No impact.
Solid Waste	Minor to moderate short-term impact; minor long-term impact. Estimated 67,870 cubic yards of construction and demolition wastes.	Minor to moderate short-term impact; minor long-term impact. Estimated 68,140 cubic yards of construction and demolition wastes.	No impact.
Cultural Resources			
Archaeological Resources	No direct impacts. Significant, negative, indirect impacts on NRHP-eligible 18th century shipwreck underwater archaeological site outside APE could potentially occur (Former Naval Hospital). No direct or indirect impact at other properties.	No direct impacts. Significant, negative, indirect impacts on NRHP-eligible 18th century shipwreck underwater archaeological site outside APE could potentially occur (Former Naval Hospital). No direct or indirect impact at other properties.	No impact.
Architectural Resources	Significant, negative, indirect, and direct impacts on NRHP-eligible architectural resources would potentially occur (Former Naval Hospital and Tank Farms 1 and 2). No direct or indirect impact at other properties.	Significant, negative, indirect, and direct impacts on NRHP-eligible architectural resources would potentially occur (Former Naval Hospital and Tank Farms 1 and 2). No direct or indirect impact at other properties.	Significant, negative direct impacts on NRHP-eligible architectural resources would potentially occur (Former Naval Hospital).
Native American Resources	Consultation to determine potential impacts is ongoing.	Consultation to determine potential impacts is ongoing.	Consultation to determine potential impacts is ongoing.
Historic Properties	Adverse effects on historic properties that will be mitigated. Potential adverse effects on the NRHP-eligible Naval Hospital Historic District from disposal and demolition (Former Naval Hospital). Potential adverse effects on the NRHP-eligible Melville Naval Historic District (Tank Farms 1 and 2). No direct or indirect effects at other properties.	Adverse effects on historic properties that will be mitigated. Potential adverse effects on the NRHP-eligible Naval Hospital Historic District from disposal and demolition (Former Naval Hospital). Potential adverse effects on the NRHP-eligible Melville Naval Historic District (Tank Farms 1 and 2). No direct or indirect effects at other properties.	Adverse effects on historic properties that will be mitigated. Potential adverse effects on the NRHP-eligible Naval Hospital Historic District resulting from neglect in a manner that causes their deterioration.

Table 2-3 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Topography, Geology, and Soils			
Topography, Geology and Soils	Minor impact on topography and soils. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. No impact on geology.	Minor impact on topography and soils. The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. No impact on geology.	No impact.
Bathymetry and Marine Sediment	Minor impact (Former Naval Hospital and Midway Pier/Greene Lane).	Minor impact (Former Naval Hospital and Midway Pier/Greene Lane).	No impact.
Water Resources			
Surface Water and Water Quality	Minor impact. Short-term sedimentation and turbidity in Narragansett Bay during pile driving for piers (Former Naval Hospital, Midway Pier/Greene Lane properties). Stormwater runoff during construction and associated with increase in impervious surfaces (38.6 acres). The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	Minor impact. Minor impact. Short-term sedimentation and turbidity in Narragansett Bay during pile driving for piers (Former Naval Hospital, Midway Pier/Greene Lane properties). Stormwater runoff during construction and associated with increase in impervious surfaces (42.6 acres). The developer will implement erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	No impact.
Groundwater	Minor impact. The developer would use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	Minor impact. The developer would use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	No impact.
Floodplains	Moderate impact. 1.8 acres of 100-year floodplain would be permanently affected (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to minimize or offset impacts from redevelopment. No impact at other properties.	Moderate impact. 1.8 acres of 100-year floodplain would be permanently affected (Former Naval Hospital, Midway Pier/Greene Lane properties). The developer would be required to minimize or offset impacts from redevelopment. No impact at other properties.	No impact.
Wetlands	Minor impact. 0.12 acres of permanent impact and 0.4 acres of direct impact on perimeter wetlands (Former Naval Hospital, Tank Farms 1 and 2). The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. No impact at other properties.	Minor impact. 0.14 acres of permanent impact and 0.5 acres of direct impact on perimeter wetlands (Former Naval Hospital, Tank Farms 1 and 2 and Midway Pier/Greene Lane). The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. No impact at other properties.	No impact.

Table 2-3 Summary of Environmental Consequences for All Sites

Resource	Alternative 1	Alternative 2	No Action Alternative
Biological Resources			
Vegetation	Minor to moderate impact. Proposed developments would be primarily located in previously developed areas. Permanent conversion of 2.7 acres mixed oak/white pine; 14.5 acres ruderal forest; and 11.3 acres old field and grassed areas.	Minor to moderate impact. Proposed developments would be primarily located in previously developed areas. Permanent conversion of 2.7 acres mixed oak/white pine; 16.4 acres ruderal forest; and 11.5 acres old field and grassed areas.	No impact.
Wildlife	Minor impact. Fish and marine mammals could be exposed to noise during pile driving for pier construction (Former Naval Hospital, Midway Pier/Greene Lane properties). Measures to reduce impacts would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	Minor impact. Fish and marine mammals could be exposed to noise during pile driving for pier construction (Former Naval Hospital, Midway Pier/Greene Lane properties). Measures to reduce impacts would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	No impact.
Threatened and Endangered Species	May affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, green sea turtle (Former Naval Hospital and Midway Pier/Greene Lane), and northern long-eared bat (Former Naval Hospital, Tank Farms 1 and 2 and Midway Pier/Greene Lane). No effect at other properties.	May affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, green sea turtle (Former Naval Hospital and Midway Pier/Greene Lane), and northern long-eared bat (Former Naval Hospital, Tank Farms 1 and 2 and Midway Pier/Greene Lane). No effect at other properties.	No effect.
Significant Wildlife Habitat	The Navy determined that no adverse effects on designated essential fish habitat (EFH) in Narragansett Bay would occur. The National Marine Fisheries Service (NMFS) will review the proposed action upon completion of the project design through the state and federal permitting processes of the CRMC/SAMP, and Section 404 of the CWA. No impact at other properties that do not contain significant wildlife habitat.	The Navy determined that no adverse effects on designated EFH in Narragansett Bay would occur (Former Naval Hospital and Midway Pier/Greene Lane). The NMFS will review the proposed action upon completion of the project design through the state and federal permitting processes of the CRMC/SAMP, and Section 404 of the CWA. No impact at other properties that do not contain significant wildlife habitat.	No impact.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 1.8 acres would occur. • Moderate impact on on-site land use associated with change from undeveloped open space to retail uses. • No direct impact on surrounding land uses. • Moderate indirect impacts on adjacent residential land due to increased traffic; moderate indirect impact on other surrounding land uses due to potential to contribute to and influence other commercial redevelopment in the area. • Proposed retail would be consistent with nearby commercial uses. • The Town of Middletown would be responsible for implementing transportation improvements associated with the development of the larger 14-acre property, as outlined in the *West Main/Coddington Development Center Master Plan.*	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 2.1 acres would occur. • Moderate impact on on-site land use associated with change from undeveloped open space to retail uses. • No direct impact on surrounding land uses. • Moderate indirect impacts on adjacent residential land due to increased traffic; moderate indirect impact on other surrounding land uses due to potential to contribute to and influence other commercial redevelopment in the area. • Proposed retail would be consistent with nearby commercial uses. • The Town of Middletown would be responsible for implementing transportation improvements associated with the development of the larger 14-acre property, as outlined in the *West Main/Coddington Development Center Master Plan.*	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore, no impact on on-site or surrounding land uses.
	Consistency with Local Planning/Zoning: ***Primarily consistent with local planning/zoning.*** • Consistent with *West Main/Coddington Development Center Master Plan*, *Comprehensive Community Plan*, and *Aquidneck Island West Side Master Plan*. • Consistent with existing zoning if redevelopment remains in public ownership; proposed use is also consistent with watershed protection district, Zone 2. • Town of Middletown proposes to implement proposed Coddington Center Overlay District to facilitate implementation.	**Consistency with Local Planning/Zoning:** ***Primarily consistent with local planning/zoning.*** • Consistent with *West Main/Coddington Development Center Master Plan*, *Comprehensive Community Plan*, and *Aquidneck Island West Side Master Plan*. • Consistent with existing zoning if redevelopment remains in public ownership; proposed use is also consistent with watershed protection district, Zone 2. • Town of Middletown proposes to implement proposed Coddington Center Overlay District to facilitate implementation.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with local zoning.*** • Not consistent with *West Main/Coddington Development Center Master Plan*, *Comprehensive Community Plan*, or *Aquidneck Island West Side Master Plan*, which recommend development of the site. • Consistent with existing town zoning.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Coastal Resources: ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Navy Lodge for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island Coastal Resources Management Program (CRMP) and the Aquidneck Island Special Area Management Plan (SAMP). • The Rhode Island Coastal Resources Management Council (CRMC) concurred with the Navy's determination. • The developer would be required to comply with the Aquidneck Island SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Navy Lodge for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the Aquidneck Island SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable at this site as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***No impact.*** • No development would occur; therefore, no uses or natural resources of the coastal zone would be affected.
Socioeconomics and Environmental Justice	**Economy, Employment, and Income:** ***Beneficial impact.*** • $8.5 million in total construction expenditures would have a beneficial impact on the economy. • 72 direct, indirect, and induced jobs would be created during construction. • 46 direct and 13 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***Beneficial impact.*** • $17 million in total construction expenditures would have a beneficial impact on the economy. • 143 direct, indirect, and induced jobs would be created during construction. • 91 direct and 26 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***No impact.*** • No new economic activity would be generated, and no increased employment opportunities would occur.
	Population: ***Minor impact***. • Increased employment opportunities may potentially result in a slight increase in regional population.	**Population:** ***Minor impact***. • Increased employment opportunities may potentially result in a slight increase in regional population.	**Population:** ***No impact.*** • Regional population would not change as a result of development because no development would occur.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Housing and Commercial Property: ***Minor impact.*** • No increase in residential housing in the Town of Middletown; no significant impact on housing prices or availability. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property:** ***Minor impact.*** • No increase in residential housing in the Town of Middletown; no significant impact on housing prices or availability. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property:** ***No impact.*** • No development would occur; therefore, no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***Beneficial impact.*** • Estimated $334,000 in annual property tax revenue would have a positive impact on government revenues in the Town of Middletown.	**Taxes and Revenue:** ***Beneficial impact.*** • Estimated $260,000 in annual property tax revenue would have a positive impact on government revenues in the Town of Middletown.	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the property would retain its current tax-exempt status.
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Low-income populations exist within the study area. • No disproportionately high or adverse human health or environmental effects would occur to these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high or adverse human health or environmental effect.*** • Low-income populations exist within the study area. • No disproportionately high or adverse human health or environmental effects would occur to these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.
Community Facilities and Services	• Minor impact on community facilities and services in the Town of Middletown. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• Minor impact on community facilities and services in the Town of Middletown. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Transportation	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 1,309 daily trips added to the surrounding road network. • Projected 3,390 vehicle trips during the evening peak hour at the intersection of West Main Road and Coddington Highway (increase of 662 trips over existing conditions). • Projected 3,749 vehicle trips during the evening peak hour at the intersection of West Main Road and Valley Road (increase of 714 trips over existing conditions). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Middletown would be responsible for reviewing sight lines at proposed driveway location to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 2,619 daily trips added to the surrounding road network. • Projected 3,452 vehicle trips during the evening peak hour at the intersection of West Main Road and Coddington Highway (increase of 724 trips over existing conditions). • Projected 3,795 vehicle trips during the evening peak hour at the intersection of West Main Road and Valley Road (increase of 760 trips over existing conditions). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Middletown would be responsible for reviewing sight lines at proposed driveway location to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth***. • Significant and unavoidable increase in traffic volume would occur due to regional growth and other proposed developments not specifically identified.
	Level of Service: ***Significant and unavoidable decrease in level of service (LOS), even with implementation of proposed mitigation measures.*** • The intersection of West Main Road and Coddington Highway would operate at LOS D during evening peak hour (existing LOS C). • The intersection of West Main Road and Valley Road would operate at LOS C during evening peak hour (existing LOS B). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • The intersection of West Main Road and Coddington Highway would operate at LOS D during evening peak hour (existing LOS C). • The intersection of West Main Road and Valley Road would operate at LOS C during evening peak hour (existing LOS B). • The developer/Town of Middletown would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer, and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Middletown requirements.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and hazardous materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer, and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Middletown requirements.	**Hazardous Waste and Materials:** ***No impact***. • No development would occur; therefore, no impact on the environment from new sources of hazardous waste and hazardous materials management.
	Environmental Restoration Program: ***No impact.*** • The nearest Environmental Restoration (ER) Program site is 0.5 miles from the former Navy Lodge property and no further action is recommended for the site.	**Environmental Restoration Program:** ***No impact.*** • The nearest ER Program site is 0.5 miles from the former Navy Lodge property no further action is recommended for the site.	**Environmental Restoration Program:** ***No impact.*** • The nearest ER Program site is 0.5 miles from the former Navy Lodge property no further action is recommended for the site.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operation would result in increased vehicle emissions. • The developer could utilize best management practices (BMPs) such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operation would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.
	Greenhouse Gas (GHG) Emissions: ***Minor impact.*** • The change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the Council on Environmental Quality (CEQ) to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impact.*** • The change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of GHG emissions would be created.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Noise	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise*: Minor impact*. • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic noise would be 1 dBA at nearby receptors. The 1 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact***. • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic noise would be 1.2 dBA at nearby receptors. The 1.2 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact.*** • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.
Infrastructure and Utilities	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. The estimated demand of 3,813 gallons per day (gpd) is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. The estimated demand of 7,625 gpd is within projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***No impact.*** • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.
	Wastewater: ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on capacity of City of Newport's treatment system. The estimated 3,630 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on capacity of City of Newport's treatment system. The estimated 7,259 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***No impact.*** • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Storm Water: ***Minor impact.*** • 78,400 square feet of impervious surface would be constructed at the site, which is currently undeveloped. • The developer would be required to construct new storm water infrastructure. • The Town of Middletown will require the developer to prepare a stormwater management plan before issuing a building permit, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Minor impact.*** • 91,500 square feet of impervious surface would be constructed at the site, which is currently undeveloped. • The developer would be required to construct new storm water infrastructure. • The Town of Middletown will require the developer to prepare a stormwater management plan before issuing a building permit, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on the volume of stormwater would occur because there would be no change from existing conditions.
	Other Utility Systems: ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 438,036 kilowatt-hours (kWh). The developer would be required to obtain new electric connections/infrastructure for the proposed development. <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 1,018,700 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 876,071 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 2,037,400 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Solid Waste: ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 270 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial land use.	**Solid Waste:** ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 540 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial land use.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.
Cultural Resources	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at the former Navy Lodge property.	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present within APE at the former Navy Lodge property.	**Archaeological Resources:** ***No impact.***
	Architectural Resources: ***No impact.*** • No impact on architectural resources; existing utility shed and concrete pad would remain on the property.	**Architectural Resources:** ***No impact.*** • No impact on architectural resources; existing utility shed and concrete pad would remain on the property.	**Architectural Resources:** ***No impact.***
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.
	Historic Properties: ***No effect.*** • No effect on historic properties because none have been identified within the Area of Potential Effect (APE) at the former Navy Lodge property.	**Historic Properties:** ***No effect.*** • No effect on historic properties because none have been identified within the APE at the former Navy Lodge property.	**Historic Properties:** ***No effect.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
Topography, Geology, and Soils	**Topography:** ***Minor impact.*** • Site is flat as a result of previous development at the site.	**Topography:** ***Minor impact***. • Site is flat as a result of previous development at the site.	**Topography:** ***No impact.***
	Geology: ***No impact.***	**Geology:** ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact***.
Water Resources	**Surface Water:** ***Minor impact.*** • No direct impacts; no surface waters on-site. • Negligible indirect impacts on Bailey's Brook from construction activities. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***Minor impact.*** • No direct impacts; no surface waters on-site. • Negligible indirect impacts on Bailey's Brook from construction activities. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***No impact.***
	Water Quality: ***Minor impact.*** • 1.8 acres of impervious surface area. • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new stormwater system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • 2.1 acres of impervious surface area. • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new stormwater system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Navy Lodge Property			
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater**: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater:** ***No impact.***
	Floodplains: ***No impact.*** • No floodplains on-site.	**Floodplains**: ***No impact***. • No floodplains on-site.	**Floodplains**: ***No impact.***
	Wetlands: ***No impact***. • No wetlands occur on-site.	**Wetlands**: ***No impact***. • No wetlands occur on-site.	**Wetlands:** ***No impact.*** • No wetlands occur on-site, and no development is proposed.
Biological Resources	**Vegetation**: ***Minor impact.*** • 1.8 acres of grassed areas permanently removed and 1.2 acres maintained as open space. • The developer would restore temporarily disturbed areas retained as open space to grass or conventional landscaping.	**Vegetation**: ***Minor impact.*** • 2 acres of grassed areas permanently removed and 1 acre maintained as open space. • The developer would restore temporarily disturbed areas retained as open space to grass or conventional landscaping.	**Vegetation:** ***No impact.*** • No development would occur; therefore, vegetation would not be impacted.
	Wildlife: ***Minor impact.*** • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase.	**Wildlife**: ***Minor impact.*** • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase.	**Wildlife:** ***No impact.*** • No development would occur; therefore, wildlife would not be impacted.
	Threatened and Endangered Species: ***No impact.*** • No federally listed or state-listed threatened or endangered species occur.	**Threatened and Endangered Species:** ***No impact.*** • No federally listed or state-listed threatened or endangered species occur.	**Threatened and Endangered Species:** ***No impact.*** • No federally listed or state-listed threatened or endangered species occur.
	Significant Wildlife Habitat: ***No impact***. • No significant wildlife habitat exists on-site.	**Significant Wildlife Habitat:** ***No impact***. • No significant wildlife habitat exists on-site.	**Significant Wildlife Habitat:** ***No impact.*** • No significant wildlife habitat exists on-site.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 4.5 acres would occur. • Moderate impact on on-site land use associated with change from vacant, former institutional to mixed use, including waterfront park. • No direct impact on surrounding land use. • Moderate indirect impact on surrounding land use due to increased traffic and potential to contribute to and influence other area development.	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • Redevelopment of 4.8 acres would occur. • Moderate impact on on-site land use associated with change from vacant, former institutional to mixed use, including waterfront park. • No direct impact on the surrounding land use. • Moderate indirect impact on surrounding land use due to increased traffic and potential to contribute to and influence other area development.	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore, no impact on on-site or surrounding land use.
	Consistency with Local Planning/Zoning: ***Not fully consistent with local planning/zoning.*** • Consistent with the *2006 North End Master Plan* and the *Aquidneck Island West Side Master Plan.* • Not consistent with the *City of Newport Comprehensive Land Use Plan,* which does not provide for any commercial uses of the land. • Proposed hotel and commercial uses not consistent with existing zoning and would require rezoning or a variance. • The City of Newport would rezone property or the developer would be required to obtain a variance.	**Consistency with Local Planning/Zoning:** ***Not fully consistent with local planning/zoning.*** • Consistent with the *Aquidneck Island West Side Master Plan.* • Not consistent with the *City of Newport Comprehensive Land Use Plan*, which does not provide for any commercial uses of the land, or the *2006 North End Master Plan* because it does not include housing as recommended in the master plan. • Proposed hotel and commercial uses not consistent with existing zoning and would require rezoning or a variance. • The City of Newport would rezone the property or the developer would be required to obtain a variance.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with zoning.*** • Not consistent with the *City of Newport Comprehensive Land Use Plan*, the *2006 North End Master Plan*, or the *Aquidneck Island West Side Master Plan*, which recommend development of the site and public access to the waterfront. • Consistent with existing city zoning.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Coastal Resources: ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Naval Hospital for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Rhode Island CRMC concurred with the Navy's determination. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the former Naval Hospital for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***No impact.*** • No development would occur; therefore, the use or natural resources of the coastal zone would not be affected.
Socioeconomics and Environmental Justice	**Economy, Employment, and Income:** ***Beneficial impact.*** • $24.8 million in total construction expenditures would have a beneficial impact on the economy. • 226 direct, indirect, and induced jobs would be created during construction. • 189 direct and 69 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***Beneficial impact***. • $27 million in total construction expenditures would have a beneficial impact on the economy. • 226 direct, indirect, and induced jobs would be created during construction. • 279 direct and 92 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment, and Income:** ***No impact*** • No new economic activity would be generated, and no increased employment opportunities would occur.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Population: ***Minor impact.*** • Proposed new residential housing and increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population:** ***Minor impact***. • Increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population**: ***No impact.*** • Regional population would not change as a result of development because no development would occur.
	Housing and Commercial Property: ***Minor impact.*** • Increase of 36 residential units in the City of Newport would have a minor impact on housing market; no discernable impact on housing availability or prices. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property:** ***Minor impact.*** • Increase in residential housing in the City of Newport would have a minor impact on housing market; no significant impact on housing prices or availability. • Increase in commercial space; no discernible impact on availability or prices of existing retail space.	**Housing and Commercial Property**: ***No impact***. • No development would occur; therefore no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***Beneficial impact.*** • Estimated $412,000 in annual property tax revenue would have a positive impact on government revenues in the City of Newport.	**Taxes and Revenue:** ***Beneficial impact.*** • Estimated $260,000 in annual property tax revenue would have a positive impact on government revenues in the City of Newport	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the property would retain its current tax-exempt status.
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high and adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Community Facilities and Services	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue. • Positive impact by the creation of a waterfront park.	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue. • Positive impact by the creation of a waterfront park.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.
Transportation	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 1,248 daily trips added to existing transportation network. • Projected 1,507 vehicle trips during evening peak hour on the existing intersection of Admiral Kalbfus Road/Training Station Road and Third Street (increase of 314 trips over existing conditions). • Between 605 and 609 projected new trips during evening peak hours at the intersections with the three driveways. • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network. • The developer/City of Newport would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 1,576 daily trips added to existing transportation network. • Projected 1,549 vehicle trips during the evening peak hour on the existing intersection of Admiral Kalbfus Road/Training Station Road and Third Street (increase of 356 trips over existing conditions). • Between 648 and 697 projected new trips during evening peak hours at the intersections with the three driveways. • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network. • The developer/City of Newport would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth.*** • Significant and unavoidable increase in traffic volume due to regional growth and other proposed developments not specifically identified.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Level of Service: ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • Admiral Kalbfus Road/Training Station Road and Third Street would operate at LOS C during evening peak hour (existing LOS B). • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • Admiral Kalbfus Road/Training Station Road and Third Street would operate at LOS C during evening peak hour (existing LOS B). • The developer/City of Newport would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveways and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified.
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future activities would use hazardous materials and generate hazardous wastes. • Potential for radioactive materials to be found during demolition due to previous use as a hospital. • Large quantities of asbestos-containing materials (ACM) and lead-based paint (LBP) require removal prior to demolition. • Some areas of lead-containing soil require remediation before redevelopment. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and City of Newport requirements.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future activities would use hazardous materials and generate hazardous wastes. • Potential for radioactive materials to be found during demolition due to previous use as a hospital. • Large quantities of ACM and LBP require removal prior to demolition. • Some areas of lead-containing soil require remediation before redevelopment. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and City of Newport requirements.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous materials on-site.*** • Minor, long-term impact from the presence of ACM, LBP, and lead-containing soil.
	Environmental Restoration Program: ***No impact.*** • No ER Program sites are located near the former Naval Hospital property.	**Environmental Restoration Program:** ***No impact.*** • No ER Program sites are located near the former Naval Hospital property.	**Environmental Restoration Program:** ***No impact.*** • No ER Program sites are located near the former Naval Hospital property.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.
	GHG Emissions: ***Minor impacts.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impacts.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of GHG emissions would be created.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Noise	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with City of Newport zoning regulations on the timing of construction activities.	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with City of Newport zoning regulations on the timing of construction activities.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise: ***Minor impact.*** • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic would be 1 dBA at nearby receptors. The 1 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact.*** • Operational noise would primarily be associated with increased traffic. • Largest estimated increase in traffic noise would be 1.3 dBA at nearby receptors. The 1.3 dBA increase would not be perceptible.	**Operational Noise:** ***Minor impact.*** • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.
Infrastructure and Utilities	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 25,243 gpd is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require new a distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 23,400 gpd is within projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***No impact.*** • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.
	Wastewater: ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on the capacity of City of Newport's treatment system. Estimated 23,670 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***Minor impact on treatment capacity and moderate impact on collection system.*** • Minor impact on the capacity of City of Newport's treatment system. Estimated 22,253 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater**: ***No impact***. • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Storm Water: ***Moderate impact.*** • 195,243 square feet of impervious surface (4% increase) would be constructed at the site. • The developer would be required to construct new stormwater infrastructure. • The City of Newport would require the developer to prepare a stormwater management plan as part of the development plan review, which would include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Moderate impact*** • 210,410 square feet of impervious surface (12% increase) would be constructed at the site. • The developer would be required to construct new stormwater infrastructure. • The City of Newport would require the developer to prepare a stormwater management plan as part of the development plan review, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on volume of stormwater would occur because there would be no change from existing conditions.
	Other Utility Systems: ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 2,470,529 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 8,335,116 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***Negligible impact.*** <u>Electricity</u> • Negligible impact on regional demand; estimated annual demand of 2,832,468 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. <u>Natural Gas</u> • Negligible impact on regional demand; estimated annual demand of 9,594,120 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Solid Waste: ***Moderate short-term impact; minor long-term impact.*** • Moderate short-term impact on solid waste management through demolition of existing structures and generation of construction and demolition wastes; estimated 64,200 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial and residential land uses.	**Solid Waste:** ***Moderate short-term impact; minor long-term impact.*** • Moderate short-term impact on solid waste management through demolition of existing structures and generation of construction and demolition wastes; estimated 63,800 cubic yards of waste. • Minor long-term impact on solid waste management from operation of commercial land uses.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.
Cultural Resources	**Archaeological Resources:** ***Potential significant negative indirect impact that would be mitigated.*** • No direct impact on terrestrial archaeological resources because none are present at the former Naval Hospital property. • Potential significant, negative, indirect impact on one underwater archaeological site outside the APE that is eligible for the National Register of Historic Places (NRHP). • Potential significant, negative, indirect on one underwater NRHP-eligible archaeological site outside the APE would be mitigated as discussed below for historic properties.	**Archaeological Resources:** ***Potential significant negative indirect impact that would be mitigated.*** • No direct impact on terrestrial archaeological resources because none are present at the former Naval Hospital property. • Potential significant, negative, indirect impact on one underwater NRHP-eligible archaeological site outside the APE. • Potential significant, negative, indirect on one underwater NRHP-eligible archaeological site outside the APE would be mitigated as discussed below for historic properties.	**Archaeological Resources:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Architectural Resources: ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of demolition of buildings or structures that are contributing resources to the NRHP-eligible Naval Hospital Historic District. • Significant, negative, direct impact on architectural resources that are contributing resources to the NRHP-eligible Naval Hospital Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of demolition of buildings or structures that are contributing resources to the NRHP-eligible Naval Hospital Historic District. • Significant, negative, direct impact on architectural resources that are contributing resources to the NRHP-eligible Naval Hospital Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of neglect of buildings or structures that are contributing resources to the NRHP-eligible Naval Hospital Historic District in a manner that causes their deterioration. • Significant, negative, direct impact on architectural resources that are contributing resources to the NRHP-eligible Naval Hospital Historic District would be mitigated as discussed below for historic properties.
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Historic Properties: ***Adverse effect on historic properties that would be mitigated.*** • Adverse effect on an underwater NRHP-eligible archaeological site that is outside, but in the vicinity of, the underwater portion of the APE. Adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from on-site sediment disruption caused by underwater waves, currents, or sediments dispersed through or carried by water during demolition, construction, and/or alteration of Pier 71. • Adverse effect on buildings or structures within the APE that are contributing elements of the NRHP-eligible Naval Hospital Historic District. Direct adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from demolition of contributing resources to the historic district. Indirect adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from alteration of contributing resources and the character-defining features that contribute to the integrity and significance of the historic district. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within and outside but in the vicinity of the APE.	**Historic Properties:** ***Adverse effect on historic properties that would be mitigated.*** • Adverse effect on an underwater NRHP-eligible archaeological site that is outside, but in the vicinity of, the underwater portion of the APE. Adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from on-site sediment disruption caused by underwater waves, currents, or sediments dispersed through or carried by water during demolition, construction, and/or alteration of Pier 71. • Adverse effect on buildings or structures within the APE that are contributing elements of the NRHP-eligible Naval Hospital Historic District. Direct adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from demolition of contributing resources to the historic district. Indirect adverse effect of disposal and subsequent redevelopment of the Naval Hospital property could result from alteration of contributing resources and the character-defining features that contribute to the integrity and significance of the historic district. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within and outside but in the vicinity of the APE.	**Historic Properties:** ***Adverse effect on historic properties that would be mitigated.*** • Adverse effect on buildings and structures within the APE that are contributing elements of the NRHP-eligible Naval Hospital Historic District. Adverse effect could result from neglect in a manner that causes their deterioration. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding the potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Topography, Geology, and Soils	**Topography:** ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography from grading and associated cut-and-fill activities necessary to accommodate the new buildings.	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography from grading and associated cut-and-fill activities necessary to accommodate the new buildings.	**Topography**: ***No impact.***
	Geology: ***No impact.***	**Geology**: ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact.***
	Bathymetry: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***No impact.***
	Marine Sediment: ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Water Resources	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact in the form of erosion, sedimentation, and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact in the form of erosion, sedimentation and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***No impact.***
	Water Quality: ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, stormwater runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 4.5 acres of impervious surface area (increase of 0.2 acres above existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, storm water runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 4.8 acres of impervious surface area (increase of 0.5 acres above existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater**: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater:** ***No impact.***
	Floodplains: ***Moderate impact.*** • 1.6 acres of 100-year floodplain would be permanently affected by construction of the hotel, residential units, and paved access, portions of which are currently developed. • 0.09 acres of new development in the floodplain would not result in the loss of floodplain storage capacity or rise in the 100-year floodplain. • The developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through local building permit process.	**Floodplains**: ***Moderate impact.*** • 1.6 acres of 100-year floodplain would be permanently affected by construction of the hotel, commercial use, conference center, and paved access. • No new loss of floodplain storage capacity anticipated; area is currently developed. • Developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through local building permit process.	**Floodplains:** ***No impact.***
	Wetlands: ***Minor impact.*** • 0.02 acres of permanent impact from the fill needed for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands**: ***Minor impact.*** • 0.04 acres of permanent impact from the fill needed for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
Biological Resources	**Vegetation:** ***Minor impact.*** Upland • Proposed development would be located primarily in previously developed areas. • 1.8 acres maintained as open space and 2.0 acres maintained as waterfront park. • 0.10 acre of grassed areas would be permanently removed for path through the waterfront park and boat storage facility. Wetland • 0.02 acres of permanent impact on marine/estuarine wetlands. • The developer would restore temporarily disturbed areas following construction; wetland mitigation is discussed above.	**Vegetation:** ***Minor impact.*** Upland • Proposed development would be located primarily in previously developed areas. • 1.8 acres maintained as open space and 2.0 acres maintained as waterfront park. • 0.10 acre of grassed areas would be permanently removed for path through the waterfront park and boat storage facility. Wetland • 0.04 acres of permanent impact on marine/estuarine wetlands. • The developer would restore temporarily disturbed areas following construction; wetland mitigation is discussed above.	**Vegetation:** ***No impact.*** • No development would occur; therefore, vegetation would not be impacted.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Wildlife: ***Minor impact on terrestrial mammals and avian species. Not likely to result in takes of marine mammals.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise from pile-driving activities associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the Marine Mammal Protection Act (MMPA), the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. • Measures to reduce impacts on marine mammals would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***Minor impact on terrestrial mammals and avian species. Not likely to result in takes of marine mammals.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise from pile-driving activities associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal • Measures to reduce impacts on marine mammals would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***No impact.*** • No development would occur; therefore, wildlife would not be impacted.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Avian Species • Short-term displacement during construction. • Minimal habitat loss as site is largely developed. • No significant adverse effects on, or harm to, a population of migratory birds.	Avian Species • Short-term displacement during construction. • Minimal habitat loss as site is largely developed. • No significant adverse effects on, or harm to, a population of migratory birds.	
	Threatened and Endangered Species: ***No effect on North Atlantic right whale, humpback whale, or fin whale; may affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic Distinct Population Segment (DPS) of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, or green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No effect on North Atlantic right whale, humpback whale or fin whale; may affect but is not likely to adversely affect the Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, or green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Former Naval Hospital Property			
	Significant Wildlife Habitat: ***Minor impact.*** • 0.04 acres of the 0.3 acres of marine/estuarine wetlands would be filled for pilings used to anchor the floating dock in place. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. • No adverse effects would occur to Essential Fish Habitat (EFH) including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities. • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***Minor impact.*** • 0.04 acres of the 0.3 acres of marine/estuarine wetlands would be filled for pilings used to anchor the floating dock in place. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. • No adverse effects would occur to EFH, including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities. • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • A total of 31.1 acres would be redeveloped, and 104.9 acres would remain as open space. • Moderate impact on on-site land use associated with change from primarily vacant and industrial to mixed use. • Developer may need to comply with land use controls upon completion of environmental remediation at site. • No direct impact on surrounding land use. • Moderate indirect impacts on surrounding land use with potential increased traffic contributing to and influencing other area redevelopment (i.e., Melville area).	**On-site/Surrounding Land Use:** ***Moderate impact due to changes in land use.*** • A total of 34 acres would be redeveloped, and 102 acres would remain as open space. • Moderate impact on on-site land use associated with change from primarily vacant and industrial to mixed use. • Developer may need to comply with land use controls upon completion of environmental remediation at site. • No direct impact on surrounding land use. • Moderate indirect impacts on surrounding land use with potential increased traffic contributing to and influencing other area redevelopment (i.e., Melville area).	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore no impact on on-site or surrounding land use.
	Consistency with Local Planning/Zoning: ***Primarily consistent with local planning/zoning.*** • Consistent with the *Aquidneck Island West Side Master Plan,* the draft *Portsmouth Tank Farm Redevelopment Plan*, and the *Town of Portsmouth Comprehensive Community Plan.* • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; the variance would not result in a significant impact on surrounding land uses.	**Consistency with Local Planning/Zoning:** ***Primarily consistent with local planning/zoning.*** • Consistent with the *Aquidneck Island West Side Master Plan,* the draft *Portsmouth Tank Farm Redevelopment Plan*, and the *Town of Portsmouth Comprehensive Community Plan.* • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; the variance would not result in a significant impact on surrounding land uses.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with local zoning.*** • Not consistent with the *Town of Portsmouth Comprehensive Community Plan*, draft Portsmouth *Tank Farm Redevelopment Plan*, or *Aquidneck Island West Side Master Plan*, which recommend development of the site. • Consistent with existing town zoning.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Coastal Resources: ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of Tank Farms 1 and 2 for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Rhode Island CRMC concurred with the Navy's determination. • The developer would be required to comply with the SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***Not reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of Tank Farms 1 and 2 for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the SAMP and applicable state permitting processes. • State review of coastal resources under the Rhode Island CRMP is not applicable as the property is not located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area as defined under the Rhode Island CRMP.	**Coastal Resources:** ***No impact*** • No development would occur; therefore, the use or natural resources of the coastal zone would not be affected.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Socioeconomics and Environmental Justice	**Economy, Employment and Income:** ***Beneficial impact.*** • $33.7 million in total construction expenditures would have a beneficial impact on the economy. • 289 direct, indirect, and induced jobs would be created during construction. • 592 direct and 170 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment and Income:** ***Beneficial impact.*** • $37.7 million in total construction expenditures would have a beneficial impact on the economy. • 322 direct, indirect, and induced jobs would be created during construction. • 702 direct and 198 indirect/induced jobs would be created following construction, which would positively impact employment and income in the long term.	**Economy, Employment and Income:** ***No impact.*** • No new economic activity would be generated associated with redevelopment of the surplus properties, and no increased employment opportunities would occur.
	Population: ***Minor impact.*** • Increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population**: ***Minor impact.*** • Increased employment opportunities may potentially result in slightly increased regional population; impacts would not be significant.	**Population**: ***No impact.*** • Regional population would not change as a result of development because no development would occur.
	Housing and Commercial Property: ***Minor impact*** • No increase in residential housing in the Town of Portsmouth; no significant impact on housing prices or availability. • Increase in supply of industrial and office space may result in downward pressure on prices at existing office buildings and industrial space.	**Housing and Commercial Property**: ***Minor impact*** • No increase in residential housing in the Town of Portsmouth; no significant impact on housing prices or availability. • Increase in supply of industrial and office space may result in downward pressure on prices at existing office buildings and industrial space.	**Housing and Commercial Property**: ***No impact.*** • No development would occur; therefore, no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***Beneficial impact.*** • Estimated $421,000 increase in annual property tax revenue would have a positive impact on government revenues in the Town of Portsmouth.	**Taxes and Revenue:** ***Beneficial impact.*** • Estimated $494,000 increase in annual property tax revenue would have a positive impact on government revenues in the Town of Portsmouth.	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the properties would retain their current tax-exempt status.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Minority or Hispanic/Latino populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high or adverse human health or environmental effect.*** • Minority and Hispanic/Latino populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.
Community Facilities and Services	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• Minor impact on community facilities and services in the City of Newport. • Additional demand for community facilities and services would be offset by increased property tax revenue.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Transportation	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 2,762 daily trips added to the existing transportation network. • Projected 3,599 vehicle trips during the evening peak hour at the intersection of West Main Road and Stringham Road (increase of 828 trips over existing conditions). • Projected 3,461 vehicle trips during the evening peak hour at the intersection of West Main Road and Bradford Avenue (increase of 857 trips over existing conditions). • Projected 1,185 vehicle trips during the evening peak hour at the intersection of Defense Highway and Stringham Road (increase of 315 trips over existing conditions). • Minor impacts on streets and intersections surrounding the property. • Increase in traffic is mainly due to regional growth and other proposed developments not specifically identified. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Portsmouth would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists. • If the developer proposes use of Bradford Avenue as an access point, signalization/roadway improvements would need to be considered to improve safety in the vicinity of the Melville School.	**Traffic Volume:** ***Significant and unavoidable increase in traffic even with implementation of proposed mitigation measures.*** • Projected 3,151 daily trips added to the existing transportation network. • Projected 3,631 vehicle trips during the evening peak hour at the intersection of West Main Road and Stringham Road (increase of 860 trips over existing conditions). • Projected 3,496 vehicle trips during the evening peak hour at the intersection of West Main Road and Bradford Avenue (increase of 892 trips over existing conditions). • Projected 1,209 vehicle trips during the evening peak hour at the intersection of Defense Highway and Stringham Road (increase of 339 trips over existing conditions). • Minor impacts on streets and intersections surrounding the property. • Increase in traffic is mainly due to regional growth and other proposed developments not specifically identified. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network. • The developer/Town of Portsmouth would be responsible for reviewing sight lines at proposed driveway locations to maximize visibility for motorists. • If the developer proposes use of Bradford Avenue as an access point, signalization/roadway improvements would need to be considered to improve safety in the vicinity of the Melville School.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth.*** • Significant and unavoidable increase in traffic due to regional growth and other proposed developments not specifically identified.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Level of Service: ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • West Main Road and Stringham Road intersection would operate at an LOS of D during evening peak hour (existing LOS C). • West Main Road and Bradford Avenue intersection would operate at an LOS of B for northbound traffic and F for eastbound traffic during evening peak hour (existing LOS A and F, respectively). • Defense Highway and Stringham Road intersection would operate at an LOS of A for northbound traffic and LOS F for northeast approach traffic during evening peak hour (existing LOS A and D, respectively). • Stringham Road and Tank Farm 2 proposed driveway would operate at an LOS of C for southbound traffic during the evening peak hour, and LOS A for eastbound traffic. • Stringham Road and Tank Farm 1 proposed driveway would operate at an LOS of B during morning and evening peak hours for westbound traffic. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS even with implementation of proposed mitigation measures.*** • West Main Road and Stringham Road intersection would operate at an LOS of D during evening peak hour (existing LOS C). • West Main Road and Bradford Avenue intersection would operate at an LOS of B for northbound traffic and F for eastbound traffic during evening peak hour (existing LOS A and F, respectively). • Defense Highway and Stringham Road intersection would operate at an LOS of A for northbound traffic and F for northeast approach traffic during evening peak hour (existing LOS A and D, respectively). • Stringham Road and Tank Farm 2 proposed driveway would operate at an LOS of C for southbound traffic during the evening peak hour and LOS A for eastbound traffic. • Stringham Road and Tank Farm 1 proposed driveway would operate at an LOS of B during morning and evening peak hours for westbound traffic. • The developer/Town of Portsmouth would be responsible for roadway improvements such as signage, striping, and traffic configurations, depending on final design of the driveway and parking lot network.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Portsmouth requirements. • ACM and LBP require removal before demolition. • Some areas of lead-containing soil require remediation prior to development.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials management.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Future site activities would use hazardous materials and generate hazardous waste. • Hazardous materials/waste will be managed by the developer and occupants (businesses, management, service contractors) of the property in accordance with state, federal, and Town of Portsmouth requirements. • ACM and LBP require removal before demolition. • Some areas of lead-containing soil require remediation prior to development.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous materials on-site.*** • Minor long-term impact from the presence of ACM, LBP, and lead-containing soil. • Tank farms will be closed under RIDEM's UST regulations and remediated under CERCLA.
	Environmental Restoration Program: ***No impact.*** • Tank farms would be closed under RIDEM's UST regulations and remediated under CERCLA before property is redeveloped. The developer may need to comply with land use controls upon completion of environmental remediation at the site. • The types of businesses and land uses that are planned (light industrial, office, and boat storage space and solar array) would likely be consistent with any land use controls that accompany the final remedies.	**Environmental Restoration Program:** ***No impact.*** • Tank farms would be closed under RIDEM's UST regulations and remediated under CERCLA before property is redeveloped. The developer may need to comply with land use controls upon completion of environmental remediation at the site. • The types of businesses and land uses that are planned (light industrial, office, and boat storage space and solar array) would likely be consistent with any land use controls that accompany the final remedies.	**Environmental Restoration Program:** ***No impact***. • Tank farms will be closed under RIDEM's UST regulations and remediated under CERCLA.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy-efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** Construction Emissions • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. Operational Emissions • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy-efficiency standards, etc.	**Construction/Operational Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.
	GHG Emissions: ***Minor impact.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impact.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy-efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of air emissions would be created.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Noise	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction.	**Construction Noise:** ***Minor impacts on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise: ***Minor impact.*** • A minor noise impact would result from the light industrial land uses (these areas are not near residential areas). • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; to obtain a variance, the developer would be required to conduct a noise assessment. • A minor impact would result from traffic noise. The largest estimated increase in traffic noise would be 6.4 dBA at Bradford Avenue; this increase would be perceptible, but the resultant sound level of 49.5 dBA is acceptable according to Federal Highway Administration (FHWA) criteria.	**Operational Noise:** ***Minor impact.*** • A minor noise impact would result from the light industrial land uses (these areas are not near residential areas). • The developer would be required to obtain a use variance for development of a solar array in the zoned redevelopment district; to obtain a variance, the developer would be required to conduct a noise assessment. • A minor impact would result from traffic noise. The largest estimated increase in traffic noise would be 5.1 dBA at Bradford Avenue; this increase would be perceptible, but the resultant sound level of 48.2 dBA is acceptable according to FHWA criteria.	**Operational Noise:** ***Minor impact***. • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.
Infrastructure and Utilities	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 18,000 gpd is within the projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Minor impact on water treatment capacity and moderate impact on distribution system.*** • Minor impact on City of Newport water treatment plant capacity. Estimated demand of 22,150 gpd is within the projected capacity of Newport Water Division's treatment plant in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply** ***No impact.*** • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Wastewater: ***Potentially significant impact on wastewater treatment infrastructure.*** • The Town of Portsmouth currently has no centralized wastewater treatment/collection infrastructure. The estimated 17,170 gpd generation would require connection to a new treatment facility or the City of Newport's treatment system. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***Potentially significant impact on wastewater treatment infrastructure.*** • The Town of Portsmouth currently has no centralized wastewater treatment/collection infrastructure. The estimated 21,126 gpd generation would require connection to a new treatment facility or the City of Newport's treatment system. • Moderate impact on collection systems; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater:** ***No impact***. • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.
	Storm Water: ***Significant increase in impervious surface (130% increase).*** • 1,352,300 square feet of impervious surface (130% increase) would be constructed at the site. • The developer would be required to construct new storm water infrastructure or modify the existing system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Significant increase in impervious surface (151% increase).*** • 1,478,800 square feet of impervious surface (151% increase) would be constructed at the site. • The developer would be required to construct new storm water infrastructure or modify the existing system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on volume of stormwater would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Other Utility Systems: ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 2,012,362 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. Natural Gas • Negligible impact on regional demand; estimated annual demand of 7,944,000 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 2,590,198 kWh. The developer would be required to obtain new electric connections/infrastructure for the proposed development. Natural Gas • Negligible impact on regional demand; estimated annual demand of 9,151,853 cubic feet. The developer would be required to obtain new gas connections/infrastructure for the proposed development.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems would occur because there would be no change from existing conditions.
	Solid Waste: ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 2,600 cubic yards of waste. • Minor long-term impact on solid waste management from operation of industrial and commercial uses.	**Solid Waste:** ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 3,000 cubic yards of waste. • Minor long-term impact on solid waste management from operation of industrial and commercial uses.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Cultural Resources	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at Tank Farms 1 and 2.	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at Tank Farms 1 and 2.	**Archaeological Resources:** ***No impact.***
	Architectural Resources: ***Significant negative indirect impact that would be mitigated.*** • No direct physical impact on architectural resources because all buildings and structures at Tank Farm 1 would be removed as part of a separate action and all of the extant buildings and structures at Tank Farm 2 would remain in place and would not be directly impacted by redevelopment. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District. Indirect impacts would occur as a result of transfer of the buildings and structures at the Tank Farms 1 and 2 property out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the historic district's historic significance. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant negative indirect impact that would be mitigated.*** • No direct physical impact on architectural resources because all buildings and structures at Tank Farm 1 would be removed as part of a separate action and all of the extant buildings and structures at Tank Farm 2 would remain in place and would not be directly impacted by redevelopment. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District. Indirect impacts would occur as a result of transfer of the buildings and structures at the Tank Farms 1 and 2 property out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the historic district's historic significance. • Significant, negative, indirect and cumulative impacts on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District would be mitigated as discussed below for historic properties.	**Architectural Resources:** ***Significant, negative, direct impact that would be mitigated.*** • Significant, negative, direct impact on architectural resources. Impact would occur as a result of neglect of buildings or structures that are contributing resources to the NRHP-eligible Melville Naval Historic District in a manner that causes their deterioration. • Significant, negative, direct impact on buildings and structures at Tank Farms 1 and 2 that are contributing resources to the NRHP-eligible Melville Naval Historic District would be mitigated as discussed below for historic properties.
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Historic Properties: ***Adverse effect, including cumulative effect, on historic properties that would be mitigated.*** • Potential adverse effects on historic properties within the APE from disposal of the Tank Farms 1 and 2 property that would result from transfer of the buildings or structures at Tank Farm 2 that are contributing elements of the NRHP-eligible Melville Naval Historic District out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure the long-term preservation of the property's historic significance. • Potential cumulative adverse effects on historic properties within the APE from the transfer of the Tank Farms 1 and 2 property when considered in conjunction with the proposed demolition of abandoned facilities at Tank Farm 1 as part of a separate action. • Potential cumulative adverse effects would result from physical destruction of contributing resources to the NRHP-eligible Melville Naval Historic District, changes to the physical features (e.g., removal of buildings and structures) within the historic district's setting that contribute to its historic significance, and transfer of property out of federal ownership or control (i.e., the disposal of the Tank Farms 1 and 2 property) without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects, including any cumulative effects, on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.	**Historic Properties:** ***Adverse effects, including cumulative effect, on historic properties that would be mitigated.*** • Potential adverse effects on historic properties within the APE from disposal of the Tank Farms 1 and 2 property that would result from transfer of the buildings or structures at Tank Farm 2 that are contributing elements of the NRHP-eligible Melville Naval Historic District out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure the long-term preservation of the property's historic significance. • Potential cumulative adverse effects on historic properties within the APE from the transfer of the Tank Farms 1 and 2 property when considered in conjunction with the proposed demolition of abandoned facilities at Tank Farm 1 as part of a separate action. • Potential cumulative adverse effects would result from physical destruction of contributing resources to the NRHP-eligible Melville Naval Historic District, changes to the physical features (e.g., removal of buildings and structures) within the historic district's setting that contribute to its historic significance, and transfer of property out of federal ownership or control (i.e., the disposal of the Tank Farms 1 and 2 property) without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects, including any cumulative effects, on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.	**Historic Properties:** ***Adverse effects on historic properties that would be mitigated.*** • Potential adverse effects on historic properties within the APE that are contributing elements of the NRHP-eligible Melville Naval Historic District resulting from neglect in a manner that causes their deterioration. • The Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding potential adverse effects on historic properties and anticipates development of measures to mitigate any adverse effects on historic properties within the APE.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
Topography, Geology, and Soils	**Topography:** ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new buildings.	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new buildings.	**Topography**: ***No impact.***
	Geology: ***No impact.***	**Geology**: ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor permanent impacts would result from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact.***
Water Resources	**Surface Water:** ***Minor impact.*** • No direct impact; no surface waters on-site. • Minor indirect impacts on Melville Ponds and an unnamed stream north of the property from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***Minor impact.*** • No direct impact; no surface waters on-site. • Minor indirect impacts on Melville Ponds and an unnamed stream north of the property from increase in impervious surfaces and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Surface Water:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Water Quality: ***Minor impact.*** • 31.0 acres of impervious surface area (130% increase over existing conditions). • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new storm water system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • 33.9 acres of impervious surface (151% increase over existing conditions). • Erosion, sedimentation, and stormwater runoff would be short-term impacts; long-term impacts expected to be managed with a new stormwater system. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater:** ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • The developer would use standard dewatering techniques; comply with stormwater permits, management plans, and erosion and sediment control plans; and implement BMPs.	**Groundwater:** ***No impact.***
	Floodplains: ***No impact***. • No floodplains occur on-site.	**Floodplains**: ***No impact.*** • No floodplains occur on-site.	**Floodplains:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Wetlands: ***Minor impact.*** • 0.08 acre of permanent potential wetland fill on Tank Farm 1. • 0.4 acres of perimeter wetland would be directly impacted. • Negligible indirect impacts on on-site potential wetlands and Melville Ponds, adjacent to the Tank Farms. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands**: ***Minor impact.*** • 0.09 acre of permanent potential wetland fill on Tank Farm 1. • 0.5 acres of perimeter wetland would be directly impacted. • Negligible indirect impacts on on-site potential wetlands and Melville Ponds, adjacent to the Tank Farms. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands:** ***No impact***.
Biological Resources	**Vegetation:** ***Moderate impact.*** Mixed Oak/White Pine • Permanent conversion of 2.7 acres to parking/access and office. Old Field • Permanent conversion of 9.2 acres of old field to parking/access and solar array. Ruderal Forest • Permanent conversion of 14.5 acres of ruderal forest to parking access, office, and light industrial.	**Vegetation:** ***Moderate impact.*** Mixed Oak/White Pine • Permanent conversion of 2.7 acres to parking/access and office. Old Field • Permanent conversion of 9.2 acres of old field to parking/access and solar array. Ruderal Forest • Permanent conversion of 16.4 acres of ruderal forest to parking/access, office, and light industrial.	**Vegetation:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Wildlife: ***Minor impact.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Habitat loss from conversion of vegetation types. Avian Species • Short-term displacement during construction. • Habitat loss from conversion of vegetation types. • No significant adverse effects on a population of migratory birds.	**Wildlife:** ***Minor impact.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Habitat loss from conversion of vegetation types. Avian Species • Short-term displacement during construction. • Habitat loss from conversion of vegetation types. • No significant adverse effects on a population of migratory birds.	**Wildlife:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Tank Farms 1 and 2 Properties			
	Threatened and Endangered Species: ***May affect but is not likely to adversely affect the northern long-eared bat.*** • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 14.5 acres of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer. (i.e., 0.25 mile buffer around known, occupied hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	**Threatened and Endangered Species:** ***May affect but is not likely to adversely affect the northern long-eared bat.*** • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 16.4 acres of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer (i.e., 0.25 mile buffer around known occupied, hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	**Threatened and Endangered Species:** ***No impact.***
	Significant Wildlife Habitat: ***No impact***. • 0.48 acres of freshwater wetlands would be filled for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Significant Wildlife Habitat:** ***No impact*** • 0.59 acres of freshwater wetlands would be filled for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Significant Wildlife Habitat:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Land Use, Zoning, and Coastal Resources	**On-site/Surrounding Land Use:** ***Minor impact due to changes in land use.*** • A total of 10.7 acres would be redeveloped, primarily as recreational/open space. • Minor impact on on-site land use associated with change from undeveloped open space to a shoreline park. • No direct impact on surrounding land use. • Minor indirect impact on surrounding land use due to slight increase in use of Defense Highway.	**On-site/Surrounding Land Use:** ***Minor impact due to changes in land use.*** • A total of 10.7 acres would be redeveloped, primarily as recreational/open space. • Minor impact on on-site land use associated with change from undeveloped open space to a shoreline park. • No direct impact on surrounding land use. • Minor indirect impact on surrounding land use due to slight increase in use of Defense Highway.	**On-site/Surrounding Land Use:** ***No impact.*** • No change to existing land use; therefore, no impact on on-site or surrounding land use.
	Consistency with Local Planning/Zoning ***Primarily consistent with local planning/zoning.*** • Consistent with the *Town of Middletown Comprehensive Community Plan*, the *Shoreline Master Plan,* and the *Aquidneck Island Transportation Study.* • Not consistent with the *Aquidneck Island West Side Master Plan* recommendations for upgrading Defense Highway into a scenic byway. • Consistent with Town of Middletown zoning.	**Consistency with Local Planning/Zoning:** ***Primarily consistent with local planning/zoning.*** • Consistent with the *Town of Middletown Comprehensive Community Plan*, the *Shoreline Master Plan,* and the *Aquidneck Island Transportation Study.* • Not consistent with the *Aquidneck Island West Side Master Plan* recommendations for upgrading Defense Highway into a scenic byway. • Consistent with Town of Middletown zoning.	**Consistency with Local Planning/Zoning:** ***Not consistent with local planning; consistent with local zoning.*** • Not consistent with redevelopment elements of the *Town of Middletown Comprehensive Community Plan*, the *Shoreline Master Plan,* the *Aquidneck Island Transportation Study,* or the *Aquidneck Island West Side Master Plan.* • Consistent with Town of Middletown zoning.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Coastal Resources: ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the Midway Pier/Greene Land property for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Rhode Island CRMC concurred with the Navy's determination. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, and within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***Reasonably likely to affect the use or natural resources of the coastal zone.*** • The Navy's proposed action of disposing of the Midway Pier/Greene Land property for reuse would be conducted in a manner that is consistent to the maximum extent practicable with the Rhode Island CRMP and the Aquidneck Island SAMP. • The Navy did not request concurrence on Alternative 2 because Alternative 1 is the preferred alternative. • The developer would be required to comply with the Rhode Island CRMP for non-federal projects within tidal waters, on a shoreline feature, and within the 200-foot contiguous area as defined under the Rhode Island CRMP, and would also be required to comply with the Aquidneck Island SAMP and applicable state permitting processes.	**Coastal Resources:** ***No impact.*** • No development would occur; therefore, the use or natural resources of the coastal zone would not be affected.
Socioeconomics and Environmental Justice	**Economy, Employment, and Income:** ***Beneficial impact.*** • $6 million in total construction expenditures would have a beneficial impact on the economy. • 50 direct, indirect, and induced jobs would be created during construction. • No long-term direct, indirect, or induced jobs would be created following construction.	**Economy, Employment, and Income:** ***Beneficial impact.*** • $6 million in total construction expenditures would have a beneficial impact on the economy • 50 direct, indirect, and induced jobs would be created during construction. • No long-term direct, indirect, or induced jobs would be created following construction.	**Economy, Employment, and Income:** ***No impact.*** • No new economic activity would be generated associated with redevelopment of the surplus properties, and no increased employment opportunities would occur.
	Population: ***No impact*** • No population growth-inducing development is proposed.	**Population**: ***No impact***. • No population growth-inducing development is proposed.	**Population**: ***No impact.*** • Regional population would not change as a result of development because no development would occur.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Housing and Commercial Property: ***No impact***. • No residential or commercial land use is proposed. Proposed shoreline park is not anticipated to impact regional housing or commercial property market.	**Housing and Commercial Property:** ***No impact***. • No residential or commercial land use is proposed. Proposed shoreline park is not anticipated to impact regional housing or commercial property market.	**Housing and Commercial Property**: ***No impact.*** • No development would occur; therefore, no change to the regional housing or commercial property market would occur.
	Taxes and Revenue: ***No impact*** • The proposed shoreline park would be tax-exempt; therefore, the proposed redevelopment would not generate tax revenue.	**Taxes and Revenue:** ***No impact***. • The proposed shoreline park would be considered tax-exempt; therefore, the proposed redevelopment would not generate tax revenue.	**Taxes and Revenue:** ***No impact.*** • Local government tax receipts would not increase because the property would retain its current tax-exempt status.
	Environmental Justice: ***No disproportionately high or adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health or safety impacts are expected to occur.	**Environmental Justice:** ***No disproportionately high or adverse human health or environmental effect.*** • Minority, Hispanic/Latino, and low-income populations exist within the study area. • There would be no disproportionately high or adverse human health or environmental effects on these environmental justice communities because no significant unmitigated environmental, human health, or safety impacts are expected to occur.	**Environmental Justice:** ***No impact.*** • No disproportionately high or adverse human health or environmental effects would occur because there would be no change from existing conditions.
Community Facilities and Services	• Positive impact by the creation of a waterfront park.	• Positive impact by the creation of a waterfront park.	• No impact on existing community services and facilities would occur because there would be no change from existing conditions.
Transportation	**Traffic Volume:** ***Minor impact.*** • Negligible number of new daily vehicle trips added to existing transportation network would have a minor impact on traffic volume. • Increase in morning and evening peak hour trips on the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Traffic Volume:** ***Minor impact.*** • Negligible number of new daily vehicle trips added to existing transportation network would have minor impact on traffic volume. • Increase in morning and evening peak hour trips on the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Traffic Volume:** ***Significant and unavoidable increase in traffic due to background growth.*** • Significant and unavoidable increase in traffic due to regional growth and other proposed developments not specifically identified.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Level of Service: ***No impact*** • Negligible number of new daily vehicle trips added to existing transportation network would have no impact on existing LOS. • Decrease in LOS at the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Level of Service:** ***No impact*** • Negligible number of new daily vehicle trips added to existing transportation network would have no impact on existing LOS. • Decrease in LOS at the existing intersections of Defense Highway/Burma Road and Greene Lane, and Defense Highway/Burma Road and Stringham Road due to nearby buildout of Tank Farms 1 and 2 and increase in background traffic levels.	**Level of Service:** ***Significant and unavoidable decrease in LOS due to background growth.*** • Significant and unavoidable decrease in LOS due to regional growth and other proposed developments not specifically identified. • Under caretaker status, Navy would reduce overall maintenance of Defense Highway and Stringham Road.
Environmental Management	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Hazardous materials/waste will be managed by the developer and/or the management/service contractors of the property in accordance with state, federal, and Town of Middletown requirements. • Minor impact associated with unknown contamination in underground fuel pipeline and presence of ACM on underground steam line. • The Navy would provide appropriate notifications in the deed or real estate instrument transferring the property to alert property owner to the presence of hazardous material.	**Hazardous Waste and Materials:** ***Minor impact on the environment related to hazardous waste and materials.*** • Potential increase in quantity of hazardous materials and waste used/generated, stored, and disposed of during construction. • Hazardous materials/waste will be managed by the developer and/or the management/service contractors of the property in accordance with state, federal, and Town of Middletown requirements. • Minor impact associated with unknown contamination in underground fuel pipeline and presence of ACM on underground steam line. • The Navy would provide appropriate notifications in the deed or real estate instrument transferring the property to alert property owner to the presence of hazardous material.	**Hazardous Waste and Materials:** ***Minor impact.*** • Minor impact associated with unknown contamination in underground fuel pipeline and presence of ACM on underground steam line.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Environmental Restoration Program: ***No impact.*** • The nearest ER Program site is IRP Site 13, Tank Farm 5, across Defense Highway from the Midway Pier/Greene Lane property. Remedial activities and long-term groundwater monitoring are not expected to restrict redevelopment of Midway Pier/Greene Lane property.	**Environmental Restoration Program:** ***No impact.*** • The nearest ER Program site is IRP Site 13, Tank Farm 5, across Defense Highway from the Midway Pier/Greene Lane property. Remedial activates and long-term groundwater monitoring are not expected to restrict redevelopment of Midway Pier/Greene Lane property.	**Environmental Restoration Program:** ***No impact***.
Air Quality	**Construction/Operational Emissions:** ***Minor impact.*** <u>Construction Emissions</u> • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. <u>Operational Emissions</u> • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for hot water, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in very minor increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***Minor impact.*** <u>Construction Emissions</u> • The generation of construction emissions would not be permanent. • Emissions could occur intermittently during the 20-year development period. <u>Operational Emissions</u> • Operational emissions from building energy use would result from the direct use of fuel oil and/or natural gas, primarily for hot water, as well as the indirect use of electricity. • Increased vehicle traffic during operations would result in very minor increased vehicle emissions. • The developer could utilize BMPs such as proper maintenance of equipment, idling-reduction measures, and building design to meet energy efficiency standards.	**Construction/Operational Emissions:** ***No impact***. • No development would occur; therefore, no new sources of air emissions would be created.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	GHG Emissions: ***Minor impact.*** Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 1 would be 14,716 metric tons of carbon dioxide equivalents. • The developer could use energy efficient building designs and renewable energy sources to reduce GHG emissions.	**GHG Emissions:** ***Minor impact.*** • Change in GHG emissions resulting from implementation of the action would be less than the 25,000 metric ton standard recommended by the CEQ to warrant further analysis. Across all surplus properties, the total GHG emissions under Alternative 2 would be 19,833 metric tons of carbon dioxide equivalents. • The developer could use energy efficient building designs and renewable energy sources to reduce GHG emissions.	**Greenhouse Gas Emissions:** ***No impact.*** • No development would occur; therefore, no new sources of GHG emissions would be created.
Noise	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***Minor impact on adjacent land uses.*** • Short-term, minor noise impacts would occur during construction. • The developer would be required to comply with Town of Middletown zoning regulations on the timing of construction activities.	**Construction Noise:** ***No impact.*** • No development would occur; therefore, no new sources of noise would be created.
	Operational Noise: ***Minor impact.*** • A negligible increase in noise would result from use of the shoreline park and multi-use parkway (i.e., children playing and recreational activities). • Only 1 to 2 peak hour trips would be generated from the shoreline park; therefore, noise levels from traffic are assumed to be insignificant and were not modeled.	**Operational Noise:** ***Minor impact.*** • A negligible increase in noise would result from use of the shoreline park and multi-use parkway (i.e., children playing and recreational activities). • Only 1 to 2 peak hour trips would be generated from the shoreline park; therefore, noise levels from traffic are assumed to be insignificant and were not modeled.	**Operational Noise:** ***Minor impact.*** • Although no new development would occur, the increase in traffic volume due to regional growth would result in an increase in traffic-related noise.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Infrastructure and Utilities	**Water Supply:** ***Negligible impact on water treatment capacity and moderate impact on distribution system.*** • Negligible impact on City of Newport water treatment plant capacity. The estimated demand of 180 gpd is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** ***Negligible impact on water treatment capacity and moderate impact on distribution system.*** • Negligible impact on City of Newport water treatment plant capacity. The estimated demand of 180 gpd is within projected capacity of Newport Water Division's treatment plants in 2033. • Moderate impact on distribution facilities; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Water Supply:** No impact. • No impact on existing water treatment and distribution infrastructure would occur because there would be no change from existing conditions.
	Wastewater: ***Negligible impact on treatment capacity and moderate impact on collection system.*** • Negligible impact on capacity of City of Newport's treatment system. The estimated 144 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection system; redevelopment would require a new collection system, which would be the responsibility of the developer.	**Wastewater**: ***Negligible impact on treatment capacity and moderate impact on collection system.*** • Negligible impact on capacity of City of Newport's treatment system. The estimated 144 gpd generation is within the existing system's treatment capacity. • Moderate impact on collection system; redevelopment would require a new distribution system, which would be the responsibility of the developer.	**Wastewater:** ***No impact.*** • No impact on existing wastewater treatment and collection infrastructure would occur because there would be no change from existing conditions.
	Storm Water: ***Minor impact.*** • 56,180 square feet of impervious surface would be constructed at the site, resulting in a 41% decrease from existing conditions. • The developer would be required to construct new stormwater infrastructure. • The Town of Middletown will require the developer to prepare a stormwater management plan before issuing a building permit, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***Minor impact.*** • 76,610 square feet of impervious surface would be constructed at the site, resulting in a 20% decrease from existing conditions. • The developer would be required to construct new stormwater infrastructure. • The Town of Middletown will require the developer to prepare a stormwater management plan before issuing a building permit, which will include measures to control volume and quality of stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Storm Water:** ***No impact.*** • No impact on the volume of stormwater would occur because there would be no change from existing conditions.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Other Utility Systems: ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 9,452 kWh. The developer would be required to obtain new electric connections/infrastructure. Natural Gas • Negligible impact on regional demand; estimated annual demand of 47,067 cubic feet for restroom hot water. The developer would be required to obtain new gas connections/infrastructure.	**Other Utility Systems:** ***Negligible impact.*** Electricity • Negligible impact on regional demand; estimated annual demand of 9,452 kWh. The developer would be required to obtain new electric connections/infrastructure. Natural Gas • Negligible impact on regional demand; estimated annual demand of 47,067 cubic feet for restroom hot water. The developer would be required to obtain new gas connections/infrastructure.	**Other Utility Systems:** ***No impact.*** • No impact on other utility systems would occur because there would be no change from existing conditions.
	Solid Waste: ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 800 cubic yards of waste. • Negligible long-term increase in solid waste from public use of shoreline park and multi-use pathway.	**Solid Waste:** ***Minor impact.*** • Minor short-term impact on solid waste management through generation of construction and demolition wastes; estimated 800 cubic yards of waste. • Negligible long-term increase in solid waste from public use of shoreline park and multi-use pathway.	**Solid Waste:** ***No impact.*** • No development would occur; therefore, no solid waste would be generated.
Cultural Resources	**Archaeological Resources:** ***No impact***. • No impact on archaeological resources because none are present at the Midway Pier/Greene Lane property.	**Archaeological Resources:** ***No impact.*** • No impact on archaeological resources because none are present at the Midway Pier/Greene Lane property.	**Archaeological Resources:** ***No impact.***
	Architectural Resources: ***No significant impact.*** • One architectural resource at the Midway Pier/Greene Lane property, the existing Midway Pier, will be demolished. However, demolition of the pier would not be considered a significant impact on architectural resources because the Midway Pier was previously determined not NRHP-eligible.	**Architectural Resources:** ***No significant impact.*** • One architectural resource at the Midway Pier/Greene Lane property, the existing Midway Pier, will be demolished. However, demolition of the pier would not be considered a significant impact on architectural resources because the Midway Pier was previously determined not NRHP-eligible.	**Architectural Resources:** ***No impact.***
	Native American Resources: Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.	**Native American Resources:** Consultation to determine potential impacts on Native American resources is ongoing.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Historic Properties: ***No effect.*** • No effect on historic properties because none have been identified within the APE at the Midway Pier/Greene Lane property.	**Historic Properties:** ***No effect.*** • No effect on historic properties because none have been identified within the APE at the Midway Pier/Greene Lane property.	**Historic Properties:** ***No effect.***
Topography, Geology, and Soils	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new building (i.e., restrooms).	**Topography**: ***Minor impact.*** • Development would largely occur in areas that have been previously developed by the Navy. • Some alteration of the existing topography would be expected as a result of grading and associated cut-and-fill activities needed to accommodate the new building (i.e., restrooms).	**Topography:** ***No impact.***
	Geology: ***No impact.***	**Geology**: ***No impact.***	**Geology**: ***No impact.***
	Soils: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***Minor impact.*** • Minor, temporary impacts would occur during construction due to clearing, grading, etc. • Minor, permanent impacts would result from stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Soils**: ***No impact***.
	Bathymetry: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***Minor impact.*** • Displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry because of the small amount of sediment to be removed.	**Bathymetry**: ***No impact.***
	Marine Sediment: ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***Minor impact.*** • Short-term impacts during the construction period would be localized within the bay and are not expected to affect the overall marine sediment dynamics in Narragansett Bay.	**Marine Sediment:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Water Resources	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact on Gomes Brook and Narragansett Bay in the form of erosion, sedimentation, and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***Minor impact.*** • Direct short-term impact on Narragansett Bay in the form of sediment disturbance due to pile installation. • Indirect short-term impact on Gomes Brook and Narragansett Bay in the form of erosion, sedimentation, and stormwater runoff. • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit. • The developer would be required to obtain a permit from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act for the in-water work.	**Surface Water:** ***No impact.***
	Water Quality: ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, stormwater runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 1.3 acres of impervious surface area (decrease of 41% from existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***Minor impact.*** • Short-term sedimentation and turbidity during pile driving. • Erosion, sedimentation, resuspension of sediments, stormwater runoff, and construction vessels could collectively impact the water quality of Narragansett Bay. • 1.8 acres of impervious surface area (decrease of 20% from existing conditions). • The developer would implement appropriate erosion and sediment control measures and stormwater management in accordance with local and state laws and the Construction General Permit.	**Water Quality:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Groundwater: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • Developer will use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater**: ***Minor impact.*** • Temporary construction activities could extend below ground surface to a depth that would directly impact the underlying water table. • Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. • Developer will use standard dewatering techniques, comply with stormwater permits and management plans, and implement BMPs.	**Groundwater***: No impact.*
	Floodplains: ***Moderate impact.*** • 0.17 acres of 100-year floodplain would be permanently affected by construction of the shoreline park (picnic area, restrooms, a portion of the playground, a small segment of the pier, small portion of the multi-use pathway). • No loss of floodplain storage capacity anticipated. • The developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through the local building permit process.	**Floodplains**: ***Moderate impact .*** • 0.19 acres of 100-year floodplain would be permanently affected by construction of the shoreline park (picnic area, restrooms, a portion of the playground, a small segment of the pier, small portion of the multi-use pathway). • No loss of floodplain storage capacity anticipated. • The developer would be required to minimize or offset impacts from redevelopment that could degrade floodplain values and increase flood risk; to be accomplished through the local building permit process.	**Floodplains:** ***No impact.***
	Wetlands: ***No impact.***	**Wetlands:** ***Minor impact.*** • Less than 0.01 acre of permanent impact from the fill needed for pilings used to anchor the floating dock in place. • The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wetlands:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
Biological Resources	**Vegetation:** ***Minor impact.*** Old field • Permanent conversion of 0.2 acres of old field habitat.	**Vegetation:** ***Minor impact.*** Old field • Permanent conversion of 0.2 acres of old field habitat.	**Vegetation:** ***No impact.***
	Wildlife: ***Minor impact on terrestrial mammals and avian species. Minor impact on marine mammals and fish .*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Minimal habitat loss from conversion of vegetation types. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise during pile driving associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal • Measures to reduce impacts on marine mammals would be implemented, as necessary, by the developer through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***Minor impact on terrestrial mammals and avian species. Minor impact on marine mammals and fish.*** Terrestrial Mammals • Wildlife species such as small mammals may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. • Minimal habitat loss from conversion of vegetation types. Fish and Marine Mammals • Fish and marine mammals could be exposed to underwater noise during pile driving associated with construction of the floating docks. Sound pressure levels would not result in injury (Level A harassment) of marine mammals. • Potential Level B behavioral harassment could occur within 130 feet of active pile driving. • Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. • Measures to reduce impacts on marine mammals would be implemented by the developer, as necessary, through the state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.	**Wildlife:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	Avian Species • Short-term displacement during construction. • Minimal habitat loss from conversion of vegetation types. • No significant adverse effects on, or harm to, a population of migratory birds.	Avian Species • Short-term displacement during construction. • Minimal habitat loss from conversion of vegetation types. • No significant adverse effects on, or harm to, a population of migratory birds.	
	Threatened and Endangered Species: ***No effect on North Atlantic right whale or humpback whale; may affect but is not likely to adversely affect Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, and green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No effect on North Atlantic right whale or humpback whale; may affect but is not likely to adversely affect Atlantic sturgeon, Northwest Atlantic DPS of loggerhead sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, and green sea turtle.*** • The NMFS concurred with the effects determination for listed marine species. • Effects are considered insignificant or discountable. • The NMFS concurred with conservation measures recommended by the Navy, including constructing the project between November and May and installing piles with an impact hammer. • Conservation measures would be implemented by the developer through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and ESA.	**Threatened and Endangered Species:** ***No impact.***

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Midway Pier/Greene Lane Property			
	May affect but is not likely to adversely affect the northern long-eared bat. • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 0.2 acre of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer. (i.e., 0.25 mile buffer around known, occupied hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	***May affect but is not likely to adversely affect the northern long-eared bat.*** • NAVSTA Newport is located within the white nose syndrome zone and the redevelopment would remove 0.2 acre of potential roosting habitat. • The Navy would include USFWS recommended conservation measures as deed restrictions for the developer. (i.e., 0.25 mile buffer around known, occupied hibernacula, tree clearing between October 1 and April 15 only). • The Navy is consulting informally with USFWS under Section 7 of the ESA.	**.**
	Significant Wildlife Habitat: ***Minor impact.*** • No wetlands would be impacted under Alternative 1. • No adverse effects would occur to EFH, including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***Minor impact.*** • Less than 0.01 acre coastal wetlands would be filled for pilings used to anchor the floating dock in place. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. • No adverse effects would occur to EFH, including temporary disturbance of fish, increase in sediment loads, and turbidity during construction activities • No eel grasses beds would be directly impacted. • The NMFS will review the proposed action upon completion of a project through the state and federal permitting processes of the CRMC/SAMP, Section 404 of the CWA and MSFCMA.	**Significant Wildlife Habitat:** ***No impact.***

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3 Background Information and Methodology for Resource Area Assessments

The following section provides background information, including the regulatory context, about the resources on the surplus properties at NAVSTA Newport that have been evaluated in this EIS. The methodology used by the Navy to assess the existing environment and evaluate potential impacts on resources at all surplus properties under all alternatives also is described. This background information is common to all of the surplus properties and is presented here to reduce the redundancy of repeating the information for each surplus property.

3.1 Land Use, Zoning, and Coastal Resources

3.1.1 Resource Overview and Regulatory Authority

3.1.1.1 Land Use and Zoning

"Land use" generally refers to how land is used within a defined area, whether describing existing conditions, future planning and development, or need for governing regulations or special protection. Land use is usually described in broad terms that relate the use to human activities, such as the use of residential, industrial, commercial, institutional, recreational, and open space. Land use planning and regulation is the responsibility of the jurisdictions that govern or own the land or resources on the land such as towns, cities, counties, state or federal agencies, and often with public involvement. Coastal resources are a special land use feature that has a specific governing framework (see Section 3.1.1.2).

The Rhode Island Comprehensive Planning and Land Use Regulation Act of 1988 (General Laws of Rhode Island [G.L.] Chapter 45-22.2) requires each municipality in the state to establish a comprehensive land use planning program and produce and implement a comprehensive plan according to the standards laid out in the act. Comprehensive plans normally are produced by municipal staff with input from interested members of the public; reviewed and recommended by the city or town's planning board; then adopted by the city or town council. A comprehensive plan contains the goals, objectives, and policies for land use planning in each municipality.

Municipalities may develop area master plans as part of their comprehensive planning program. Area master plans are similar to comprehensive plans in that they contain goals, objectives, and policies for land use planning. However, area master plans generally consider a smaller area or single property that is the focus of a concentrated development or redevelopment effort. Area master plans also may be used to coordinate the joint planning efforts of two or several partnering municipalities.

Zoning is the primary land use control used by most towns and cities to guide development on municipal and privately owned land. Rhode Island G.L. Chapter 45-24 enables all cities and towns in the state to develop zoning ordinances to regulate in an orderly way the "type, intensity, and arrangement of land uses" within their boundaries (G.L. Chapter 45-24-29). The state requires each town and city to amend its zoning ordinance to be consistent with its comprehensive plan (G.L. Chapter 45-24-29). While the policies included in a town or city's comprehensive plan take the form of recommendations, the regulations included in a municipal zoning ordinance are requirements that developers must satisfy.

3.1.1.2 Coastal Zone Management

Congress passed the federal Coastal Zone Management Act (CZMA) in 1972 to encourage the appropriate development and protection of the nation's coastal and shoreline resources (16 U.S.C. 33 §§ 1451-1465). The CZMA gives states the primary role in managing these areas. To assume this role,

each state develops a coastal zone management plan that describes the state's coastal resources and how these resources are to be managed. The CZMA applies to lands within the coastal zone; however, the CZMA excludes "lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers or agents" (16 U.S.C. §1453). Although federal lands are excluded from direct application of the CZMA, a consistency determination for these federal properties is conducted to determine if project-related impacts on the neighboring properties would be consistent under CZMA regulations. Section 307 of the CZMA stipulates that when a federal project initiates reasonably foreseeable impacts on any coastal resource or use (land or water use or natural resource), that action must be consistent to the maximum extent practicable with the enforceable policies of the affected state's federally approved coastal zone management plan. Federal agencies must also consider management program provisions that are in the nature of recommendations.

The State of Rhode Island has developed and implemented a federally approved Coastal Resources Management Program (CRMP) describing current coastal legislation and enforceable policies. This program was approved by the federal Office of Ocean and Coastal Resource Management (OCRM) in 1978. The policies of the Rhode Island CRMP emphasize "preservation and restoration of ecological systems" within the state's coastal zone to provide for the state's social and economic welfare (Coastal Resources Management Council 2010, 2012). The Rhode Island CRMP is managed by the Rhode Island Coastal Resources Management Council (CRMC), a state agency administrated by a council composed of appointed state and local government and public representatives. The CRMC creates policies and plans and adopts regulations to implement the Rhode Island CRMP.

Direct federal actions in Rhode Island are subject to federal consistency requirements if those actions affect any coastal use or resource. Federal agencies undertaking such actions must show that the proposed action would be "conducted in a manner that is consistent with the enforceable policies of the [Rhode Island CRMP]," as well as any applicable special area management plans (SAMPs) (Coastal Resources Management Council n.d.).

Under the Rhode Island CRMP, any alteration or activity proposed within tidal waters, shoreline features, and contiguous areas[6] is regulated and a Council Assent is required. Rhode Island tidal waters have been assigned to one of six use categories:

Type 1–Conservation Areas

Type 2–Low-Intensity Use

Type 3–High-Intensity Boating

Type 4–Multipurpose Waters

Type 5–Commercial and Recreational Harbors

Type 6–Industrial Waterfronts and Commercial Navigation Channels

Shoreline features also have been assigned to the following categories:

- Coastal beaches and dunes
- Barrier beaches
- Coastal wetlands
- Coastal cliffs, bluffs, and banks

[6] The contiguous area is defined as 200 feet landward of a shoreline feature.

- Rocky shores
- Man-made shorelines.

All four of the surplus properties analyzed in this EIS are under the review authority of the CRMC because they are all located within coastal communities. The former Naval Hospital and the Midway Pier/Greene Lane properties are located in Rhode Island's coastal zone, in the 200-foot contiguous area of Narragansett Bay, which is categorized as a Type 4 Water: Multipurpose Waters.

All four surplus properties are located in the Aquidneck Island SAMP area. The CRMC developed a SAMP for the western side of Aquidneck Island and adjacent waters to protect the ecological, economic, and cultural values of this area (Coastal Resources Management Council 2009). Reuse and redevelopment of the surplus properties must also be consistent with applicable SAMP policies, which include setback and vegetation requirements, storm water management requirements, open space and public access provisions, and requirements for protecting scenic areas (Coastal Resources Management Council 2009).

3.1.2 Methodology: Assessing the Existing Environment

The discussion of land use in the existing environment includes a description of the existing land use at each of the surplus properties, a description of surrounding land use, a description of the comprehensive plans, master plans, and zoning that apply to the surplus properties and surrounding areas and a description of the applicable enforceable policies under the Rhode Island CRMP and the Aquidneck Island SAMP.

The study area for the land use analysis has been defined as an approximate 0.25-mile radius around each of the surplus properties. For consistency, all existing land use was derived from spatial data provided by the Aquidneck Island Planning Commission (2013).

Land use plans and policies applicable to the description of the existing environment include NAVSTA Newport planning documents, local comprehensive plans, zoning ordinances, the Rhode Island CRMP guidance document, and the Aquidneck Island SAMP.

3.1.3 Methodology: Evaluating Environmental Consequences

The impacts of the alternatives on land use were assessed in terms of consistency with adjacent existing land uses, planned future land uses, local and state land use plans, and local zoning regulations. Potential impacts on adjacent existing land uses were determined primarily by comparing local zoning regulations with the proposed redevelopment or reuse presented under each alternative. The type of land use, the intensity, and potential dimensions proposed under each alternative were considered. Proposed land uses are considered consistent with applicable land use plans and zoning ordinances if they conform to or promote the goals, policies, or requirements outlined in the land use controls. Proposed land uses are considered inconsistent if they would not conform to or would be prohibited by these goals, policies, or requirements. The impacts of the alternatives on Rhode Island's coastal zone and coastal uses or resources were assessed in terms of consistency with the enforceable policies of Rhode Island's CRMP and the Aquidneck Island SAMP. Consultation with CRMC during the scoping phase of the EIS solicited guidance on applicable coastal management policies for analysis; this guidance was used to frame the analysis of the proposed action's consistency with the RI CRMP and the Aquidneck Island SAMP. The Navy has received concurrence from the Rhode Island CRMC on its coastal consistency determination (CCD)(Willis 2014). A copy of the letter is included in Appendix B.

3.2 Socioeconomics and Environmental Justice

3.2.1 Resource Overview and Regulatory Authority

Socioeconomics are defined as the demographic and economic characteristics of a defined geographic area such as a town, city, county, or state. Included in the resource analysis are population; economy, employment and income; housing and commercial property; taxes and revenue. These are described below.

- Population: Number of persons within a defined geographic area from the U.S. Census Bureau Decennial Census of Population and Housing (Years 1990, 2000, and 2010). In addition, the 2009-2013 American Community Survey shows the most recent estimated population.
- Economy, employment, and income: Employment by industry sector from the U.S. Census Bureau; annual labor force and unemployment statistics from the U.S. Bureau of Labor Statistics; and median household and per capita income data from the U.S. Census Bureau 2009-2013 American Community Survey.

  Employment by industry sector refers to the way employment is distributed to companies producing similar products or providing similar services. Labor force is defined as the number of persons currently employed or actively searching for work within an area. Median household income is the total income a household receives from all sources where 50 percent of an area's households receive more total income and where 50 percent of an area's households receive less total income. Per capita income is a measure of the total income from all sources for all residents divided by the total number of residents in an area.
- Housing and commercial property: Number and characteristics of housing units within a defined geographic area as recorded by the U.S. Census Bureau 2010 Census of Population and Housing, the 2009-2013 American Community Survey, and local resources, where available.
- Taxes and revenue: Included in the resource analysis are property taxes by class of property (i.e., commercial real estate, residential real estate, personal and motor vehicles).

There are no specific federal statutes that provide protection for or guide the assessment of impacts on socioeconomic characteristics of a defined area with implementation of the proposed action.

However, closely aligned with socioeconomics are issues of environmental justice and the protection of children. EPA specifically defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, sex, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies" (U.S. EPA 2013a).

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was signed by the president on February 11, 1994. This EO requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental impacts of its programs, policies, and activities on minority and low-income populations, including Native American populations. The EPA and CEQ emphasize the importance of incorporating environmental justice review in the analyses conducted by federal agencies under NEPA and of developing protective measures that avoid disproportionate environmental impacts on minority and low-income populations.

The president issued EO 13045, Environmental Health Risks and Safety Risks to Children, on April 21, 1997. This order requires each federal agency to "make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and shall . . . ensure that its policies, programs, activities, and standards address disproportionate risks to children." This order was issued because a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks.

The Navy implements EO 12898 and EO 13045 through the Office of the Chief of Naval Operations M-5090.1, *Environmental Readiness Program Manual* (January 10, 2014). This policy provides instructions for naval personnel to identify and assess stressors to, and disproportionately high and adverse impacts upon, minorities, low-income populations, and children. A component of this policy institutes processes that result in consistent and efficient consideration of environmental impacts on Navy decision-making.

The CEQ has issued guidance to federal agencies on the terms used in EO 12898, as follows:

- **Low-income Population.** Low-income populations in an affected area should be identified using the annual statistical poverty thresholds from the U.S. Census Bureau.
- **Minority.** An individual who is a member of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.
- **Minority Population.** Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.
- **Disproportionately High and Adverse Human Health Effects.** When determining whether human health effects are disproportionately high and adverse, agencies are to consider the following three factors to the extent practicable:
    1. Whether the health effects, which may be measured in risks and rates, are "significant" (as employed by NEPA), or above generally accepted norms
    2. Whether the risk or rate of hazard exposure to a minority population, low-income population, or Indian tribe to an environmental hazard is "significant" (as employed by NEPA) and appreciably exceeds or is likely to appreciably exceed the risk or rate to the general population or other appropriate comparison group
    3. Whether health effects occur in a minority population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposure to environmental hazards.
- **Disproportionately High and Adverse Environmental Effects.** When determining whether environmental effects are disproportionately high and adverse, agencies are to consider the following three factors to the extent practicable:
    1. Whether there is or will be an impact on the natural or physical environment that significantly (as employed by NEPA) and adversely affects a minority population, low-income population, or Indian tribe. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment;

2. Whether environmental effects are "significant" (as employed by NEPA) and are or may be having an adverse impact on minority populations, low-income populations, or Indian tribes that appreciably exceed or are likely to appreciably exceed those on the general population or other appropriate comparison group; and
3. Whether the environmental effects occur or would occur in a minority population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposures from environmental hazards (Council on Environmental Quality 1997a).

3.2.2 Methodology: Assessing the Existing Environment

The existing environment section presents the demographic and socioeconomic characteristics of the City of Newport and the towns of Middletown and Portsmouth, including population; economy, employment and income; housing and commercial property; and taxes and revenue. Data on Newport County and the state of Rhode Island as a whole also have been presented for comparison purposes, where applicable.

The study area for the socioeconomic analysis of all of the surplus properties encompasses the City of Newport and the towns of Middletown and Portsmouth. As a result of this more regional focus, the existing socioeconomics and environmental justice environment sections for the four surplus properties have been combined in Section 4.2 rather than being presented separately for each property as for other resource areas.

3.2.3 Methodology: Evaluating Environmental Consequences

Socioeconomics

Factors considered in the analysis of population and housing impacts included the potential effects that implementing the proposed alternatives would have on the regional economy and whether these impacts would generate a change in economic activity sufficient to cause an expected influx of new residents to the area. In addition, any housing developments planned under the proposed alternatives were analyzed to determine if, at maximum build-out, the additional new housing units would affect the regional housing market in terms of price, supply or demand.

Factors considered in the analysis of economic impacts included short- and long-term employment, construction expenditures, and changes to the tax base. For employment, the short-term effects of construction activities and the longer-term impacts associated with reuse of the properties were evaluated. Estimates of the long-term employment and income impacts associated with the reuse and redevelopment of the former Navy properties assumed the maximum build-out was achieved for each proposed alternative. An estimate of the total long-term employment at maximum build-out was made using standard planning assumptions that correlated the total number of workers to the number of square feet of property developed for various types of land use.

The proposed construction associated with implementation of the alternatives would result in an immediate, short-term influx of money to the local economy from spending on such construction-related activities as labor, supplies and materials. Once these direct impacts on employment and income were estimated, the indirect or multiplied economic impacts on employment and income were then calculated using the U.S. Bureau of Economic Analysis' Regional Input-Output Modeling System (RIMS II). The multipliers from this model are based on regional information derived from databases analyzing commercial, industrial, and household spending patterns and relationships. The U.S. Department of Energy's Jobs and Economic Development Impact (JEDI) Model was used to assess the direct and indirect economic impacts of the proposed solar energy project at Tank Farms 1 and 2.

The implications for the local tax base and real property tax receipts were estimated by adapting property value estimates developed for the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (RKG Associates, Inc. et al. 2011) for those properties that would be taxable These cost estimates were assumed to be equivalent to the fair market value of the real estate. The total assessed value of the properties at maximum build-out was then calculated from this estimate of fair market value. Current (fiscal year [FY] 2013) real property tax rates were then applied to the estimated assessed value to calculate the potential tax-generating capacity of these properties at maximum build-out. The waterfront park at the former Naval Hospital property and the Midway Pier/Greene Lane component were not included in this analysis of tax-generating capacity because ownership of the property would be tax-exempt.

Given the regional nature of socioeconomic and environmental justice issues, the socioeconomic analysis focuses on the demographic and economic attributes of the city and the towns; data on Newport County and the state of Rhode Island as a whole also have been presented for comparison purposes, where applicable. As a result of this more regional focus, the socioeconomics and environmental justice environmental consequences sections have been combined and are not presented separately for each property.

Environmental Justice and Protection of Children

Consistent with EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994), and EO 13045, Environmental Health Risks and Safety Risks to Children (April 21, 1997) the U.S. Navy's policy is to identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority, children, and low-income populations.

Demographic and economic data for all census block groups and/or census tracts that are wholly or partially within the study area were compared with similar demographic and economic data county-wide to determine whether the study area included minority or low income populations. (Note: Income data available through the U.S. Census Bureau's American Community Survey can be found only at the census block group level. Thus, while race and age data are presented at the census block group level, low-income population data are presented at the census tract level.) When the percentage of the population that is either minority or low-income within an affected area exceeds 50 percent or is "meaningfully greater" than the minority or low income population percentage of the community of comparison, minority or low-income populations may potentially be subject to a disproportionately high and adverse effect. The Navy evaluated whether the study area included minority or low-income populations and whether the proposed action could result in human health or environmental effects. In addition any environmental health or safety risks that could be unique to children were also assessed.

3.3 Community Facilities and Services

3.3.1 Resource Overview and Regulatory Authority

Community facilities and services are those attributes of a community that promote the common welfare of area residents and include educational facilities, public safety and emergency response services, parks and recreational facilities, and health care/medical facilities. There are no specific federal statutes that provide protection for or guide the assessment of impacts on community facilities and services upon implementation of the proposed action.

3.3.2 Methodology: Assessing the Existing Environment

The existing environment section presents the community facilities and services of the City of Newport and the towns of Middletown and Portsmouth, including educational facilities, public safety and

emergency response services, health care/medical facilities, and parks and recreational facilities that would support development at each of the surplus properties.

3.3.3 Methodology: Evaluating Environmental Consequences

To address environmental consequences on community facilities and services, the direct population change as a result of full build-out under each alternative and the potential for an impact on capacity was the focus of the assessment.

3.4 Transportation

3.4.1 Resource Overview and Regulatory Authority

Transportation encompasses the roads, highways, and public transportation services that allow vehicles and people to move around the region and that provide access to homes, businesses, and other land uses.

Roadways are classified into one of three types according to the function served in moving traffic: arterial, collector roadways, and local streets. *Arterials* facilitate the movement of traffic regionally and between population and activity centers with a minimal level of access to adjacent properties. *Collector roadways* facilitate the movement of traffic from population and activity centers and funnel it onto arterial highways with a moderate level of access to adjacent properties. *Local roadways* provide access to adjacent properties and move traffic onto collector and arterial roadways.

To determine the adequacy of roadways, a capacity analysis is conducted that characterizes roadways and intersections based on their level of service (LOS). LOS is a qualitative measure that describes general operating conditions based on factors such as speed, travel times, and delays. LOS is reported on a scale of 'A' to 'F.' 'A' represents the best operating conditions with free-flowing traffic, and 'F' represents the worst operating conditions with significant delays.

There are no specific statutes that govern transportation as it pertains to implementation of the proposed action. The City of Newport does not have any specific regulations in its codified ordinances regarding traffic or transportation. The Town of Portsmouth has a traffic-sensitive overlay district; however, this overlay district applies only to lots that have frontage on a specific list of streets, none of which are applicable to the surplus property in Portsmouth. The Town of Middletown, through the zoning ordinance, has established traffic-sensitive districts (Middletown Code of Ordinances, Chapter 152 §720). The "traffic-sensitive" designation has been established by the town to improve traffic flow and safety on the town's major roadways. The town has established minimum lot width requirements in traffic-sensitive districts to reduce the number and increase the spacing of access points to major roadways (Middletown Code of Ordinances, Chapter 152 §720). Only lots with frontage on the following streets must adhere to the regulations of this district: East Main Road, West Main Road, Valley Road, and Aquidneck Avenue. Although the former Navy Lodge property is located within a traffic-sensitive district, the property fronts Coddington Highway and, therefore, is not subject to these regulations.

3.4.2 Methodology: Assessing the Existing Environment

Existing conditions related to the roadway networks and intersection operations were established by reviewing field data, regional planning documents and transportation studies such as the *Aquidneck Island Transportation Study* (Vanasse Hangen Brustlin, Inc. 2011), and discussions with the local planning departments.

A traffic analysis of existing traffic conditions in October 2012 focused on seven major intersections and eight roadways in the vicinity of the surplus properties. The intersections and roadways evaluated were

chosen based on their proximity to the surplus properties and their likelihood to be impacted by proposed alternatives. These intersections and roadways are depicted in Figure 3.4-1.

Existing physical characteristics of nearby roads and intersections were determined largely by visual inspection. Traffic volume data, in the form of manual turning movement counts and automatic traffic recorder (ATR) counts, for the study area were collected on mid-work week days (October 23 and 24, 2012). Manual turning movement counts were made at the following intersections (see Figure 3.4-1) from 6:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 6:00 p.m. (Pare Corporation 2013):

- Admiral Kalbfus Road/Training Station Road and Third Street (Newport)
- West Main Road (Route 114) and Coddington Highway/Rockwood Road (Middletown)
- West Main Road (Route 114) and Valley Road (Route 214) (Middletown)
- Defense Highway/Burma Road and Greene Lane (Middletown)
- West Main Road (Route 114) and Stringham Road (Portsmouth)
- West Main Road (Route 114) and Bradford Avenue (Portsmouth)
- Defense Highway/Burma Road and Stringham Road (Portsmouth).

Additionally, daily average traffic counts were taken at eight locations in the vicinity of the surplus properties using ATRs:

- Third Street, south of Dyers Gate Road (Newport)
- Coddington Highway, west of Jones Road (Middletown)
- West Main Road (Route 114) south of Valley Road (Middletown)
- Defense Highway/Burma Road north of Greene Lane (Middletown)
- West Main Road (Route 114) north of John Kesson Lane (Middletown)
- Stringham Road west of West Main Road (Route 114) (Portsmouth)
- Bradford Avenue east of Sullivan Drive (Portsmouth)
- Alexander Road south of Bay View Terrace (Portsmouth).

Public transit routes from the Rhode Island Public Transit Authority (RIPTA) were also reviewed.

To address safety issues, accident data were requested from the towns of Portsmouth and Middletown and the City of Newport for the most recent three-year period. Additionally, speed studies were conducted on each of the key study area roadways in the vicinity of each of the surplus properties to determine typical travel speeds. Stopping sight distance measurements were taken at the proposed driveway locations for each surplus property. Sight distances were assessed in conjunction with the American Association of State Highway and Transportation Officials (AASHTO) publication, *A Policy on Geometric Design of Streets and Highways, 2011 Edition* (as cited by Pare Corporation 2013).

3.4.3 Methodology: Evaluating Environmental Consequences

Impacts on transportation were determined by evaluating the potential change in traffic volumes, circulation patterns, and LOS on roadways. As previously discussed, LOS is a quality measure describing operational conditions within a traffic stream, generally in terms of service measures such as speed, travel

times, traffic interruptions, etc. Adverse impacts on roadways are any that force a road to operate beyond its full design capacity.

These impacts were assessed using trip generation estimates and a capacity analysis. The Institute of Transportation Engineers (ITE) Manual Trip Generation, 8th edition (as cited by Pare Corporation 2013), was used to estimate trip generation of proposed land uses for each property and each alternative. Trip generation estimates for each property took into account the redevelopment proposed for the other three properties as well as a 1 percent annual background growth that is expected to occur through the year 2032. Background growth is the growth expected within the study area based on development projects not specifically identified as well as annual population and traffic increases. Existing travel patterns on roadways in the vicinity of surplus properties were used to determine the distribution of trips for each alternative. The capacity analysis identified an LOS for each of the seven intersections studied under existing and alternative conditions.

3.5 Environmental Management

3.5.1 Resource Overview and Regulatory Authority

Environmental management is the handling of specialized materials and wastes that could be an environmental hazard if not properly managed. Such materials and wastes consist of hazardous waste; hazardous materials; petroleum, oil, and lubricants (POL) and other materials stored in tanks; asbestos; lead-based paint (LBP); PCBs; pesticides; radioactive materials and radon; and medical waste. This resource area also addresses sites the Navy is managing under the Navy's Environmental Restoration (ER) Program.

3.5.1.1 Hazardous Waste

The Resource Conservation and Recovery Act (RCRA) of 1976 regulates the "cradle-to-grave" control of hazardous waste, including generation, transportation, treatment, storage, and disposal. The Hazardous and Solid Waste Amendments of 1984 added land disposal restrictions and corrective action requirements, among others. Hazardous waste is specifically defined by the EPA and consists of solid wastes that contain listed hazardous wastes or exhibit hazardous waste characteristics such as ignitability, corrosivity, reactivity, or toxicity. Hazardous wastes also include universal wastes, which consist of certain batteries, certain pesticides, mercury-containing equipment (such as thermostats), and mercury-containing light bulbs.

RIDEM regulates hazardous waste management in Rhode Island under Regulation #DEM-OWM-HW10-01, Rules and Regulations for Hazardous Waste Management. The regulation incorporates EPA's hazardous waste regulations in 40 CFR Parts 260 to 273, largely by reference, with some exceptions and additions (RIDEM 2010a), e.g., Rhode Island identifies certain additional Rhode Island hazardous wastes. Rhode Island's hazardous waste regulations apply to all generators and the state does not recognize federal exemptions for small quantity generators (defined by the EPA as those that generate less than 1,000 kilograms of hazardous waste per month) (RIDEM 2008a). Thus NAVSTA Newport is considered to be a large-quantity generator (generation of 1,000 kilograms or more of hazardous waste per month) (NAVSTA Newport 2010).

M:\VA_Beach\NS_Newport\Maps\MXD\EIS_2015\Section_3\Traffic_Study.mxd

SCALE

0 0.5 1 Miles

Legend

- Automatic Traffic Recorders (ATR)
- Street
- Major Road
- River/Stream
- Waterbody
- Property Boundary

Figure 3.4-1

Traffic Study Area

NAVSTA Newport, Rhode Island

Notes: *Labeled streets in bold indicate streets assessed as part of traffic study.*

Property boundaries as shown will be confirmed by surveys and therefore may be modified.

SOURCE: Pare Corporation 2013

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The NAVSTA Newport Environmental Division manages hazardous waste at the installation[7]. NAVSTA Newport ensures the safe management and control of hazardous waste through the implementation of several planning documents:

- *Hazardous Waste Management Plan,* which provides guidance for hazardous and universal waste management at the installation, including training, collection, packaging, labeling, marking, recordkeeping, transfer, storage, and disposal. The plan also addresses management of special RCRA wastes such as waste oil, which RIDEM considers to be a hazardous waste; non-RCRA wastes such as asbestos, which is regulated by the Toxic Substances Control Act (TSCA) of 1976; and non-RCRA waste such as PCBs, a TSCA waste that RIDEM considers to be a hazardous waste (NAVSTA Newport 2010).
- *Final Hazardous Waste Contingency Plan*, which describes emergency response preparedness, procedures, and capabilities for areas of NAVSTA Newport where hazardous waste and specialized wastes (e.g., oil filters, used oil, and oily wastes) are generated and stored (Michael Baker Jr. Inc. 2011).
- NAVSTA Newport Instruction 5090.5D, *Hazardous Waste Management*, which provides general naval instruction for developing a Hazardous Waste Management Plan and properly managing hazardous waste (U.S. Department of the Navy 2011a).
- NAVSTA Newport Instruction 5090.20B, *Hazardous Waste Munitions (HWM)*, which provides general naval instruction for disposal and certification of waste munitions (U.S. Department of the Navy 2012).

Small quantities of hazardous wastes are generated at NAVSTA Newport during the year from routine operational activities such as cleaning, painting, equipment maintenance, and installation maintenance. Such wastes include paints, bilge water, chemical solutions (e.g., potassium hydroxide solutions, phenol solutions, and trichloroacetic acid solutions), compressed gases, flammable adhesives, used antifreeze, and lead waste (NAVSTA Newport 2011a, 2012c). NAVSTA Newport generates small quantities of universal wastes annually such as batteries, fluorescent light bulbs (which contain mercury), and other mercury-containing items (NAVSTA Newport 2011a, 2012c).

Hazardous waste generated at NAVSTA Newport is collected in one of two satellite accumulation areas and then consolidated in a single 90-day accumulation area (Michael Baker Jr. Inc. 2011). After 90-day storage, hazardous waste is transported off-site for disposal in compliance with federal and state regulations. Universal waste is collected in one of three universal waste storage areas and transported off-site for disposal or recycling within one year of accumulation and storage. Used oil and oily wastes, which the RIDEM considers to be hazardous wastes, are accumulated in seven "non-regulated" waste storage areas at NAVSTA Newport (Michael Baker Jr. Inc. 2011).

3.5.1.2 Hazardous Materials

Although hazardous materials and substances have specific regulatory definitions, in this EIS the term "hazardous materials" is used in a broad sense to mean an item or agent (chemical, physical, biological, or radiological) that has the potential to cause harm to the environment (including the human environment), either by itself or through interaction with other factors. NAVSTA Newport is managing hazardous materials and substances under a variety of regulatory programs, as described below.

[7] The installation's EPA hazardous waste identification number is RI1170024243.

Hazardous Material Control

NAVSTA Newport employs a Consolidated Hazardous Material Reutilization Implementation Management Program to achieve life-cycle hazardous material control and management (HMC&M) and pollution prevention (P2) at the installation. The program provides a standardized approach for HMC&M that ultimately reduces the quantities of hazardous material that are procured, stocked, and distributed for operational purposes and that are eventually disposed of as waste (Commander Navy Installations Command [CNIC] n.d.[a]). Hazardous materials that are routinely acquired to operate NAVSTA Newport include chemicals, acids, alcohols, solvents, paints, cleaners, oil, and fuel (diesel and gasoline) (NAVSTA Newport 2004a). Key elements of the program include:

- A centralized hazardous materials distribution and collection center.
- The *Hazardous Material Control and Management Plan*, which governs the procurement, issue, storage, use, handling, and management of hazardous material (NAVSTA Newport 2004a).
- NAVSTA Newport Instruction 5090.14B, *Hazardous Material Control and Management,* which provides general naval instruction for HMC&M (U.S. Department of the Navy 2007a).

In accordance with the Emergency Planning and Community Right-to-Know Act (EPCRA), NAVSTA Newport files an annual Tier II Emergency and Hazardous Chemical Inventory of the hazardous chemicals present on site (NAVSTA Newport 2012d).

Underground Storage Tanks

Operation of USTs is regulated under RCRA Subtitle I, Underground Storage Tanks, which is codified in 40 CFR Parts 280 to 282. The federal program regulates USTs containing petroleum products or hazardous substances, with a focus on preventing and cleaning up UST releases in order to protect the nation's groundwater. 40 CFR 280 provides the technical standards and corrective action requirements for owners and operators of USTs. 40 CFR 281 provides the requirements for state UST programs to receive EPA approval. RIDEM regulates USTs in Rhode Island under Regulation #DEM-OWM-UST03-11, Rules and Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials (RIDEM 2011a).

The NAVSTA Newport Environmental Division manages USTs under their tank management program, which is conducted in accordance with the following:

- The installation's Tank Management Plan.
- NAVSTA Newport Instruction 5090.8F, *Underground and Aboveground Storage Tank Management*, which provides general naval instruction for managing USTs and aboveground storage tanks (ASTs) (U.S. Department of the Navy 2011b).

The purpose of the NAVSTA Newport tank management program is to prevent contamination of soil and groundwater from USTs and aboveground storage tanks (ASTs) by registering tanks, establishing leak-tight design requirements, establishing leak detection and monitoring requirements, remediating contaminated sites, and ensuring proper UST and AST closure (CNIC n.d.[b]). Active USTs and associated features (e.g., leak detection systems, spill containment, and piping sumps) are inspected monthly for integrity in compliance with federal, state, and installation requirements (NAVSTA Newport 2013a). Inactive USTs are addressed under RIDEM's UST regulations.

Aboveground Storage Tanks

ASTs used to store petroleum products are regulated primarily under 40 CFR 112, Oil Pollution Prevention, as codified from the Clean Water Act (CWA). The purpose of 40 CFR 112 is to prevent the discharge of oil to waters and natural resources of the United States. The regulation focuses on spill prevention, control, and countermeasures and requirements for facility response plans. RIDEM regulates ASTs in Rhode Island under their Oil Pollution Control Regulations, which apply to aboveground oil storage tank facilities with a combined storage capacity of more than 500 gallons (RIDEM 1991). The NAVSTA Newport Environmental Division manages ASTs under their tank management program, as described above for USTs. In addition, the installation manages ASTs in accordance with the following:

- *Spill Prevention, Control, and Countermeasure [sic] Plan* (the SPCC plan), which addresses installation conditions, preventive practices, training, and other mitigating measures to reduce the potential for a spill of oil to navigable water from NAVSTA Newport (Aerostar 2012).
- *OPA 90 Facility Response Plan* (the FRP), which provides facility information (response planning data) and the emergency response action plan for postulated incidents involving oil and related products at NAVSTA Newport (Levine Fricke 2005).

The installation's SPCC plan and FRP address prevention of and specific response actions for spills from bulk petroleum containers such as ASTs, USTs, and for other sources of oil at the installation. Like the USTs, active ASTs and associated features (e.g., leak detection systems, spill containment, and valves) are inspected monthly for integrity in compliance with federal, state, and installation requirements (NAVSTA Newport 2013b).

Oil/Water Separators

Oil/water separators (OWSs) are regulated under 40 CFR 112, Oil Pollution Prevention, and subject to SPCC regulations if the OWSs are used in oil production and to meet the secondary containment requirements of the rule. OWSs that are used only to treat wastewater and are not used to satisfy any requirement of 40 CFR 112 are exempt from SPCC requirements (U.S. EPA 2005). OWSs are subject to regulation under the CWA and the National Pollutant Discharge Elimination System (NPDES) permit program (under 40 CFR 122) if the OWS discharges to the environment. In Rhode Island, OWSs are similarly regulated under the Rhode Island Pollutant Discharge Elimination System program if the OWS discharges to the environment.

OWSs are used in various locations at NAVSTA Newport, typically to treat and separate oil from water before discharge of the water at Rhode Island-permitted outfalls. They are used to treat wastewater and therefore are not regulated under 40 CFR 112 nor addressed in the SPCC Plan.

Asbestos-Containing Materials

Asbestos was used in building materials such as roofing and siding shingles, ceiling and floor tiles, insulation, cement, textiles, and coatings before the 1970s (U.S. EPA 2012a). The EPA banned the use of most asbestos-containing products by 1989 following studies that concluded that friable asbestos is an airborne hazard that is dangerous to the lungs.

Asbestos abatement is regulated under Title II of TSCA (also known as the Asbestos Hazard Emergency Response Act [AHERA] of 1986), which authorized the EPA to determine the extent of the risk to human health posed by asbestos in public and commercial buildings and the means to respond to any risk. Asbestos is also regulated as a human health and environmental hazard under various other federal laws and regulations, including the Clean Air Act (CAA) (Section 112, National Emission Standards for Hazardous Air Pollutants [NESHAPs], codified in 40 CFR 61), the Safe Drinking Water Act, and by the

Occupational Safety and Health Administration (OSHA) under the Asbestos General Standard (29 CFR 1910.1001) and Asbestos Construction Standard (29 CFR 1926.1101).

Under the authority of Title 23, Chapter 24.5 of the General Laws of the State of Rhode Island, entitled Asbestos Abatement, the Rhode Island Department of Health (RIDOH) regulates asbestos assessment and abatement in regulation R23-24.5-ASB, Rules and Regulations for Asbestos Control (RIDOH 2007a).

The NAVSTA Newport Environmental Division manages the identification, control, and abatement of asbestos-containing materials (ACM) in accordance with *Asbestos Operations & Management Plan* (U.S. Department of the Navy 1997). The plan establishes requirements for asbestos inspections, assessments, surveys, and sampling; labeling ACM; cleaning ACM surfaces; ACM removal; ACM disposal; worker training; and health and safety. The most comprehensive ACM survey at NAVSTA Newport was made in 1992 when 200 buildings totaling more than 3,600,000 square feet were surveyed (Halliburton 1994). One hundred forty-five of the 200 surveyed buildings were found to contain some known or assumed ACM in varying conditions. Following the survey and the recommendations in the report, the Navy labeled ACM at the installation and instituted a removal program for ACM with a potential to expose workers or the public. Individual asbestos surveys of other buildings and areas also have been performed. Since the time of the survey and the development of the *Asbestos Operations & Management Plan*, asbestos and ACM are evaluated on a case-by-case basis when specific maintenance or demolition work is scheduled for buildings or facilities at NAVSTA Newport.

Lead-Based Paint/Lead

LBP is regulated under Title IV of TSCA, known as Lead Exposure Reduction, which was added to TSCA in 1992. Among other things, Title IV required the EPA to establish reliable, effective, and safe standards for performing LBP activities; authorized states to administer and enforce their own LBP programs; and required the EPA to develop a model state program (Congressional Research Service 2011). Similar to asbestos, lead is regulated as a human health and environmental hazard under various other federal laws and regulations including the CAA (Section 112, NESHAPs, codified in 40 CFR 61), the Safe Drinking Water Act, RCRA, and by OSHA under the Lead General Standard (29 CFR 1910.1025) and Lead Construction Standard (29 CFR 1926.62).

Rhode Island's law and regulations for LBP apply to residential areas and facilities where children could be at risk from lead poisoning and are not intended to apply to industrial areas at NAVSTA Newport or the surplus property. The Rhode Island Department of Administration regulates lead mitigation for dwellings under the authority of the Lead Hazard Mitigation Act (Chapter 42-128.1 of the Rhode Island General Laws) and the regulation called Rules and Regulations Governing Lead Hazard Mitigation (Rhode Island Department of Administration 2011). RIDOH regulates the control of lead hazards in residential and child-occupied areas under the authority of the Lead Poisoning Prevention Act (Chapter 23-24.6 of the Rhode Island General Laws) and regulation R23-24.6-PB, Rules and Regulations for Lead Poisoning Prevention (RIDOH 2010). RIDEM regulates LBP removal from the exterior surfaces of any facility under Air Pollution Control Regulation No. 24, Removal of Lead Based Paint from Exterior Surfaces (RIDEM 2007a), so that LBP removal does not create an airborne exposure hazard for workers or others nearby. RIDEM regulates the investigation and remediation of releases of lead to the environment, such as to soil, under regulation DEM-DSR-01-93, Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (RIDEM 2004).

The NAVSTA Newport Environmental Division manages the identification, control, and abatement of LBP, lead, and lead-containing materials under their LBP program (CNIC n.d.[c]). The objectives of the program are to manage LBP in residential and child-occupied facilities and protect the safety of government employees and others engaged in the maintenance of areas with LBP and the general use of lead or lead-containing materials. The program is conducted primarily in accordance with NAVSTA

Newport Instruction 5090.9B, *Lead Paint Program*, which provides general instruction for working with lead and lead paint at the installation. NAVSTA Newport Instruction 5090.9B includes brief standard operating procedures (SOPs) for work on painted surfaces, paint chip sampling, exterior lead projects, and interior lead projects (U.S. Department of the Navy 2011c).

The NAVSTA Newport Environmental Division maintains a lead log of areas that have been identified as containing LBP. The installation's LBP program includes review of design specifications and contracts for all construction, demolition, and renovation projects—not just those in residential areas—to ensure that LBP assessment and control are conducted as necessary for those projects (CNIC n.d.[c]; Smith 2012).

Polychlorinated Biphenyls

PCBs are regulated by the EPA under TSCA. Rhode Island regulates PCBs and PCB-contaminated materials as a Rhode Island hazardous waste (RIDEM 2010a).

The NAVSTA Newport Environmental Division manages the identification and control of PCBs and PCB-contaminated materials. Transformers used in the delivery of electrical service are a common source of PCBs. PCB-containing transformers were removed or replaced at NAVSTA Newport in the 1980s (U.S. Department of the Navy 2009) and the Navy is not otherwise aware of any PCB-containing transformers at the installation (CNIC n.d.[d]). A transformer without a "PCB-free" label is required to be tested to verify that it is PCB-free (i.e., does not contain PCBs greater than or equal to 50 parts per million [ppm]). Because some caulkings, including window caulkings, manufactured before 1980 can contain PCBs, demolition or renovation projects include testing caulking to determine proper handling and disposal methods (CNIC n.d.[d]). Fluorescent light ballasts containing PCBs are handled as a hazardous waste.

Pesticides

Pesticides are regulated by the EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which provides the basis for the regulation, sale, distribution, and use of pesticides in the United States. Herbicides are considered to be a class of pesticides. The RIDEM Division of Agriculture regulates pesticide use in Rhode Island, primarily pursuant to the Pesticide Control Act of 1976 (Chapter 23-25-1 of the Rhode Island General Laws) and the regulation entitled Rules and Regulations Relating to Pesticides (RIDEM 2006).

The NAVSTA Newport Environmental Division controls pests in accordance with the *Integrated Pest Management Plan* (Geo-Marine 2009). The integrated pest management program uses "continuous monitoring, education, recordkeeping, and communication to prevent pests and disease vectors from causing unacceptable damage to operations, people, property, materiel, or the environment." Common pests that the installation monitors and controls include insects (mosquitos, bees, termites, cockroaches, and ants), decay fungi, weeds, rodents, and birds. The installation controls pests using non-chemical methods first (e.g., sanitary conditions, physical controls, mechanical controls, and biological controls), followed by chemical methods if necessary. Chemical pesticides are required to have as low a toxicity as possible. Only pesticides approved by the EPA and the RIDEM are used, and NAVSTA Newport provides a list of pesticides in use to Naval Facilities Engineering Command (NAVFAC) Atlantic. Pesticides are applied by trained and certified pest-control operators who meet DOD and RIDEM standards for pesticide application. Pest-management staff are required to know the locations of sensitive habitats at the installation and to apply pest control accordingly.

Radioactive Materials

The U.S. Nuclear Regulatory Commission (NRC) is responsible for protecting the health and safety of the public and the environment from civilian (i.e., non-militaristic) uses of radioactive material. The NRC

delegates its authority to state governments under its Agreement State Program. Although Rhode Island is an Agreement State, NAVSTA Newport, as a federal entity, is regulated directly by the NRC. The Navy has authority from the NRC, under the Navy's Master Materials License of Broad Scope, to receive, use, transport, transfer, and dispose of radioactive material from Navy activities. Under the broad scope license, Naval Radioactive Materials Permits are issued to individual installations for activities that use radioactive materials. NAVSTA Newport does not maintain such a permit because there are no current activities at the installation, including the surplus property, where radioactive material is routinely used (Moore 2013). Likewise, NAVSTA Newport does not have a specific radioactive materials or radioactive waste management plan. The NAVSTA Newport Environmental Division requires contractors who bring radioactive materials on base for specific purposes (e.g., radiography or LBP inspections) to have a radiation safety program and obtain NRC approval.

Radon

EPA regulates radon in indoor air under Title III of TSCA, known as Indoor Radon Abatement, which was added to the TSCA in 1988. Under Title III, the EPA is required to publish a citizens' guide to radon health risk and perform studies of radon contamination in federal buildings. The EPA maintains guidance levels for radon in residences and has published numerous guides for testing and mitigating radon in residences. OSHA regulates radon in the workplace under the Occupational Safety and Health Act of 1970. The occupational standard for radon is codified in the ionizing radiation standards in 29 CFR 1910.1096, which address limits for exposure to airborne radioactive material.

RIDOH regulates radon in public and high-priority buildings (such as schools) under the authority of the Radon Control Act (Chapter 23-61 of the Rhode Island General Laws) and regulation R23-61-RC entitled Rules and Regulations for Radon Control (RIDOH 2007b). Among other things, the regulations provide measurement and mitigation protocols for public and high-priority buildings. The standards and protocol are aligned with the EPA's recommendations.

The NAVSTA Newport Environmental Division manages radon in accordance with the Navy Radon Assessment and Mitigation Program (NAVRAMP), which is addressed in Chapter 25 of OPNAV M-5090.1, *Environmental Readiness Program Manual* (U.S. Department of the Navy 2014). The NAVRAMP describes radon-testing protocol, action levels, and mitigation measures, which are based on the EPA's recommendations (CNIC n.d.[e]). Additional NAVRAMP guidance that NAVSTA Newport uses is provided in *U.S. Navy Radon Assessment and Mitigation Program Guidebook for Radon Management in Nonresidential Buildings* (Oak Ridge National Laboratory 2010).

The NAVSTA Newport Environmental Division made a comprehensive radon study of many areas at the installation in 1993, consisting of more than 2,500 measurements. Most of the results were below EPA's threshold level of 4 picocuries per liter (pCi/L) (NAVSTA Newport 1996). The few areas with elevated radon results were identified for potential mitigation. Many of the buildings with elevated results from the 1990s testing were retested in 2011, for which there were a few elevated results (NAVSTA Newport 2011b). Individual radon studies of other buildings and areas also have been performed.

3.5.1.3 Medical Waste

Medical waste is not regulated at the federal level. The RIDEM Office of Waste Management regulates medical waste under the authority of Chapter 23-19.12 of the Rhode Island General Laws and the ensuing regulation DEM-OWM-MW-1-2009, Rules and Regulations Governing the Generation, Transportation, Storage, Treatment, Management and Disposal of Regulated Medical Waste in Rhode Island (RIDEM 2010b).

NAVSTA Newport manages medical waste in accordance with NAVSTA Newport Instruction 5090.12B, *Regulated Medical Wastes (RMW)* (U.S. Department of the Navy 2011d). Medical waste is generated

primarily by Naval Health Clinic New England (NHCNE), which is the current on-base medical facility. In accordance with the instruction, medical waste generated at the installation is managed by a contractor that services NHCNE.

3.5.1.4 Environmental Restoration Program

Under the Navy's ER Program, inactive hazardous waste sites and hazardous substance spills are investigated and cleaned up in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as Superfund. CERCLA provides federal authority for response actions to clean up contamination from releases or threatened releases of hazardous substances that may endanger human health or the environment. Under CERCLA, the EPA developed a National Priorities List (NPL) of sites that present the greatest risk to public health and the environment. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, which mandated that the DOD follow the same cleanup regulations that apply to private entities. SARA established the Defense Environmental Restoration Program (DERP), which is the broad program encompassing the Navy ER Program. Through the DERP (and hence the ER Program), the DOD conducts environmental restoration activities at sites on active installations, installations undergoing BRAC, and formerly utilized defense sites. The main objectives of the DERP are as follows:

- The identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants, and contaminants
- The correction of other environmental damage (such as detection and disposal of unexploded ordnance) that creates an imminent and substantial endangerment to public health or the environment
- The demolition and removal of unsafe buildings and structures, including at formerly utilized defense sites.

The Navy established the ER Program to comply with the DERP.

The Navy's 1983 Initial Assessment Study at NAVSTA Newport identified sites where contamination was suspected to pose a threat to human health or the environment. NAVSTA Newport was listed on the NPL on November 21, 1989, under EPA ID RI6170085470 (U.S. Department of the Navy 2009). On March 23, 1992, the Navy entered into a Federal Facility Agreement (FFA) with EPA Region I and the State of Rhode Island under CERCLA §120 (U.S. EPA 1992). The FFA listed the Installation Restoration Program (IRP) study areas and sites considered to be areas of contamination; established goals and responsibilities among the Navy and the regulatory agencies; and set enforceable cleanup schedules for the sites. A restoration advisory board (RAB), established in 1996, comprises community representatives and state and federal regulators who advise the Navy on environmental cleanup issues and strategies. CERCLA remedy selection takes into account reasonably anticipated future land uses to determine the appropriate extent of remediation, which must be protective of human health and the environment.

CERCLA 120(h)(3)(A) requires that, prior to property transfer, all necessary remedial actions to protect human health and the environment with respect to any such hazardous substance remaining on the property be completed or in place and proven to be operating properly and successfully.

CERCLA 120(h)(3) imposes several requirements on all transfers of federal real property "owned by the United States" to non-federal entities. With regard to the Federal Real Property Disposal Process, CERCLA requires the federal government to:

- Give notice of hazardous substance activity to the grantee
- Include a covenant in the deed that "all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer"
- Include a deed covenant that the United States will return and perform any additional response action that may be required in the future
- Retain a perpetual right of access necessary to do such additional response actions.

These requirements only apply to conveyances of real property out of federal ownership. They do not apply to interagency federal real property transfers or to leases, licenses, or easements granted for the use of federal land.

CERCLA 120(h)(3)(C) allows property at NPL sites to be transferred before all necessary remedial actions have been taken if the EPA, with the concurrence of the governor of the state in which a facility is located, determines that the property is suitable for transfer, based on a finding that:

(I) The property is suitable for transfer for the use intended by the transferee, and the intended use is consistent with protection of human health and the environment;

(II) The deed or other agreement proposed to govern the transfer between the United States and the transferee of the property contains assurances that:

1. Provide for any necessary restrictions on the use of the property to ensure the protection of human health and the environment;
2. Provide that there will be restrictions on use necessary to ensure that required remedial investigations, response action, and oversight activities will not be disrupted;
3. Provide that all necessary response actions will be taken and identify the schedules for investigation and completion of all necessary response actions as approved by the appropriate regulatory agency; and
4. Provide that the federal agency responsible for the property subject to transfer [in this case, the Navy] will submit a budget request to the Director of the Office of Management and Budget that adequately addresses schedules for investigation and completion of all necessary response action, subject to congressional authorizations and appropriations;

(III) The federal agency requesting deferral [in this case, the Navy] has provided notice, by publication in a newspaper of general circulation in the vicinity of the property, of the proposed transfer and of the opportunity for the public to submit, within a period of not less than 30 days after the date of the notice, written comments on the suitability of the property for transfer; and

(IV) The deferral and the transfer of the property will not substantially delay any necessary response action at the property (U.S. EPA 2002).

Transfer of property pursuant to CERCLA 120(h)(3)(C) is commonly referred to as an "early transfer."

The Navy ER Program encompasses three main program categories: the IRP, the Munitions Response Program (MRP), and POL spills that are not addressed in the CERCLA framework. The IRP and MRP are described below. NAVSTA Newport has not designated any POL sites under their ER Program. The

Navy maintains a Site Management Plan for NAVSTA Newport that describes the IRP and MRP sites, tasks completed, and the schedule for planned work (Resolution Consultants 2014). The Site Management Plan is updated annually. The Navy conducts five-year reviews of the ER Program, which discuss the status of the ER Program sites and evaluate implemented remedies with respect to their protection of human health and the environment. CERCLA activities under the Navy ER Program continue regardless of whether the installation or parts of it were recommended for disposal under BRAC.

Because CERCLA excludes petroleum from its definition of hazardous substances, the cleanup of petroleum releases from USTs is regulated under RCRA and state law. Petroleum cleanup follows an iterative process similar to the CERCLA cleanup process.

Installation Restoration Program

The IRP portion of the Navy ER Program addresses releases of hazardous substances, pollutants, or contaminants that pose toxicological risks to human health or the environment. The Navy's IRP is structured in accordance with CERCLA requirements, which specify sequential procedures for initiating and carrying out the remedial process. These general steps are as follows (U.S. Department of the Navy 2007a):

1. Site discovery and notification
2. Preliminary assessment/site inspection (PA/SI)
3. Remedial investigation/feasibility study (RI/FS)
4. Record of Decision (ROD)
5. Remedial design (RD)
6. Remedial action – construction
7. Remedy-in-place
8. Remedial action – operation
9. Response complete
10. Long-term management
11. Site closeout.

The EPA, state agencies, and the public have opportunities to review and comment on assessments/studies and proposals for removal/remedial actions throughout the process. The ROD is prepared after public review of the proposed remedial action plan. The ROD identifies the selected remedy based on information and technical analysis presented in the RI/FS report. A site may be removed from the NPL when the final ROD requirements are attained and the site is operational and functional.

The IRP sites currently identified for NAVSTA Newport are shown on Figure 3.5-1. There are 14 current IRP sites, two of which are located on surplus properties; these two are noted in Table 3.5-1 along with IRP sites within approximately 0.5 mile from a surplus property. The list excludes certain sites identified at the time of the FFA that have since been fully remediated or otherwise moved out of the IRP and includes some sites added since the FFA. Locations identified as "sites" are areas of concern (AOCs) where contaminants have been found at concentrations that pose risk. Locations identified as "study areas" are being evaluated to determine if there is risk (Resolution Consultants 2014).

Table 3.5-1 Environmental Restoration Program Sites at NAVSTA Newport

Site Number	Site Name	Conditions/Status
Installation Restoration Program Sites		
Study Area 4	Coddington Cove Rubble Fill Area	8-acre construction and demolition (C&D) debris and general fill disposal area. Contaminants found in groundwater and soil. Additional groundwater sampling was completed in early 2014; evaluation is ongoing as to whether further action is necessary.
Study Area 7	Tank Farm 1	50-acre inactive tank farm used to store fuel. Tanks cleaned in 1996/1997. Environmental investigations conducted since 1983. Contaminants found in groundwater and soils. Two tanks have been removed. Currently being studied under both the CERCLA IRP and RIDEM UST programs.
Study Area 10	Tank Farm 2	70-acre inactive tank farm used to store fuel. Tanks cleaned in 1996/1997. Environmental investigations conducted since 1983. Contaminants found in groundwater and soils. Currently being studied under both the CERCLA IRP and RIDEM UST programs.
Site 13	Tank Farm 5	Inactive tank farm used to store fuel. Tanks cleaned between 1994 and 1997 and demolished in place between 1998 and 1999. Environmental investigations conducted since 1983. Currently being studied under both the CERCLA IRP and RIDEM UST programs. A former OWS has been demolished and some AOCs of contaminated soil have been excavated.
Site 13	Tank Farm 5, Tanks 53 and 56	Tanks cleaned in 1992 and demolished in place in 1998 and 1999. Contaminated soil near Tank 53 was removed and a groundwater extraction and treatment/containment system was operated from 1994 to 1996 to clean up the area groundwater. The remedial objectives for these tanks have been met. A final ROD for the corrective action plan is anticipated in October 2015.

Source: NAVFAC 2013b; Dorocz 2015.

NAVSTA Newport Instruction 5090.15B, *Installation Restoration (IR) Site Use Restrictions,* addresses institutional controls for ground surface disturbance of selected IRP sites, to ensure the safety of the public and the environment (U.S. Department of the Navy 2007b).

Munitions Response Program

The MRP portion of the Navy ER Program addresses munitions and explosives of concern (MEC) and the human health and environmental risks associated with munitions constituents at sites other than operational ranges. The key program drivers developed to date for MRP actions are outlined in the National Oil and Hazardous Substance Pollution Contingency Plan as authorized by CERCLA (NAVFAC 2013a).

One MRP site has been identified for NAVSTA Newport and is shown on Figure 3.5-1.

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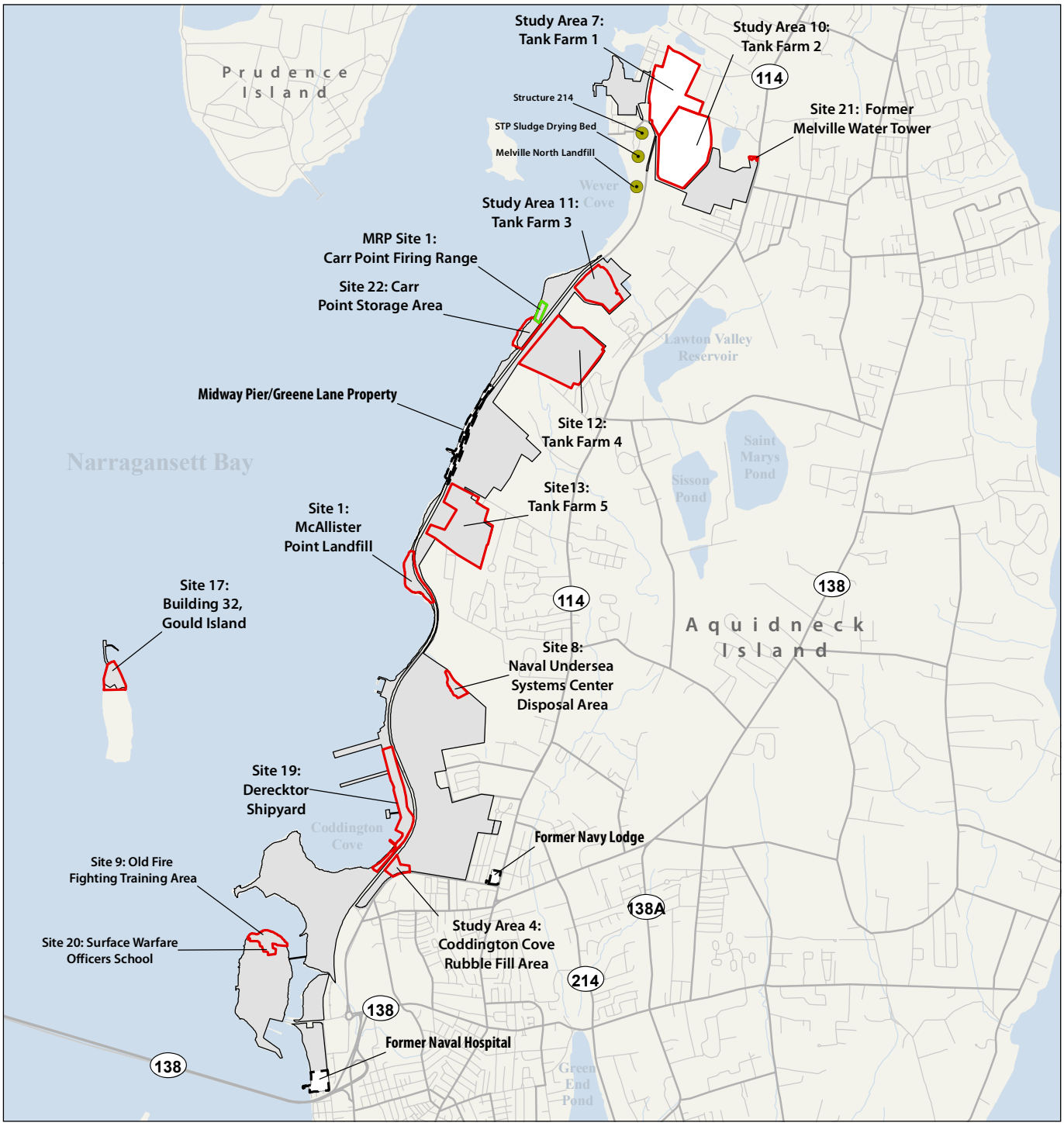

N

SCALE

0 0.5 1 Miles

Legend

- Street
- Major Road
- IRP Site/Study Area Boundary
- MRP Site Boundary
- Surplus Property
- Installation Boundary
- Rivers/Streams
- Waterbody
- Non-Navy CERCLA Site

Figure 3.5-1

Environmental Restoration Program and Non-Navy CERCLA Sites

NAVSTA Newport, Rhode Island

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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3.5.1.5 Finding of Suitability to Transfer

Real property transactions under BRAC require the preparation of a finding of suitability to transfer (FOST). The FOST summarizes how the applicable requirements and notifications for hazardous materials, petroleum products, and other regulated materials (e.g., ACM, LBP, PCBs, and pesticides) have been satisfied and whether the property is environmentally suitable for transfer. The Environmental Condition of Property report that was prepared for the NAVSTA Newport surplus properties provides baseline information to the BRAC PMO to support disposal decisions and real estate transfer documentation.

The redevelopment plan for the NAVSTA Newport surplus properties assumes that certain cleanup actions will occur before property transfer (RKG Associates, Inc. et al. 2011). In those cases, NAVSTA Newport will remove and dispose of hazardous materials in accordance with applicable laws and regulations and perform any required closures. The FOST(s) for NAVSTA Newport will address any restrictions, notifications, or covenants in deeds related to hazardous materials at the surplus properties. The FOST(s) also will specifically address compliance with CERCLA and any applicable CERCLA §120(h)(3) covenants (see Section 3.5.1.3). Long-term remedies, including land use controls, and responsibilities for maintenance and reporting are discussed in the FOST(s).

Potentially contaminated properties can be transferred under the "early transfer" process of CERCLA, as described in Section 3.5.1.3, in which case the Navy would prepare a finding of suitability for early transfer (FOSET) to transfer property prior to cleanup actions. In the case of a FOSET, either the Navy or the property recipient may conduct cleanup actions. The benefit of a FOSET is that property can be transferred sooner in order to begin redevelopment while still being assured of property cleanup.

The FOST(s) for the NAVSTA Newport surplus property will be forwarded to the EPA (and RIDEM) for review as appropriate (U.S. Department of Defense 2006).

3.5.2 Methodology: Assessing the Existing Environment

Existing conditions related to environmental management were assessed by obtaining, reviewing, and summarizing information for each topic area (e.g., hazardous waste, PCBs, radon, the ER Program) as applicable to NAVSTA Newport in general as well as specifically to the properties to be disposed of; interviewing NAVFAC and installation personnel; and attending walkover and windshield surveys of the properties. A survey also was made in April 2013 for ACM, LBP, PCB-containing window caulk, and lead in soils for applicable structures at the surplus properties in support of this EIS and future disposition of the properties (YU & Associates 2013). The following structures were surveyed:

- **Former Naval Hospital**
  - Building 1 – Former main hospital building (including Building A72, Public Works electrical room and storage)
  - Building 7 – Housekeeping
  - Building 45 – Drug and alcohol rehabilitation
  - Building 63 – Detached garages
  - Building 993 – Emergency generator
  - Quarters A & B – Housing units
  - Pier 71 – Berthing pier

- **Tank Farm 1**
  - Building 199 –Transformer building; part of electrical substation
- **Tank Farm 2**
  - Building 48 – Former Navy fire station
  - Building 219 – Electrical distribution (transformer building)

The survey consisted of the following primary elements:

- Collection and analysis of 342 samples for friable and non-friable ACM
- Field screening for LBP using an X-ray fluorescence (XRF) device and collection/analysis for lead of 11 follow-up paint chip samples
- Collection and analysis for lead of 10 composite soil samples from around buildings
- Collection and analysis for PCBs of six composite samples of window caulking and sealants.

The survey was performed in accordance with established regulatory requirements. The executive summary of the report documenting the survey (YU & Associates 2013) is provided in Appendix E. Management, investigation, and cleanup activities are ongoing at the base; therefore, the existing conditions present the most recent data that were available at the time of preparation of this EIS.

3.5.3 Methodology: Evaluating Environmental Consequences

The impact analysis was performed by evaluating the potential impacts, under each alternative, associated with generating and managing wastes and materials and managing specialized features such as tanks. This included evaluating, for example, whether and to what extent the alternatives would result in the generation, handling, or management of hazardous materials and wastes; whether and to what extent the alternatives would be affected by IRP and MRP sites and activities; and comparisons with applicable regulatory criteria. The impact analysis included discussing any requirements for property transfer related to environmental management, e.g., restrictions or covenants due to residual contamination that could not or need not be remediated and the status of applicable FOSTs for the properties.

3.6 Air Quality

3.6.1 Resource Overview and Regulatory Authority

Air quality is defined by ambient air concentrations of specific pollutants that have been determined by the EPA to be a concern related to the health and welfare of the general public and the environment and that are widespread across the U.S. The CAA of 1970, 42 U.S.C. 7402, et seq., amended in 1977 and again in 1990, is the primary federal statute governing the control of air quality. Under the authority of the CAA, the EPA designates pollutants as “criteria pollutants” for which National Ambient Air Quality Standards (NAAQS) have been established to protect public health and welfare. With EPA oversight, states may set concentration levels for additional pollutants not regulated by the EPA. The State of Rhode Island administers the provisions of the majority of the CAA.

The CAA designates pollutants as "criteria pollutants" for which NAAQS have been established to protect public health and welfare and the environment. "Criteria pollutants" are particularly an issue in developed countries such as the U.S. and include the following: particulate matter less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and ozone (O_3) (see Table 3.6-1). The CAA established two types of NAAQS: *Primary standards* set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. *Secondary standards* set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (U.S. EPA 2015a).

A geographic area with air quality that meets the primary standard, because its air is as clean as or cleaner than the standard, is called an "attainment" area. Areas that do not meet NAAQS for criteria pollutants are designated "nonattainment areas" for that pollutant. Areas that achieve the air quality standard after being designated nonattainment are redesignated as attainment following EPA approval of a maintenance plan. In areas that exceed the NAAQS, the CAA requires preparation of a state implementation plan (SIP). The SIP details how the state will attain the standards within mandated time frames. Both the federal CAA and the state CAA identify emission-reduction goals and compliance dates based upon the severity of the NAAQS violation within a region. The CAA prohibits federal agencies from engaging in, supporting, providing financial assistance for licensing, permitting, or approving any activity that does not conform to an applicable SIP. Federal agencies must determine that a federal action conforms to the SIP before proceeding with the action. This determination is conducted in accordance with the General Conformity Rule (40 CFR 93).

The location of the proposed action is in Newport County, Rhode Island, and is part of the Providence, Rhode Island air quality region, which encompasses all of Rhode Island. The state is under the jurisdiction of the RIDEM for air quality, which implements Air Pollution Control Regulations pursuant to Rhode Island General Laws § 42-17.1-2(s) and 23-23, as amended, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, Rhode Island General Laws, Chapter 42-35 (RIDEM 2013a). Rhode Island is in attainment for all NAAQS (EPA 2015b). Rhode Island had previously been designated nonattainment for the 1997 ozone standard; however, on March 6, 2015 EPA revoked the 1997 8-hour ozone NAAQS (80 FR 12264; Federal Register 2015). The Region is currently in attainment for all NAAQS (U.S. EPA 2015b).

3.6.1.1 General Conformity

The EPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emission thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in tons per year) vary from pollutant to pollutant and also depend on the severity of the nonattainment status (see Table 3.6-2).

A conformity applicability analysis, the first step of a conformity evaluation, assesses whether a federal action must be supported by a conformity determination. This is typically done by quantifying applicable direct and indirect emissions that are projected to result due to implementation of the federal action. Indirect emissions are those emissions caused by the federal action, originate in the region of interest but may occur at a later time and/or in a different location from the action itself, and are reasonably foreseeable. The federal agency can control and maintains control over the indirect action through its continuing program responsibility.

Table 3.6-1 National Ambient Air Quality Standards

Pollutant [final rule cite]	Description	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is formed by the incomplete combustion of fuels. The primary sources of this pollutant are automobiles, aircraft, and other on- and off-road vehicles.	Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead	Lead is a metal that had many uses in the past, including as a primary ingredient in fuel and paint. Since lead is no longer allowed in gasoline and household paint, there are no emissions from painting operations and vehicles. Emissions may result from painting operations if old lead-based paint is removed as part of the process.	Primary and secondary	Rolling 3 month average	0.15 $\mu g/m^3$ (Note 1)	Not to be exceeded
Nitrogen Dioxide	Nitrogen dioxide is a gas that forms when nitric oxide (NO) reacts with atmospheric oxygen (O_2). Most sources of NO_2 are man-made, and the primary source is high-temperature combustion. The principal sources of this pollutant are automobiles, aircraft, and fossil fuel-powered electricity generating plants.	Primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		Primary and secondary	Annual	53 ppb	Annual Mean

Table 3.6-1 National Ambient Air Quality Standards

Pollutant [final rule cite]		Description	Primary/ Secondary	Averaging Time	Level	Form
Ozone		Ozone is formed in the atmosphere rather than being directly emitted from pollutant sources. Ozone forms as a result of volatile organic compounds (VOCs) and oxides of nitrogen (NO_X) reacting in the presence of sunlight in the atmosphere. VOCs and NO_X are termed "ozone precursors," and their emissions are regulated in order to control the creation of ozone.	Primary and secondary	8-hour	0.070 ppm (Note 2)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution	$PM_{2.5}$	Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. $PM_{2.5}$ refers to particulate matter less than or equal to 2.5 micrometers in diameter. PM_{10} refers to particulate matter less than or equal to 10 microns in diameter. A portion of the particulate matter in the air comes from natural sources such as windblown dust and pollen. Other sources of particulate matter include material combustion, automobiles, construction activities or other man-made disturbances of unpaved areas, and photochemical reactions in the atmosphere.	Primary	Annual	12 $\mu g/m^3$	Annual mean, averaged over 3 years
			Secondary	Annual	15 $\mu g/m^3$	Annual mean, averaged over 3 years
			Primary and Secondary	24-hour	35 $\mu g/m^3$	98th percentile, averaged over 3 years
	PM_{10}		Primary and secondary	24-hour	150 $\mu g/m^3$	Not to be exceeded more than once per year on average over 3 years

Table 3.6-1 National Ambient Air Quality Standards

Pollutant [final rule cite]	Description	Primary/ Secondary	Averaging Time	Level	Form
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]	Sulfur dioxide (SO_2) is produced when any sulfur-containing fuel (e.g., coal, diesel, residual fuel oil) is burned. Fossil fuel-powered electricity generating plants are the primary source of SO_2. Since the sulfur content of mobile vehicle fuels has been significantly reduced in the United States, aircraft and automobiles are no longer significant sources of this pollutant.	Primary	1-hour	75 ppb (Note 3)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the lead standards prior to the promulgation of the current (2008) standards, and for which state implementation plans (SIPs) to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu g/m^3$ as a calendar quarter average) also remain in effect.

(2) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) ozone standards additionally remain in effect in some areas. Revocation of the previous (2008) ozone standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(3) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet one year since the effective date of designation under the current (2010) standards, and (2) any area for which SIPs providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.

Source: U.S. Environmental Protection Agency 2015a

Key:
$\mu g/m^3$ = Micrograms per cubic meter.
mg/m^3 = Milligrams per cubic meter.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
ppm = Parts per million.

Table 3.6-2 *De Minimis* Levels for Exemption from General Conformity Rule Requirements

Pollutant	Tons/Year
Ozone (VOCs or NO_X)	
Serious nonattainment areas	50
Severe nonattainment areas	25
Extreme nonattainment areas	10
Marginal and moderate ozone nonattainment and ozone maintenance areas outside an ozone transport region	
VOCs	100
NO_X	100
Marginal and moderate nonattainment and ozone maintenance areas inside an ozone transport region	
VOCs	50
NOx	100
CO	
All nonattainment and maintenance areas	100
SO_2 or NO_2	
All nonattainment and maintenance areas	100
Particulate Matter (PM_{10})	
Moderate nonattainment and maintenance areas	100
Serious nonattainment areas	70
Particulate Matter ($PM_{2.5}$)	
Direct Emissions	100
SO_2	100
NO_X (unless determined to not be a significant precursor)	100
VOC or ammonia (if determined to be significant precursors)	100
Lead	
All nonattainment and maintenance areas	25

Source: 40 CFR 93.

Key:
CO = Carbon monoxide.
NO_X = Nitrogen oxides.
NO_2 = Nitrogen dioxide.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOCs = Volatile organic compounds.

"Reasonably foreseeable emissions" are projected future direct and indirect emissions that are identified at the time of the conformity evaluation. The location of such emissions is known and the emissions are quantifiable, as described and documented by the federal agency based on its own information and after reviewing any information presented to the federal agency. If the results of the applicability analysis indicate that the total emissions would not exceed the *de minimis* emission thresholds, then the conformity evaluation process is completed.

3.6.1.2 Hazardous Air Pollutants

In addition to the ambient air quality standards for criteria pollutants, national standards exist for hazardous air pollutants (HAPs), which are regulated under Section 112(b) of the 1990 CAA Amendments. NESHAPs regulates HAP emissions from stationary sources (40 CFR Part 61). HAPs emitted from mobile sources are called mobile source air toxics (MSATs). MSATs are compounds emitted from highway vehicles and non-road equipment that are known or suspected to cause cancer or other serious health and environmental effects. In 2001, the EPA issued its first MSATs Rule, which identified 21 compounds as being HAPs that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health: benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter. The EPA issued a second MSAT Rule in February 2007 that generally supported the findings in the first rule and provided additional recommendations about compounds having the greatest impact on health. The rule also identified several engine-emission certification standards that must be implemented (40 CFR parts 59, 80, 85, and 86; FR 72 No. 37, pp. 8427-8570, 2007).

Unlike the criteria pollutants, there are no NAAQS for benzene and other HAPs. The primary control methodologies for these pollutants for mobile sources involves reducing their content in fuel and altering the engine operating characteristics to reduce the volume of pollutant generated during combustion.

3.6.1.3 Greenhouse Gases

GHGs are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

Climate change refers to any significant change in measures of climate lasting for an extended period. Global climate change threatens ecosystems, water resources, coastal regions, crop and livestock production, and human health (U.S. EPA 2014). Many scientific studies correlate the observed rise in global annual average temperature and the resulting change in global climate patterns with the increase in GHGs in the Earth's atmosphere. World-wide use of fossil fuels is the primary cause of that increase (U.S. EPA 2014).

The EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule on September 22, 2009. GHGs covered under the Final Mandatory Reporting of Greenhouse Gases Rule are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other fluorinated gases, including nitrogen trifluoride and hydrofluorinated ethers. Each GHG is assigned a global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO_2, which has a value of one. For example, methane (CH_4) has a GWP of 25, which means that it has a global warming effect 25 times greater than CO_2 on an equal mass basis. The equivalent CO_2 rate is calculated by multiplying the emission of each GHG by its GWP and adding the results together to produce a single, combined emission rate representing all GHGs. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of mobile sources and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions as CO_2 equivalent (CO_2e) are required to submit annual reports to the EPA.

On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and EOs. On March 19, 2015, President Obama issued EO 13693, "Planning for Federal Sustainability in the Next Decade," which requires federal agencies to meet emission-reduction goals associated with energy use, water use, building design and utilization, fleet vehicles, and procurement and acquisition decisions. The CEQ provided federal agencies with implementation guidance and plans to

meet these new goals in June 2015 (CEQ 2015).GHG emissions occur locally, but GHG impacts are both global in scale and cumulative over time.

On December 18, 2014, the CEQ issued new draft guidance "to provide Federal agencies direction on when and how to consider the effects of GHG emissions and climate change in their evaluation of proposed federal actions in accordance with NEPA and CEQ Regulations implementing the NEPA" (CEQ 2014). This guidance states that projects with GHG emissions greater than 25, 000 metric tons CO2e should report quantified GHG emissions (CEQ 2014).

3.6.2 Methodology: Assessing the Existing Environment

The existing environment as it pertains to air quality was assessed through a review of regional air quality data, including NAAQS attainment status. Additionally existing sources of emissions were identified (if applicable).

3.6.3 Methodology: Evaluating Environmental Consequences

Annual criteria pollutant emissions from all direct and indirect sources associated with the existing conditions and all alternatives to this action are considered to determine the annual impact on the region. While the effects of Alternative 1 and Alternative 2 at the four surplus properties are generally considered in this document on a property-by-property basis, air quality total emissions from all four properties occurring at the same time are considered because they would occur within the same air quality region. Total emissions from the operation of all facilities, buildings, and residential units as well as vehicle usage in roadways before and after implementation are analyzed to evaluate the direct and indirect changes in emissions.

Construction and Operational Emissions

Sources of potential emissions associated with the proposed action fall into two categories: construction and operational. Temporary emissions from construction equipment, construction materials delivery, and construction employee commute have also been considered. These emissions are considered separately from operational emissions because they would occur before full implementation of the action and only during the period of construction. Air emissions would result from demolition, material removal, renovation, building and road construction, and worker commutes and material deliveries. Soil, fill material, concrete, sheet pile, asphalt, and other construction materials and equipment would be transported to and from the site by truck. Operational emissions would occur after construction is complete.

Building emission sources were estimated based on U.S. averages for typical energy types (i.e., electricity, fuel oil, and natural gas) for energy use per square foot, obtained from the U.S. Department of Energy's Energy Information Administration (EIA) for specific types of building use (U.S. Department of Energy EIA 2003; 2009). Vehicle emissions were estimated using the California Air Resources Board's EMFAC model (California Air Resources Board n.d.) for most conservative assumptions for the year 2020 (see Appendix D for details on assumptions and calculations for these estimates).

General Conformity Rule

Under the exclusions at Section 40 CFR 93.1539(c), the General Conformity Rule does not apply to this federal BRAC action. Additionally, since the 1997 8-hour ozone standard was revoked in 2015(80 FR 12264; Federal Register 2015), Rhode Island is currently in attainment for all NAAQS (EPA 2015b), and therefore the Conformity Rule does not apply.

Under the General Conformity Rule, a federal action is exempt if the action's total net emissions are below the *de minimis* levels (see Table 3.6-2) specified in the rule. While not applicable to the action, the

de minimis thresholds under the General Conformity Rule have been used to consider the potential level of significance of the air quality impacts under NEPA. If the resulting emissions are below these thresholds, it is assumed that the action would not result in a significant impact on air quality.

GHG Emissions

Emissions of GHG are also considered in order to evaluate whether the action would result in total annual GHG emissions over the Final Mandatory Reporting of Greenhouse Gases Rule reporting threshold of 25,000 metric tons, above which CEQ requires reporting of the quantification of GHG emissions (CEQ 2014).

3.7 Noise

3.7.1 Resource Overview and Regulatory Authority

3.7.1.1 Noise Fundamentals

Noise can be defined as any unwanted sound. Sound becomes noise when it interferes with normal activities such as sleep and conversation. The principal human response to noise is annoyance. Human response can vary according to the type and source of the noise, the distance between the source and the human receptor, the perceived importance of the noise, its appropriateness in the setting, and the sensitivity of the person receiving the noise (the receptor).

A noise-sensitive receptor is defined as a location or facility where people involved in indoor or outdoor activities may be subject to stress or considerable interference from noise. Such locations or facilities often include residential dwellings, hospitals, nursing homes, educational facilities, and libraries. Sensitive noise receptors may also include supporting habitat for certain wildlife species or noise-sensitive cultural practices.

The measurement and human perception of sound involves three basic physical characteristics: intensity, frequency, and duration. Intensity is a measure of the acoustic energy of the sound vibrations and is expressed in terms of sound pressure. As sound pressure increases, the energy carried by the sound increases, and the perception of loudness of that sound increases as well. Frequency is the number of times per second the air vibrates or oscillates. Low-frequency sounds are characterized as rumbles or roars, while sirens or screeches typify high-frequency sounds. Duration is the length of time the sound can be detected.

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. Because of this vast range, using a linear scale to represent the intensity of sound becomes very unwieldy. As a result, a logarithmic unit known as the decibel (dB) is used to represent the intensity of a sound. Such a representation is called a sound level. A sound level of zero dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB and a garbage disposal has a sound level of about 80 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 and 140 dB are felt as pain (Berglund and Lindvall 1995).

The A-weighted decibel scale (dBA) is the primary descriptor of sound for human use. Noise measurements assessed relative to human exposure are usually expressed using an “A-weighted” scale that filters out very low and very high frequencies in order to replicate human sensitivity. It is common to add the letter “A” to the unit of measurement (dBA) in order to identify that the measurement has been

made with this filtering process. Human hearing ranges from approximately 0 dBA (the threshold of hearing) to between 130 and 140 dBA (the threshold of pain).

Table 3.7-1 list some typical sources and levels of noise and corresponding human responses to the noise.

Table 3.7-1 Decibel Level of Some Common Sounds

Sound Source	dB(A)	Perception/Response
	150	
Carrier Deck Jet Operation	140	
	130	Painfully Loud Limit
Jet Takeoff (200 feet) Discotheque	120	
Auto Horn(3 feet) Riveting Machine	110	
Jet Takeoff (2000 feet) Shout (0.5 feet)	100	
N.Y. Subway Station Heavy Truck (50 feet)	90	Very Annoying Hearing Damage (8 hours, continuous exposure)
Pneumatic Drill (50 feet)	80	Annoying
Freight Train (50 feet) Freeway Traffic (50 feet)	70	Telephone Use Difficult Intrusive
Air Conditioning Unit (20 feet)	60	
Light Auto Traffic (50 feet)	50	Quiet
Living Room Bedroom	40	
Library Soft Whisper (15 feet)	30	Very Quiet
Broadcasting Studio	20	
	10	Just Audible
	0	Threshold of Hearing

Source: New York State Department of Environmental Conservation 2002

Human response to changes in sound levels depends on a number of factors, including the quality of the sound, the magnitude of the changes, the time of day at which the changes take place, whether the noise is continuous or intermittent, and the individual's ability to perceive the changes. Human ability to perceive changes in noise levels varies widely with the individual. Generally, changes in noise levels less than 3 average-weighted decibels (dBA) will be barely perceptible to most listeners, whereas a 10 dBA change is normally perceived as a doubling (or halving) of noise levels. As the change in dBA increases, the individual perception is greater, as shown in Table 3.7-2.

Table 3.7-2 Subjective Response to Sound

Change (dBA)	Relative Loudness
+/- 3	Barely perceptible change
+/- 5	Readily perceptible change
+/- 10	Half or twice as loud

Source: Federal Highway Administration 1995

Because of the logarithmic nature of the dB unit, sound levels cannot be arithmetically added or subtracted and are somewhat cumbersome to handle mathematically. However, some simple rules are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level (Berglund and Lindvall 1995). For example:

60 dB+ 60 dB =63 dB
80 dB+ 80 dB =83 dB

Second, the total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

60 dB + 70 dB =70.4 dB

The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. On average, a person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness, and this relation holds true for loud and quiet sounds. A decrease in sound level of 10 dB actually represents a 90 percent decrease in sound intensity but only a 50 percent decrease in perceived loudness because of the nonlinear response of the human ear (similar to most human senses).

The sound pressure level (SPL) that humans experience typically varies from moment to moment. Therefore, various descriptions are used to evaluate noise levels over time. Commonly used descriptors include the continuous equivalent sound level (L_{eq}) and the level exceeded for 90 percent of the time (L_{90}).

- The continuous equivalent sound level is the sound energy from the fluctuating SPLs averaged over time to create a single number to describe the mean energy, or intensity level.
- The noise level exceeded for 90 percent of the time is generally considered to be representative of the background or ambient level of a noise environment.

3.7.1.2 Regulatory Authority

The State of Rhode Island does not have regulations that set community noise exposure criteria. A community may establish noise regulations through community by-laws.

Chapter 8.12 of the Code of Ordinances of the City of Newport, Rhode Island, sets maximum permissible sound levels allowed at or within the real property boundary of a receiving land use. The maximum permissible sound levels are noted in Table 3.7-3.

The towns of Middletown and Portsmouth, Rhode Island, do not currently have local noise ordinances.

Table 3.7-3 City of Newport, Rhode Island, Maximum Permissible Sound Level limits

Location of Receiving Land Uses	Time	Sound Limit dBA
Zoning District		
Residential	7:00 a.m. to 9.59 p.m.	65 dBA
	10:00 p.m. to 6:59 a.m.	55 dBA
Limited Business	1:00 a.m. to 7:00 a.m.	55 dBA
	All other times	75 dBA
General Business	1:00 a.m. to 7:00 a.m.	55 dBA
	All other times	75 dBA
Waterfront Business	1:00 a.m. to 7:00 a.m.	55 dBA
	All other times	75 dBA
Commercial/Industrial	1:00 a.m. to 7:00 a.m.	55 dBA
	All other times	75 dBA
Other		
Public Water	1:00 a.m. to 7:00 a.m.	55 dBA
	All other times	65 dBA
Noise-Sensitive Area	7:00 a.m. to 9:59 p.m.	65 dBA
	10:00 p.m. to 6:59 a.m.	55 dBA

Source: City of Newport n.d.(a)

3.7.2 Methodology: Assessing the Existing Environment

Existing sound levels in the project area are primarily determined by motor vehicle traffic on roads within NAVSTA Newport and the Naval Undersea Warfare Center (NUWC) and on nearby off-base roads, and the wind in trees, waves, buoy bells, and aircraft overhead. Traffic noise depends upon the volume and speed of traffic and the number of trucks in the flow of the traffic. Vehicle noise is a combination of the noises produced by the engine, exhaust, and tires.

The existing acoustical environment for the City of Newport and towns of Middletown and Portsmouth was characterized during a baseline sound monitoring study associated with the proposed development of wind energy facilities at NAVSTA Newport (Tech Environmental 2011). As part of the study, existing sound levels were measured continuously at three monitoring stations (see Figure 3.7-1) over three periods in December 2010.

In addition, noise levels from existing vehicle traffic in the vicinity of each of the surplus properties were modeled using traffic noise model (TNM) model version 2.5, which was developed by the Federal Highway Administration (FHWA). Traffic volumes and vehicle mix data, which are inputs to the model, were taken from the traffic study conducted for this proposed action, *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013) (see Section 3.4 and Appendix C).

3.7.3 Methodology: Evaluating Environmental Consequences

Noise levels were modeled to evaluate impacts on the ambient noise environment during construction and during operation.

Construction

Noise impacts during construction activities would include construction equipment operating on the surplus properties and delivery vehicles traveling to and from the sites. Noise impacts would vary widely, depending on the phase of construction (e.g., demolition, land clearing and excavations, foundation, construction of new building walls, etc.) and the specific task being undertaken. Increased noise levels would be most significant during the early stages of each construction phase, although these periods would be of relatively short duration.

Construction and demolition activities associated with the proposed action would involve operating construction equipment and commercial vehicles traveling to and from the surplus properties during regular working, daylight hours. Noise from construction equipment is typically intermittent. For example, an air compressor will normally be quiet for a period of time (perhaps half an hour or so, depending on intensity of use) and then will make noise for a few minutes as it compresses more air. At a distance of 50 feet from a construction or demolition site, noise from the various types of equipment will, at times, range from 80 to 95 dBA.

Noise levels generated by construction activities such as pilings removal, dock construction, building demolition and new building construction were analyzed A construction noise model was used to determine projected noise levels at various distances and receptor locations during a typical hour for each phase of construction. The algorithm in the model considered construction equipment noise specification data, usage factors, and the relative distances of the noise-sensitive receptor to the source of noise.

The following logarithmic equation was used to compute projected noise levels:

$$Lp1 = Lp2 + 10_{log}(U.F.) - 20_{log}(d1/d2):$$

where:

Lp1 = the average noise level (in dBA) at a noise sensitive receptor due to the operation of a unit of equipment throughout the day

Lp2 = the equipment noise level (dBA) at a reference distance (d2)

U.F. = a usage factor that accounts for a fraction of time an equipment unit is in use throughout the day

d1 = the distance from the receiver to the unit of equipment in feet

d2 = the distance at which equipment noise level data is known (reference distance = 50 feet).

Noise levels (L_{eq}) and usage factor data for construction equipment were obtained from the equipment manufacturer and government publications. Usage factors were used to account for the fact that construction equipment use is intermittent throughout the course of a normal workday. The usage factors were selected from Table 9.1 in the FHWA Highway Construction Noise Handbook (Federal Highway Administration 2006).

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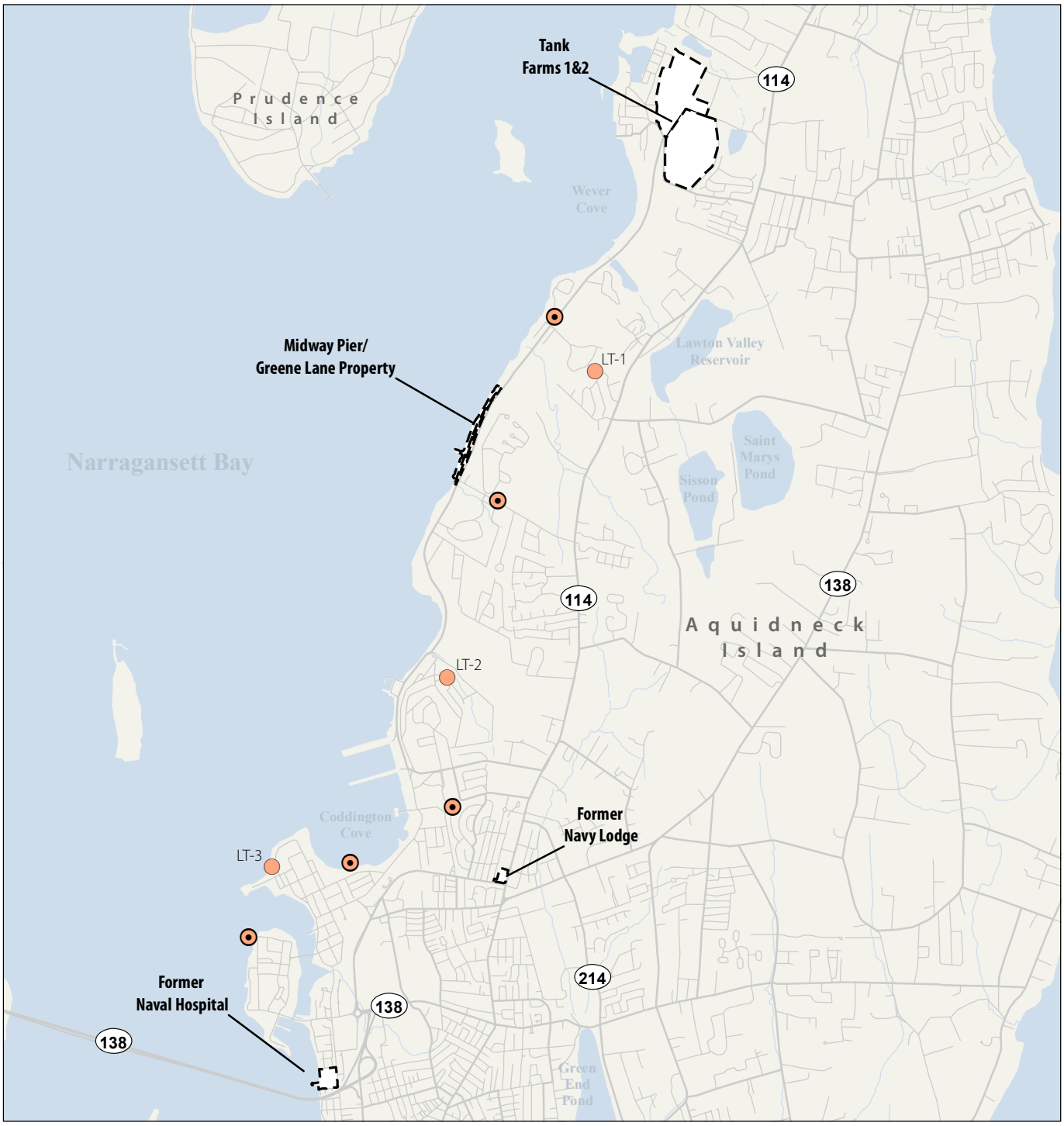

SCALE

0 0.5 1 Miles

Legend

- Street
- Major Road
- River/Stream
- Waterbody
- Property Boundary

Sound Monitoring Locations

- Long-Term
- Short-Term

Figure 3.7-1

Baseline Sound Monitoring Locations

NAVSTA Newport, Rhode Island

Notes: *Monitoring locations were part of a 2010 study to support the potential development of wind turbines and were not part of the EIS.*

Property boundaries as shown will be confirmed by surveys and therefore may be modified.

SOURCE: Tech Environmental 2011

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Operation

Noise resulting from the operation of the four sites would arise mainly from an increase in traffic on the local streets around the sites. Building heating, ventilation, and air conditioning (HVAC) systems would not be expected to contribute significantly to the existing background sound levels at the nearest receptors.

Noise levels from the projected vehicle traffic following the redevelopment at each of the surplus properties were modeled using TNM version 2.5. Traffic volumes and vehicle mix data, which are inputs to the model, were taken from the traffic study conducted for this proposed action, *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013).

The FHWA provides policies and guidance for the analysis of highway traffic noise and abatement of highway traffic noise that were adopted by the RIDOT. FHWA-established criteria that represent the upper limit of acceptable traffic noise levels in areas based on defined land use are identified in Table 3.7-4.

Noise impacts occur when the predicted traffic noise levels approach within 1 dBA of the noise abatement criteria (see Table 3.7-4) corresponding equivalent sound level (Federal Highway Administration 1995). Based on this, 66 dBA effectively becomes the noise abatement criterion for the residential land use category, or when the predicted traffic noise levels substantially exceed (are more than 15 dBA) the existing noise levels. Traffic noise impacts can occur below the noise abatement criteria. The noise abatement criteria should not be viewed as federal standards or desirable noise levels. The noise abatement criteria should only be used as absolute values which, when approached or exceeded, require that traffic noise abatement measures be considered.

Table 3.7-4 Traffic Noise Abatement Criteria, Hourly A-weighted Sound Level (dBA)

Activity Category	L_{eq} (H)[1]	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 purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above (e.g., commercial, industrial)
D	---	Undeveloped lands
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, auditoriums, offices, etc.

Source: Federal Highway Administration 1995

[1] Hourly A-Weighted Sound Level – decibels (dBA)

3.8 Infrastructure and Utilities

3.8.1 Resource Overview and Regulatory Authority

The focus of this section is on infrastructure and service components that could be temporarily or permanently impacted by the proposed action.

"Infrastructure" is the underlying framework of a system. Utility systems—water supply, wastewater management, storm water management, and electricity and natural gas generation and distribution—rely on the underlying systems of generation, protection, and transmission: potable water is made available through either municipal or public water systems; wastewater is managed through municipal wastewater treatment systems or individual, on-site septic systems; electricity is generated and transmitted through a series of stations and lines; and natural gas is transmitted through pipelines to supply heat. With the exception of the regulations discussed below regarding storm water management, there are no specific statutes that govern the provision of other utilities. This section also addresses solid waste management.

Storm Water

Storm water is rainwater and snowmelt that falls onto surfaces such as roofs, streets, and the ground and is not absorbed or retained by that surface but flows off, collecting volume and energy, as well as pollutants from land uses (i.e., roadways, agricultural fields). Storm water runoff management addresses reducing flow energy and pollutants in storm water and controlling discharge from point and non-point sources into waterbodies. Non-point source runoff is discharge to a waterbody from diffuse sources. Point-source discharge is produced by a single, identifiable point source.

Section 438 of the Energy Independence and Security Act (EISA) of 2007 requires that any development or redevelopment project involving a federal facility with a footprint exceeding 5,000 square feet shall use site planning, design, construction, and maintenance strategies in order to maintain or restore the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow. Compliance with this requirement can be met through the implementation of low-impact development (LID) technologies.

The U.S. Navy has developed a LID policy for storm water management, which was released in December 2007. This policy focuses on the implementation of LID techniques in lieu of conventional storm water collection and conveyance systems, because the conventional measures cannot replicate natural systems and can result in increased storm water volume and flow as well as adverse water quality impacts on the receiving waterbodies (U.S. Department of the Navy 2007c). LID techniques include a variety of best management practices (BMPs) that maintain or restore predevelopment hydrology and reduce pollutant loading of storm water. Examples of LID BMPs include bioretention (vegetated depressions that collect runoff and facilitate infiltration), filter strips (dense vegetation designed to filter runoff), grassed swales (shallow, grass-lined channels used to convey and store runoff), and permeable pavement.

The U.S. Navy's LID policy sets a goal of no net increase in storm water volume and sediment or nutrient loading from major renovation and construction projects. This policy dictates that LID be considered in the design for all projects that have a storm water management component (U.S. Department of the Navy 2007c).

Storm water management in the State of Rhode Island is regulated by the RIDEM, Office of Water Resources. The Regulations for the Rhode Island Pollutant Discharge Elimination System stipulate when a permit is needed for discharges of storm water. In 2010, RIDEM issued a revised Stormwater Design and Installation Standards Manual that requires recharge or infiltration of a portion of storm water into the

ground and use of LID techniques as the primary method of storm water control (RIDEM and CRMC 2010).

Solid Waste

Non-hazardous solid wastes are regulated under RCRA and the regulations in 40 CFR Parts 239 to 259. RCRA provides requirements for state solid waste programs, solid waste incineration, municipal solid waste landfills, and recycling and materials recovery. The RIDEM Office of Waste Management and Office of Environmental Coordination regulate solid waste management in Rhode Island under the authority of numerous laws and associated regulations, including Solid Waste Regulation Numbers 1 through 8, as well as Rules and Regulations for Reduction and Recycling of Commercial and Non-Municipal Residential Solid Waste (RIDEM 1996). Collectively, the regulations address requirements for solid waste management facilities, landfills, transfer stations, incinerators, resource recovery, waste tire handling, petroleum-contaminated soil, construction and demolition (C&D) debris, composting, and recycling.

The NAVSTA Newport Environmental Division manages solid waste in accordance with the following:

- The *Solid Waste Management Plan*, which provides guidance for solid waste management at the installation, including education, collection, recycling, storage, and disposal (Nobis Engineering, Inc. 2003).
- NAVSTA Newport Instruction 5090.3C, *Recycling Materials Program*, which provides general naval instruction for recycling (U.S. Department of the Navy 2007d).
- Commander Navy Region Mid-Atlantic Instruction 5090.5, *Integrated Solid Waste Management Program (ISWMP) and Qualified Recycling Program (QRP),* which provides general naval instruction for managing solid waste and accomplishing recycling in accordance with DOD goals and requirements (U.S. Department of the Navy 2008).

Operations and activities at the installation routinely result in the generation of non-hazardous solid wastes that consist largely of mixed trash, paper, cardboard, food waste, C&D waste (e.g., wood, concrete, building materials), industrial scrap materials (e.g., wood, metal), and household waste, much of which is recyclable (Nobis Engineering, Inc. 2003). NAVSTA Newport has a 50 percent diversion rate goal (CNIC n.d.[f]), i.e., to divert 50 percent of solid waste from disposal via methods, such as recycling and reuse.

3.8.2 Methodology: Assessing the Existing Environment

To assess existing conditions, information on existing infrastructure and utilities was obtained from various sources and reviewed for an indication of current condition and capacity.

3.8.3 Methodology: Evaluating Environmental Consequences

For each alternative, an analysis was undertaken to determine future water, wastewater, electric, and natural gas demand. This future demand was then compared with the known future capacity of municipal systems to determine whether that capacity can be met or whether additional capacity would be needed. A summary description of the methodology used in calculating these projections, along with the assumptions and definitions of multipliers, is presented in Appendix D.

For solid waste, potential impacts associated with generating and managing solid waste were evaluated for each alternative. Where possible, this included calculating or estimating quantities of C&D wastes that would be generated from the planned construction and demolition activities. The methodology for those calculations is provided in Appendix D.

3.9 Cultural Resources

3.9.1 Resource Overview and Regulatory Authority

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural/engineering resources, and traditional resources. Cultural resources that are eligible for listing in the National Register of Historic Places (NRHP) are called historic properties and are evaluated for potential adverse impacts from a major federal action. In addition, some cultural resources, such as Native American sacred sites or traditional resources, may not be historic properties, but they are also evaluated under NEPA for potential adverse effects from a major federal action. These resources are identified through consultation with appropriate Native American or other interested groups.

National Historic Preservation Act

Section 106 of the NHPA of 1966, as amended (16 U.S.C. 470) requires federal agencies to identify historic properties within the proposed project's area of potential effect (APE). The APE is the geographic area within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking. Generally, an area broader than the project footprint must be considered. Federal agencies must also determine what potential effects the proposed project may have on identified historic properties and consult with the SHPO on determinations of eligibility and findings of effects. For undertakings occurring on or affecting historic properties on American Indian tribal lands, Federal agencies must consult with the Tribal Historic Preservation Officer (THPO) in lieu of the SHPO.

If the proposed project adversely affects an identified historic property, further consultation with the SHPO or THPO is required to avoid or minimize the adverse effect. To be considered eligible for inclusion in the NRHP, cultural resources must be determined to be significant by meeting one or more of the criteria outlined in 36 CFR 60.4 (NRHP, Criteria for Evaluation). A historic property must also possess integrity of location, design, setting, materials, workmanship, feeling, or association. A property must be 50 years old or older to be considered for eligibility to the NRHP or must have achieved exceptional importance within the last 50 years. For example, more recent historic resources on a military installation may be considered significant if they are of exceptional importance in understanding the Cold War.

Tribal Treaty Rights and Trust Responsibilities

Treaties with American Indian tribes are considered government to government agreements, similar to international treaties, and preempt state laws. Treaty language securing fishing and hunting rights is not a "grant of rights (from the federal government to the Indians), but a grant of rights from them - a reservation of those not granted" (United States v. Winans 1905). This means that the tribes retain rights not specifically surrendered to the United States. Furthermore, the United States has a trust or special relationship with American Indian tribes. The Secretary of the Interior and the Secretary of Commerce, pursuant to the Endangered Species Act of 1973, issued Secretarial Order 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities. This order states the following: "The unique and distinctive political relationship between the United States and the Indian Tribes is defined by statutes, EOs, judicial decisions, and agreements, and differentiates tribes from other entities that deal with, or are affected by, the federal government."

This unique relationship provides the basis for legislation, treaties, and EOs that grant unique rights or privileges to American Indians (Morton v. Mancari 1974). The trust responsibility has been interpreted to

require federal agencies to carry out their activities in a manner that is protective of American Indian treaty rights. EO 13175 (Consultation and Coordination with Indian Tribal Governments) affirms the trust responsibility of the United States and directs agencies to consult with American Indian tribes and respect tribal sovereignty when taking actions affecting such rights. This policy is also reflected in the March 30, 1995, document, Department of Commerce - American Indian and Alaska Native Policy (United States Department of Commerce 1995). Also, on November 21, 1999, the DOD promulgated its Native American and Alaska Native Policy emphasizing the importance of respecting and consulting with tribal governments on a government-to-government basis. The policy requires an assessment, through consultation, of the effects of proposed DOD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Native American lands before decisions are made by the services.

Other Federal Laws, Regulations, and Executive Orders

Under NEPA, the Navy is required to demonstrate that the proposed action is in compliance with NHPA of 1966, as amended, as described above. For actions on federal lands, the Navy is also required to comply with a number of other federal laws, regulations, and executive orders relating to cultural resources where applicable, including the following: The Archaeological and Historic Preservation Act of 1974, EO 11593 (Protection and Enhancement of the Cultural Environment; signed in 1971); the Native American Graves Protection and Repatriation Act of 1990; the American Indian Religious Freedom Act of 1978; and EO 13007 (Indian Sacred Sites; signed in 1996).

3.9.2 Methodology: Assessing the Existing Environment

Existing conditions related to cultural resources were identified based on the results of Phase I archaeological investigations and the architectural survey and evaluation update conducted for the proposed action (Gould and LeeDecker 2014; Groesbeck and Bedford 2014, respectively). Additional information for existing conditions related to cultural resources was identified based on the results of earlier cultural resources investigations at NAVSTA Newport and the results of Navy's consultation for the proposed action in accordance with Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800.

Specific documentation used to prepare the existing environment sections for cultural resources consisted of the following:

- The Final Phase I Archaeological Investigation, Five Areas for BRAC Disposal, U.S. Naval Station Newport, Newport, Rhode Island (Gould and LeeDecker 2014)
- The Final Architectural Survey and Evaluation Update, U.S. Naval Station Newport, Newport, Rhode Island (Groesbeck and Bedford 2014)
- The Integrated Cultural Resources Management Plan (2010-2014), Naval Station Newport, Newport, Rhode Island (U.S. Department of the Navy 2010a)
- The Cultural Resources Survey, U.S. Naval Complex, Newport, Rhode Island (Louis Berger & Associates, Inc. 1998)
- Correspondence between the U.S. Department of the Navy and the Rhode Island State Historic Preservation Officer (Rhode Island SHPO) (Preston 2013; Sanderson 2013a, 2013b; Lin 2013)
- Correspondence between the U.S. Department of the Navy and the following federally recognized tribes: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah). Copies of the letters sent to these tribes to

initiate and follow-up on government-to-government consultation are found in Appendix A.

- Correspondence between the U.S. Department of the Navy and the following other consulting parties: Town of Portsmouth, Town of Middletown, City of Newport, Newport Historic District Commission, the Preservation Society of Newport County, Rhode Island CRMC, the Point Association of Newport, Newport Restoration Foundation, Preserve Rhode Island, Rhode Island Lighthouse Foundation, and the Aquidneck Land Trust. Copies of the letters sent to these other consulting parties are found in Appendix A.

According to 36 CFR 800.16(d), the APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist. The Navy, in consultation with the Rhode Island SHPO, determined that the APE for the proposed action consists of the areas within the boundaries of the surplus property (Preston 2013; Sanderson 2013a). For the purposes of assessing the existing environment for cultural resources, the Navy considered the cultural resources and historic properties identified within the APE for the proposed action. The Navy also evaluated historic properties outside the APE as part of the re-assessment of two historic districts that would be affected by the proposed action (the NRHP-eligible U.S. Naval Hospital Newport Historic District and the NRHP-eligible Melville Naval Historic District).

In 2013, the Navy conducted a Phase I archaeological investigation within the APE for the proposed action, the results of which are presented in the *Final Phase I Archaeological Investigation, Five Areas for BRAC Disposal, U.S. Naval Station Newport, Newport, Rhode Island* report (Gould and LeeDecker 2014). The purpose of this investigation was to supplement or confirm the findings of previous archaeological investigations, presented in the *Cultural Resources Survey, U.S. Naval Complex, Newport, Rhode Island* (Louis Berger & Associates, Inc. 1998) and/or summarized in the *Integrated Cultural Resources Management Plan (2010-2014), Naval Station Newport, Newport, Rhode Island* (U.S. Department of the Navy 2010a).

Additionally, in 2013, the Navy conducted an architectural survey and evaluation update for the proposed action, the results of which are presented in the *Final Architectural Survey and Evaluation Update, U.S. Naval Station Newport, Newport, Rhode Island* (Groesbeck and Bedford 2014). The purpose of this investigation was to supplement or confirm the findings of previous architectural surveys and NRHP-eligibility evaluations, presented in the *Cultural Resources Survey, U.S. Naval Complex, Newport, Rhode Island* (Louis Berger & Associates, Inc. 1998) and/or summarized in the *Integrated Cultural Resources Management Plan (2010-2014), Naval Station Newport, Newport, Rhode Island* (U.S. Department of the Navy 2010a).

The cultural resources identified within the APE from all of the studies, including archaeological resources, architectural resources, and/or Native American resources, are described in order to demonstrate that the proposed action is in compliance with NEPA. The cultural resources that meet National Register eligibility criteria (36 CFR Part 63) and have been identified as historic properties are also described as part of demonstrating that the proposed action was in compliance with Section 106 of the NHPA. NRHP-eligibility criteria are presented below in Tables 3.9-1 and 3.9-2.

Table 3.9-1 National Register of Historic Places Criteria for Historic Significance

36 CFR 60.4, Part I
The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and: A. That are associated with events that have made a significant contribution to the broad patterns of our history; or B. That are associated with the lives of persons significant in our past; or C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or D. That have yielded, or may be likely to yield, information important in prehistory or history.
36 CFR 60.4, Part II
Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories: A. A religious property deriving primary significance from architectural or artistic distinction or historical importance; or B. A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or C A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or D A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or E. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or F. A property primarily commemorative in intent if design, age, traditions, or symbolic value has invested it with its own exceptional significance; or G. A property achieving significance within the past 50 years if it is of exceptional importance.

Source: U.S. Department of the Interior, National Parks Service 1995.

Table 3.9-2 National Park Service Criteria for Architectural Integrity

Criteria	Definition of Architectural Integrity
Location	Must not have been moved.
Design	Must retain historic elements that create the form, plan, space, structure, and style of the property.
Setting	Setting must retain its historic character.
Materials	Must retain the key exterior materials dating from the period of its historic significance.
Workmanship	Methods of construction from its time of significance must be evident.
Feeling	Physical features must convey its historic character.
Association	Must be the actual place where a historic event or activity occurred and must be sufficiently intact to convey that relationship to an observer.

Source: U.S. Department of the Interior, National Parks Service 1995; Advisory Council on Historic Preservation 2004.

3.9.3 Methodology: Evaluating Environmental Consequences

The impacts of each alternative on cultural resources were evaluated in terms of whether they were direct or indirect, temporary or permanent, beneficial or negative, and/or associated with construction or post-construction activities, for NEPA compliance purposes. Measures developed by Navy to avoid, minimize, or mitigate impacts on cultural resources were identified as part of evaluating environmental consequences where appropriate and necessary. The effects of impacts on historic properties were separately evaluated by Navy as part of compliance with Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800. The criteria of adverse effects are presented in Table 3.9-3. The Section 106 compliance process consisted of Navy consultation with the Rhode Island SHPO, federally recognized Indian tribes, and other consulting parties to identify the APE for the proposed action, determine the NRHP-eligibility of cultural resources within the APE, determine the effects of the alternatives for future development on historic properties, and develop measures stipulated in an agreement document to mitigate any adverse effects of future development on historic properties.

Table 3.9-3 Findings of Effect on Historic Properties

Finding of No Historic Properties Affected (No Effect on Historic Properties)
"If the agency official finds that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them as defined in §800.16(i), the agency shall provide documentation of this finding, as set forth in §800.11(d), to the SHPO/THPO" (36 CFR 800.4[d][1]).
Finding of No Adverse Effect
"If the agency official finds that there are historic properties which may be affected by the undertaking, the agency official shall notify all consulting parties, including Indian tribes and Native Hawaiian organizations, invite their views on the effects and assess adverse effects, if any, in accordance with §800.5" (36 CFR 800.4[d][2]). "The agency official, in consultation with the SHPO/THPO may propose a finding of no adverse effect when the undertakings' effects do not meet the criteria of paragraph (a)(1) [of 36 CFR 800.5] or the undertaking is modified or conditions are imposed, such as the subsequent review of plans for rehabilitation by the SHPO/THPO …to avoid adverse effects" (36 CFR 800.5[b]). The agency official shall maintain a record of the finding of no adverse effect and provide information on the finding to the public on request consistent with the confidentiality provisions of §800.11(c)" (36 CFR 800.5[d][1]).
Finding of Adverse Effect
"An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or cumulative" (36 CFR 800.5[a][1]).

Table 3.9-3 Findings of Effect on Historic Properties

Examples of Adverse Effect
"Adverse effects on historic properties include but are not limited to: ■ Physical destruction of or damage to all or part of the property ■ Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines ■ Removal of the property from its historic location ■ Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance ■ Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features ■ Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization ■ Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance" (36 CFR 800.5[a][2]).

3.10 Topography, Geology, and Soils

3.10.1 Resource Overview and Regulatory Authority

"Topography" is the description or delineation of the physical surface characteristics of the land, e.g., slope, elevation, and general surface features. "Soils" refers to unconsolidated earthen materials overlying bedrock or other parent material. "Geology" deals with the dynamics and physical history of the earth, the rocks of which it is composed, and the physical, chemical, and biological changes that the earth has undergone or is undergoing. Bathymetry refers to the measurement of water depth at various points within a body of water. Marine sediments are the deposits of rock and soil particles that are transported from land areas and that accumulate on the seafloor.

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) and its implementing regulations (7 CFR 658 et seq.) require that federal agencies identify and take into account adverse effects of federal programs on the protection of farmland. Agencies are to consider proposed actions and alternatives to lessen any adverse effects on farmlands and, to the extent practicable, be compatible with state and local programs to protect farmland. According to the FPPA, protected farmland includes prime farmland soils, unique soils, or statewide or locally important soils.

3.10.2 Methodology: Assessing the Existing Environment

Existing conditions related to topography, soils, and geology were characterized by reviewing U.S. Geological Survey (USGS) topographic maps; Rhode Island soil surveys; U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO), and the USGS geologic maps, physiographic provinces maps, and earthquake hazards database. Existing conditions related to bathymetry and marine sediments were characterized primarily by reviewing Rhode Island geographic information system (GIS) layers.

3.10.3 Methodology: Evaluating Environmental Consequences

The impact of the proposed action on prime farmland, as defined under the FFPA, and on various soil characteristics and limitations was assessed for each alternative.

Soil Characteristics and Limitations

- **Prime Farmland**. Soils that are particularly well-suited for use as farmland are classified by the NRCS as prime farmland. Some soils that are naturally wet in their undisturbed state may be considered prime farmland if drained.
- **Farmland of Statewide Importance**. Soils important for farming use may be considered farmland of statewide importance or unique farmland. Farmlands of statewide importance are not typically as ideal for farmland use as prime farmland but are productive and are used widely within a given state.
- **Erosion Potential**. In general, soils with steeper slopes have greater potential for erosion via precipitation. Soils with moderate or severe erosion potential require a higher level of water management and vegetative-cover BMPs than soils with low erosion potential.
- **Hydric Soils**. Hydric soils are soils that remain saturated at or near the surface for sufficient periods of the year during the growing season to create anaerobic conditions. Hydric soils may require special measures during construction or other uses to overcome limitations cause by wetness. Limitations may include a high water table or low strength for supporting construction equipment and structures.
- **Constructability**. Constructability can be defined by soil strength and the presence of saturated layers near the soil surface. Some soils present construction limitations due to high shrink-swell ratios, which must be accounted for in the design of structural foundations. Individual soils have different inherent abilities to withstand loading from heavy equipment, buildings, roads, and other structures. Soil strength is influenced by wetness, mineralogy, soil-particle shape and size distribution, and soil structure. Such limitations do not necessarily mean the soil cannot be used for a given purpose but rather that the construction methods and structural designs may require additional elements to overcome limitations. Costs usually increase when addressing the limiting soil qualities.

Frost action can destabilize roadways and shallow excavations unless specific design and construction measures are taken to manage dimensional changes due to freezing and thawing of water in the soil.

Hydric soils may be associated with wetlands that are subject to regulation by federal and/or state regulation. The wet conditions associated with hydric soils may also present limit development activities such as excavation and the movement of heavy equipment.

In general, a proposed action would adversely impact topography and soils for the following reasons:

- Results in substantial soil erosion or the loss of topsoil
- Results in the loss of prime farmland or farmland of statewide importance
- Is located on a geologic unit, topography, or soil that is unstable, or that would become unstable as a result of the proposed project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse
- Is located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

Additionally, the impact of the proposed action on bathymetry and marine sediments was assessed by determining whether existing bathymetric contours or marine sediments would be significantly altered or disturbed as a result of in-water activities.

3.11 Water Resources

3.11.1 Resource Overview and Regulatory Authority

Water resources discussed in the EIS are defined below and include surface water, groundwater, floodplains, and wetlands.

Surface Water

Surface water includes streams, rivers, lakes, and reservoirs. Water quality describes the chemical and physical composition of water as affected by natural conditions and human activities. The CWA (33 U.S.C. §1251), established the basic structure for regulating discharges of pollutants into waters of the United States. The CWA contains the requirements to set water quality standards for all contaminants in surface waters. The EPA is the designated regulatory authority to implement pollution control programs and other requirements of the CWA. However, the EPA delegates regulatory authority for the CWA to the applicable state agency for the implementation of pollution control programs as well as other CWA requirements. In Rhode Island, RIDEM issues Water Quality Certifications under Section 401 of the CWA. The USACE authorizes discharges of fill into waters of the U.S. under Section 404 of the CWA. The Rivers and Harbors Appropriations Act of 1899 (33 U.S.C. 401 et seq.) regulates development and use of the nation's navigable waterways. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and vests the U.S. Army Corps of Engineers (USACE) with authority to regulate discharges of fill and other materials into such waters.

The CWA designates water quality standards and establishes permitting and certification processes. Water quality standards are the foundation of a water-quality-based pollution control program, which is implemented through the states for waterbodies within their jurisdiction. These standards define the goals for a waterbody by designating its uses and setting criteria to protect these uses.

Water quality standards consist of three primary elements:

1. Designated best uses (also referred to as beneficial uses)
2. Narrative statements and numeric criteria (i.e., for specific physical, chemical, and biological characteristics) to protect the uses
3. An anti-degradation policy to protect higher quality waters from being further degraded.

The CWA requires that each state conduct water quality assessments to determine whether its streams, lakes, and estuaries are sufficiently “healthy” to meet their designated best uses. This information is updated and reported to the EPA every two years. This process is mandated by Section 305(b) of the CWA, and the state prepares 305(b) reports. The 305(b) report is the primary source of information for the development of the “Impaired Waters” list for the states, known as the 303(d) list. Impaired waters are waterbodies that do not meet the water quality standards for their designated uses.

The water quality standards are based on the designated uses. If a waterbody contains levels of pollutants that are greater than the water quality standards, it will not support one or more of its designated uses and its water quality will be considered to be “impaired.” Thus, when a waterbody is included on the 303(d) list, the designated use that is impaired and the specific water quality standards for that use that have not been achieved are identified.

In Rhode Island, RIDEM is responsible for assessing water quality and determining whether waters meet the water quality standards. RIDEM prepares a water quality assessment report every two years that is submitted to the EPA for review. This report satisfies the requirements of the CWA Sections 305(b) and 303(d) and the *Rhode Island Water Quality Regulations*. RIDEM submitted the *State of Rhode Island 2012 303(d) List – List of Impaired Waters Final* (RIDEM 2012a) for 2012 and it was approved by the EPA on September 27, 2012. This report summarizes the water quality conditions in Rhode Island from 2010 through 2011 and includes a comprehensive list of impaired waters.

In Rhode Island, the state's water quality standards are promulgated in the *Rhode Island Water Quality Regulations*. There are seven designated uses for surface waters, as indicated in Rule 8: Surface Water Quality Standards:

- Public drinking water supply
- Primary contact recreation/swimming
- Secondary contact recreation/swimming
- Aquatic life support/fish, other aquatic life and wildlife
- Fish consumption
- Shellfishing/shellfish consumption
- Shellfish controlled relay and depuration.

The surface waters of the state are each assigned to one of the classes defined below; each class is defined by the designated use(s) that it is intended to protect. Classes of freshwater and seawater are provided in Table 3.11-1.

Table 3.11-1 Water Use Classification

Class	Description
Freshwater	
Class AA	Designated as a source of public drinking water supply or as tributary waters within a public drinking water supply watershed, for primary and secondary contact recreational activities, and for fish and wildlife habitat. These waters shall have excellent aesthetic value.
Class A	Designated for primary and secondary contact recreational and for fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquaculture uses, navigation, and irrigation and other agricultural uses. They shall have excellent aesthetic value.
Class B	Designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquaculture uses, navigation, and irrigation and other agricultural uses. They shall have good aesthetic value.
Class B1	Designated for primary and contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquaculture uses, navigation, and irrigation and other agricultural uses. They shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges.

Table 3.11-1 Water Use Classification

Class	Description
Class C	Designated for secondary-contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquaculture uses, navigation, and irrigation and other agricultural uses. They shall have good aesthetic value.
Seawater	
Class SA	Designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquaculture uses, navigation, and industrial cooling. They shall have good aesthetic value.
Class SB	Designated for primary and secondary contact recreational activities, shellfish harvesting for controlled relay and depuration, and fish and wildlife habitat. They shall be suitable for aquaculture uses, navigation, and industrial cooling. They shall have good aesthetic value.
Class SB1	Designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquaculture uses, navigation, and industrial cooling. They shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges.
Class SC	Designated for secondary contact recreation activities, and fish and wildlife habitat. They shall be suitable for aquaculture uses, navigation, and industrial cooling. They shall have good aesthetic value.

Source: RIDEM 2009.

The Narragansett Bay watershed (hydrologic unit code [HUC] 0109000409) comprises nine sub-watersheds that drain a total area of approximately 1,657 square miles. Approximately 39 percent of that area is located in Rhode Island and 61 percent in Massachusetts (Raposa n.d.). Narragansett Bay is an estuary with freshwater inputs from three major rivers: Blackstone, Taunton, and Pawtuxet rivers (Narragansett Bay Estuary Program 2009).

Total forested land represents approximately 52 percent of the overall land use in the Narragansett Bay watershed; total developed land represents approximately 25 percent of the overall land use. Open water, wetlands, and agricultural land, respectively, comprise the remainder of the land uses within the watershed (Narragansett Bay Estuary Program 2009).

Aquidneck Island is divided into five sub-watersheds of the Narragansett Bay watershed (see Figure 3.11-1) (Wild 2007):

- The Upper East Passage, which includes a small portion of Middletown and a larger portion of Portsmouth and drains 14.58 square miles
- The Sakonnet River sub-watershed, which includes the eastern half of the island and drains approximately 35.81 square miles
- The Lower East Passage sub-watershed, which includes the southwestern portion of the island and drains approximately 11.02 square miles
- The Aquidneck Island - Frontal Atlantic Ocean sub-watershed, which includes the south central portion of the island and drains 9.51 square miles
- The Mount Hope Bay sub-watershed, which includes a portion at the northern tip of the island and drains approximately 10.71 square miles.

Groundwater

Groundwater is water beneath the surface found in soil pore spaces and in the fractures of rock formations; it can be collected using wells, tunnels, or drainage galleries, or it may flow naturally to the ground surface via seeps or springs. An aquifer is an underground layer of water-bearing permeable rock or unconsolidated materials (e.g., gravel, sand, silt, or clay) that can yield a usable quantity of water.

Congress originally passed the Safe Drinking Water Act in 1974 (42 U.S.C. § 300 et seq.) to protect public health by regulating the nation's public drinking water supply. The law, as amended in 1986 and 1996, includes numerous requirements to protect drinking water and its sources. A sole-source aquifer, as defined under Section 1424(e) of the Safe Drinking Water Act, is an aquifer that has been designated as the sole or principal drinking water source for the area and that, if contaminated, would create a significant hazard to public health.

The state's Groundwater Quality Rules (RIDEM 2010c) have been promulgated to protect and restore the quality of the state's groundwater resources for use as drinking water and other beneficial uses. Groundwater supplies approximately 26 percent of the state's population with drinking water from public and private wells, and approximately two-thirds of the municipalities in the state rely on groundwater as a source of drinking water (RIDEM 2013b). The Groundwater Quality Rules classify groundwater resources and set forth groundwater quality standards and preventive action limits for each groundwater classification. These classifications are summarized below (RIDEM 2010c):

- GAA: Groundwater resources suitable for public drinking water use without treatment that are located in groundwater reservoirs, wellhead protection areas for community water supply wells, and physically isolated groundwater-dependent areas, all as designated by the RIDEM
- GA: Groundwater resources designated to be suitable for public or private drinking water use without treatment and that are not described under GAA groundwater resources
- GB: Groundwater resources that may not be suitable for public or private drinking water use without treatment due to known or presumed degradation
- GC: Groundwater resources more suitable for certain waste disposal practices than for development as a drinking water supply due to present or past land use or hydrogeological conditions.

The EPA's Wellhead Protection Program is a community-based approach for the protection of groundwater that supplies drinking water to public water wells and wellfields. A wellhead protection area is defined as the surface and subsurface area surrounding a water well or wellfield that supplies a public water system through which contaminants are reasonably likely to move toward and reach the water well or a wellfield. The State of Rhode Island has an EPA-approved state wellhead protection program.

Floodplains

A floodplain is flat, or nearly flat, land adjacent to a stream or river that experiences occasional or periodic flooding. EO 11988 (Floodplain Management) and the regulations of the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA) (44 CFR, Part 60, Criteria for Land Management and Use) establish avoidance of development in floodplains as federal policy. FEMA defines the regulatory 100-year floodplain as the area covered by a flood that has a 1 percent chance of occurring in any given year (often referred to as the "100-year flood event"). Development in the regulatory floodplain is discouraged because floodplains provide a natural means of detaining floodwaters and thus protecting downstream properties from damage.

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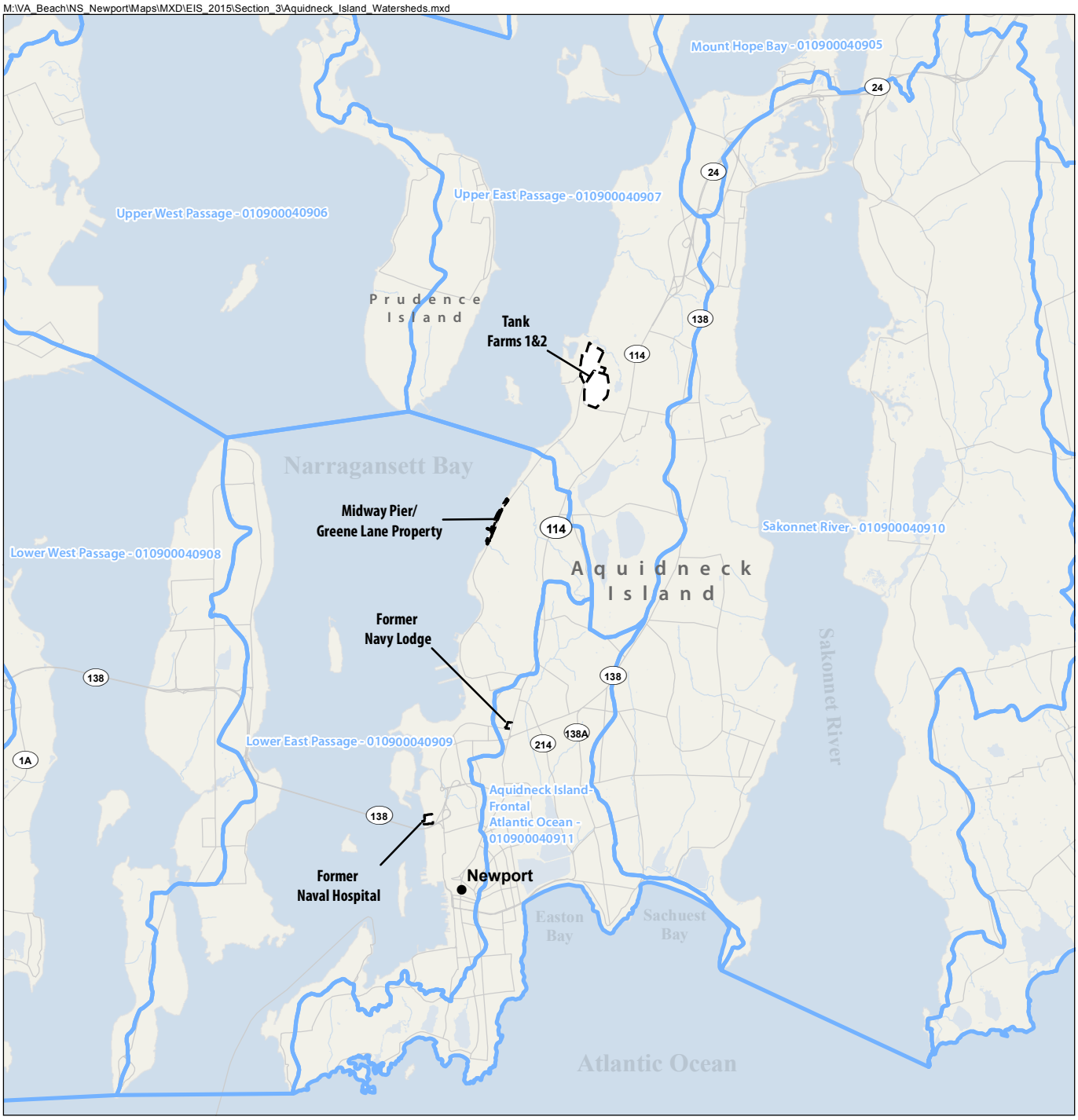

SCALE

1 0 1 Miles

Legend

- City
- Street
- River/Stream
- 12-digit HUC Subwatershed Boundary
- Property Boundary

Figure 3.11-1

Aquidneck Island Watersheds

NAVSTA Newport, Rhode Island

SOURCE: U.S. Department of Agriculture, Natural Resources Conservation Service, Rhode Island State Office 2007

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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Under the authority of EO 11988, Floodplain Management, federal agencies are required to avoid, to the extent possible, the long- and short-term impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development where there is a practicable alternative. Federal agencies are also required to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values provided by the floodplain.

Wetlands

Wetlands are defined as "those areas that are inundated or saturated by groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas" (33 CFR 328.3[b]).

Section 404 of the CWA established a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities such as infrastructure development are regulated under this program, and a permit is required before any dredged or fill material can be discharged into wetlands or waters of the U.S. EO 11990 requires that new construction in wetlands be avoided to the extent possible and that all practicable measures be taken to minimize or mitigate impacts on wetlands.

The EPA and the USACE use the 1987 USACE Wetlands Delineation Manual and regional supplements, where appropriate, to identify wetlands for the CWA Section 404 permit program. The USACE administers and enforces Section 404 provisions and conducts or verifies jurisdictional determinations of waters of the U.S. boundaries. The EPA provides programmatic oversight.

EO 11990, Protection of Wetlands, was issued to help avoid possible long- and short-term adverse impacts associated with the destruction and modification of wetlands and to avoid direct or indirect support of development in wetlands wherever there is a practicable alternative. EO 11990 requires that federal agencies establish and implement procedures to minimize development in wetlands.

A jurisdictional boundary has been determined by RIDEM and the CRMC that designates the areas of freshwater wetland jurisdiction. Through the *Freshwater Wetlands Act* (Rhode Island General Law Sections 2-1-18 et seq.), RIDEM regulates all of the freshwater wetlands on the landward side of the jurisdictional boundary line established for the RIDEM and CRMC, regardless of wetland size (RIDEM 2008b). Through the *Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast*, the CRMC regulates freshwater wetlands in the vicinity of Rhode Island's coast. Under the *Freshwater Wetlands Act*, an upland area adjacent to certain wetlands is regulated as a buffer area or perimeter wetland. The perimeter wetland is the upland area located 50 feet from the landward edge of any bog, marsh, swamp or pond. Two additional state jurisdictional resource areas are defined below (Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rule 4.00):

- Riverbank wetlands – The area of land within 200 feet of the edge of any flowing body of water having a width of 10 feet or more and that area of land within 100 feet of the edge of any flowing body of water having a width of less than 10 feet during normal flow.
- Floodplain wetlands – Land area adjacent to a river or stream or other flowing body of water that is, on average, likely to be covered with flood waters resulting from a 100-year frequency storm.

The USFWS classification scheme serves as the national standard for wetland classification. Wetlands are broadly classified into five systems: 1) marine, 2) estuarine, 3) riverine, 4) lacustrine, or 5) palustrine. They are further classified by subsystems and classes based on substrate material, flooding regime, or vegetation.

- **Marine System.** Open ocean overlying the continental shelf, including high-energy shorelines such as beaches and rocky headlands.
- **Estuarine System.** Deepwater and wetland areas that are usually semi-enclosed with an opening to the ocean and in which some mixing of fresh and sea water occurs.
- **Riverine System.** Freshwater rivers and their tributaries and most associated wetlands.
- **Lacustrine System.** Open freshwater wetlands larger than 20 acres in size situated in topographic depressions with less than 30 percent vegetative cover.
- **Palustrine System.** All non-tidal freshwater wetlands dominated by trees, shrubs, and persistent emergent vegetation.

3.11.2 Methodology: Assessing the Existing Environment

Existing conditions related to water resources were characterized by reviewing USGS topographic maps, FEMA floodplain maps, the installation's Integrated Natural Resources Management Plan (INRMP) (Tetra Tech, Inc. 2014a), and data published by federal and state natural resource agencies. The INRMP summarizes ground-truthing field surveys conducted in October 2013 to ground-truth existing mapped wetlands and identify potential wetlands and waterbodies; these field data have been incorporated into this assessment. Specific acreages used in the descriptions for wetland areas for the properties being transferred were calculated using National Wetland Inventory (NWI) data from the USFWS. Although state data were available, the USFWS data were based on more current aerials and analysis.

3.11.3 Methodology: Evaluating Environmental Consequences

For each redevelopment alternative, a GIS impact analysis was undertaken. The redevelopment footprint was overlaid on top of the digital water resources features to identify areas of impact, including water quantity and quality as well as buffer areas. In addition, impacts associated with the proposed action and alternatives were compared with applicable regulatory criteria and used to determine the magnitude of potential impacts. In general, the proposed action would impact water resources if any of the following conditions applied:

- Federal and/or state water quality standards or waste discharge requirements would be violated.
- Groundwater supplies would be depleted or groundwater recharge would be substantially hindered.
- Groundwater quality would be degraded through the introduction of contaminants from site storm water runoff.
- The existing drainage pattern of the site or area, including the course of a stream or river, would be substantially altered or the rate or amount of surface runoff substantially increased in a manner that would result in flooding on- or off-site.
- Runoff water would be created that exceeded the capacity of existing or planned storm water drainage systems or that introduced substantial additional sources of polluted runoff.

- Structures and/or fill would be placed within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

3.12 Biological Resources

3.12.1 Resource Overview and Regulatory Authority

The biological resources discussed in this EIS include vegetation, wildlife, threatened and endangered species, and significant wildlife habitat. The vegetative communities present on the surplus properties were grouped into dominant cover-types based on the Rhode Island geographical information systems (RI GIS) forest habitat classification developed by the University of Rhode Island, Department of Natural Resources Science GIS Laboratory (Buffam 2012) and the acreages were determined or were based on the Rhode Island Ecological Communities Classification (Enser 2011). The RI GIS is a digital dataset of land cover and land use categories across the state of Rhode Island. It uses a combination of forestry data from multiple datasets, a shrubland dataset, and the NWI wetlands dataset. Habitats found on the surplus properties include developed, grassland, upland forest coniferous, upland forest deciduous, upland forest mixed, upland shrubland, wetland forest deciduous, freshwater lakes/rivers, wetland freshwater emergent, and wetland marine/estuarine.

3.12.1.1 Vegetation

Vegetation on the surplus properties at NAVSTA Newport comprises terrestrial plant communities and their constituent plant species; aquatic and terrestrial invasive species; and estuarine and freshwater habitat. There is no regulatory authority in Rhode Island that oversees the protection or preservation of vegetative ecological communities unless the vegetative community is also categorized as a significant habitat (see Section 3.12.1.4).

Both federal and state legislation are in place, however, to manage aquatic nuisance species. The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, P.L. 101-646, and the National Invasive Species Act of 1996 were developed in response to the disastrous spread of zebra mussels in the Great Lakes. The National Invasive Species Act allowed the establishment of the federal interagency Aquatic Nuisance Species (ANS) Task Force, which is responsible for coordinating both federal ANS management and private sector efforts. The Act also calls for developing state ANS management plans, such as the 2007 *Rhode Island Aquatic Invasive Species Management Plan*, which outlines existing management efforts, existing legislation, and objectives for future statewide ANS control and management (Coastal Resources Management Council 2007).

This discussion of vegetation at the surplus properties is based on the installation's Integrated Natural Resources Management Plan (INRMP) (Tetra Tech, Inc. 2014a), the *Environmental Condition of Property Report* (U.S. Department of the Navy 2009), and the Narragansett Bay National Estuarine Research Reserve's (NBNERR) *An Ecological Profile of the Narragansett Bay* (NBNERR 2009). The NBNERR describes ecological communities and habitats typical of the Narragansett Bay National Research Reserve, located on Prudence and Patience Islands which, because they are near Aquidneck Island, should share similarities in species type and density.

Terrestrial Plant Communities

The surplus properties are located in the eastern broadleaf forest (oceanic) province of the humid temperate division ecoregion of the United States (Bailey 1995). The winter deciduous forest that makes up the eastern broadleaf forest (oceanic) province is composed predominantly of tall broadleaf trees among three major associations: mixed mesophytic, Appalachian oak, and pine-oak. Typical species include American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), buckeye (*Aesculus glabra*),

and basswood (*Tilia americana*). A full herbaceous groundcover emerges in the spring, which gives way to a dense canopy in the summer that loses its leaves in the winter. Elevations in the eastern portion of the ecoregion in the Piedmont Plateau and coastal plain range from sea level to 1,000 feet (Bailey 1995).

The Rhode Island Natural History Survey (RINHS) *Natural Resources Inventory and Assessment of Naval Station Newport* was completed in 2006. During the summer of 2013, field surveys at NAVSTA Newport were completed, and these surveys confirmed many of the species previously identified by the RINHS (Tetra Tech 2014a). Twelve vegetation communities were mapped, including seven upland communities and five wetland communities (see Table 3.12-1); these communities generally follow those described in the Rhode Island Ecological Communities Classification (Enser 2011).

Table 3.12-1 Ecological Communities at NAVSTA Newport

Community Type	Acres
Upland Communities	
Developed Land	896.8
Maritime Shrubland	31.1
Mixed Deciduous/Coniferous Forest	5.5
Northern Hardwood Forest	14.1
Old Field	261.7
Ruderal Forest	98.1
Tree Plantation	3.9
Wetland Communities	
Emergent Marsh	5.7
Emergent Marsh with Shrub Swamp	3.3
Impoundment	1.7
Red Maple Swamp	0.2
Salt Marsh	1.5
Shrub Swamp	28.5
Shrub Swamp with Emergent Marsh	5.9
Wet Meadow	9.1

Source: Tetra Tech 2014a.

Invasive Species

Invasive species discussed in this EIS include any species that has been introduced to an environment where it is not native and that has since become a nuisance through rapid spread and increase in numbers, often to the detriment of native species. Problems that arise from the introduction and proliferation of invasive species include, but are not limited, the reduction in diversity of native plants and animals, degradation of water quality and wildlife habitat, reduction in finfish and shellfish populations, and economic impacts on the local economy.

Dominant invasive species in Narragansett Bay include oriental bittersweet (*Celastrus orbiculatus*), which affects all habitats, beach rose (*Rosa rugosa*) which covers at least 14 percent of the dune shrublands, and sea lettuce (*ulva lactuca*), which is a green algae that forms large, odorous mats along the low tide mark of the shoreline. Sea lettuce is difficult to remove and can negatively impact proliferation of eelgrass beds, deplete oxygen in the water, and hinder recreational swimming and use of fishing nets.

In emergent freshwater communities, common reed (*Phragmites australis*) out-competes native vegetation, while coastal forest habitats have seen an increase in Norway maple (*Acer platenoides*) and exotic maples sycamore maples (*Acer pseudoplatanus*) (NBNERR 2009). Additional invasive species

documented during 2013 floral surveys at NAVSTA Newport include multiflora rose (*Rosa multiflora*), purple loosestrife (*Lythrum salicaria*), Japanese knotweed (*Polygonum cuspidatum*), common buckthorn (*Rhamnus cathartica*), and autumn olive (*Elaeagnus umbellata*) (Tetra Tech, Inc. 2014a).

Estuarine and Freshwater Habitat

Mapped data from the Narragansett Bay Project[8] identifies both estuarine and freshwater habitat at the surplus properties (NBNERR 2009). Submerged aquatic vegetation (SAV) has also been mapped along the NAVSTA Newport coastline, including along Coasters Harbors Island, Coddington Point, and near the former Midway Pier (Tetra Tech, Inc. 2014a). Narragansett Bay is the second largest estuary in the United States, and dominant vegetation in open water consists of phytoplankton. Open standing water is defined as having less than 50 percent of the water body surface dominated by persistent emergent vegetation, shrubs, or trees (RIDEM 2007b). Freshwater marshes in Narragansett Bay are wetlands in which emergent herbaceous vegetation populates standing water or saturated soil. Additional wetlands are predominantly nonnative *Phragmites* (noted above under "Invasive Species"). Shrub wetlands are populated by highbush blueberry (*Vaccinium corymbosum*), red maple tree saplings (*Acer rubrum*), and other low woody vegetation (NBNERR 2009).

Eelgrass beds are a particularly important vegetation community, as they provide cover, forage, and breeding habitats for a variety of aquatic species. Eelgrass is considered a special aquatic site, under Section 404(b)(1) of the CWA in categorizing disposal sites for placement of dredged or fill material (40 CFR 230). It is considered a vegetated shallow, as it is permanently inundated and maintains a SAV community.

3.12.1.2 Wildlife

Wildlife discussed here includes all animal and avian species, but not including threatened and endangered species and significant wildlife habitat, which are discussed in Sections 3.12.3 and 3.12.4, respectively). Information on wildlife that could occur at the surplus properties was compiled from a review of existing literature, including but not limited to the installation's INRMP (Tetra Tech 2014a) and *Environmental Condition of Property Report* (U.S. Department of the Navy 2009), *An Ecological Profile of the Narragansett Bay National Estuarine Research Reserve* (NBNERR 2009), and *Rhode Island's Comprehensive Wildlife Conservation Strategy* (RIDEM 2005).

Most land and water resources at the surplus properties serve as habitat for some form of wildlife. Buildings, structures, and associated landscape areas (lawns, shrubs and trees) on developed portions generally support the following mammals and birds: eastern grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphis virginiana*), skunk (*Mephitidae mephitis*), common raccoon (*Procyon lotor*), American robin (*Turdus migratorius*), cardinal (*Cardinalis cardinalis*), crow (*Corvus*), sparrow (*Passeridae*), mourning dove (*Zenaida macroura*), and various song birds and raptors, while less developed areas generally provide "undisturbed" vegetative habitat for species less tolerant of human activity. The habitat in the open areas of two of the surplus properties consists of limited, if any, grasses, herbs, shrubs, and vines. The sparsely vegetated developed areas of the former Navy Lodge and former Naval Hospital are suitable for wildlife species such as the fox (*Canidae*) (NAVFAC Mid-Atlantic 2001).

Wildlife and associated habitat at NAVSTA Newport is limited by the installation's industrial land uses. Occurrence of representative species is dictated largely by available habitat and past land uses. Widespread habitat alteration in the past also has caused many original species to be eliminated, particularly reptiles and mammals. Wildlife now is typical of urbanized areas where species have adapted

[8] The Narragansett Bay Project is part of a comprehensive study of Narragansett Bay that is being managed jointly by the NMFS and the RIDEM; it includes assessments of Bay fish and fisheries and other study elements.

to diverse habitat requirements, such as the coyote (*Canis latrans*) and common raccoon (Tetra Tech 2014a).

Terrestrial Mammals

Terrestrial mammals common to Rhode Island include the deer (*Cervidae*), coyote, Virginia opossum, fisher (*Martes pennanti*), beaver (*Castor canadensis*), house mouse (*Mus musculus*), feral dog (*Canis lupus familiaris*) and cat (*Felis silvestris*), and black (*Rattus rattus*) and Norway rat (*Rattus norvegicus*) (August et al. 2001). While still uncommon, black bears (*Ursus americanus*) have been increasingly sighted because there are established bear populations in nearby Connecticut and Massachusetts. Some of these species adapt to a variety of habitats, while others only succeed in specific ecological environments. As such, some terrestrial mammals found in the area are vulnerable to habitat fragmentation and degradation caused by development (RIDEM 2005).

Common mammals observed at NAVSTA Newport include the coyote, white-tailed deer (*Odocoileus virginianus*), common raccoon, eastern gray squirrel, striped skunk (*Mephitis mephitis*), and white-footed mouse (*Peromyscus leucopus*) (Tetra Tech, Inc. 2014a).

Eight species of bat are known or believed to occur in Rhode Island: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), eastern small-footed bat (*Myotis leibii*), little brown bat (*Myotis lucifugus*), northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*). All eight species have a high likelihood of occurrence at NAVSTA Newport (Tetra Tech, Inc. 2014a).

Marine Mammals

The Marine Mammal Protection Act (MMPA) is administered by the USFWS and the National Oceanic and Atmospheric Administration's (NOAA's) NMFS to protect and manage marine mammals. The Marine Mammal Protection Act (MMPA) of 1972 established, with limited exceptions, a moratorium on the "taking" of marine mammals in waters or on lands under U.S. jurisdiction. The Act further regulates "takes" of marine mammals in the global commons (i.e., the high seas) by vessels or persons under U.S. jurisdiction. The term "take," as defined in Section 3 (16 U.S.C. 1362) of the MMPA, means "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." "Harassment" was further defined in the 1994 amendments to the MMPA, which provided two levels of harassment: Level A (potential injury) and Level B (potential disturbance).

The MMPA defines "harassment" as any act of pursuit, torment, or annoyance which: (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment] (50 C.F.R, Part 216, Subpart A, Section 216.3-Definitions). Level A is the more severe form of harassment because it may result in injury, whereas Level B only results in disturbance without the potential for injury.

Section 101(a) (5) of the MMPA directs the Secretary of the Department of Commerce to allow, upon request, the incidental (but not intentional) taking of marine mammals by U.S. citizens who engage in a specified activity (exclusive of commercial fishing), if certain findings are made and regulations are issued. Permission will be granted by the Secretary for the incidental take of marine mammals if the taking will have a negligible impact on the species or stock and will not have an immitigable adverse impact on the availability of such species or stock for taking for subsistence uses.

Harbor seals and harbor porpoises are two marine mammals known to reside in Narragansett Bay; the harbor seal is the dominant marine mammal present within lands/waters of NAVSTA Newport. Harbor

seals are most commonly sighted offshore of the installation, at haul-out sites near Coddington Point and Bishop's Rock (Tetra Tech 2014a). The *Rhode Island Ocean Special Area Management Plan* (University of Rhode Island [URI] 2010) identifies an additional 34 species of marine mammals that have been recorded in Rhode Island waters; 12 of these species are considered common and 5 are regularly noted. Occurrence of harbor porpoises is mostly seasonal, with the majority of occurrences documented in spring (URI 2010). Many documented records of whales and dolphins in Rhode Island are isolated incidents of strandings, but species spotted frequently in Rhode Island coastal waters include the humpback whale (*Megaptera novaeangliae*), North Atlantic right whale (*Eubalaena glacialis*), fin whale (*Balaenoptera physalus*), common minke whale (*Balaenoptera acutorostrata*), common bottlenose dolphin (*Tursiops truncatus*), and the short-beaked common dolphin (*Delphinus delphis*) (URI 2010).

Herpetofauna

Various species of amphibians and reptiles have been identified in Narragansett Bay, according to NBNERR surveys and RIDEM inventories (NBNERR 2009). While reptile and amphibian populations are declining both on a local and global scale, species common to the state of Rhode Island and the islands of Narragansett Bay include the dusky salamander (*Desmognathus fuscus*), Fowler's toad (*Bufo fowleri*), green frog (*Rana clamitans*), black rat snake (*Elaphe obsoleta*) and the common garter snake (*Thamnophis sirtalis*) (NBNERR 2009; RIDEM 2005). Habitats characteristic of these species are ponds, forested and shrubland wetlands, and woodland pools. The common snapping turtle was documented during 2013 field surveys along the coastline of NAVSTA Newport (Tetra Tech 2014a).

Benthos

The bottom community of organisms residing in shallow estuaries and their habitat is referred to as benthos. The benthic community of Narragansett Bay includes fauna of various sizes (ranging from macro (0.5 mm to 2.0 cm) to micro (less than 100 µm). Common benthic species in Narragansett Bay include annelids (Phylum *Annelida*), nematodes (Phylum *Nematoda),* gastropods (Class *Gastropoda*), bivalves (Class *Bivalvia*), and mollusks (Phylum *Mollusca*) (URI 2007).

Avian Species

Migratory birds are any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle. The Migratory Bird Treaty Act (MBTA) was enacted in the United States in 1918 in order to establish federal protection for migratory birds (16 U.S.C. 703-712). The MBTA prohibits the taking, killing or possessing of migratory birds unless permitted. The list of bird species protected by the MBTA appears in 50 CFR 10.13. The USFWS is in the process of preparing a draft EIS regarding alternatives for permitting incidental take of resources protected under the MBTA, similar to that with the ESA.

In 1940 bald eagles gained protection under the Bald and Golden Eagle Protection Act. Bald eagles were listed as an endangered species under the Endangered Species Preservation Act of 1966 on March 11, 1967, and in 1972 the bald eagle became protected under the MBTA. On February 14, 1978 the bald eagle was listed as an endangered species in 43 of the contiguous states under the Endangered Species Act (ESA) and listed as threatened in five states (Michigan, Minnesota, Wisconsin, Oregon and Washington) (43 FR 6230, February 14, 1978). Effective 8 August 2007, the USFWS delisted the Bald Eagle under the authority of the ESA (see 72 FR 37345, July 9, 2007), removing it from the ESA's list of endangered and threatened wildlife throughout most of its range. The prohibitions of the ESA no longer apply except to the Sonoran Desert nesting bald eagle population, which is currently listed as threatened. In May 2007 the USFWS issued a set of National Bald Eagle Management Guidelines providing landowners and others with guidance on how to ensure that actions taken on private property are consistent with the Bald and Golden Eagle Protection Act and the MBTA, which both protect Bald Eagles by prohibiting killing, selling or otherwise harming eagles, and their nests or eggs (USFWS 2007).

A modification to the definition of "disturb," a term specifically prohibited as a "take" by the Bald and Golden Eagle Protection Act was implemented on July 5, 2007 (72 FR 31132, June 5, 2007). The revised definition defines "disturb" as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available:

- Injury to an eagle
- A decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior
- Nest abandonment, by substantially interfering with normal breeding, feeding or sheltering behavior."

On September 11, 2009 the USFWS published its Final Rule on Authorizations Under the Bald and Golden Eagle Protection Act for Take of Eagles (74 FR 46836). This Final Rule establishes permit provisions for Bald and Golden Eagle takes under limited circumstances.

This description of avian species in and around the surplus properties includes information from literature specific to Narragansett Bay and Rhode Island coastal environments, as well as from the 2014 INRMP. Narragansett Bay is home to a variety of songbirds, shore birds, and waterfowl, both breeding and migratory. The coastal region is in the Atlantic flyway, attracting migratory birds during winter and summer months. Shorebirds frequenting the bay waters and beaches of Narragansett Bay include loons (*Gavia immer*), grebes (*Podicipedidae*), cormorants (*Phalacrocoracidae*), bitterns (*Ardeidae*), egrets (*Ardeidae*), and geese (*Anatidae*) (Tetra Tech, Inc. 2014a). Migratory bird species expected in the summer typically breed in Narragansett Bay and spend winters farther south. Migratory species may consist of Canada geese (*Branta canadensis*), black duck (*Anas rubripes*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), egret, ibis (*Threskiornithidae*), little blue heron (*Egretta caerulea*), black-crowned night heron (*Nycticorax nycticorax*), and the American oystercatcher (*Haematopus palliatus*). Species common to the East Passage of Narragansett Bay in the winter are species that typically breed farther north during the summer—sea ducks, king eider (*Somateria spectabilis*), white-winged scooter (*Melanitta fusca*), lesser scaup (*Aythya affinis*), black duck (*Anas rubripes*), mallard (*Anas platyrhynchos*), cormorant (*Phalacrocorax*), oldsquaw (*Clangula hyemalis*), common merganser (*Mergus merganser*), bufflehead (*Bucephala albeola*), and common goldeneye (*Bucephala clangula*) (RIDEM 2005).

More than 100 species of bird have been observed at NAVSTA Newport, including raptors, wading birds, and seabirds. Raptors include the sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperi*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) (Tetra Tech, Inc. 2014a). Common wading birds at NAVSTA Newport include great-blue heron (*Ardea herodias*), black-crowned night heron (*Nycticorax nycticorax*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), and glossy ibis (*Plegadis falcinellus*). Seabirds in some of the highest numbers observed at NAVSTA Newport include the herring gull (*Larus argentatus*), double-crested cormorant (*Phalacrocorax auritus*), and common tern (*Sterna hirundo*) (Tetra Tech, Inc. 2014a).

Important Bird Areas

The National Audubon Society has designated eight important bird areas (IBAs) in Narragansett Bay. An IBA is a site that supports one of the following: species of conservation concern, restricted-range species, vulnerable species, or congregative species (Audubon 2010). No IBAs have been designated within the boundaries of the surplus properties.

NBNERR estimates that 187 species of birds are associated with Narragansett Bay. Prudence and Patience, the two islands off the west coast of Aquidneck Island noted above, have been designated as an

IBA. This IBA, along with the Marsh Meadows Wildlife Preserve are the closest IBAs to the surplus properties—a distance of approximately 2 miles, although all eight are within 10 miles of the surplus properties. The remaining IBAs consist of Rumstick/Jacobs Points, Potowomut River, Pettaquamscutt Cove, Sachuset Point and 3rd Beach, Quicksand/Tunipers Pond, and Sapowet Marsh Wildlife Management Area. Waterfowl common to these areas include bufflehead (*Bucephala albeola*), harlequin duck (*Histrionicus histrionicus*), and hooded merganser (*Lophodytes cucullatus*). Gulls (primarily herring gull [*Larus argentatus*]), terns (common [*Sterna hirundo*] and least [*Sterna albifrons*]), egrets, herons, piping plover (*Charadrius melodus*), and double-crested cormorant (*Phalacrocorax auritus*) are species of colonial nesting birds found along the Rhode Island coast (NBNERR 2009). Thirty-five species of songbirds are found in Narragansett Bay, the most common of which include gray catbird (*Dumetella carolinensis*), common yellowthroat (*Geothlypis trichas*), rufous-sided towhee (*Pipilo erythrophthalmus*), and yellow warbler (*Dendroica petechial*).

Finfish

Fish populations in Narragansett Bay are monitored to determine diversity and abundance for commercial and recreational fishing and also to better understand the ecological health of bay waters. Historical sampling and survey efforts identify the following as fish species common to Narragansett Bay: winter flounder (*Pseudopleuronectes americanus*), menhaden (*Brevoortia tyrannus*), bluefish (*Pomatomus saltatrix*), striped bass (*Morone saxatilis*), weakfish/squeteque (*Cynoscion regalis*), and tautog (*Tautoga onitis*) (Tetra Tech, Inc. 2014a). A more comprehensive list of fish species expected to occur in Narragansett Bay is provided in Table 3.12-2. Essential fish habitat (EFH) is discussed in Section 3.12.1.4.

Table 3.12-2 Fish Species

Family	Common Name	Scientific Name
Angelita	American eel	*Anguilla rostrate*
Clupeidae	Alewife and Blueback	*Alosa spp.*
	Atlantic herring	*Clupea harengus*
	Atlantic menhaden	*Brevoortia tyrannus*
Engraulidae	Bay anchovy	*Anchoa mitchilli*
	Striped anchovy	*A. hepsetus*
Gadidae	Fourbeard rockling	*Enchelyopus cimbrius*
	Atlantic Cod	*Gadus marhua*
	Silver hake	*Merluccius bilinearis*
	Hakes	*Urophycis spp.*
	Pollock	*Pollachius virens*
Atherinidae	Atlantic silverside	*Menidia menidia*
Syngnathidae	Northern pipefish	*Syngnathus fuscus*
Serranidae	Sea basses	*Morone sp., Morone americanus, Morone saxatilis, Morone americana*
Sparidae	Scup	*Stenotomus chrysops*
Chaetodontidae	Spotfin butterflyfish	*Chaetodon ocellatus*
Sciaenidae	Northern kingfish	*Menticirrhus saxitilis*
Labridae	Tautog	*Tautoga onitis*
	Cunner	*Tautogolabrus adspersus*
Stichaeidae	Radiated shanny	*Ulvaria subbifurcata*
	Snake blenny	*Lumpenus lumpretaeformis*
Pholidae	Rock gunnel	*Pholis gunnellus*
Ammodytidae	American sand launce	*Ammodytes americanus*
Gobiidae	Seaboard goby	*Gobiosoma ginsburgi*

Table 3.12-2 Fish Species

Family	Common Name	Scientific Name
Scombridae	Atlantic mackerel	*Scomber scombrus*
Stromateidae	Butterfish	*Peprilus triacanthus*
Triglidae	Searobin	*Prionotus carolinus*
Cottidae	Grubby sculpin	*Myoxocephalus aeneus*
	Longhorn sculpin	*Myoxocephalus octodecimspinosus*
Cyclopteridae	Seasnail	*Liparis atlanticus*
Bothidae	Windowpane	*Scophthalmus aquosus*
	Summer flounder	*Paralichthys dentatus*
	Fourspot flounder	*Paralichthys oblongus*
	Gulfstream flounder	*Citharichthys arctifrons*
Pleuronectididae	Winter flounder	*Pleuronectes americanus* *Pseudopleuronectes americanus*
	Yellowtail	*Pleuronectes ferrugineus*
	American plaice	*Hippoglossoides platessoides*
Soleidae	Hogchoker	*Trinectes maculatus*
Tetraodontidae	Puffer	*Sphoeroides maculatus*

Source: Narragansett Bay National Estuarine Research Reserve 2009

Shellfish and Crustacea

Shellfish and crustacean species found in the region are commercially important. Species typical of Narragansett Bay include quahog (*Mercenaria mercenaria*), soft-shelled clam (*Mya arenaria*), mussel (*Mytilus edulis*), American lobster (*Homarus americanus*), and squid (Order *Teuthida*). All of these species are harvested from the bay.

RIDEM shellfishing regulations have been established to protect human consumers from shellfish deemed unsuitable for consumption. Title 20, Chapter 8.1 of the General Laws of 1956, "Shellfish Grounds," indicates that “certain water areas in Rhode Island overlying shellfish grounds have been found to be in an unsatisfactory sanitary condition for the taking of shellfish for human consumption and are declared to be polluted areas” (RIDEM 2012b). No lobster fishing or shellfishing is permitted within the Naval Security Zone, located from Pier 2 to the tip of the breakwater (Tetra Tech, Inc. 2014a).

RIDEM also designates certain species of fish as restricted finfish: commercial or recreational catch restricted to a maximum volume limit per day (RIDEM 2013e). Species subject to these regulations include scup (*Stenotomus chrysops*), summer flounder, winter flounder, tautog, striped bass (*Morone saxatilis*), and black sea bass (*Centropristis striata*). Additionally, the catch of lobsters, blue crabs, and horseshoe crabs all require a minimum size.

3.12.1.3 Threatened and Endangered Species

Under NEPA, the impacts of a proposed action to federally listed threatened and endangered (T&E) species must be considered. The ESA of 1973 established protection over and conservation of federally threatened and endangered species and the ecosystems upon which they depend. An “endangered” species is a species that is in danger of extinction throughout all or a significant portion of its native habitat, while a “threatened” species is one that is likely to become endangered within the foreseeable future throughout all or in a significant portion of its native habitat. Federal “species of concern” is an informal term that indicates species that might be in need of conservation actions. Federal species of concern do not receive legal protection and this term does not imply the species will eventually be proposed for listing.

The USFWS and the NMFS jointly administer the ESA and are responsible for listing species (i.e., labeling a species as either threatened or endangered). The USFWS has primary responsibility for managing terrestrial and freshwater species; the NMFS has primary responsibility for marine species and anadromous fish species (species that migrate from saltwater to freshwater to spawn). The ESA allows the designation of geographic areas as critical habitat for threatened or endangered species.

Although protection of species listed at the state level as threatened or endangered is not legally mandated for federal agencies, the Navy encourages cooperation with states to protect such species where such protection is consistent with the installation's mission. The U.S. Navy is required under the Sikes Act (16 U.S.C. 670) to prepare and implement an INRMP for each of its military installations with significant natural resources. INRMPs aim for sustainable natural resources management while ensuring no net loss in the capability of installation lands to support the military mission. The RIDEM Division of Planning and Development is responsible for managing Rhode Island's Natural Heritage Program (NHP). This statewide inventory catalogs any species considered endangered, threatened, or of special concern in the state of Rhode Island.

A list of federally and state-listed T&E species potentially occurring on the surplus properties was developed based on agency correspondence and review of federal and state databases. The USFWS database indicates the presence of 10 federally listed species in Rhode Island. None of these species have been identified at the surplus properties. In a letter dated February 13, 2013, the USFWS indicated that no federally threatened or endangered species or critical habitat under its jurisdiction are known to occur in the vicinity of the surplus properties (Chapman 2013 [see Appendix A-2]).

Since the February 2013 response letter, the USFWS designated the northern long-eared bat as a threatened species under the ESA, effective May 4, 2015, based on the species' risk of extinction (USFWS 2015a). On January 14, 2016, the USFWS published the Final 4(d) Rule[9], which provides protective measures to minimize potential adverse impacts on northern long-eared bats and their habitats (USFWS 2016). It includes stipulations for consultations with the USFWS if a project is located within the white-nose syndrome zone, which is an area comprising those counties within 150 miles of the boundaries of the U.S. counties or Canadian districts where the fungus (*Pseudogymnoascus destructans*) or white-nose syndrome has been detected (USFWS 2015a). If a project is located within an area of potentially suitable habitat; is within the white-nose syndrome zone; and may potentially affect the northern long-eared bat, certain conservation measures that protect the bat's most vulnerable life stages are required. Newport County is located within the designated white-nose syndrome zone; therefore, the Navy has contacted the USFWS regarding the potential for the northern long-eared bat to be present at the surplus properties (see Sections 6.12.3, 8.12.3, and 10.12.3 for a more detailed discussion).

The NMFS Northeast Region stated that certain New England coastal waters support various listed species, including whales, sea turtles, and the Northwest Atlantic distinct population segment (DPS) of loggerhead sea turtles (*Caretta caretta*) (Colligan 2013). These species are listed in Table 3.12-3. NMFS Northeast Region indicated the potential occurrence of two listed whales in the waters off of Rhode Island: federally endangered North Atlantic right whale (*Eubalaena glacialis*) (from December 1 to June 30) and the federally endangered humpback whale (*Megaptera novaeangliae*) (from March 15 to November 30). Three additional whales were also noted as occurring in New England (fin whale – *Balaenoptera physalus*; Sei – *Balaenoptera borealis*; and Sperm – *Physter macrocephalus*), but due to depths and near shore location, these species were deemed unlikely to exist within the vicinity of the project area (Colligan 2013). Additionally, sea turtles potentially occurring in northeastern New England,

[9] A 4(d) rule is one of the tools provided by the ESA to provide flexibility in the ESA's implementation of protections for threatened species and to tailor prohibitions to those that make the most sense for protecting and managing at-risk species (USFWS 2015b).

and potentially Narragansett Bay, are typically small juveniles. NMFS Northeast Region identified listed sea turtle species potentially occurring in New England waters as the federally endangered leatherback (*Dermochelys coriacea*) and federally endangered Kemp's ridley (*Lepidochelys kempi*). The federally threatened green sea turtle (*Chelonia mydas*) has the potential to occur sporadically in New England waters, but its occurrence is rare. The federally threatened Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) was also referenced by NMFS as potentially occurring in Narragansett Bay, and potentially originating from the endangered New York Bight, Chesapeake Bay, South Atlantic, or Carolina DPSs, or threatened Gulf of Maine DPS. Additionally two federal species of concern, alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*), have been identified to potentially occur near the project area (Colligan 2013). A letter dated February 12, 2013, from the RIDEM indicated there are no state-listed or candidate, rare, threatened or endangered species, unique natural communities or other significant wildlife communities at or near the surplus properties (Jordan 2013).

Table 3.12-3 Threatened and Endangered Species under the Jurisdiction of NMFS in Rhode Island

Common Name	Scientific Name	Status
Federally Listed Threatened and Endangered Species		
North Atlantic right whale	*Eubalaena glacialis*	E
Humpback whale	*Megaptera novaengliae*	E
Kemp's ridley turtle	*Lepidochelys kempi*	E
Loggerhead turtle[1]	*Caretta caretta*	T[1]
Leatherback turtle	*Dermochelys coriacea*	E
Green turtle[2]	*Chelonia mydas*	T
Atlantic sturgeon	*Acipenser oxyrinchus oxyrinchus*	T

Sources: Colligan 2013
[1] Northwest Atlantic Distinct Population Segment.
[2] Instances of this species in New England waters is rare.

Key:
E = Federally Endangered
T = Federally Threatened

3.12.1.4 Significant Wildlife Habitat

For the purposes of the Draft EIS, significant wildlife habitats were defined as those locations that would require a regulatory review if the proposed redevelopment had the potential for adverse affects on the proposed properties. These included SAV beds, EFH, wetlands, and vernal pools. The RIDEM's Division of Planning and Development reviewed the Rhode Island Natural Heritage Program database and has indicated that no state-designated unique natural communities or other significant wildlife communities live at or near the surplus property (Jordan 2013).

Submerged Aquatic Vegetation

Eelgrass and widgeon grass are both ecologically significant seagrasses that play an important role in the marine food web in addition to providing important habitat for many species of fish and wildlife. Pollution and uncontrolled development have contributed to the decline of eelgrass habitat in Narragansett Bay. Because eelgrass stands provide nursery, feeding, and resting habitat for such a large variety of fish and wildlife, Rhode Island state agencies and environmental activist groups consider protection and recuperation of these habitats a priority. In addition, vegetated shallows, which contain SAV, are considered a special aquatic site under Section 404 of the CWA.

Under Section 300.18 of the Rhode Island Coastal Resources Management Program (RI CRMP), activities pertaining to Residential, Commercial, Industrial, and Public Recreational Structures,

Recreational Boating Facilities, Sewage Treatment and Stormwater, Dredging and Dredged Materials Disposal, Filling in Tidal Waters, Aquaculture, and activities undertaken in accordance with municipal harbor regulations are required to avoid any negative impact on SAV such as eelgrass and widgeon grass habitat (Coastal Resources Management Council 2010).

SAV has been mapped along the NAVSTA Newport coastline, including along Coasters Harbors Island, Coddington Point, and near the former Midway Pier (Tetra Tech, Inc. 2014a).

Essential Fish Habitat

EFH is defined under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (P. L. 94-265), as amended by the Sustainable Fisheries Act of 1996 (P.L. 104-267), as "those waters and substrate necessary to fish for spawning, breeding, and feeding or growth to maturity." The Magnuson Fishery Conservation and Management Act established a 200 nautical mile (nm) fishery conservation zone in U.S. waters and a regional network of Fishery Management Councils. The Fishery Management Councils are composed of federal and state officials, including the USFWS, which oversee fishing activities within the fishery management zone. In 1996, the Magnuson Fishery Conservation and Management Act was reauthorized and amended as the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), also known as the Sustainable Fisheries Act. The MSFCMA mandated numerous changes to the existing legislation designed to prevent overfishing, rebuild depleted fish stocks, minimize by-catch, enhance research, improve monitoring, and protect fish habitat.

One of the most significant mandates in the MSFCMA is the EFH provision, which provides the means to conserve fish habitat. The EFH mandate requires that the regional Fishery Management Councils, through federal fishery management plans (FMPs), describe and identify EFH for each federally managed species, minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats.

Congress defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802[10]). The term "fish" is defined in the MSFCMA as "finfish, mollusks, crustaceans, and all other forms of marine animals and plant life other than marine mammals and birds." The regulations for implementing EFH clarify that "waters" include all aquatic areas and their biological, chemical, and physical properties, while "substrate" includes the associated biological communities that make these areas suitable fish habitats (50 CFR 600.10). Habitats used at any time during a species' life cycle (i.e., during at least one of its life stages) must be accounted for when describing and identifying EFH. In addition to EFH designations, areas called habitat areas of particular concern (HAPCs), which are a subset of designated EFH that is especially important ecologically to a species/life stage and/or is vulnerable to degradation, are also to be designated to provide additional focus for conservation efforts (50 CFR 600.805-600.815). Categorization as HAPC does not confer additional protection for or restriction of designated areas.

Authority to implement the MSFCMA is given to the Secretary of Commerce and delegated to NMFS. The MSFCMA requires that EFH be identified and described for each federally managed species. NMFS and regional Fishery Management Councils determine the species distributions by life stage and characterize associated habitats, including HAPC. The MSFCMA requires federal agencies to consult with NMFS on activities that may adversely affect EFH, or when NMFS independently learns of a federal activity that may adversely affect EFH. The MSFCMA defines an adverse effect as "any impact which reduces quality and/or quantity of EFH [and] may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species' fecundity), site-specific or habitat wide impacts, including individual, cumulative, or synergistic consequences of actions" (50 CFR 600.810).

EFH designations emphasize the importance of habitat protection of healthy fisheries and serve to protect and conserve the habitat of marine, estuarine, and anadromous finfish, mollusks, and crustaceans. EFH embodies both the water column (including its physical, chemical, and biological growth properties) and its underlying substrate (including sediment, hard bottom, and other submerged structures). Under the EFH definition, necessary habitat is that which is required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem. EFH is designated for a species' complete life cycle, including spawning, feeding, and growth to maturity, and may be specific for each life stage (e.g., eggs, larvae).

EFH that is judged to be particularly important to the long-term productivity of populations of one or more managed species, or to be particularly vulnerable to degradation, may also be identified by the NMFS as HAPCs. For types or areas of EFH to be considered HAPC, the following must be demonstrated: the importance of the ecological function provided by the habitat; the extent to which the habitat is sensitive to human-induced environmental degradation; whether, and to what extent, development activities are, or will be, negatively impacting the habitat type; or the rarity of the habitat. HAPCs may include high-value intertidal and estuarine habitats, offshore areas of high habitat value or vertical relief, and habitats used for migration, spawning, and rearing of fish and shellfish. The NMFS has summarized EFH in major estuaries, bays, and rivers along the northeast U.S. Coast in the NMFS *Guide to Essential Fish Habitat Descriptions in the Northeast United States* (NOAA Fisheries Northeast Regional Office n.d.). EFH has been designated for the following 17 species in Narragansett Bay: Atlantic sea herring (*Clupea harengus*), Atlantic plaice (*Hippoglossoides platessoides*), haddock (*Melanogrammus aeglefinus*), Atlantic mackerel (*Scomber scombrus*), king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), red hake (*Urophycis chuss*), cobia (*Rachycentron canadum*), windowpane flounder (*Scopthalmus aquosus*), winter flounder (*Pleuronectes americanus*), summer flounder (*Paralicthys dentatus*), winter skate (*Leucoraja ocellata*), little skate (*Leucoraja erinacea*), bluefish (*Pomatomus saltatrix*), scup (*Stenotomus chrysops*), black sea bass (*Centropristus striata*), and sand tiger shark (*Carcharias taurus*) (NOAA Fisheries Northeast Regional Office n.d.; Boelke 2013).

The summer flounder EFH designation includes juvenile and adult HAPC for all native species of macroaglae, seagrasses, and freshwater and tidal macrophytes in beds. Therefore, any of the eelgrass beds located adjacent to NAVSTA Newport could be considered a HAPC for summer flounder EFH.

Wetlands

A definition of this resource and an overview of federal legislation pertaining to the protection of wetlands are discussed in Section 3.11.

Vernal Pools

A vernal pool is a temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may be dry during the summer. Vernal pools may be a part of a larger wetland (commonly forested or scrub-shrub wetlands), or may occur as isolated depressions in upland landscapes. These pools have no obvious direct surface connection to streams or ponds and do not support populations of fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders, blue-spotted salamanders, and fairy shrimp (*Eubranchipus sp.*) as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species.

In 1994, the State of Rhode Island amended the Rhode Island Fresh Water Wetlands Act (RIFWWA) by including a new wetland category, special aquatic site (Rule 5.80), defined as "a body of open standing water . . . which does not meet the definition of pond but which is capable of supporting and providing habitat for aquatic lifeforms" (R.I.G.L., Sections 2-1-18 through 2-1-27). According to the RIFWWA and its *Rules and Regulations*, regardless of the size of the wetland, RIDEM has jurisdiction over all

freshwater wetlands on the landward side of the jurisdictional boundary, as discussed in Section 3.11. As such, vernal pools are regulated by both RIDEM and CMRC, depending on their proximity to the coast.

3.12.2 Methodology: Assessing the Existing Environment

Existing conditions related to biological resources were characterized by reviewing current aerial photography and data published by federal and state natural resource agencies and organizations as well as data published by NAVSTA Newport. The Navy requested information from the USFWS and NMFS during the scoping phase of the EIS to assist in identifying species and significant wildlife habitat known to occur at the surplus properties. The NMFS identified four listed species of turtles and one species of fish, as well as a total of 17 species for which EFH has been designated in the Narragansett Bay (Colligan 2013; Boelke 2013).

The USFWS originally concurred that no federally listed or proposed endangered species or critical habitat under its jurisdiction are known to occur at the surplus properties (Chapman 2013). However, the USFWS designated the northern long-eared bat (*Myotis septentrionalis*) as a federally listed threatened species under the ESA, effective May 4, 2015. On June 17, 2015, the Navy contacted the USFWS regarding the potential presence of northern long-eared bat at the surplus properties (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). To date, USFWS has not provided a response, and informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing.

3.12.3 Methodology: Evaluating Environmental Consequences

For each redevelopment alternative, a GIS impact analysis was made. The redevelopment footprint was overlaid on top of the digital biological resources features to identify areas of impact, inclusive of ecological communities, significant wildlife habitat areas, IBAs, and buffer areas. In addition, impacts associated with the proposed action and alternatives were compared with applicable regulatory criteria and used to determine the magnitude of impacts. Impacts on listed species and significant wildlife habitat, as identified through agency consultation, were also assessed.

In general, the proposed action would impact biological resources if any of the following would occur:

- Federal and/or state wildlife protection laws would be violated
- Eelgrass habitat would be substantially impacted
- Non-native nuisance plants of animal species would spread
- T&E habitat would be substantially altered or modified, resulting in construction mortality or displacement
- Structures were placed in such a way that they would contribute to terrestrial habitat fragmentation or obstruct the airspace of IBAs.

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4 Former Navy Lodge Existing Conditions

4.1 Land Use, Zoning, and Coastal Resources

This section summarizes existing land uses at the former Navy Lodge property. A discussion of the land use and zoning districts surrounding the property and the plans and regulations that guide or direct the development of this land also is provided.

4.1.1 On-Site Land Use

The former Navy Lodge property occupies 3 acres at the southern end of NAVSTA Newport in the Town of Middletown. The site is bounded by the town's recreation complex to the north, Coddington Highway to the south, West Main Road (State Route 114) to the east, and Lake Erie Street to the west (see Figure 4.1-1).

The former Navy Lodge building was constructed in 1971 and demolished in 2004, when a new Navy Lodge was built at Coddington Point (U.S. Department of the Navy 2009; EDAW/AECOM 2008). The site currently is unfenced and vacant, except for a telephone utility shed on the southwestern corner and a water meter vent on a concrete pad on the northeastern corner of the property. The remainder of the property is covered in grass. A small portion of the eastern edge of the property was conveyed to RIDOT around 2004 as part of the ROW for a turning lane on Coddington Road (U.S. Department of the Navy 2009). A water meter pit and an associated 16-inch water main are located along the southern boundary of the site along Coddington Highway (see Figure 1-3).

4.1.2 Surrounding Land Use

The study area for surrounding land uses is defined as the area within 0.25 miles of the site boundaries. Land use designations are derived from data provided by the Aquidneck Island Planning Commission (2013). North of the former Navy Lodge property along West Main Road are several municipality-owned properties, including the town's recreation complex, Middletown Public Library, and the former John F. Kennedy elementary school (now closed).

The remainder of the study area primarily contains residential and commercial land uses. Two Navy family housing areas composed of multi-unit houses are located west and northwest of the site (see Figure 4.1-1). Four-unit homes are found to the west, in the area known as the former Anchorage Housing, along with a smaller number of two-unit homes. Single-family residential housing is located south and east of the site, off Coddington Highway. Commercial land uses primarily are located east and southeast of the site on West Main Road and East Main Road.

4.1.3 Land Use Plans and Zoning

Land surrounding the former Navy Lodge property is in the jurisdiction of the Town of Middletown. Land use and development in the town is regulated by the town's zoning code (Middletown Code of Ordinances, Chapter 152) and guided by the *Town of Middletown, RI, 2014 Comprehensive Community Plan* (Town of Middletown Planning Department 2015).

In addition, the town has completed the *West Main/Coddington Development Center Master Plan* (Vanasse Hangen Brustline, Inc., and RKG Associates 2011) to guide redevelopment of the site and the three adjacent municipality-owned properties identified in Section 4.1.2. A regional planning agency, the Aquidneck Island Planning Commission, included the site in its regional study, the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005).

Town of Middletown Zoning Code. The former Navy Lodge property is located in a public (PA) zoning district. The "A" in the zoning designation indicates that this district is a traffic-sensitive area (Middletown Code of Ordinances, Chapter 152 §720). The public zoning district designates land owned by federal or state government agencies or the Town of Middletown. Government land uses are the only uses permitted in the public zoning district. If a property in a public zoning district is transferred to a private owner, the town requires the property to be rezoned before it is used for a non-governmental purpose (Middletown Code of Ordinances Chapter 152 §2600 – §2601). The "traffic-sensitive" designation has been established by the town to improve traffic flow and safety on the town's major roadways. The town has established minimum lot-width requirements in traffic-sensitive districts to reduce the number and increase the spacing of access points to major roadways (Middletown Code of Ordinances, Chapter 152 §720). As indicated in Section 3.4.1, only lots with frontage on the following streets must adhere to the regulations of this district: East Main Road, West Main Road, Valley Road, and Aquidneck Avenue. The former Navy Lodge property also is included in the town's watershed protection district, Zone 2. This watershed protection district has been established to protect, preserve, and maintain the quality of surface and groundwater used by the town. Any uses permitted in the underlying zones are allowed in the watershed protection district. There are no additional permitting requirements for development proposed within Zone 2.

Town of Middletown, RI, 2014 Comprehensive Community Plan. Future land use at the former Navy Lodge property is designated as institutional, a designation consistent with the current zoning for the site as noted above (Town of Middletown Planning Department 2015). The site is adjacent to areas designated for future general business/mixed use in the 2014 comprehensive plan update. Additionally, the 2014 comprehensive plan update notes that the town may pursue designating the area in the vicinity of the former Navy Lodge property and the intersection of West Main and East Main Roads as a state-recognized "growth center." "Growth centers" are priority areas for state investments in urban development (Town of Middletown Planning Department 2015). The growth center designation would complement the goals of the *West Main/Coddington Development Center Master Plan*, described below.

West Main/Coddington Development Center Master Plan. The Town of Middletown's *West Main/Coddington Development Center Master Plan* (Vanasse Hangen Brustlin, Inc. and RKG Associates 2011) is intended to guide an integrated redevelopment of the site and three adjacent municipality-owned properties, together totaling approximately 14 acres. The master plan identifies goals for redevelopment of these properties, including creating pedestrian and vehicle access from surrounding residential neighborhoods to the redeveloped properties and creating a "mixed use center and unique destination" in the town. The town's preferred redevelopment scenario, developed through the master planning process, is to create a mixed-use center, potentially with government, office, retail, multi-family residential, and open space land uses in the plan area, including the former Navy Lodge property. The master plan envisions redevelopment of the former Navy Lodge property with retail land uses. Draft language for a new zoning overlay district, the proposed Coddington Center Overlay District, which was recommended to facilitate redevelopment of the master plan area, was developed as part of the master plan process. The overlay district would allow commercial, office, municipal government, and multi-family land uses by right or by special use permit (Vanasse Hangen Brustlin, Inc. and RKG Associates 2011).

Aquidneck Island West Side Master Plan. The Aquidneck Island Planning Commission cites the need to plan for the reuse of surplus Navy properties as one of the reasons for preparing the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005). The Aquidneck Island Planning Commission is a regional planning agency that includes representatives of the towns of Middletown and Portsmouth, the

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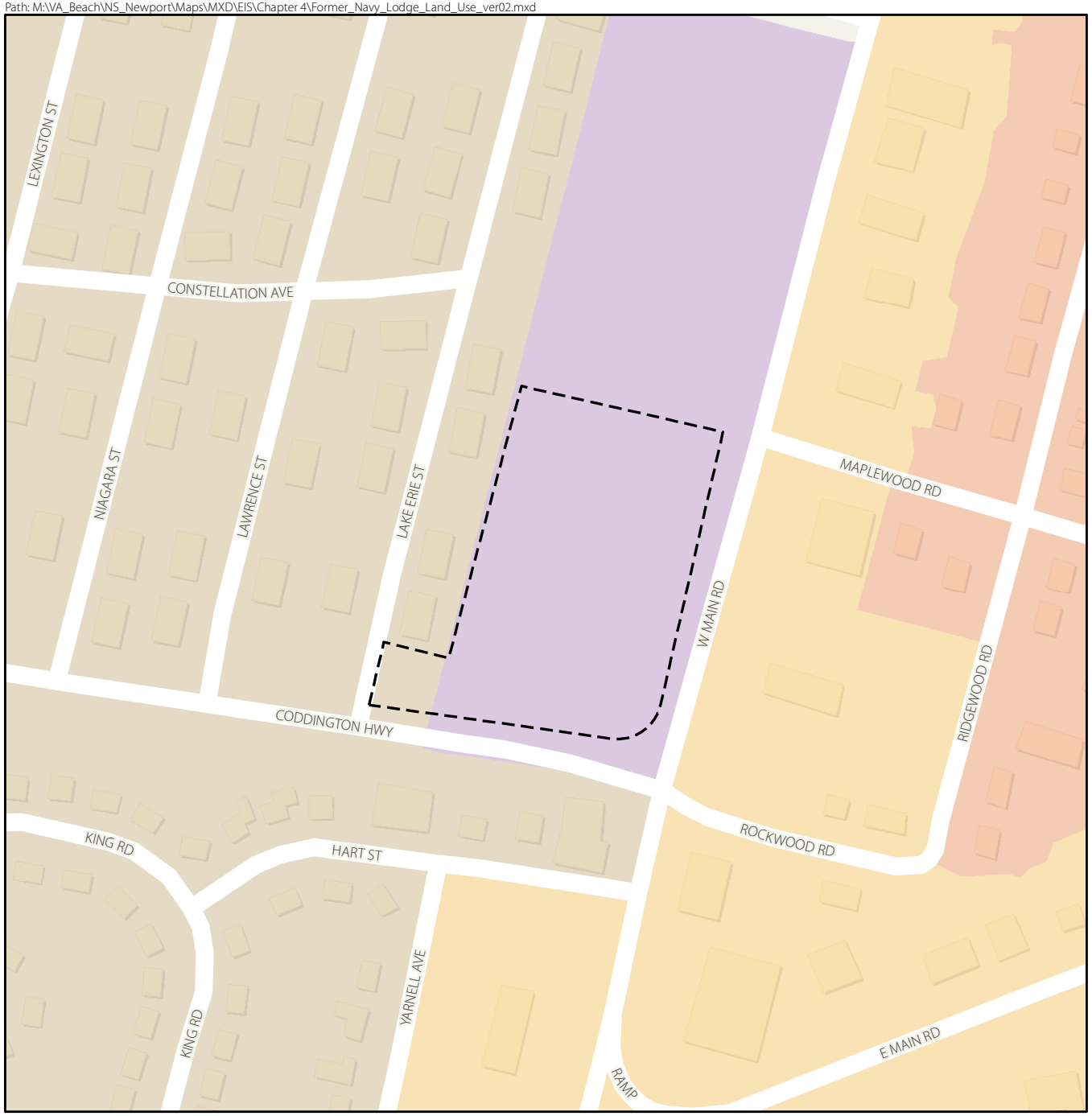

Figure 4.1-1
Former Navy Lodge Property Existing Land Use and Surrounding Land Use
NAVSTA Newport, Rhode Island

Legend

Property Boundary

Land Use

- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)

N

SCALE

0 150 300 Feet

SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013

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City of Newport, and NAVSTA Newport. The west side planning area includes approximately 5,000 acres on the west side of Aquidneck Island in all three municipalities. The former Navy Lodge property is located at the southeast boundary of the planning area.

The primary land use goals laid out in the master plan include minimizing sprawl, planning for reuse of surplus Navy property, and diversifying land use. Accordingly, the overall recommendation for future land uses in the west side planning area is for "targeted, mixed-use redevelopment that supports existing land uses and provides public economic benefit, within an attractive and accessible open space system" (The Cecil Group et al. 2005). Infill development or redevelopment with commercial and compatible industrial land uses is emphasized. The *Aquidneck Island West Side Master Plan* does not include recommendations specific to the former Navy Lodge property but does include various recommendations for planned redevelopment and reuse of surplus Navy properties. These recommendations include the following:

- Consistency with the economic, civic, and environmental goals of the master plan
- Prioritizing local and regional economic goals
- Focusing on mixed-use redevelopment such as commercial, light industrial, marine-related, affordable housing, or public utilities
- Compatibility with and support of the mission at NAVSTA Newport (The Cecil Group et al. 2005).

4.1.4 Coastal Zone Management

Under the CZMA and the RI CRMP, the CRMC has review authority for all federal actions or activities regardless of their location within a Rhode Island coastal community or state territorial waters. However, only the disposal of the surplus property is a federal action; the subsequent redevelopment would be a non-federal action. Although the CRMC has direct state permitting authority for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area, the former Navy Lodge property is not located in any tidal waters, on a shoreline feature, or within the 200-foot contiguous area, so state review of coastal resources is not applicable. However, the Coastal Development Policies of the Aquidneck Island SAMP do apply to this property (see Table 4.1-1).

Table 4.1-1 Applicable Policies from the Aquidneck Island Special Area Management Plan for the Former Navy Lodge Property

Aquidneck Island SAMP Section	Policy
Section 130.8 Open Space and Public Access	The primary goal/standard for any development project along the shoreline must be a requirement to provide public access to and along the shoreline within the project property boundary.
Section 150.1 Standards Applicable to Entire Development	A) *25% Minimum Vegetation Requirement* – Applicants must include sustainably landscaped areas in their proposals to achieve vegetative coverage of at least 25% of the surface area over the entire development parcel. B) *Storm Water Management* – All new development and redevelopment proposals shall meet the storm water requirements of CRMP Section 300.6 and as specified in the most recent edition of the Rhode Island Stormwater Design and Installation Standards Manual to control peak flow rates and volumes and improve water quality. Communities should be

Table 4.1-1 Applicable Policies from the Aquidneck Island Special Area Management Plan for the Former Navy Lodge Property

Aquidneck Island SAMP Section	Policy
	implementing LID practices to meet the 2007 Cleaner Narragansett Bay Act (R.I.G.L. § 45-61.2), which requires LID as the primary means of managing and treating storm water. C) *Open Space* – There are three aspects to open space designations of importance. First is the choice of the land that should be set aside and what qualities that land possesses; second is the links between the open space parcels that allow greenways throughout the area and improve the value of the land and mobility for residents; and third is the design of the designated areas that will ensure their long-term value. D) *Public Access* – When applicants choose the Coastal Greenway option, the CRMC requires that shoreline and arterial public access pathways be provided by the applicant within the development site, as described in Aquidneck Island SAMP Coastal Development Section 150.5. E) *Construction Setback* – A construction setback of 25 feet is required for all new and existing residential, commercial, mixed-use, and other structures to provide for fire, safety, and maintenance purposes. The setback is measured from the inland edge of the Coastal Greenway or buffer.

4.2 Socioeconomics and Environmental Justice

This section provides a discussion of the socioeconomic conditions in the communities surrounding all four surplus properties: the former Navy Lodge property, the former Naval Hospital property, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property. For the purposes of projecting economic impacts, the impact area is defined as the three communities in which these properties are located—the City of Newport, the Town of Middletown, and the Town of Portsmouth. The following subsections also discuss Newport County and the State of Rhode Island as points of comparison.

4.2.1 Economy, Employment, and Income

The regional economy on Aquidneck Island is strongly influenced by the Navy's presence in Newport County; defense contractors and the Navy are major employers in the three communities. In addition, tourism-related industries centered in the City of Newport are an important economic driver in the island's economy. Tourism, health care and social service providers, and Salve Regina University are major employers in the region (Rhode Island Economic Development Corporation 2011).

The employment by industry sector is similar for the City of Newport and the towns of Middletown and Portsmouth. During 2013, educational services, health care, and social assistance were the largest single industrial sectors in terms of employment for the three municipalities. Approximately one quarter of all employed civilian workers in the communities were employed in these industries (see Table 4.2-1).

Corresponding to the importance of tourism in the local economy, the arts, entertainment, and recreation and accommodation and food services sector was the second largest employment sector in the City of Newport and the Town of Middletown in 2013, employing approximately 22.2 percent and 15.0 percent

of the employed civilian workforce, respectively. The professional, scientific, and management, administrative, and waste management services sector was the next largest employment sector in the City of Newport and the Town of Middletown, accounting for 12.2 percent and 12.5 percent of total employed civilian workforce, respectively. In the Town of Portsmouth, the professional, scientific, and management, administrative, and waste management services sector was the second largest employment sector, accounting for 13.7 percent of the total civilian employment in 2013, while the arts, entertainment, and recreation and accommodation and food services sector accounted for 11.4 percent of the total civilian employment (Table 4.2-1).

Table 4.2-1 Civilian Employment by Industry Sector in the Project Area (2013)

	City of Newport		Town of Middletown		Town of Portsmouth	
	Employees	% of Total	Employees	% of Total	Employees	% of Total
Agriculture, forestry, fishing and hunting, and mining	9	0.1%	39	0.5%	27	0.3%
Construction	674	5.35%	369	5.0%	323	4.0%
Manufacturing	660	5.2%	402	5.4%	696	8.5%
Wholesale trade	182	1.4%	67	0.9%	97	1.2%
Retail trade	1,375	10.9%	743	10.0%	782	9.6%
Transportation and warehousing, and utilities	243	1.9%	134	1.8%	215	2.6%
Information	210	1.7%	126	1.7%	160	2.0%
Finance and insurance, and real estate and rental and leasing	788	6.3%	427	5.8%	542	6.6%
Professional, scientific, and management, and administrative and waste management services	1,533	12.2%	929	12.5%	1,119	13.7%
Educational services, and health care and social assistance	3,078	24.4%	1,873	25.2%	2,214	27.1%
Arts, entertainment, and recreation, and accommodation and food services	2,792	22.2%	1,111	15.0%	928	11.4%
Other services, except public administration	363	2.9%	327	4.4%	463	5.7%
Public administration	695	5.5%	873	11.8%	603	7.4%

Source: U.S. Census Bureau 2013a.

The region and the State of Rhode Island as a whole experienced relatively high unemployment rates between 2011 and 2013, although the rates in 2013 have decreased since 2011. As shown on Table 4.2-2, 2013 average annual unemployment rates in the area ranged from a low of 8.0 percent in the Town of Portsmouth to a high of 9.4 percent in the City of Newport. The rates in the Town of Portsmouth (8.0 percent) and the Town of Middletown (8.6 percent) were lower than the national rate of 8.9 percent, whereas the rate in the City of Newport was higher. Newport County's labor force of 44,157 workers in

2013 accounted for approximately 8 percent of the total workforce for the State of Rhode Island. Newport, Middletown, and Portsmouth all experienced some fluctuation in the size of their labor forces between 2011 and 2013, with small declines between 2011 and 2012 and small increases between 2012 and 2013 in all but the Town of Middletown. The City of Newport had the largest labor force, at 12,769 persons in 2013 (Table 4.2-2).

Table 4.2-2 Annual Average Labor Force and Unemployment Rates in the Project Area (2011 to 2013)

	2011		2012		2013	
	Labor Force	Percent Unemployment Rate	Labor Force	Percent Unemployment Rate	Labor Force	Percent Unemployment Rate
City of Newport	13,023	10.5	12,687	9.8	12,769	9.4
Town of Middletown	8,085	10.2	8,042	9.6	8,038	8.6
Town of Portsmouth	9,496	9.7	9,407	8.7	9,441	8.0
Newport County	44,560	10.2	44,053	9.4	44,157	8.6
State of Rhode Island	560,455	11.1	556,910	10.4	553,332	9.3

Source: U.S. Bureau of Labor Statistics 2015.

On average, residents of the City of Newport and the Towns of Middletown and Portsmouth are more affluent than the average resident in the State of Rhode Island. In 2013, total per capita income was $38,267 in the City of Newport, $34,192 in the Town of Middletown, and $44,821 in the Town of Portsmouth. Comparatively, the statewide total per capita income was $30,469. Similarly, median household income for the three communities was higher than the statewide median household income. In 2013, median household income was estimated to be $60,533 in the City of Newport, $69,784 in the Town of Middletown, and $74,487 in the Town of Portsmouth. These figures were significantly higher than the statewide median household income of $53,367 (Table 4.2-3).

Table 4.2-3 Per Capita and Median Household Income in the Project Area (2000 and 2013)

	2000		2013		Percent Change 2000 to 2013	
	Per Capita Income	Median Household Income	Per Capita Income	Median Household Income	Per Capita Income	Median Household Income
City of Newport	$25,441	$40,669	$ 38,267	$ 60,533	50.4%	48.8%
Town of Middletown	$25,857	$51,075	$ 34,192	$ 69,784	32.2%	36.6%
Town of Portsmouth	$28,161	$58,835	$ 44,821	$ 74,487	59.2%	26.6%
Newport County	$26,779	$50,448	$ 40,293	$ 71,713	50.41%	50.41%
State of Rhode Island	$21,688	$42,090	$ 30,469	$ 53,367	36.9%	33.0%

Source: U.S. Census Bureau 2000a, 2013a.

Corresponding to the high per capita and median household income levels, the three communities also have had a smaller percentage of residents living below the poverty level, as defined by the U.S. Census Bureau, than the state as a whole. In 2013, approximately 10.8 percent of the total population in the City of Newport had income levels that placed them below the national poverty level. During the same time period, an estimated 9.6 percent of the residents in the Town of Middletown and 7.8 percent of the residents in the Town of Portsmouth had incomes that placed them below the national poverty level. In

contrast, approximately 13.6 percent of all residents in the State of Rhode Island had incomes that placed them below the national poverty level (Table 4.2-4).

Table 4.2-4 Poverty Status in the Project Area (2000 and 2013)

	Persons Below Poverty Level in 2000 (% of Total)	Persons Below Poverty Level in 2013 (% of Total)	Percent Change 2000 to 2013
City of Newport	14.4%	10.8%	-3.6%
Town of Middletown	5.0%	9.6%	4.6%
Town of Portsmouth	3.4%	7.8%	4.4%
Newport County	7.1%	8.3%	1.2%
State of Rhode Island	11.9%	13.6%	1.7%

Source: U.S. Census Bureau 2000a, 2013a.

4.2.2 Population

Total population in the region has been declining for the past 20 years. In 2010, Newport County had a total population of 82,888 residents, a 4.9 percent decline from its 1990 population. Table 4.2-5 shows total population statistics from 1990 to 2010 for the City of Newport, the towns of Middletown and Portsmouth, Newport County as a whole, and the State of Rhode Island as a whole. The City of Newport is the most populous community in the county and accounted for 29.7 percent of the county's total 2010 population, with 24,672 residents. During the same year, the Town of Portsmouth had 17,389 residents and the Town of Middletown had 16,150 residents (see Table 4.2-5).

Partially as a result of the realignments occurring at NAVSTA Newport and reduction in employment by military contractors located in Newport County, population in the county as a whole declined during the last decade. Between 2000 and 2010, the populations of the City of Newport and the Town of Middletown both declined by 6.8 percent. This rate of decline was more than twice the county's rate of 3 percent between 2000 and 2010. In contrast, the population of the Town of Portsmouth increased by 1.4 percent during that same period (Table 4.2-5).

Table 4.2-5 Total Population in the Project Area (1990 to 2010)

	1990	2000	2010	Percent Change 1990 to 2000	Percent Change 2000 to 2010
City of Newport	28,227	26,475	24,672	-6.2%	-6.8%
Town of Middletown	19,460	17,334	16,150	-10.9%	-6.8%
Town of Portsmouth	16,857	17,149	17,389	1.7%	1.4%
Newport County	87,194	85,433	82,888	-2.0%	-3.0%
State of Rhode Island	1,003,464	1,048,319	1,052,567	4.5%	0.4%

Source: U.S. Census Bureau 1990, 2000b, 2010a.

4.2.3 Housing and Commercial Property

According to the 2009-2013 American Community Survey, there were a total of 13,152 housing units in the City of Newport, 7,238 housing units in the Town of Middletown, and 8,369 housing units in the Town of Portsmouth in 2013. Table 4.2-6 shows the total number of housing units by type of structure. The City of Newport, which had the largest number of housing units, also had the largest number of multi-family units. Of the 13,152 housing units in the city, 43.3 percent were classified as single-family detached units, 4.8 percent were considered single-family attached units, 0.3 percent were mobile homes, and the remaining 51.6 percent of the units were considered multi-family units. In comparison, over 55 percent of all units in Middletown and more than 75 percent of units in Portsmouth were classified as single-family detached units (see Table 4.2-6).

Table 4.2-6 Total Housing Stock by Type of Structure in the Project Area (2013)

	City of Newport	Town of Middletown	Town of Portsmouth
Single family – detached	5,691	4,039	6,474
Attached – 1 unit	626	405	476
Attached - 2 units	1,786	1,183	331
Attached – 3 to 9 units	3,622	546	360
Attached – 10 or more units	1,388	893	474
Mobile homes and others	39	172	254
Total Number of Housing Units	**13,152**	**7,238**	**8,369**

Source: U.S. Census Bureau 2013b.

Corresponding to the high number of multi-family units located in the City of Newport, there were also a large number of renters in the city. In 2013, approximately 56.3 percent of the occupied housing units in the City of Newport were rented accommodations, while only 43.7 percent of all occupied housing was owner-occupied. In contrast, during the same time period, the Town of Portsmouth had a total of 7,087 occupied housing units; 74.5 percent of these were owner-occupied and only 25.5 percent were renter-occupied. The Town of Middletown had a total of 6,536 occupied housing units in 2013; 52.1 percent of these were owner-occupied and 47.9 percent were renter-occupied units.

In 2013, all three communities experienced low homeowner vacancy rates, with the Town of Middletown experiencing the lowest homeowner vacancy rate. Only 0.5 percent of the owner-occupied units were vacant in the Town of Middletown in 2013. The City of Newport and the Town of Portsmouth had homeowner vacancy rates of only 1.4 percent and 1.2 percent, respectively. Rental vacancy rates were slightly higher in all three communities. The Town of Middletown had the lowest rental vacancy rate, which was 3.2 percent in 2013. The City of Newport and the Town of Portsmouth had rental vacancy rates of 3.9 percent and 3.3 percent, respectively (see Table 4.2-7).

Table 4.2-7 Housing Vacancy Rates and Median Value and Median Contract Rent in the Project Area (2013)

	Owner-Occupied Units			Renter-Occupied Units		
	Number of Units	Vacancy Rate	Median Value	Number of Units	Vacancy Rate	Median Contract Rent
City of Newport	4,575	1.4%	$387,100	5,905	3.9%	$1,113
Town of Middletown	3,408	0.5%	$347,800	3,128	3.2%	$1,192
Town of Portsmouth	5,281	1.2%	$342,000	1,806	3.3%	$1,304
Newport County	21,773	1.4%	$355,800	13,001	3.4%	$1,144

Source: U.S. Census Bureau 2013b.

Of the three communities in the study area, owner-occupied housing prices are highest in the City of Newport. In 2013 the median value of owner-occupied units in the City of Newport was $387,100. In comparison, the median value of owner-occupied housing units in the Town of Middletown was $347,800 and $342,000 in the Town of Portsmouth. Conversely, the median contract rent in the City of Newport was $1,113, $1,192 in the Town of Middletown, and $1,304 in the Town of Portsmouth (Table 4.2-7).

The approximate area of existing office, industrial, and retail space in the City of Newport and towns of Middletown and Portsmouth, as reported by the AIRPA, is provided in Table 4.2-8.

Table 4.2-8 Office, Industrial, and Retail Space on Aquidneck Island (estimated)

Area	Type of Space (in Square Feet)		
	Office	Industrial	Retail
Town of Portsmouth			450,000
Raytheon	404,000	360,000	
Other	190,000	785,000	
Town of Middletown	1,200,000	477,000	1,300,000
City of Newport	730,000	320,000	2,300,000
Aquidneck Island	2,000,000	1,300,000	4,000,000

Source: RKG Associates, Inc. et al. 2011

Notes:
1. The office and industrial totals for Aquidneck Island exclude Raytheon.
2. The numbers in the table are taken from the source and are reported to be approximate. The numbers for the towns do not sum exactly to the totals shown for Aquidneck Island.

As shown in Table 4.2-8, the Town of Middletown, with nearly 1.2 million square feet of office space, accounts for the majority of office space on the island; the Town of Portsmouth, with approximately 1.1 million square feet of industrial space, accounts for the majority of industrial space; and the City of Newport, with 2.3 million square feet of retail space, accounts for the majority of retail space in the area.

As indicated by the vacancy rates shown in Table 4.2-9, the overall Rhode Island market for suburban office space and industrial properties experienced a significant downturn following the financial crises and ensuing economic downturn in 2009. Suburban office space in the entire state was experiencing vacancy rates above 20 percent from 2009 through 2012. In 2013, the vacancy rate dipped to 19.6 percent, closer to 2008 vacancy rates (see Table 4.2-9).

Table 4.2-9 Vacancy Rates by Type of Space

Year	Suburban Rhode Island Office Space	Aquidneck Island Office Space	Rhode Island Industrial Space	Rhode Island Retail Space
2008	19.1%	6.6%	8.6%	NR
2009	25.5%	12.0%	9.2%	NR
2010	21.7%	10.5%	10.1%	NR
2011	22.3%	12.6%	10.4%	NR
2012	20.2%	NR	9.9%	6.1%
2013	19.6%	NR	9.1%	NR

Sources: CBRE/New England 2010, 2011, 2012, 2013 and 2014; Capstone Properties 2012

Notes:
NR = Not reported

In contrast, Aquidneck Island has seen lower vacancy rates than elsewhere in Rhode Island (CBRE/New England 2011), due in part to the presence of the defense industry. However, the office space vacancy rate on the island was 12.6 percent in 2011, nearly twice what it had been in 2008, whereas the suburban office space market in the entire state had almost returned to its pre-recession 2008 levels by 2012 (see Table 4.2-9).

The vacancy rate for industrial properties in Rhode Island increased slightly between 2008 and 2011 and began to decline in 2012 and 2013. The *Providence Business News* reported in February 2013 that the market for industrial properties had "stabilized" and that vacancy rates in this category had begun to fall; the paper went on to report that sales prices and rents for industrial properties "are still bouncing along the bottom" (Providence Business News 2013). According to market analyses published by Capstone Properties, a real estate development company that serves the State of Rhode Island, there is an "ample" supply of retail space in Rhode Island and little activity in this market over the past few years (Capstone Properties 2011, 2012).

4.2.4 Taxes and Revenue

The City of Newport's total revenues in the FY ending June 30, 2014, were approximately $141.5 million. Local property tax receipts ($71.3 million) accounted for more than 50.0 percent of this total. Charges for services were another major source of local revenue in the city. In the FY ending June 30, 2014, charges for services generated $42.2 million, or 29.8 percent of total revenues in the city (Sitrin 2014).

The Town of Middletown received approximately $72.5 million in total revenues during the FY ending June 30, 2014. Approximately 60.1 percent, or $43.6 million, of the town's revenues were from taxes levied on real and tangible personal property. An additional 17.0 percent, or $12.3 million, of total revenue was collected from charges for services (Lefkowitz, Garfinkel, Champi, & DeRienzo P.C. 2012).

In the FY ending June 30, 2014, the Town of Portsmouth collected approximately $64.7 million in total revenues. Property taxes and payments in lieu of taxes generated $48.0 million, or approximately 74.0 percent of the town's total revenues. An additional $5.1 million, or 7.9 percent of the town's total revenues, were collected through charges for services (Town of Portsmouth 2014).

Table 4.2-10 provides property tax rates in the City of Newport and towns of Middletown and Portsmouth by class of property for FY 2014. Motor vehicles are assessed at 70 percent of their fair market value in the Town of Portsmouth. The City of Newport and the Town of Middletown assess motor vehicles at 100 percent of their fair market value. All other property is assessed at 100 percent of their fair market value at time of assessment in each of the three municipalities (Rhode Island Department of Revenue, Division of Municipal Finance 2014).

Table 4.2-10 FY 2014 Property Tax Rates by Class of Property in the Project Area (per $1,000 of assessed value)

Municipality	Residential Real Estate	Commercial Real Estate	Personal Property	Motor Vehicles
City of Newport	$11.71	$16.23	$16.23	$23.45
Town of Middletown	$15.71	$20.87	$15.71	$16.05
Town of Portsmouth	$14.53	$14.53	$14.53	$22.50

Source: Rhode Island Department of Revenue, Division of Municipal Finance 2014.

4.2.5 Environmental Justice and Protection of Children

Table 4.2-11 presents demographic and economic data to characterize the communities in which the potential for disproportionately high and adverse human health or environmental effects will be assessed in accordance with EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994), and EO 13045, Environmental Health Risks and Safety Risks to Children (April 21, 1997).

As shown on the table, minorities account for 11.8 percent of the State of Rhode Island's total population, while Hispanics or Latinos account for 12.1 percent of the state's total population. Minorities accounted for 14.7 percent of the total population in the Town of Middletown, 11.3 percent of the total population in the City of Newport, and 5.0 percent of the total population in the Town of Portsmouth. All three municipalities have a lower percentage of Hispanics or Latino population compared with the overall state figures. In addition, the City of Newport and the towns of Middletown and Portsmouth have a significantly smaller percentage of persons living below poverty level compared with the State of Rhode Island. Finally, the percent of persons under the age of 21 years ranged from 24.1 percent of the total population in the City of Newport to a high of 27.1 percent in the Town of Portsmouth (see Table 4.2-11).

Table 4.2-11 Environmental Justice Population Characteristics in the Project Area

	Total Population	Percent Minority	Percent Hispanic or Latino	Percent < 21 Years	Percent Below Poverty
Rhode Island	1,053,959	11.8%	12.1%	26.7%	13.6%
Newport County	82,765	8.4%	4.2%	24.3%	8.3%
Town of Middletown	16,224	14.7%	6.8%	25.1%	9.6%
Town of Portsmouth	17,318	5.0%	1.2%	27.1%	7.8%
City of Newport	24,597	11.3%	7.0%	24.1%	10.8%

Source: U.S. Census Bureau 2010a, 2010b, 2013a

Note: Total Population, Percent Minority, Percent Hispanic, Percent Children are all based on 2010 figures from the *2010 Census of Population and Housing;* Percent Below Poverty are based on 2013 figures from the *American Community Survey 2009-2013.*

4.3 Community Facilities and Services

The former Navy Lodge property is located on the corner of Coddington Highway and West Main Road (SR 114) in the Town of Middletown. Community facilities and services in that area are provided by the Middletown Public School District, the Middletown Police Department, and the Middletown Fire Department. In addition, the town provides recreational facilities for all its residents. Newport Hospital, the South County Hospital, and St. Anne's Hospital are the regional medical facilities. Figure 4.3-1 shows the locations of the community facilities and services discussed in this section.

4.3.1 Educational Facilities

The Middletown Public School District had a total enrollment of 2,285 students during the 2014-2015 school year (Rhode Island Department of Education 2015). Five schools serve the district: the Middletown High School (grades 9 to 12), the J.H. Gaudet Middle School (grades 5 to 8), and three elementary schools—the Aquidneck Elementary School (pre-kindergarten to grade 4), the Forest Avenue Elementary School (kindergarten to grade 4), and the John F. Kennedy Elementary School (kindergarten to grade 4) (Middletown Public Schools 2013). The Learning Academy, located at the J.H. Gaudet Middle School, serves grade 4 (Middletown Public Schools 2012). The district had a 1:11 teacher/student ratio and spent an average of $15,460 per pupil during the 2012-2013 school year (InfoWorks 2014a).

4.3.2 Public Safety and Emergency Services

The Middletown Police Department, which operates from a single station located at 123 Valley Road in Middletown, would be responsible for providing police protection for the former Navy Lodge property. The department employs 38 full-time officers, one animal control officer, two civilian clerks, one full-time maintenance person, and a part-time civilian vehicle identification number (VIN) inspector. The police department uses a four-platoon system that includes five patrol officers, one sergeant, and one lieutenant per shift (Town of Middletown Planning Department 2015).

Fire and emergency services at the site would be provided by the Middletown Fire Department, located at 239 Wyatt Road, approximately 1.3 miles west of the property. The department is a professional fire department that employs approximately 32 full-time staff (Town of Middletown Planning Department 2015). The department has a minimum staffing level of one captain, four firefighters, and one dispatcher on duty at all times (Middletown Fire Department 2015). In the FY ending June 30, 2010, the Town of Middletown spent approximately $13.4 million on public safety, including expenditures for police, fire, and emergency services (Lefkowtiz, Garfinkel, Champi, & DeRienzo P.C. 2014).

4.3.3 Parks and Recreation

The Town of Middletown maintains more than 635 acres of active recreational land and 1,687 acres of passive open space (Vanasse Hangen Brustlin, Inc. 2010). Active recreational land includes a variety of fields for baseball, football, and soccer; facilities for track, tennis, and basketball; and playgrounds. A number of walking and hiking trails are also available, including the Sakonnet Greenway Trail which, when complete, will provide 9 miles of continuous trails (Vanasse Hangen Brustlin, Inc. 2010). The Middletown Recreation Department operates a number of programs for town residents, including a summer recreation program, youth wrestling program, and adult basketball and dodgeball programs (Middletown Department of Parks & Recreation 2013).

4.3.4 Health Care/Medical Facilities

The regional hospital serving Aquidneck Island is the Newport Hospital, located in the City of Newport approximately 0.7 miles southeast of the former Naval Hospital property. The Newport Hospital, which is part of the Lifespan nonprofit health care system, has 129 licensed beds and a staff of 785 and is Newport County's only acute-care hospital (Lifespan 2014). The hospital is equipped with an emergency department; a birthing center; a behavioral health unit; inpatient and outpatient surgical facilities; a rehabilitation division; and outpatient services, including wound care, physical therapy, and digital diagnostic imaging (Lifespan 2014). Residents living on Aquidneck Island are also provided medical services at the South County Hospital located in Wakesfield, Rhode Island, and at the Saint Anne's Hospital in Fall River, Massachusetts.

4.4 Transportation

This section describes the current local road network and traffic conditions surrounding the former Navy Lodge property. The information presented in this section is based on a traffic study conducted in 2012 (Pare Corporation 2013). Roadways and intersections close to the former Navy Lodge property that were specifically analyzed include the following:

- West Main Road (Route 114)
- Coddington Highway
- West Main Road (Route 114) and Coddington Highway/Rockwood Road intersection
- West Main Road (Route 114) and Valley Road (Route 214) intersection.

The locations of these roadways and intersections are shown on Figure 4.4-1. Information on public transit was gathered from the RIPTA.

4.4.1 Road Network and Access

The former Navy Lodge property is located at the northwest intersection of Coddington Highway and West Main Road. No driveways or roadways exist on the property, and no direct access is provided from Coddington Highway or West Main Road.

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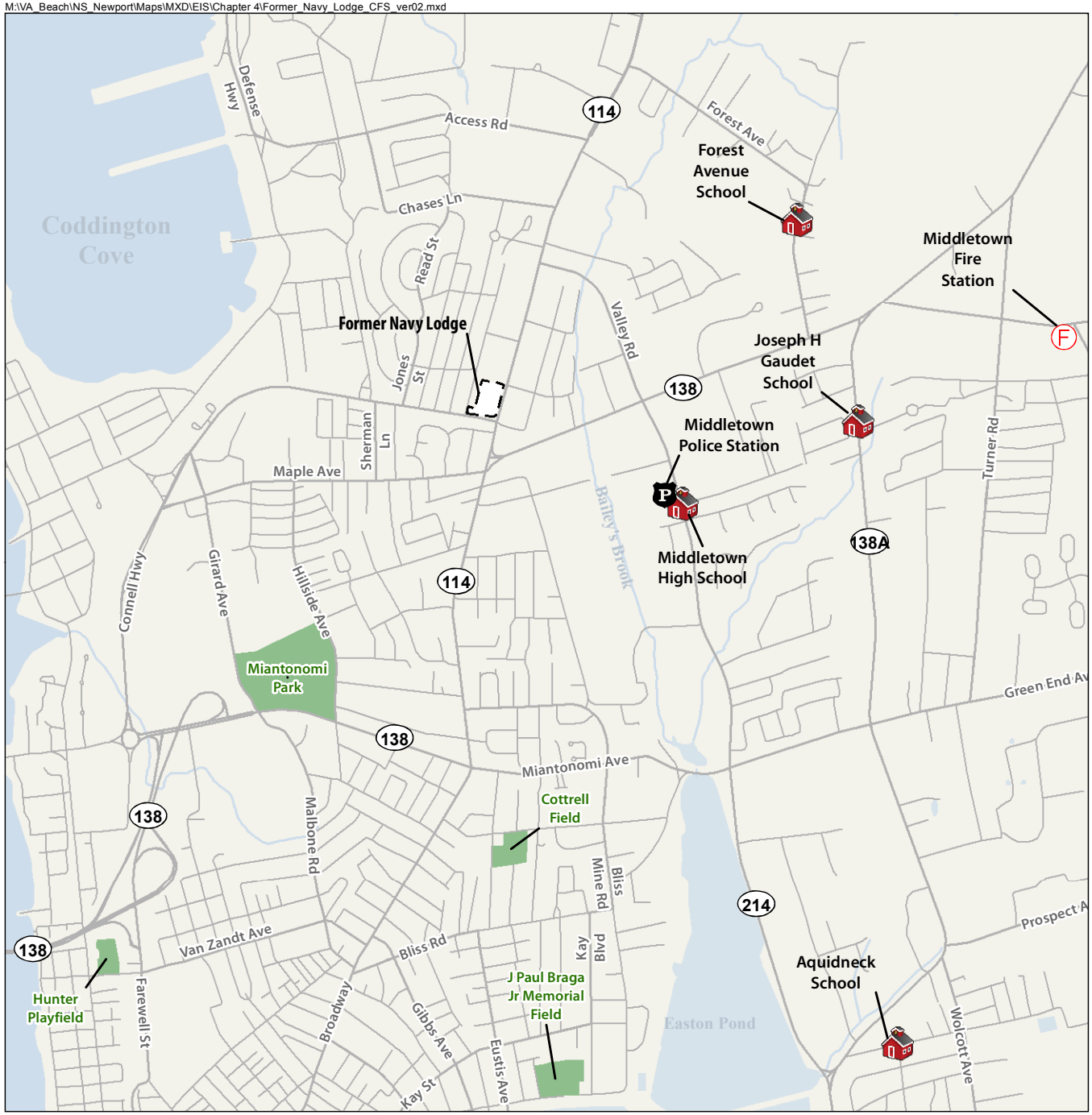

Figure 4.3-1
Former Navy Lodge Property
Community Facilities and Services
NAVSTA Newport, Rhode Island

Legend

- Street
- River/Stream
- School/Institution
- Fire Department
- Police Department
- Parks
- Property Boundary

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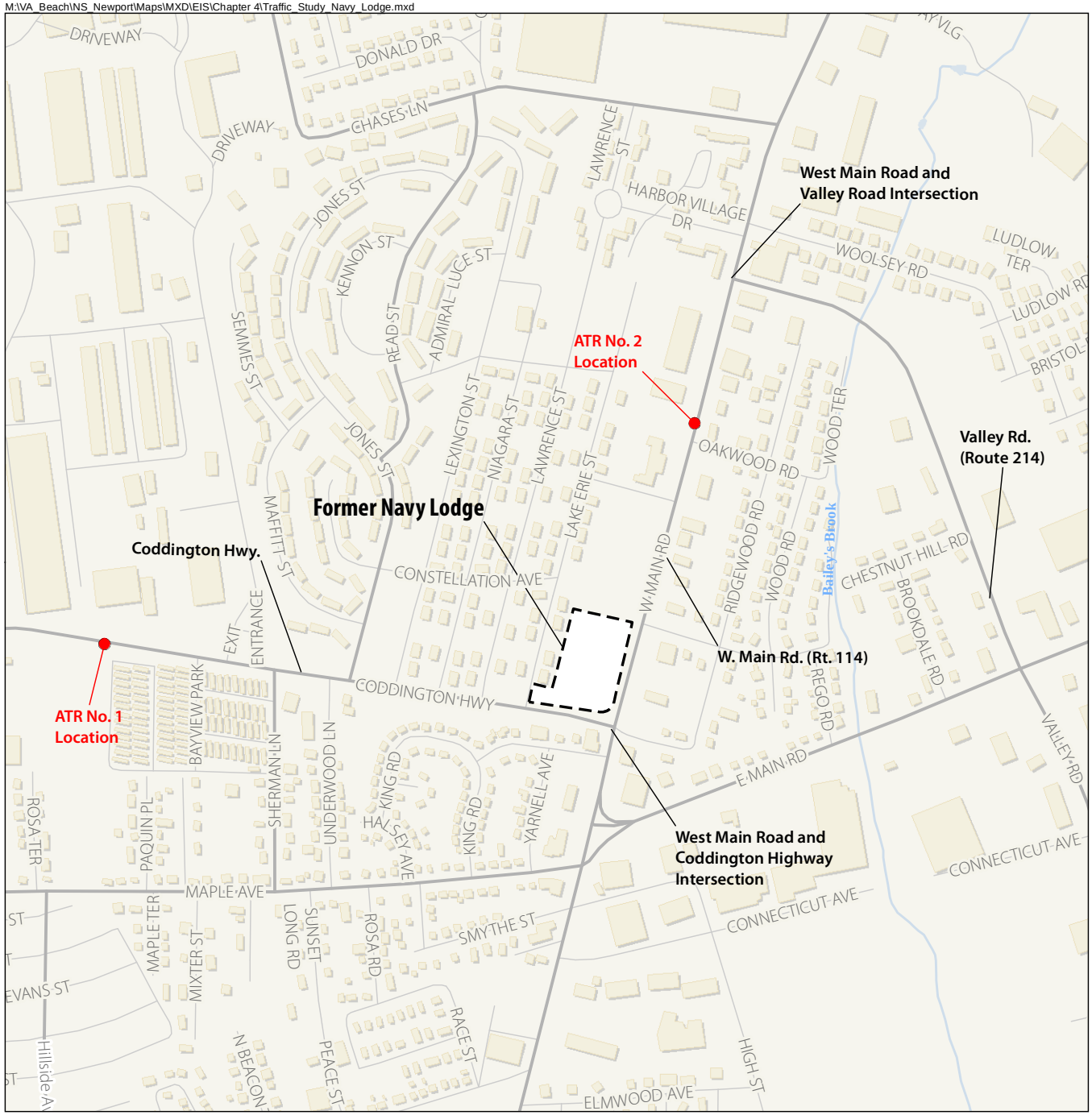

Figure 4.4-1
Former Navy Lodge Property
Traffic Study Area
NAVSTA Newport, Rhode Island

Legend

- Automatic Traffic Recorders (ATR)
- Street
- Major Road
- River/Stream
- Property Boundary

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SCALE

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SOURCE: Pare Corporation 2013

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Coddington Highway. Coddington Highway is an east/west principal arterial that terminates with its intersection at West Main Road and transitions to J.T. Connell Highway west of the property. Coddington Highway has recently been configured to include one travel lane in each direction, with bus stops on both sides, a left turning lane, and a bicycle lane in each direction. Coddington Highway is in the RIDOT's jurisdiction. The roadway provides direct access to NAVSTA Newport at Gate 10. The posted speed limit is 25 miles per hour (mph).

West Main Road (Route 114). West Main Road is a north/south principal arterial that traverses Aquidneck Island from Mount Hope Bridge at the north end of the island to the intersection of Admiral Kalbfus Road, Broadway, and Maintonomia Avenue in the City of Newport. It is designated as State Route 114 and is in RIDOT's jurisdiction. West Main Road is generally a four-lane roadway. Left and/or right turn lanes are present at most of the signalized intersections along the corridor. The posted speed limit is 30 mph from Forest Avenue to West Main Road in front of the property. Bus stops are located at several locations along the roadway.

West Main Road (Route 114) and Coddington Highway/Rockwood Road Intersection. The intersection of West Main Road and Coddington Highway is a four-way signalized intersection that also includes Rockwood Road. West Main Road forms the northbound and southbound approaches, Coddington Highway forms the eastbound approach, and Rockwood Road, a local unclassified roadway, forms the westbound approach. Left and right turn lanes exist in the northbound and eastbound directions. A right turn lane is on West Main Road in the southbound direction.

West Main Road (Route 114) and Valley Road (Route 214) Intersection. The intersection of West Main Road with Valley Road is north of the property and forms a three-way signalized intersection. West Main Road runs north–south and Valley Road runs east–west. A left turn lane is in the southbound direction and in the westbound direction. Valley Road is classified as an urban principal arterial.

4.4.2 Existing Traffic Volumes

Traffic volumes were collected in October 2012 during peak hours at the intersections of West Main Road and Coddington Highway and West Main Road and Valley Road, near the former Navy Lodge property. In addition, total daily traffic counts were conducted on Coddington Highway west of the property and on West Main Road north of the property. Peak-hour traffic volumes for the morning and evening are shown in Table 4.4-1. The peak traffic hours varied, but morning peak volumes generally occurred between 7:45 a.m. and 9:00 a.m., while evening peak volumes typically occurred between 4:45 p.m. and 5:45 p.m. Traffic volume was higher at both intersections during the evening peak hour. Overall traffic volumes for the two roadways are similar; however, the West Main Road and Valley Road intersection had a higher volume. Table 4.4-1 also shows the average daily traffic volume at two points near the former Navy Lodge property. On an average day, traffic volume on West Main Road is more than 26,000 vehicles and on Coddington Highway more than 18,000 vehicles.

Table 4.4-1 Existing Roadway Traffic Conditions near the Former Navy Lodge Property

Peak Hour Traffic Volumes		
Intersection	A.M. Peak Hour Volume[1]	P.M. Peak Hour Volume[2]
West Main Road (Route 114) and Coddington Highway/Rockwood Road	2,087	2,728
West Main Road (Route 114) and Valley Road (Route 214)	2,526	3,035

Table 4.4-1 Existing Roadway Traffic Conditions near the Former Navy Lodge Property

Average Daily Traffic Volumes		
Roadway	**Location**	**Average Daily Traffic**
Coddington Highway	West of Jones Road	18,576
West Main Road	South of Valley Road	26,366

Source: Pare Corporation 2013

Notes:
[1] The morning peak hour for West Main Road and Coddington Highway was 7:45 a.m. to 8:45 a.m. The morning peak hour for West Main Road and Valley Road was 8:00 a.m. to 9:00 a.m.
[2] The evening peak hour for both intersections was 4:45 p.m. to 5:45 p.m.

4.4.3 Roadway Intersection Level of Service

A capacity analysis characterized the LOS for the two intersections analyzed near the former Navy Lodge property. LOS is a qualitative measure that describes general operating conditions based on factors such as speed, travel times, and delays. LOS is reported on a scale of 'A' to 'F.' 'A' represents the best operating conditions, with free-flowing traffic; 'F' represents the worst operating conditions, with significant delays. Both signalized intersections currently operate at LOS B during the morning peak hour (see Table 4.4-2). The West Main Road (Route 114) and Coddington Highway/Rockwood Road intersection operates at LOS C during the evening peak hour. The West Main Road (Route 114) and Valley Road (Route 214) intersection operates at LOS B during the evening peak hour.

Table 4.4-2 Roadway Level of Service near the Former Navy Lodge Property

Intersection	LOS Morning Peak Hour	LOS Evening Peak Hour
West Main Road (Route 114) and Coddington Highway/Rockwood Road (signalized)	B	C
West Main Road (Route 114) and Valley Road (Route 214) (signalized)	B	B

Source: Pare Corporation 2013

4.4.4 Safety Conditions

Accident data from January 2010 to October 2012 were reviewed for the following road segments near the former Navy Lodge property:

- West Main Road between Chases Lane and East Main Road
- Coddington Highway between West Main Road and the Newport city line.

During this period, 136 vehicle accidents were reported, including 65 rear-end collisions, 22 broadside crashes, 20 angle crashes, 15 sideswipes, 5 head-on crashes, 4 involving a bicyclist or a pedestrian, 3 involving a loss of control of the vehicle, and 2 collisions with an object. Of the 13 intersections along these road segments, the majority of the vehicle accidents (61 [45 percent]) were reported at the intersection of West Main Road and East Main Road; 27 of these were rear-end collisions. A total of 38 accidents were reported at the intersection of Coddington Highway and West Main Road. RIDOT has recently improved the intersection of West Main Road and East Main Road as well as sections of Coddington Highway to improve safety (Pare Corporation 2013).

A speed study was conducted at Coddington Highway west of West Main Road and on West Main Road near Browns Lane. Coddington Highway has a posted speed of 25 mph, and 98 percent of the vehicles

using the road travel above the speed limit. The average speed of vehicles on this roadway was 36 mph. West Main Road near Browns Lane has a posted speed of 35 mph, and 19 percent of vehicles travel above the speed limit. The average speed of vehicles on this roadway was 32 mph (Pare Corporation 2013).

4.4.5 Public Transportation

The RIPTA provides fixed-route bus service throughout Rhode Island, including Aquidneck Island. Several bus routes serve the community near the former Navy Lodge property and are described below (RIPTA 2013a).

- Route 60 – Route 60 bus service between Newport and Providence via Middletown and Portsmouth originates at the Gateway Center in Newport; the buses travel along West and East Main Roads. Several bus stops are located in front of the former Navy Lodge property (RIPTA 2013b).
- Route 63 – Route 63 bus service between Newport and Middletown begins at the Gateway Center in Newport and travels to Newport Towne Center, located just north of the former Naval Hospital, before continuing along Coddington Highway near the former Navy Lodge property (RIPTA 2013c).
- Route 64 – Route 64 connects Newport with the University of Rhode Island in Kingston. The bus route begins at Gateway Center and travels north to Third Street, providing service along Coddington Highway in front of the property (RIPTA 2013d).

4.5 Environmental Management

This section summarizes the existing conditions regarding hazardous waste, hazardous materials, medical waste, and the Environmental Restoration Program for the former Navy Lodge property.

4.5.1 Hazardous Waste

Universal wastes such as fluorescent light bulbs and batteries likely were generated at the former Navy Lodge property when it was in use. In accordance with NAVSTA Newport installation-wide policies, universal wastes would have been transported off-site for disposal or recycling within one year of accumulation and storage (Michael Baker Jr., Inc. 2011). No other hazardous waste is known to have been generated at the former Navy Lodge property before its demolition, and no hazardous waste is currently generated there (U.S. Department of the Navy 2009).

4.5.2 Hazardous Materials

4.5.2.1 Hazardous Material Control

Hazardous materials are not known to be used at the former Navy Lodge property because it is currently vacant, and the Tier II Emergency and Hazardous Chemical Inventory report for 2011 does not list hazardous materials for the property (NAVSTA Newport 2012d). The Tier II Emergency and Hazardous Chemical Inventory report for 2002, when the Navy Lodge was still standing, similarly does not list hazardous materials for the property (Malcolm Pirnie 2003). Cleaning supplies and similar hazardous materials most likely were stored and used in the building when it was in use.

The installation spill log for 2002 through 2011 does not list any spills at the former Navy Lodge property (NAVSTA Newport 2012e).

4.5.2.2 Underground Storage Tanks

There are no active USTs on the former Navy Lodge property (Aerostar 2012). The environmental baseline survey checklist prepared for the 2004 demolition of the lodge indicated that a UST may have been located on the property at one time (NAVSTA Newport 2004b). If so, such a UST likely would have been used for fuel oil or diesel for an emergency generator.

4.5.2.3 Aboveground Storage Tanks

There are no current or former ASTs associated with the former Navy Lodge property (U.S. Department of the Navy 2009).

4.5.2.4 Oil/Water Separators

There are no OWSs associated with the former Navy Lodge property.

4.5.2.5 Asbestos-Containing Materials

The former Navy Lodge property is currently vacant and covered with grass, and there are no building sources of ACM. Underground water and steam lines may be insulated with asbestos-containing pipe wrap. ACM reported for the Navy Lodge from a 1992 sampling event was removed and disposed of off-site before the lodge was demolished in 2004 (U.S. Department of the Navy 2009).

4.5.2.6 Lead-Based Paint/Lead

The former Navy Lodge property is currently vacant and covered with grass, and there are no known sources of LBP or lead on the property. LBP reported for the Navy Lodge from a 1993 sampling event was removed and disposed of off-site before the lodge was demolished in 2004 (U.S. Department of the Navy 2009).

4.5.2.7 Polychlorinated Biphenyls (PCBs)

One transformer was located at the former Navy Lodge property, but there is no documentation regarding transformer or electrical equipment types, conditions, PCB content, or maintenance (U.S. Department of the Navy 2009). PCB-containing transformers were removed or replaced at NAVSTA Newport in the 1980s (U.S. Department of the Navy 2009), and the Navy is not otherwise aware of any PCB-containing transformers at the installation (CNIC n.d.[d]). The site is currently vacant and covered with grass, and there are no sources of PCBs on the property.

4.5.2.8 Pesticides

Pesticides are not known to have been stored, nor are they currently stored, at the former Navy Lodge property (U.S. Department of the Navy 2009). Pesticides likely were used at the lodge when it was operational and would have been applied in accordance with the policies of NAVSTA Newport in effect at the time. The property is currently vacant and covered with grass; therefore, current pesticide use would be minimal.

4.5.2.9 Radioactive Materials

There are no radioactive materials associated with the former Navy Lodge property (U.S. Department of the Navy 2009).

4.5.2.10 Radon

The records do not indicate that the former Navy Lodge building was tested for radon prior to its demolition in 2004 (NAVSTA Newport 1996). The property is currently vacant, and radon levels at the site are unknown.

4.5.3 Medical Waste

Medical wastes were not generated at the former Navy Lodge when it was in use and are not generated on the property now (U.S. Department of the Navy 2009).

4.5.4 Environmental Restoration Program

There are no ER Program sites at the former Navy Lodge property. The ER Program site nearest to the former Navy Lodge property is IRP Study Area 4, Coddington Cove Rubble Fill Area. This ER Program site is located approximately 0.5 miles west of the former Navy Lodge property, and the two locations are separated by developed areas (see Section 3, Figure 3.5-1). The Coddington Cove Rubble Fill Area is an approximately 8-acre site used from 1978 to 1982 to dispose of C&D debris and general fill material such as rubble, concrete, asphalt, slate, wood, brush, and (possibly) ash. Investigations in 2004 showed elevated levels of arsenic and lead in groundwater and elevated polycyclic aromatic hydrocarbons (PAHs), pesticides, and metals in soil (NAVFAC 2013b). Contaminants in site media have little potential of migrating off-site to other areas and pose minimal risk to human health and the environment. As a result, no further action has been recommended for the Coddington Cove Rubble Fill Area site (Resolution Consultants 2014).

4.6 Air Quality

4.6.1 Existing Air Quality

Section 3.6 describes the regional air quality and applicable regulations and requirements. The CAA is the primary federal statute governing the control of air quality. The former Navy Lodge property is in the Town of Middletown, Newport County, Rhode Island. This location is within the Providence, Rhode Island air quality region, which encompasses all of Rhode Island and is currently in attainment for all NAAQS. The state is under the jurisdiction of the RIDEM for air quality.

4.6.2 Existing Emissions

The former Navy Lodge property is currently vacant and covered with grass. Therefore, there are no existing stationary or mobile sources of criteria pollutants, HAPs, or GHG emissions from the current use of the property.

4.7 Noise

Ambient sound levels are a function of a variety of sources: local traffic, barking dogs, birds, insects, lawnmowers, children playing, and the interaction of the wind with groundcover, buildings, trees, shrubs, power lines, etc. Sound levels vary with time of day, wind speed and direction, and the level of human activity. The acoustic environment around the former Navy Lodge property is mainly characterized by traffic noise during daytime hours.

Table 4.7-1 presents the minimum and maximum hourly average L_{eq} sound levels measured in 2010 at the monitoring station nearest to the former Navy Lodge property (LT-3) (Tech Environmental 2011) (see Figure 3.7-1 in Section 3.7).

Table 4.7-1 Baseline Hourly Average L_{eq} Sound Levels near the Former Navy Lodge Property

Measurement ID	Location	Daytime		Nighttime	
		Min. L_{eq} (dBA)	Max. L_{eq} (dBA)	Min. L_{eq} (dBA)	Max. L_{eq} (dBA)
LT-3	Nimitz Field	49.2	63.2	49.2	54.7

Source: Tech Environmental 2011

To characterize the existing traffic noise near the former Navy Lodge property, the peak afternoon traffic volume, vehicle speed, and vehicle mix data for the roadways analyzed in the traffic study conducted in October 2012 (Pare Corporation 2013) were modeled using TNM version 2.5. Noise levels ranged from 60.7 to 66.6 dBA.

4.8 Infrastructure and Utilities

This section summarizes the existing infrastructure, utilities, and solid waste management at the former Navy Lodge property.

4.8.1 Water Supply

Water was supplied to the former Navy Lodge property by the City of Newport. The City of Newport owns and maintains two water mains that are located along West Main Street, including a 24-inch water main along the west side of West Main Road and an 18-inch water main along the east side of West Main Road (RKG Associates, Inc. et al. 2011). Lines from the water mains to the former Navy Lodge property were cut and capped with the closure of the former Navy Lodge property (Carlson 2012).

Two active water lines cross the former Navy Lodge property. A 16-inch water main that supplies water to NAVSTA Newport and a chlorine/water meter vent are located along the southern boundary of the property, along Coddington Highway. Additionally, a water line at the northern end of the property supplies water to an apartment housing development on the west side of the property (RKG Associates, Inc. et al. 2011).

Most of the Town of Middletown is supplied with potable water from the City of Newport, although some households rely on groundwater wells. The City of Newport also owns and maintains the water distribution system in Middletown (City of Newport Department of Utilities 2013a). (Further discussion of the City of Newport water supply is provided in Section 6.8.1).

4.8.2 Wastewater

The former Navy Lodge property was connected to the NAVSTA Newport wastewater collection system via a 10-inch line (U.S. Department of the Navy 2009). NAVSTA Newport and the Town of Middletown own and maintain sewer lines within their respective jurisdictions. Wastewater is collected for treatment in the City of Newport's wastewater treatment plant. The line from the former Navy Lodge property was cut and capped with the closure of the former Navy Lodge property (Carlson 2012).

The City of Newport's wastewater treatment plant is located on J.T. Connell Highway and has a licensed capacity of 10.7 million gallons per day (mgd). The City of Newport's wastewater treatment plant treats wastewater from the City of Newport, the Town of Middletown, the Melville area of Portsmouth, and NAVSTA Newport. In 2012, the plant treated wastewater at a rate of 9.46 mgd (City of Newport Department of Finance 2012a).

The Town of Middletown is allocated 2.1 mgd of treatment capacity from the City of Newport under an inter-municipal agreement. Historically, Middletown has exceeded this treatment capacity by 2 to 3 percent (Northeast Engineers and Consultants 2008). Much of the extraneous flow is attributed to storm water infiltration (Northeast Engineers and Consultants 2008). In 2008, a complaint was filed in the U.S. District Court against the town alleging that the sewer and storm water systems violated standards and requirements of the CWA. As part of a settlement, the town evaluated projects to address sanitary flow in 2011, and measures to reduce inflow and infiltration were identified as the most feasible (Lefkowitz, Garfinkel, Champi, and DeRienzo 2012). More than $10 million in sewer improvements in Middletown are planned between 2014 and 2018 (Lefkowitz, Garfinkel, Champi, and DeRienzo 2012). The former

Navy Lodge is located in subarea G, which was identified as the number one priority for addressing infiltration and inflow concerns in a 2003 sewer study (The Louis Berger Group, Inc. 2003).

4.8.3 Storm Water

The former Navy Lodge property has a general slope from the southwest corner towards West Main Road. Storm water runoff flows into five catch basins that discharge to Middletown's storm water system under West Main Road or into catch basins west of the property (U.S. Department of the Navy 2009; RKG Associates et al. 2011).

Storm water from the property is managed by the Town of Middletown. The town relies primarily on a system of outfalls and 1,420 catch basins for storm water management.

4.8.4 Other Utility Systems

This section provides a discussion of the electrical and natural gas supplies in the communities surrounding all four surplus properties: the former Navy Lodge property, the former Naval Hospital property, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property.

Electricity

National Grid is the primary electrical utility providing connection and distribution services in the Town of Middletown. This is a user-supported utility service, and the customers pay for the service and electricity supplied. Overhead electric lines are located along Coddington Highway and West Main Road (RKG Associates, Inc. et al. 2011).

Table 4.8-1 shows electrical usage for the Town of Middletown between 2009 through 2011. As shown in Table 4.8-1, the Town of Middletown consumed more than 115 million kilowatt hours (kWh) in 2011. The 2011 electric consumption represented a decrease from 2010, but it was an increase over the levels used in 2009. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade.

Table 4.8-1 Annual Electricity Usage (kWh) in the Project Area (2009-2011)

	2009	2010	2011
City of Newport	280,899,087	290,812,794	285,394,308
Town of Middletown	111,125,705	120,527,214	115,994,320
Town of Portsmouth	106,145,675	114,709,999	111,677,038
Total	**498,170,467**	**526,050,007**	**513,065,666**

Source: Rhode Island Energy 2012

Natural Gas

The Town of Middletown and the surrounding region is serviced by National Grid. This is a user-supported utility service, and the customers pay for service and natural gas supplied.

Table 4.8-2 shows natural gas usage for the Town of Middletown in 2010 and 2011. The Town of Middletown consumed more than 105 billion cubic feet (cf) of natural gas in 2011, a 6 percent increase over usage in 2010.

Table 4.8-2 Annual Natural Gas Usage (cf) in the Project Area (2010-2011)

	2010	2011
City of Newport	99,634,495,300	105,210,403,500
Town of Middletown	99,634,696,300	105,210,604,600
Town of Portsmouth	199,269,392,600	210,421,209,200
Total	**398,538,584,200**	**420,842,217,300**

Source: Rhode Island Energy 2012

4.8.5 Solid Waste

Solid wastes were generated at the former Navy Lodge while it was in use. Nonhazardous solid waste would have consisted primarily of mixed trash, paper, cardboard, and food waste. Solid waste was disposed of at the installation landfill until the 1980s, after which it was collected by installation personnel and disposed of at a transfer station in the City of Newport. Since 1995, solid waste generated at NAVSTA Newport has been collected, disposed of, and recycled off-site by a contractor (U.S. Department of the Navy 2009).

4.9 Cultural Resources

This section describes the existing cultural resources and historic properties that are located within the APE for the proposed action at the former Navy Lodge property. The boundary of the APE is the same as the boundary of the property that will be disposed (see Figure 4.9-1). Cultural resources within the APE would consist of archaeological sites and archaeologically sensitive areas and architectural resources. Archaeological and architectural resources are discussed in greater detail in Sections 4.9.1 and 4.9.2, respectively. A discussion of Native American resources is provided in Section 4.9.3. Cultural resources that were determined to be historic properties are discussed in greater detail in Section 4.9.4.

In general, the APE was considered sensitive for cultural resources that were associated with a variety of cultural periods of human occupation. Previously recorded archaeological sites or archaeologically sensitive areas were identified in the vicinity of the APE, indicating prehistoric and historic settlement and/or use of the general project area. Extant buildings and structures identified in the vicinity of the APE document more recent occupation and use of the area from the mid-nineteenth century to the present.

4.9.1 Archaeological Resources

The 2013 Phase I archaeological investigation conducted within the APE at the former Navy Lodge property consisted of the excavation of a total of four shovel tests. Shovel tests were placed outside the footprint of the former structure to determine whether intact soils were present. None of the shovel tests contained any artifacts. Generally, shovel test profiles revealed that the entire parcel has been significantly disturbed by cut and fill associated with construction and demolition of the former structure. Based on these results, no archaeological sites were identified within the APE at the former Navy Lodge property, and no further archaeological investigations of the APE at the former Navy Lodge property were recommended (Gould and LeeDecker 2014). The Navy consulted with the Rhode Island SHPO on the lack of archaeological sensitivity of the former Navy Lodge property; the Rhode Island SHPO concurred that no further archaeological investigations of this area were required (Lin 2013; Sanderson 2013b).

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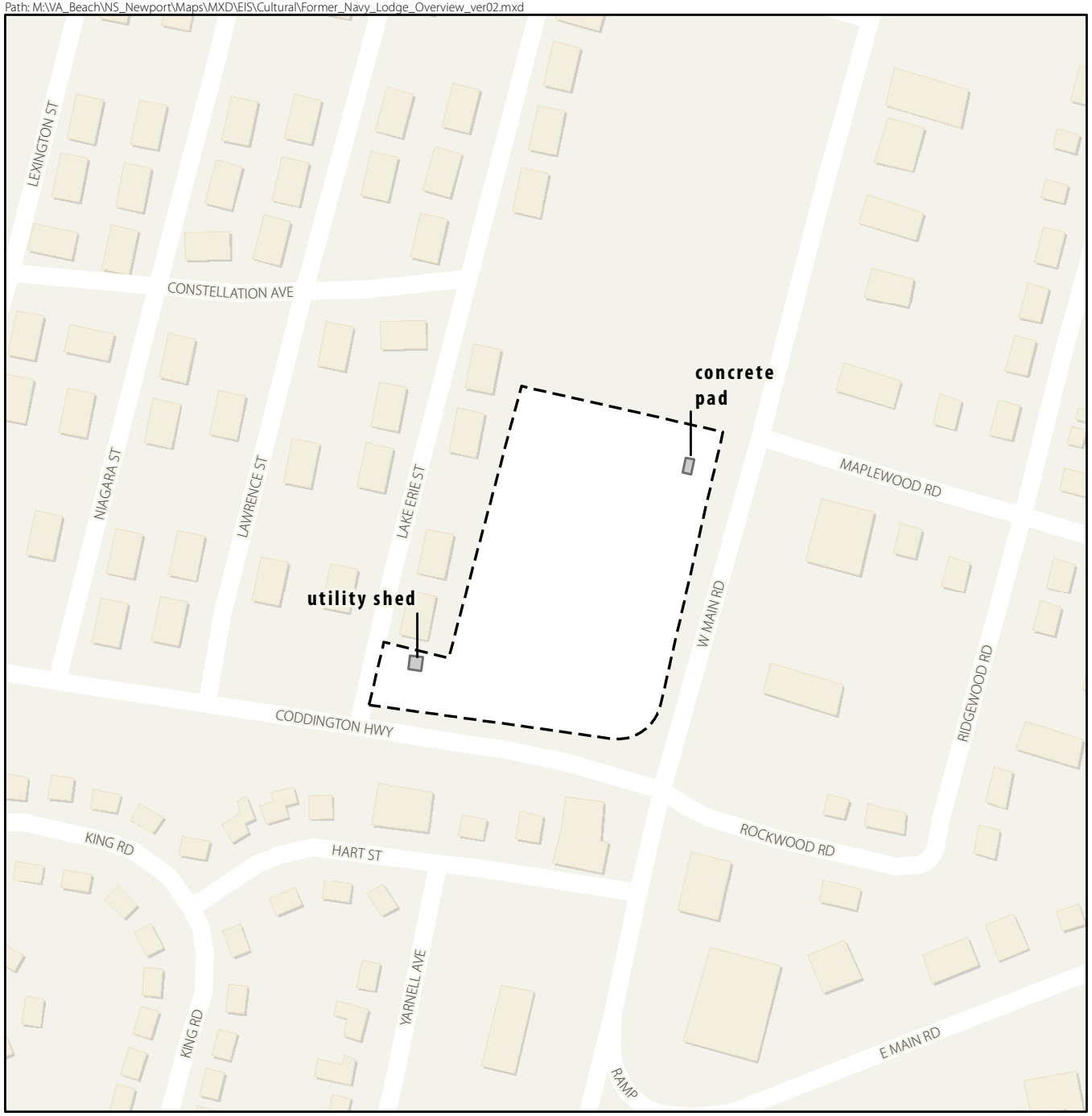

Figure 4.9-1
Former Navy Lodge Property Overview Figure
NAVSTA Newport, Rhode Island

Legend

Structure

Property Boundary

SCALE

0 150 300 Feet

SOURCE: U.S. Department of the Navy 2009

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4.9.2 Architectural Resources

There are two extant support structures within the APE at the former Navy Lodge property: a small utility shed located in the southwestern corner of the property and a small concrete pad and associated water meter vent on the northeastern corner (see Figure 4.9-1). Neither of these two structures is a historic structure or considered NRHP-eligible. The Navy Lodge formerly located on the property was constructed in 1971 and demolished in 2004 (Gould and LeeDecker 2014). No other buildings or structures are located within the APE at the former Navy Lodge property. Therefore, the 2013 architectural survey and evaluation update conducted for the proposed action did not include the APE at the former Navy Lodge property (Groesbeck and Bedford 2014).

4.9.3 Native American Resources

The Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at the former Navy Lodge property: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

4.9.4 NRHP-Listed or -Eligible Historic Properties

The 2013 Phase I archaeological investigation conducted for the proposed action resulted in the determination that no archaeological resources that are historic properties are present within the APE (Gould and LeeDecker 2014). Additionally, Navy determined that no architectural resources that were historic properties are present within the APE. The Navy consulted with the Rhode Island SHPO on this determination of no historic properties present; the Rhode Island SHPO concurred that no historic properties were present within the APE at the former Navy Lodge property (Lin 2013; Sanderson 2013b).

4.10 Topography, Geology, and Soils

This section summarizes the existing topography, geology, and soil conditions at the former Navy Lodge property.

4.10.1 Topography

The topography of the former Navy Lodge property is relatively flat; a minor slope exists from the southwest corner towards West Main Road. Elevations range from approximately 65 feet above mean sea level (amsl) at its northern boundary to approximately 70 feet amsl at its southern boundary). The nearest body of water is Bailey's Brook, located approximately 1,000 feet east of the site.

4.10.2 Geology

The former Navy Lodge property lies within the New England physiographic province (USGS 2002). The site is located on the Rhode Island Formation of the stratified Narragansett Bay Group of the Pennsylvanian period (323 million to 290 million years ago). The Narragansett Bay Group rocks are part of the Esmond-Dedham subterrane of the Southeastern New England Avalon zone. The Esmond-Dedham Subterrane Narragansett Bay Group is deposited upon older rocks of both West Bay and East Bay parts of the Esmond-Dedham subterrane. The Narragansett Bay Group–Rhode Island Formation consists of meta-sandstone, meta-conglomerate, schist, carbonaceous schist, and graphite. Plant fossils are common (USGS 2013).

According to the USGS, only one earthquake has ever been recorded as possibly being centered in the State of Rhode Island. This earthquake was recorded on February 27, 1883 (USGS 2009). No other earthquakes have been recorded in the state. The former Navy Lodge property is located in an earthquake zone (although not near any known fault locations [USGS 2005]) where, in a 50-year period, there is only a 2 percent chance of an earthquake occurring with a peak acceleration (ground movement) of 8 percent

to 10 percent acceleration due to gravity (%g). It takes a peak acceleration of 10%g to cause damage to buildings; therefore, there is minimal risk of an earthquake that would cause damage to a building on the former Navy Lodge property (USGS 2009).

4.10.3 Soils

4.10.3.1 Soil Types

Soil types present on the former Navy Lodge property include Newport-Urban land complex and Urban land (see Table 4.10.1 and Figure 4.10-1).

Table 4.10-1 Soil Types, Former Navy Lodge Property

Soil Name	% Slope Range	Acres
Newport-Urban land complex (NP)	0% to 15%	2.8
Urban land (Ur)	0% to 8%	0.2
Total		**3**

Source: U.S. Department of Agriculture 2012

Newport-Urban Land Complex (NP)

Newport-Urban land complex consists of well-drained Newport soils and areas of urban land. The main limitation of the Newport soils for development is the slow or very slow permeability in the substratum. Roads and streets require special design to prevent frost-heaving (USDA 1981).

Urban Land (Ur)

Urban land consists mostly of sites for buildings, paved roads, and parking lots. Areas of this soil require on-site investigation and evaluation for most land use decisions (USDA 1981).

4.10.3.2 Soil Characteristics and Limitations

As indicated in Section 3.10, the USDA rates soils according to characteristics that could limit development. These characteristics include the following:

- **Erosion Potential**. The soil erosion potential for the Newport-Urban land complex is moderate. The soil erodibility factor is 0.24 at a depth of 24 to 30 inches, which means the soils are moderately susceptible to detachment and they produce moderate runoff (USDA 2012; Institute of Water Research [IWR] 2002). No erosion potential was listed for urban land (USDA 2012).
- **Hydric Soils**. Both of the soils (Newport-Urban land complex and Urban land) are listed as dominantly non-hydric, although non-hydric soil can contain hydric inclusions (USDA 2012).
- **Constructability.** There are moderate constraints on development with Newport-Urban land complex soil and restrictions on residential or commercial development if on-site septic tanks are to be used.

  The more common sources of constructability limitations for these soils include shallow excavations (slight limitations due to dense to very dense soils), moderate frost action, and a moderate slope. These soils are dense to very dense, which makes excavation difficult; however, they have a low shrink-swell potential (USDA 2012, 1981).

  Urban land soils have a few restrictions on development if on-site septic tanks are to be used. These soils are human transported material (fill) (USDA 2012, 1981).

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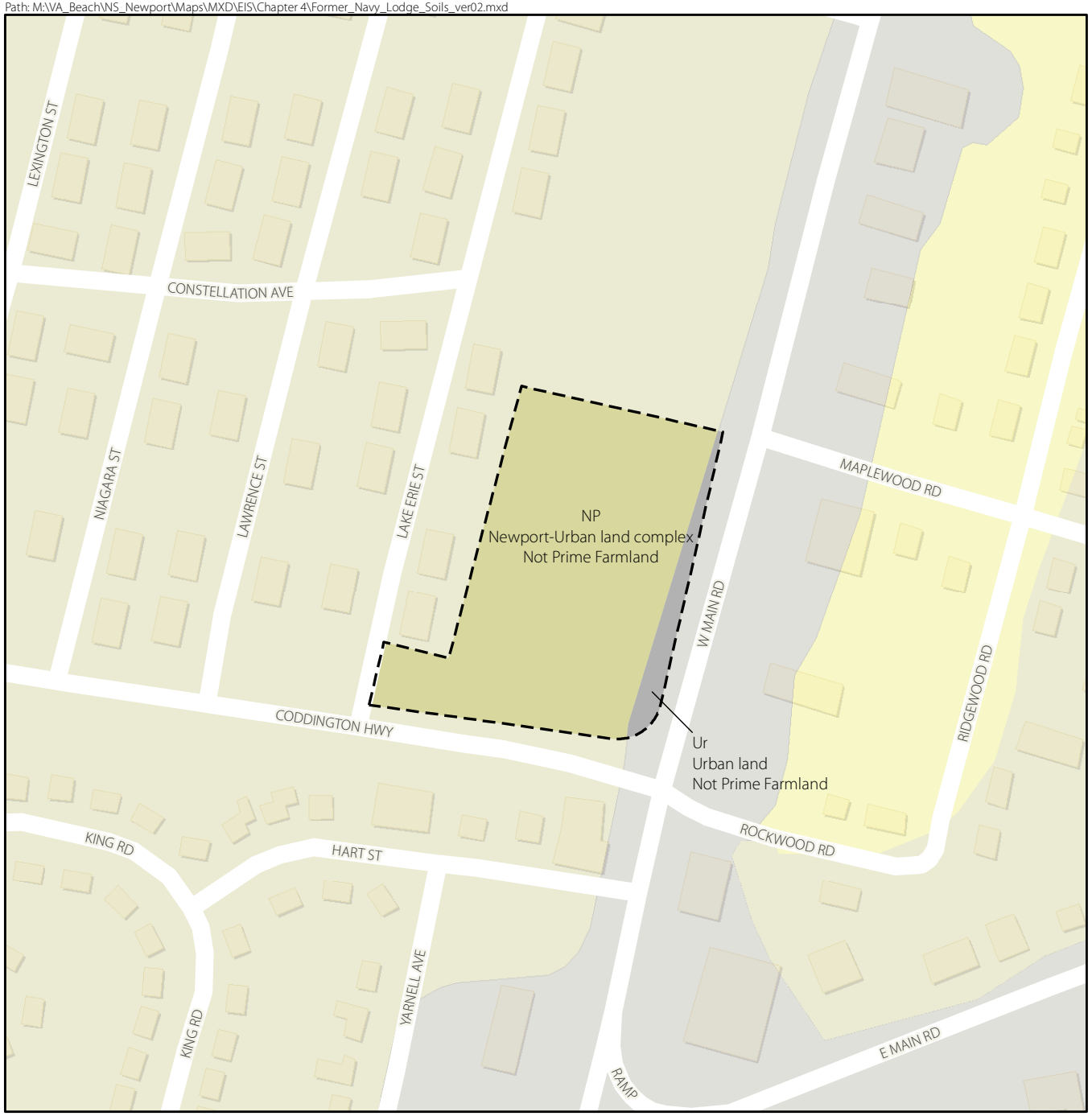

Figure 4.10-1

Former Navy Lodge Property

Soils

NAVSTA Newport, Rhode Island

Legend

Property Boundary

Soil Type

NP - Newport-Urban Land complex

Ur - Urban Land

PmA - Pittstown silt loam, 0 to 3 % slopes

SCALE

0 150 300 Feet

SOURCE: U.S. Department of Agriculture, Natural Resources Conservation Service, Rhode Island State Office 2012

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4.10.3.3 Farmland Soils

Soils located at the former Navy Lodge property are not rated for farmland (USDA 2012).

4.11 Water Resources

The following sections summarize the existing conditions and physical characteristics of water resources found on and in the vicinity of the former Navy Lodge property.

4.11.1 Surface Water

The site does not have any surface water resources. Bailey's Brook, the closest surface waterbody, is located approximately 1,000 feet (or approximately 0.2 miles) to the east of the former Navy Lodge property.

The Aquidneck Island–Frontal Atlantic Ocean subwatershed (HUC 010900040911), in which the former Navy Lodge property is located, is predominantly covered by urban and suburban areas (University of Rhode Island Environmental Data Center 2013a). The former Navy lodge property is also in the Town of Middletown's designated watershed protection district. The purpose of this watershed protection district is three-fold:

1. To protect, preserve, and maintain the quality and supply of groundwater and surface water upon which the residents of the town and others depend;
2. To protect the quality and supply of water by regulating the use and development of land adjoining water courses or primary water recharge areas and to prevent uses of land detrimental thereto; and
3. To protect the health, safety, and general welfare of the public.

Two zones have been established as part of the watershed protection district:

- Zone 1 is an area critical to the protection of surface and sub-surface water supplies and requires a high degree of protection from incompatible land uses.
- Zone 2 is the watershed area that contributes surface water runoff to the primary water bodies in Zone 1 and that drains into Zone 1 areas either though surface water runoff or groundwater movement.

These two zones encompass the majority of the town, with the exception of the most western and eastern limits. The former Navy Lodge property is located in Zone 2.

4.11.2 Water Quality

The site does not have any surface water resources (see Figure 4.11-1). Bailey's Brook is the closest surface waterbody. This waterbody is classified as AA, a source of public drinking water supply (see Table 3.11-1). Bailey's Brook and its tributaries are classified by RIDEM in the *State of Rhode Island 2012 303(d) List – List of Impaired Waters* as impaired for non-attainment of the following designated uses: fish and wildlife habitat, primary contact recreation, and secondary contact recreation (RIDEM 2012a). Fish and wildlife habitat is indicated as impaired based on the results of benthic macroinvertebrate bio-assessments and the presence of lead. Both primary and secondary contact-recreation are listed as impaired because of the presence of the pathogen *enterococcus* (RIDEM 2012a).

The former Navy Lodge property is located in the Narragansett Bay watershed. A general water quality-pollution gradient along the Bay's north-south axis shows that the sources of pollution in the Bay are

largely concentrated in the Bay's upper reaches (Narragansett Bay Estuary Program 2009). These pollution sources include public wastewater treatment facility discharges, storm water and combined sewer overflow (CSO) outlets, and urban runoff from densely populated areas (Narragansett Bay Estuary Program 2009). Pollution levels typically decrease toward the mouth of the estuary because the water is diluted by seawater and there are fewer point sources of pollution.

Wastewater treatment facilities are a major source of nitrogen in Narragansett Bay. The facilities that treat CSOs are also major sources of pathogens and other contaminants during periods of heavy rains, which can result in discharges to the Bay and its tributaries (Narragansett Bay Estuary Program 2009).

4.11.3 Groundwater

Groundwater in the East Bay section of Rhode Island is generally provided by aquifers in till and bedrock. The average depth to groundwater is approximately 5 to 12 feet (NAVFAC Mid-Atlantic 2014). Depth to the water table in Newport Urban land complex soils, the primary soil type at the surplus property, is less than 6 feet (University of Rhode Island Cooperative Extension and Rhode Island Health Source Water Assessment Program 2003).

Groundwater in the vicinity of the former Navy Lodge property is classified by the RIDEM as GA (RIDEM 2010d). As described in Section 3.11, GA groundwater resources are designated as suitable for public or private drinking water use without treatment. No wellhead protection areas exist around the former Navy Lodge property; the closest wellhead protection area is located approximately 1.7 miles to the southeast (RIDEM 2010d).

4.11.4 Floodplains

No FEMA-delineated floodplains exist on the former Navy Lodge property. The closest floodplains are those associated with Bailey's Brook, located approximately 1,000 feet to the east.

4.11.5 Wetlands

No wetlands are present within the boundaries of the former Navy Lodge property. The closest wetlands are located 1,500 feet (or 0.3 miles) to the southeast.

4.12 Biological Resources

This section summarizes the existing vegetation and wildlife, including threatened and endangered species and significant wildlife habitat, at the former Navy Lodge property.

4.12.1 Vegetation

The former Navy Lodge property is highly developed with little to no diversity in vegetation. The vegetation at the site is limited and consists primarily of maintained grass, which covers approximately 2.5 acres, or 83 percent, of the site. The remainder of the site, approximately 0.5 acres, is developed land.

4.12.2 Wildlife

Potential wildlife present at the former Navy Lodge property is limited because the site is predominantly maintained grass and impervious surfaces.

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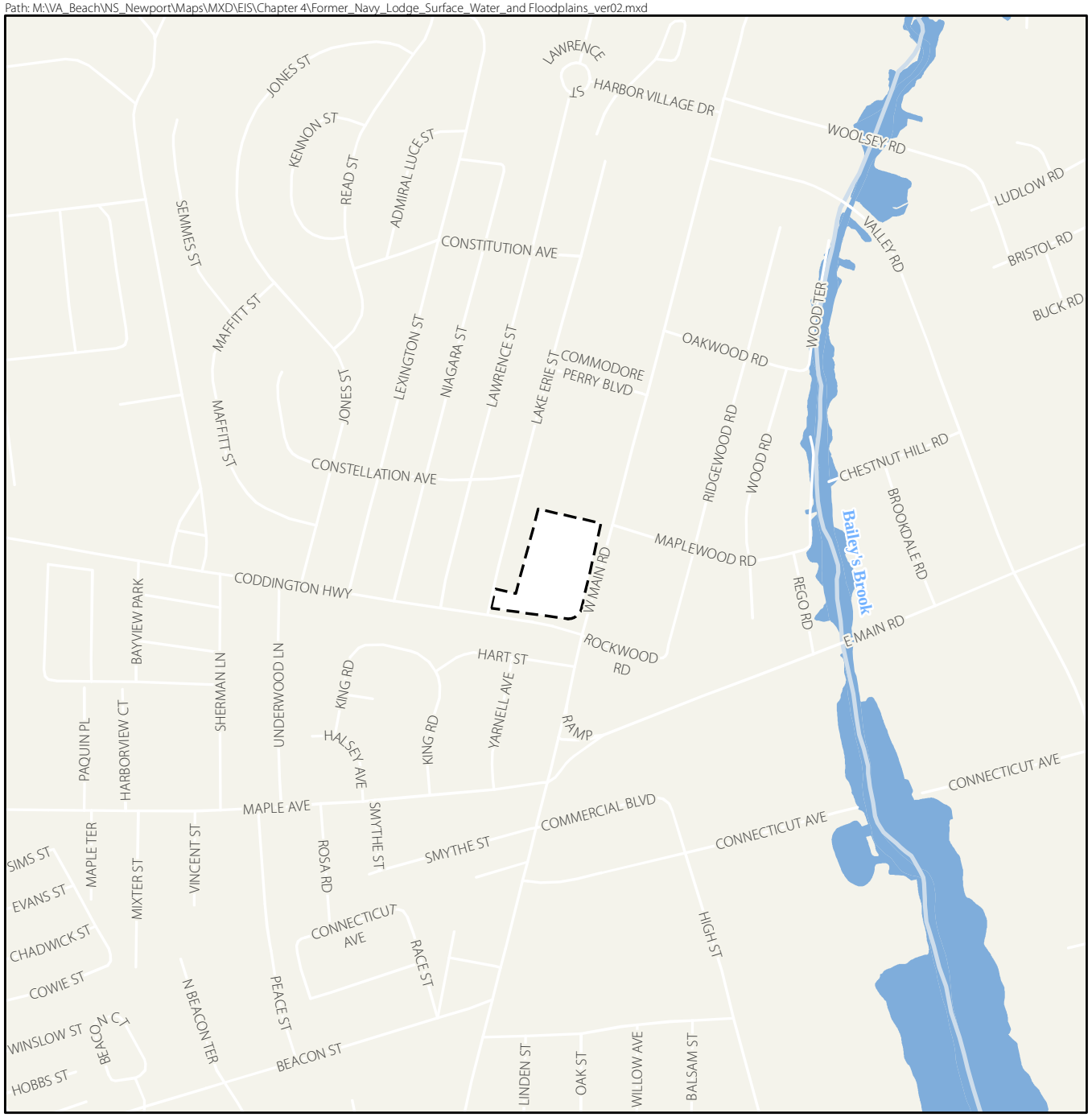

Figure 4.11-1
Former Navy Lodge Property Surface Water and Floodplains
NAVSTA Newport, Rhode Island

Legend

- River/Stream
- Property Boundary
- FEMA Floodplain
- AE

Zone AE: 100 year floodplains in which base flood elevation exists

SCALE
0 300 600 Feet

SOURCE: FEMA 2010;
RIDEM, Office of Water Resources 2010

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Terrestrial Mammals

Mammals occurring at the former Navy Lodge property are limited to those species adapted to urban/suburban conditions, such as the eastern gray squirrel (*Sciurus carolinensis*), common raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*) (NAVFAC Mid-Atlantic 2001). The white-footed mouse (*Peromyscus leucopus*) and woodchuck are also likely present at the former Navy Lodge property.

Herpetofauna

The existing habitat at the former Navy Lodge property precludes any species of herpetofauna occupying the site.

Avian Species

A discussion of avian species common to the areas around the surplus properties, including the former Navy Lodge property, and nearby IBAs is provided in Section 3.12.1.2.

4.12.3 Threatened and Endangered Species

No federally listed or state-listed species occur at the former Navy Lodge property. Agency review letters were sent to the USFWS, NOAA Fisheries, and RIDEM requesting updated information regarding listed species. A response from USFWS received on February 13, 2013, indicated that no federally listed or proposed threatened or endangered species or critical habitat is known to occur at the former Navy Lodge property (Chapman 2013). Additionally, a response from RIDEM received on February 12, 2013, indicated that no state-listed or candidate rare, threatened, or endangered species are known to occur at the former Navy Lodge property (Jordan 2013). The USFWS designated the northern long-eared bat as a threatened species under the ESA, effective May 4, 2015. However, no habitat exists for the northern long-eared bat at the former Navy Lodge property.

4.12.4 Significant Wildlife Habitat

The RIDEM's Division of Planning and Development reviewed the Rhode Island Natural Heritage Program database and has indicated that no unique natural communities or other significant wildlife communities live at or near the surplus property (Jordan 2013).

Wetlands

There are no wetlands or special aquatic habitats at the former Navy Lodge property.

Vernal Pools

There are no vernal pools at the former Navy Lodge property.

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5 Former Navy Lodge Environmental Consequences

5.1 Land Use, Zoning, and Coastal Resources

This section describes the potential land use impacts resulting from disposal and reuse of the former Navy Lodge property under Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of site-specific land use impacts, direct and indirect[10] impacts on surrounding existing land uses, consistency with local zoning and land use plans, and consistency with the enforceable policies of the RI CRMP. The study area includes the former Navy Lodge property and land within 0.25 miles in the Town of Middletown.

Upon completion of the BRAC disposal process under both Alternatives 1 and 2, the former Navy Lodge property would be under the jurisdiction of the Town of Middletown. The use of the land and the development of new buildings or structures on the site would be regulated by the Town of Middletown's zoning code and other applicable plans and regulations.

5.1.1 Alternative 1 (Preferred Alternative)

5.1.1.1 On-Site Land Use

Implementation of Alternative 1 would result in a change to the land use of the former Navy Lodge property from vacant to retail land uses. Approximately 1.8 acres (60 percent) of the former Navy Lodge property would be redeveloped with retail land uses. Two one-story retail buildings would be constructed on 0.7 acres of the site. A parking area covering 0.8 acres would be constructed between and around the buildings, and 0.3 acres would be used as access to the site from Coddington Highway (see Figure 5.1-1). The remaining 1.2 acres of the site would be left as open space.

Implementation of Alternative 1 would impact the existing land use through the introduction of a new retail land use at the currently undeveloped site and through reduction in open space. Implementation of Alternative 1 also would result in the public having access to the formerly restricted military property. Due to the development of approximately 60 percent of the property from vacant to retail uses, these impacts would be considered moderate.

5.1.1.2 Surrounding Land Use

Implementation of Alternative 1 would introduce a new retail land use in the study area, which would be consistent with nearby commercial land uses. The site is located at the intersection of two local arterial roadways, Coddington Highway and West Main Road, which are developed with similar commercial land uses (see Figure 5.1-1). Redevelopment of the property under Alternative 1 is not expected to directly impact adjacent residential land uses to the west, northwest, and south of the property.

The former Navy Lodge property is located in the Town of Middletown's *West Main/Coddington Development Center Master Plan* planning area (Vanasse Hangen Brustlin, Inc. and RKG Associates 2011). Redevelopment of the site as described under Alternative 1 is included in the master plan and could influence the timing, type, and scale of redevelopment of the other properties considered in the plan, including the town's recreation complex, the Middletown public library, and the former John F. Kennedy elementary school. These properties together comprise 14 acres. The scale of the redevelopment proposed in the master plan would result in a change in the type and intensity of land use around the site that could result in growth-induced changes in land use on other commercial properties on

[10] Indirect impacts on surrounding land uses are based on the potential for the proposed action to generate changes in the land use type, pattern, or density.

Coddington Highway and West Main Road and, subsequently, a need for transportation improvements. Construction of any transportation improvements would be the responsibility of the Town of Middletown, and the town has identified potential transportation improvements in the *West Main/Coddington Development Center Master Plan* (Vanasse Hangen Brustlin, Inc. and RKG Associates 2011) that may be warranted, e.g., additional access roads and roundabouts at busy intersections. Because of the potential for Alternative 1 to contribute to and influence the proposed redevelopment in this area, this alternative would have a moderate indirect impact on surrounding land use. However, measures are available to the Town of Middletown to control these impacts during the redevelopment process, and impacts would not be significant. These measures include a minimum lot-width requirement in traffic-sensitive areas to reduce the number and increase spacing of access points to major roadways, as well as certain watershed protection measures to protect, preserve, and maintain the quality of surface and groundwater used by the town (see Section 4.1.3).

5.1.1.3 Consistency with Land Use Plans and Zoning

The former Navy Lodge property is located in the Town of Middletown's public zoning district (PA) in an area designated as traffic-sensitive (Middletown Code of Ordinances Chapter 152 §720). While retail business is not typically considered a public land use, if the former Navy Lodge property remains under ownership by the Town of Middletown, this use would be consistent with the current zoning of the site. The town's zoning code does not permit privately owned retail land uses in the PA zoning district. Furthermore, the zoning code requires property in a public zoning district to be rezoned if it is transferred to a private owner for use for a non-governmental purpose. The Redevelopment Plan does not stipulate that the site would be transferred to a private owner. Therefore, implementation of Alternative 1 would be consistent with the existing zoning of the site and would not require rezoning the site to a designation that allows retail land uses.

As noted in Section 4.1.3, the proposed Coddington Center Overlay District, which would allow commercial, office, municipal government, and multi-family land uses by right or by special use permit, was developed during the planning process for the *West Main/Coddington Development Center Master Plan*. Implementation of this zoning overlay district would further facilitate implementation of Alternative 1.

The site also is included in the town's watershed protection district, Zone 2. The town has established the watershed protection zone in its zoning code to protect surface water and groundwater supplies from contamination by incompatible land uses. The proposed retail use under Alternative 1 would be considered compatible and permitted as a by-right use in watershed protection district, Zone 2. (See also Section 5.11, Water Resources, for a discussion of the proposed action's impacts on water quality).

The *Town of Middletown, RI, Comprehensive Community Plan Update* designates the site for future use as "institutional," consistent with the property's current zoning designation (Town of Middletown Planning Department 2015). Implementation of Alternative 1 would be consistent with this designation as long as the property remains under the Town of Middletown's ownership. Alternative 1 also would be consistent with the town's goal to designate the area surrounding the property as a growth center in conjunction with the proposed development outlined in the *West Main/Coddington Development Center Master Plan*.

As noted, redevelopment of the site is included in the *West Main/Coddington Development Center Master Plan*. Implementation of Alternative 1 would be consistent with the preferred redevelopment scenario outlined in the master plan. Furthermore, coordinated redevelopment of the former Navy Lodge property and three adjacent municipality-owned properties would support one of the recommendations of the town's comprehensive plan to "promote coordinated planned development of large land parcels" to

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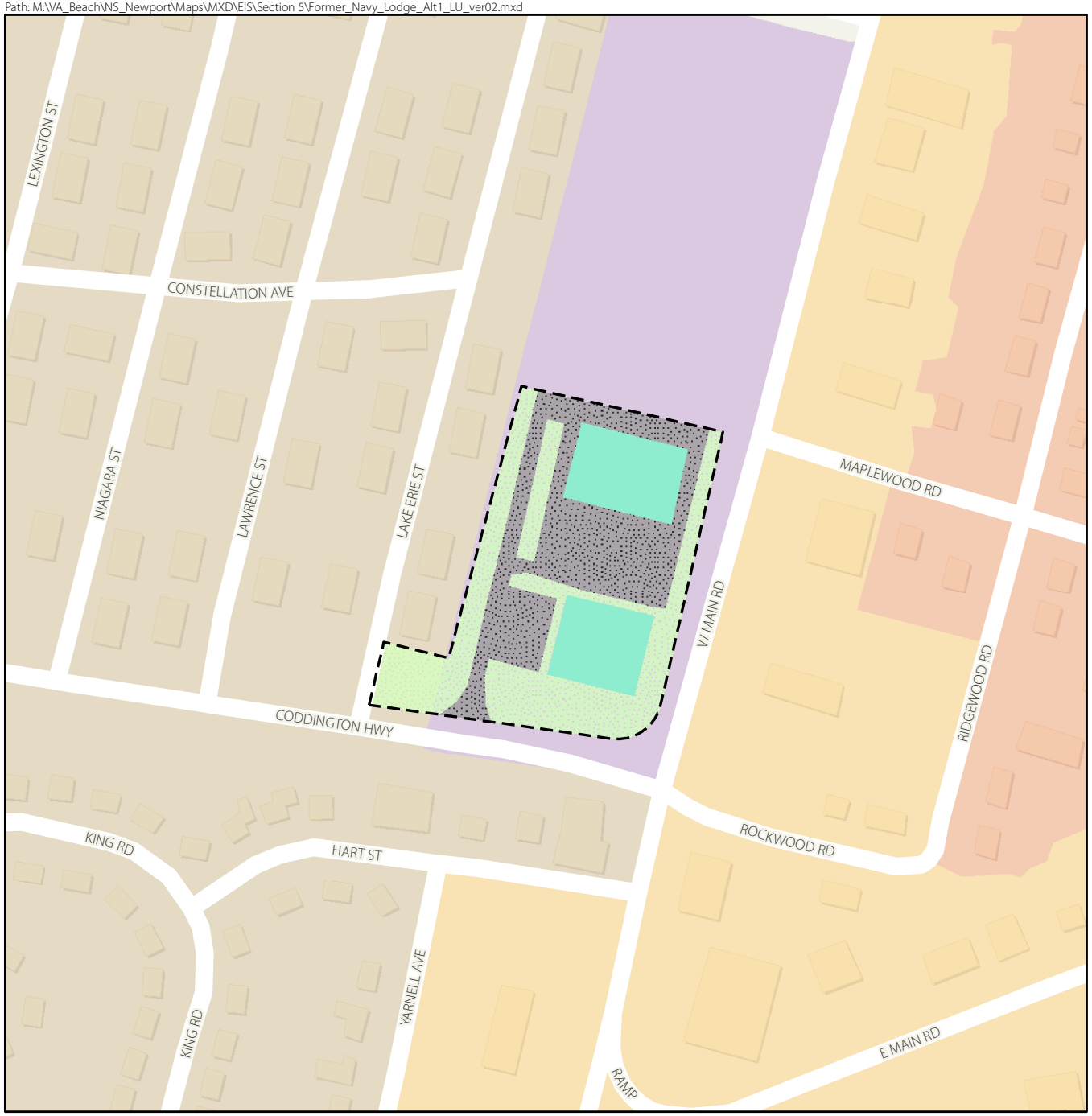

Figure 5.1-1
Former Navy Lodge Property
Alternative 1 Proposed Site-specific Land Use and Surrounding Land Use
NAVSTA Newport, Rhode Island

Legend

Property Boundary

Proposed Land Use

- Open Space
- Parking/Access
- Retail

Land Use

- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)

SCALE

0 150 300 Feet

SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013; RKG Associates et al. 2011.

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address commercial sprawl and protect natural and scenic resources (Town of Middletown Planning Department 2008).

Redevelopment of the former Navy Lodge property under Alternative 1 would be consistent with the *Aquidneck Island West Side Master Plan*'s designation of the site and the adjacent municipality-owned properties as a "mixed-use growth center" (The Cecil Group et al. 2005). Implementation of Alternative 1 would provide an economic benefit to the Town of Middletown, as discussed in Section 5.2.1, and would be compatible with the mission at NAVSTA Newport. Redeveloping the site, which is located in a developed area in one of the main commercial corridors in Middletown, would be consistent with the master plan's goals for promoting commercial infill development, "minimiz[ing] sprawl," coordinating the development of large parcels of land, and supporting municipal planning efforts (The Cecil Group et al. 2005). In summary, the proposed redevelopment at the former Navy Lodge property would be consistent with local planning, and no inconsistencies would result.

5.1.1.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 1 is not reasonably likely to affect the use or natural resources of Rhode Island's coastal zone. Disposal of the surplus property under Alternative 1 would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP and the Aquidneck Island SAMP. However, redevelopment of the former Navy Lodge property would not be a direct federal action and would, therefore, fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects.

As noted in Section 4.1.4, the former Navy Lodge property is not located in any tidal waters, on a shoreline feature, or within the 200-foot contiguous area, so state review of coastal resources under the CRMP is not applicable at this site. Redevelopment would be required to comply with the applicable policies of the Aquidneck Island SAMP, as outlined in Section 4.1.4. For purposes of this analysis, a summary of the consistency of the proposed reuse is provided below.

- Section 130.8 Open Space and Public Access – Although the former Navy Lodge is not located along the shoreline, redevelopment of this property would include the creation of open space within the property boundaries. Therefore, the proposed action would be fully consistent with this policy.
- Section 150.1 Standards Applicable to Entire Development – The developer/owner of the former Navy Lodge property will be responsible for providing separate and appropriate environmental documentation and obtaining all the necessary permits from state and federal agencies that meet the applicable standards, addressing areas such as storm water management (i.e., Rhode Island Stormwater Design and Installation Standards Manual and CRMP 300.6), groundwater protection, infrastructure, vegetation cover (i.e., Section 150.1, Standards Applicable to Entire Development), SAV, open space, construction setback, and water quality associated with the proposed activity (i.e., Water Quality Certificate from RIDEM and USACE permit, concurrent with their application to CRMC). Therefore, the proposed action would be consistent with these standards to the maximum extent practicable.

Official consultation with the Rhode Island CRMC was initiated on February 11, 2014, with a letter outlining the Navy's coastal consistency determination. The CRMC concurred with the Navy's determination that disposal of the surplus property under the preferred alternative would be conducted in a manner that is consistent to the maximum extent practicable with the CRMP, and that the developer of the Navy Lodge property would be required to comply with the applicable policies of the Aquidneck Island SAMP (Willis 2014). A copy of the letter is included in Appendix B.

5.1.2 Alternative 2

5.1.2.1 On-Site Land Use

Implementation of Alternative 2 would result in a change in the land uses on the former Navy Lodge property from vacant land to retail land uses. Approximately 2.1 acres (70 percent) of the former Navy Lodge property would be redeveloped with retail land uses. Two two-story retail buildings would be constructed on 0.7 acres of the site. The buildings would occupy the same footprint as the retail buildings proposed under Alternative 1 but would provide twice as much retail space (61,000 square feet of retail space compared with the 30,500 square feet proposed under Alternative 1). The parking area would occupy 1.1 acres between and around the buildings and 0.3 acres would be used as access to the site from Coddington Highway (see Figure 5.1-2). The remaining 0.9 acres of the site would be left as open space.

Alternative 2 would impact the existing land use at the site by introducing a new retail land use at the currently undeveloped site and reducing open space. Implementation of Alternative 2 also would result in opening public access to the formerly restricted military property. These impacts would be considered moderate.

5.1.2.2 Surrounding Land Use

Introduction of a new retail land use under Alternative 2 would be consistent with nearby commercial uses (see Figure 5.1-2). Redevelopment of the property under Alternative 2 is not expected to directly impact adjacent residential land uses to the west, northwest, and south of the property, although residential land uses may be indirectly impacted by increased traffic associated with the change to retail land use at the property.

As discussed in Section 5.1.1, redevelopment of the property in conjunction with redevelopment of adjacent municipality-owned properties as described in the *West Main/Coddington Development Center Master Plan* could result in growth-induced changes in land use on other commercial properties. As noted under Alternative 1, the retail development proposed under Alternative 2 could influence the timing, type, and scale of redevelopment of surrounding properties. Because twice as much retail space is proposed under Alternative 2, implementation of this alternative could have a dampening effect on surrounding redevelopment while this retail space is on the market. Similar to Alternative 1, implementation of Alternative 2 could generate a need for transportation improvements. The town has identified potential transportation projects in the *West Main/Coddington Development Center Master Plan* (Vanasse Hangen Brustlin, Inc. and RKG Associates 2011). Because of the potential for Alternative 2 to contribute to and influence the proposed redevelopment in this area, this alternative would have a moderate indirect impact on surrounding land use. However, measures are available to the Town of Middletown to control these impacts during the redevelopment process.

5.1.2.3 Consistency with Land Use Plans and Zoning

Redevelopment of the former Navy Lodge property under Alternative 2 would be consistent with the Town of Middletown's zoning code for the same reasons described in Section 5.1.1. The Town of Middletown could implement the proposed Coddington Center Overlay District, described in Section 4.1.3, to further facilitate development of the property under Alternative 2, if this alternative is selected.

Redevelopment of the property under Alternative 2 would be consistent with the *Town of Middletown, RI, Comprehensive Community Plan* and 2014 comprehensive plan update for the same reasons described under Alternative 1. Redevelopment under this alternative also would be consistent with the preferred redevelopment scenario outlined in the *West Main/Coddington Development Center Master Plan*. The preferred redevelopment scenario includes 80,000 square feet of retail development (Vanasse Hangen

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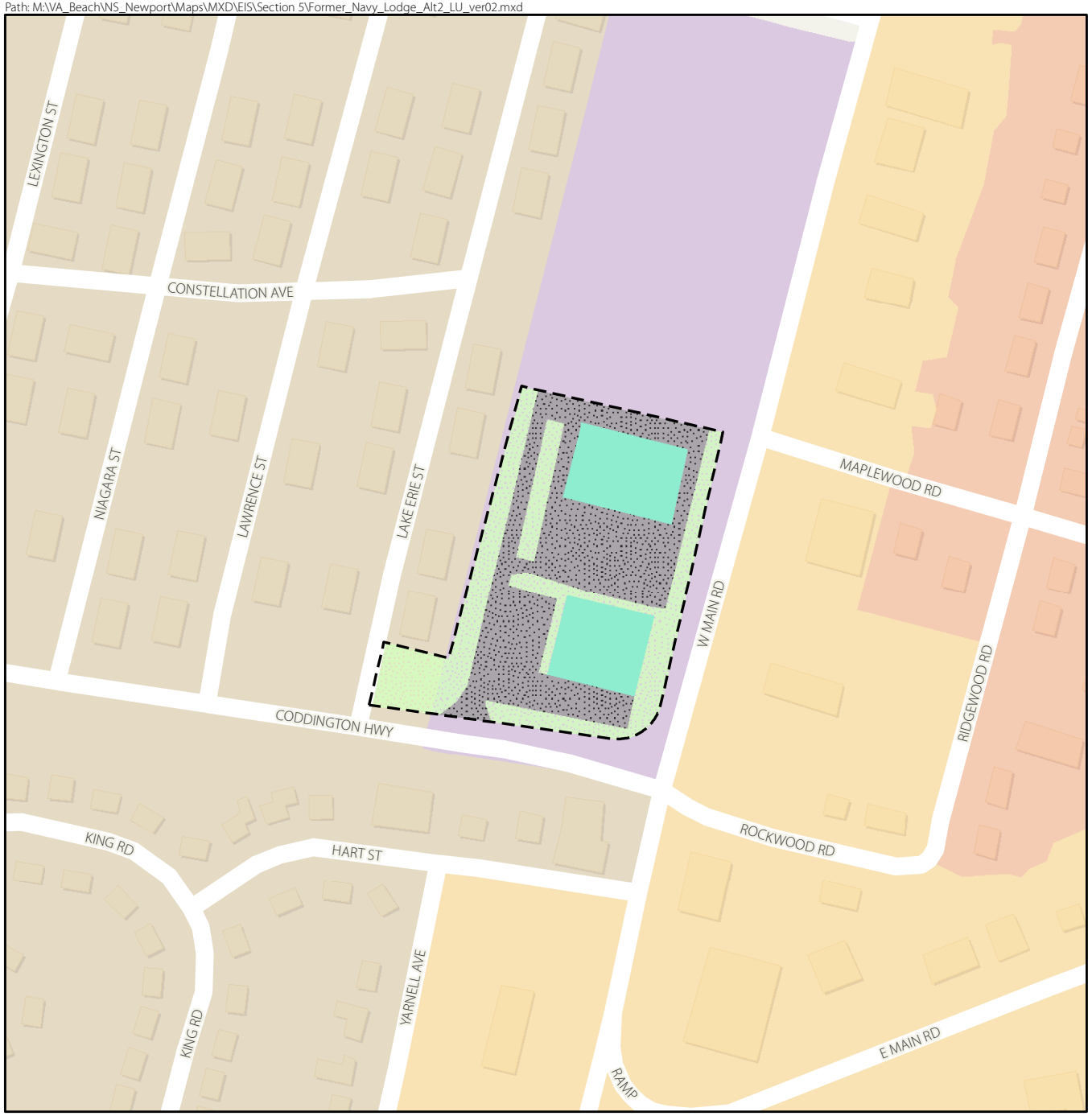

Figure 5.1-2

Former Navy Lodge Property
Alternative 2 Proposed Site-specific Land Use and Surrounding Land Use

NAVSTA Newport, Rhode Island

Legend

Property Boundary

Proposed Land Use

- Open Space
- Parking/Access
- Retail

Land Use

- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)

SCALE

0 150 300 Feet

SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013; RKG Associates et al. 2011.

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Brustlin, Inc. and RKG Associates, Inc. 2011). At full build-out, Alternative 2 would provide 76 percent of the proposed retail space. The master plan estimates that the unmet demand for retail space in the Town of Middletown is approximately 70,000 square feet (Vanasse Hangen Brustlin, Inc. and RKG Associates, Inc. 2011). Based on this, Alternative 2 would concentrate the majority of the proposed retail space in the West Main/Coddington Development Center on one property at the edge of the development center and could limit the potential for retail to be developed in other parts of this mixed-use area. Therefore, while Alternative 2 would be consistent with the master plan, this alternative could impact the town's ability to implement the preferred redevelopment scenario.

Redevelopment of the site under Alternative 2 generally would be consistent with the *Aquidneck Island West Side Master Plan* for the same reasons described under Alternative 1. However, as noted, implementation of Alternative 2 may affect the Town of Middletown's ability to implement the preferred redevelopment scenario of the *West Main/Coddington Development Center Master Plan*.

In summary, the proposed redevelopment at the former Navy Lodge property would be consistent with local planning, and no inconsistencies would result.

5.1.2.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 2 is not reasonably likely to affect the use or natural resources of Rhode Island's coastal zone. Disposal of the surplus property under Alternative 2 would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP. However, redevelopment of the former Navy Lodge property under Alternative 2 would not be a direct federal action and would, therefore, fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects.

If Alternative 2 is selected, the Navy would be required to prepare a coastal zone consistency determination for the proposed disposal and reuse of the property under Alternative 2 and submit it to the Rhode Island CRMC for concurrence. Because the former Navy Lodge property is not located in any tidal waters, on a shoreline feature, or within the 200-foot contiguous area, state review of coastal resources under the CRMP is not applicable at this site. Redevelopment would be required to comply with the applicable policies of the Aquidneck Island SAMP, as outlined in Section 4.1. 4.

Due to the similarities in land use types proposed, and the same geographic area of the proposed action under Alternative 2 compared to Alternative 1, impacts of the proposed action on the use and natural resources of the coastal zone under Alternative 2 would be similar to those under Alternative 1.

5.1.3 No Action Alternative

Under the No Action alternative, the surplus property at the former Navy Lodge property would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur, and the 3-acre site would remain vacant and undeveloped. Implementation of the No Action alternative would have no direct or indirect impacts on surrounding land uses. Town zoning regulations would not be enforceable since the properties would continue to be owned by the federal government and would be outside the jurisdiction of the Town of Middletown. Because land use on the site would not change, the No Action alternative would be consistent with the town's zoning code. However, this alternative would not be consistent with the town's comprehensive plan, *West Main/Coddington Development Center Master Plan*, or the *Aquidneck Island West Side Master Plan*. These plans recommend development or redevelopment of the site and surrounding properties with a mixture of retail and business uses that would be economically beneficial to the town.

5.2 Socioeconomics and Environmental Justice

This section provides a discussion of the impacts on socioeconomic conditions in the communities surrounding all four surplus properties: the former Navy Lodge property, the former Naval Hospital property, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property. As indicated in Section 4.2, for the purposes of projecting economic impacts, the impact area is defined as the three communities in which these properties are located—the City of Newport, the Town of Middletown, and the Town of Portsmouth. Therefore, this section describes the potential socioeconomic impacts resulting from disposal and reuse of all the surplus properties under Alternative 1, Alternative 2, and the No Action alternative.

5.2.1 Alternative 1 (Preferred Alternative)

5.2.1.1 Economy, Employment, and Income

Implementation of Alternative 1 would have a positive short-term and a positive long-term impact on the local and regional economies. The positive economic impacts that would occur in the short-term would be as a result of one-time construction expenditures needed to complete the proposed redevelopment plan. The long-term positive economic impacts would be associated with the increased economic activity that would be generated once the proposed redevelopment plan is completely implemented (i.e., at full build-out).

Total construction expenditures are estimated to be $72.9 million for the full build-out under Alternative 1 (see Table 5.2-1). This estimate includes the costs for demolition, site preparation, utilities, and new construction. All figures in the following tables and analysis are expressed in constant 2013 dollars.

Table 5.2-1 Estimated Construction Costs[1] Needed to Implement the Proposed Redevelopment Plan (Alternative 1)

Surplus Property	Construction Costs[1] (expressed in 2013 dollars)
Former Navy Lodge[2]	$8,529,000
Former Naval Hospital	$24,800,000
Tank Farms 1 and 2[3]	$33,653,000
Midway Pier/Greene Lane[4]	$5,978,000
Total	**$72,960,000**

Source: National Renewable Energy Laboratory 2013; RKG Associates, Inc. et al. 2011.

Note:

1 Construction cost estimates were developed by adapting information from the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (RKG Associates, Inc. et al. 2011). Additional information was needed to estimate the cost of construction for the solar array at Tank Farms 1 and 2. This information was obtained using the JEDI model developed by the U.S Department of Energy's National Renewable Energy Laboratory (NREL).

2 Cost estimates for the former Navy Lodge property differ from those shown in the *Redevelopment Plan for Surplus Properties at NAVSTA Newport*. The redevelopment plan's cost estimate includes residential and office construction that would occur on adjacent property. The cost estimate presented here includes costs for new development on the former Navy Lodge property only.

3 Cost estimates for the Tank Farms 1 and 2 differ from those shown in the *Redevelopment Plan for Surplus Properties at NAVSTA Newport*. The redevelopment plan's cost estimate does not include the costs for construction of the proposed solar array. The cost estimate presented here includes costs for construction of a 1 megawatt (MW) fixed-mount, crystalline silicon solar array.

4 Cost estimates for the Midway Pier/Greene Lane property are from the Shoreline Park Master Plan. Costs were originally expressed as $6,075,000 in 2014 dollars. For consistency with other estimates on this table, the Consumer Price Index (CPI) was used to deflate these cost estimates to 2013 dollars.

As shown in Table 5.2-1, development of the surplus properties are expected to cost a total of $72.9 million. Under Alternative 1, redevelopment of Tank Farms 1 and 2 would cost approximately $33.7 million, and redevelopment of the former Naval Hospital property would cost $24.8 million. The proposed redevelopment of the former Navy Lodge property would cost $8.5 million and the redevelopment of the Midway Pier/Greene Lane property would cost approximately $6 million.

Assuming that construction is completed by firms located in the regional economy, these expenditures would increase output, earnings, and employment in Newport County and in the state of Rhode Island as a whole. The positive direct economic impacts would be generated when local workers and firms are hired to complete the proposed redevelopment plan. Indirect economic impacts would occur when local suppliers provide materials for the construction and increase their sales and revenues. The induced economic impacts would occur when the construction workers spend a portion of their income in the regional economy, thereby increasing the output, earnings, and employment at local businesses. Table 5.2-2 provides an estimate of the total (direct, indirect, and induced) impacts of the increased construction expenditures on output, employee earnings, and employment in the regional economy. These estimates were developed using the U.S. Bureau of Economic Analysis' modeling system RIMS II (U.S. Bureau of Economic Analysis 2013).

Table 5.2-2 Total Impacts (Direct, Indirect, and Induced) from Construction (Alternative 1)

Surplus Property	Total Construction Expenditures	Total Change in Regional Output	Total Change in Employment (jobs)	Total Change in Employee Earnings
Former Navy Lodge	$8,529,000	$12,000,000	72	$3,100,000
Former Naval Hospital	$24,800,000	$35,000,000	208	$8,800,000
Tank Farms 1 and 2	$33,653,000	$46,000,000	289	$12,500,000
Midway Pier/Greene Lane	$5,978,000	$8,000,000	50	$2,100,000
Total	**$72,960,000**	**$101,000,000**	**619**	**$26,500,000**

Note:
All figures are expressed in constant 2013 dollars.

For the purposes of analysis, total construction expenditures have been analyzed as a lump sum that would be spent all at one time. However, in actuality, construction is likely to be spread over a 20-year time frame. Therefore, the results shown on Table 5.2-2 should be viewed as the total economic impact that would occur as a result of construction, not the annual impacts. If construction expenditures were evenly divided through a 20-year period, the annual economic impacts of the construction expenditures under Alternative 1 would be an increase of $5.1 million in regional output, an additional 31 jobs, and an increase of $1.3 million in employee earnings annually.

Since the construction costs are one-time expenditures, the positive economic impacts of construction are temporary and would last only while construction is occurring. Once these funds leave the region through such outlays as savings, taxes, or purchases of goods and services from outside the region, these positive economic effects would no longer occur.

In contrast, the positive economic impacts that would occur as a result of the ongoing operations would have a long-term impact on Newport County and on the City of Newport and the towns of Middletown and Portsmouth. Assuming that the full-build out potential is met and that the surplus property would be used by business enterprises new to the region, the proposed redevelopment plan under Alternative 1

would directly generate nearly 830 new jobs (see Table 5.2-3). The estimated number of new direct jobs was calculated using standard demographic multipliers collected by the Institute for Public Administration at the University of Delaware (Mix and Jiang 2009), which show the relationship between the average number of employees per area of work space for different nonresidential uses. These demographic multipliers were then applied to the estimated square footage of the type of development expected to occur under Alternative 1 to project the total direct employment at full build-out (see Table 5.2-3).

In addition to the direct jobs expected to be generated by the proposed redevelopment plan under Alternative 1, indirect and induced employment impacts are expected to occur as the increased employment and business activity stimulates the regional economy. As shown on Table 5.2-3, an additional 252 indirect and induced jobs are expected to be generated by implementation of Alternative 1. In total 1,079 direct, indirect, and induced jobs are expected to be created under this alternative. The indirect and induced job estimates were developed using the U.S. Bureau of Economic Analysis' modeling system RIMS II and the total number of direct jobs estimated to be generated by this project (U.S. Bureau of Economic Analysis 2013).

Table 5.2-3 Estimated Number of Direct Jobs Generated by Implementation of the Proposed Redevelopment Plan (Alternative 1)

Surplus Property	Direct Jobs (Operations Phase)	Indirect and Induced Jobs (Operations Phase)	Total Jobs
Former Navy Lodge	46	13	59
Former Naval Hospital	189	69	258
Tank Farms 1 and 2	592	170	762
Midway Pier/Greene Lane[1]	0	0	0
Total	**827**	**252**	**1,079**

Note:
[1] It has been assumed that currently employed public employees would continue in operations and maintenance activities at the Midway Pier/Greene Lane property.

5.2.1.2 Population

Implementation of the proposed redevelopment plan under Alternative 1 is anticipated to have a minor impact on the population and demographic characteristics of the City of Newport and the towns of Middletown and Portsmouth.

Proposed new residential construction at the former Naval Hospital property may result in an influx of new residents into the City of Newport by increasing the number of available housing units. However, the proposed construction of 36 residential two-bedroom units at the former Naval Hospital property would be estimated to increase the population in the city by 74 residents. This figure was derived by assuming that each new housing unit would represent one additional household moving into the City of Newport and by using the city's 2010 average household size of 2.05 persons (U.S. Census Bureau 2010a). An increase of 74 residents would equate to less than 0.3 percent of the city's 2010 total population. There are no residential land uses proposed in the towns of Middletown and Portsmouth under Alternative 1.

The increased employment opportunities under Alternative 1 as described in Section 5.2.1.1 would have the potential to slightly increase regional population. However, given the relatively high unemployment rates in the region, most of these additional jobs are expected to be filled by existing residents and would not generate much in-migration. Additionally, population levels have been declining in the area since

1990, so even if each new job were filled by someone relocating to the area with their entire household, the population of Newport County would still not reach its 2000 population level.

5.2.1.3 Housing and Commercial Property

The proposed redevelopment plan under Alternative 1 includes constructing 36 residential two-bedroom units at the former Naval Hospital property in the City of Newport. These new units would represent an increase of 0.3 percent of the city's total housing stock in 2010. This increase in the City of Newport's housing stock is not expected to substantially affect housing prices or housing availability in the city or in Newport County as a whole. Nor, as described further in Section 7.2, is the proposed housing expected to affect the City of Newport's affordable housing goals. No residential land uses are proposed in the towns of Middletown and Portsmouth under Alternative 1.

As described in Section 5.2.1.2, very little in-migration is anticipated to occur as a result of completion of the proposed redevelopment plan under Alternative 1. Therefore, implementation of Alternative 1 is expected to generate few impacts on the local or regional housing market.

Implementation of Alternative 1 may have a minor impact on the commercial property market in the three communities. The approximately 30,500 square feet of retail space proposed at the former Navy Lodge property would increase total retail space in the Town of Middletown by 2.3 percent. The approximately 28,300 square feet of retail space in the proposed hotel at the former Naval Hospital property would increase total retail space in the City of Newport by 1.3 percent. Likewise, total office space in the Town of Portsmouth would increase by 110,000 square feet, or 18.5 percent, and industrial space in the town would increase by 190,000 square feet, or 16.6 percent, under Alternative 1.

The additional retail property in the Town of Middletown and the City of Newport is not expected to substantially affect prices or availability of retail space in the local jurisdictions or in Newport County as a whole. However, the addition of 110,000 square feet of office space and 190,000 square feet of industrial space in the Town of Portsmouth could have implications for existing office and industrial properties. This additional supply, combined with current weak demand, may result in downward pressure on prices at existing office buildings and industrial space. These impacts would not be considered significant and could be considered positive or adverse, depending on the individual stakeholder.

5.2.1.4 Taxes and Revenues

Implementation of the proposed redevelopment plan under Alternative 1 would have a positive or beneficial impact on the value of taxable real estate in the City of Newport and the towns of Middletown and Portsmouth. Table 5.2-4 shows the estimated increase in the taxable real estate in each of the municipalities at full build-out. The market values of the properties upon full build-out were based on calculations made in the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (RKG Associates, Inc. et al. 2011). FY 2014 property tax rates have been applied to these estimates to project the annual amount of property tax receipts that would be generated by the proposed redevelopment at full build-out. These estimates are based on an *ad valorem* tax.[11] Each year as a result of implementing Alternative 1, the Town of Middletown would receive an estimated $334,000 in additional property tax revenue, the City of Newport would receive an estimated $412,000 in additional property tax revenue, and the Town of Portsmouth would receive an estimated $421,000 in additional tax revenue (see Table 5.2-4). Open space and park land properties were assumed to be tax exempt for estimating purposes.

[11] An *ad valorem* tax is a tax based on the assessed value of real estate.

Table 5.2-4 Fair Market Value and Estimated Annual Property Tax Receipts Resulting from Implementation of Alternative 1 at Full Build-Out

Municipality	Fair Market Value[1]	Property Tax Rate	Estimated Annual Property Tax Receipts
Residential Real Estate			
City of Newport	$14,400,000	$11.71	$169,000
Town of Middletown	$0	$15.71	$0
Town of Portsmouth	$0	$14.53	$0
Commercial/Industrial Real Estate			
City of Newport	$15,000,000	$16.23	$243,000
Town of Middletown	$16,000,000	$20.87	$334,000
Town of Portsmouth[2]	$29,000,000	$14.53	$421,000
Total Impacts			
City of Newport	$29,400,000	NA	$412,000
Town of Middletown	$16,000,000	NA	$334,000
Town of Portsmouth	$29,000,000	NA	$421,000

Source: RKG Associates, Inc. et al. 2011; Rhode Island Department of Revenue, Division of Municipal Finance 2014.

Notes:
[1] Fair market value does not equal construction costs; figures have been adapted from the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (RKG Associates, Inc. et al. 2011).
[2] Includes an estimate for the fair market value of the solar array.

Key:
NA = Not applicable

5.2.1.5 Environmental Justice and Protection of Children

This analysis focuses on the potential for disposal and reuse of the surplus properties under Alternative 1 to result in disproportionately high and adverse effects on minority and low-income populations or children (people aged less than 21 years). Minority populations are considered to be present when either the minority population is more than 50 percent of the census tract or the minority population percentage is meaningfully greater than the minority population percentage of a larger geographic area of comparison (Council on Environmental Quality 1997a). The same thresholds are used to determine low-income populations and populations younger than 21 years old.

Tables 5.2-5 and 5.2-6 provide the demographic and economic information for all census block groups and census tracts in which the proposed disposal and redevelopment of surplus properties would occur under Alternative 1. These demographic and economic data were compared with similar demographic and economic data for Newport County as the area of comparison. (Note: Income data through the U.S. Census Bureau's American Community Survey can be found only at the census block group level. Thus, while race and age data are presented at the census block group level, low-income population data are presented at the census tract level; see Table 5.2-6).

Based on these thresholds, the Navy has determined that the census block group that encompasses the former Navy Lodge property, 402001, includes an Hispanic/Latino population and a higher percentage of people aged less than 21 years than the geographic area of comparison. In addition, census tract 40200, which also encompasses the former Navy Lodge property, has a larger low-income population than the geographic area of comparison. The census block group that encompasses the former Naval Hospital property, 412001, includes a Hispanic/Latino population and a minority population that is greater than the area of comparison. In addition, census tract 41200 has a low-income population that is greater than the area of comparison. The census block group that encompasses Tank Farms 1 and 2 (401034) includes a Hispanic/Latino population, a minority population, and a higher percentage of people aged less than 21

years than the geographic area of comparison. The Midway Pier/Greene Lane property crosses two census block groups and two census tracts. One of the census block groups, 403031, has a Hispanic/Latino population that is greater than the area of comparison and has a higher percentage of people aged less than 21 years than the geographic area of comparison. Both census block groups include a significant minority population and a low-income population that is larger than the area of comparison.

Table 5.2-5 Environmental Justice Demographic Data by Census Block Group (Alternative 1)

Census Block Group	Total Persons	Percent Hispanic or Latino (%)	Percent Minority (Not Hispanic or Latino)	Percent Aged <21 Years
Former Navy Lodge Property				
402001	1,115	25.9%	8.9%	33.3%
Former Naval Hospital Property				
412001	1,885	16.6%	33.6%	24.7%
Tank Farms 1 and 2				
401034	330	14.2%	27.6%	40.9%
Midway Pier/Greene Lane Property				
402002	12	0.0%	16.7%	0.0%
403031	567	12.5%	30.3%	48.9%
Newport County				
	82,888	4.2%	9.8%	24.3%

Source: U.S Census Bureau 2010a, 2010b, 2010c.

Table 5.2-6 Percent of Population Considered Low-Income in Census Tracts Affected by the Proposed Redevelopment Plan under Alternative 1

Census Tract	Percent Low-Income
Former Navy Lodge Property	
40200	15.5%
Former Naval Hospital Property	
41200	16.1%
Tank Farms 1 and 2	
40103	5.8%
Midway Pier/Greene Lane Property	
40303	15.6%
40200	17.9%
Newport County	
	8.3%

Source: U.S. Census Bureau 2013a.

As shown on Tables 5.2-5 and 5.2-6, in most cases the percentage of minority and Hispanic races, the number of children, and the percent of the population living below the poverty level are higher in the affected census block groups and census tracts than in Newport County as a whole, leading to a possibility that there may be disproportionate adverse impacts on these communities.

However, the Navy has determined that implementation of Alternative 1 would not have disproportionately high or adverse health and safety or environmental impacts on minority, Hispanic/Latino, or low-income populations, or populations aged less than 21 years because no significant unmitigated environmental, human health or safety impacts are expected to occur in the surrounding communities as a result of Alternative 1. The properties would be fenced during

construction, and access would be permitted only to construction personnel. Removal and disposal of hazardous materials, including LBP and ACM, would comply with all applicable federal laws and regulations. Additionally, no unique environmental health or safety issues would impact children in the affected communities.

5.2.1.6 Summary

In summary, implementation of Alternative 1 is expected to have a beneficial economic impact on the regional economy, a minor impact on local population and demographic characteristics, a minor impact on the local housing and retail space market, and a minor positive fiscal impact on the City of Newport and the towns of Middletown and Portsmouth. In addition, no disproportionate impacts on minority, Hispanic/Latino, low-income, or children are expected to occur under this alternative.

5.2.2 Alternative 2

5.2.2.1 Economy, Employment, and Income

Implementation of the proposed redevelopment plan under Alternative 2 would have a positive short-term and long-term economic impact on the local and regional economies. Total construction costs would be slightly greater under Alternative 2 than those described in Alternative 1. These figures are adapted from the estimates made in the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (RKG Associates, Inc. et al. 2011) using cost estimates for the proposed solar array from the NREL's JEDI model and by apportioning construction costs for other proposed uses to determine average costs per square foot and then applying these averages to the different proposed land uses (see Table 5.2-7).

Table 5.2-7 Total Impacts (Direct, Indirect, and Induced) from Construction (Alternative 2)

Surplus Property	Total Construction Expenditures	Total Change in Regional Output	Total Change in Employment (jobs)	Total Change in Employee Earnings
Former Navy Lodge	$17,000,000	$24,000,000	143	$6,100,000
Former Naval Hospital	$27,000,000	$38,000,000	226	$9,700.000
Tank Farms 1 and 2	$37,700,000	$52,000,000	322	$13,900,000
Midway Pier/Greene Lane	$6,000,000	$8,000,000	50	$2,100,000
Total	**$87,700,000**	**$122,000,000**	**741**	**$31,800,000**

Note:
All figures are expressed in constant 2013 dollars.

As a result of increased construction costs, the beneficial short-term economic impacts of Alternative 2 would also be slightly greater than those described for Alternative 1. Table 5.2-7 shows the total estimated construction costs and the total direct, indirect, and induced impacts associated with construction activities under Alternative 2. The methodology for determining these impacts is the same as described for Alternative 1.

The long-term economic impacts associated with Alternative 2 are also expected to be slightly greater than those described in Alternative 1. As shown on Table 5.2-8, an estimated 1,072 direct and 316 indirect jobs would be created by implementation of the proposed redevelopment plan under Alternative 2. The methodology for determining these impacts is the same as described for Alternative 1.

Table 5.2-8 Estimated Number of Direct Jobs Generated by Implementation of the Proposed Redevelopment Plan (Alternative 2)

Property	Direct Jobs (Operations Phase)	Indirect and Induced Jobs (Operations Phase)	Total Jobs
Former Navy Lodge	91	26	117
Former Naval Hospital	279	92	371
Tank Farms 1 and 2	702	198	900
Midway Pier/Greene Lane[1]	0	0	0
Total	**1,072**	**316**	**1,388**

Note:
[1] It has been assumed that the currently employed personnel would continue operations and maintenance activities at the Midway Pier/Greene Lane property.

5.2.2.2 Population

Implementation of the proposed redevelopment plan under Alternative 2 is not anticipated to have a significant impact on the population of the City of Newport or the towns of Middletown and Portsmouth. No new residential construction would occur under Alternative 2.

Similar to Alternative 1, the increased employment opportunities under Alternative 2 would have the potential to slightly increase regional population. However, given the relatively high unemployment rates in the region, most of these additional jobs are expected to be filled by existing residents and would not generate much in-migration. Additionally, population levels have been declining in the area since 1990, so even if each new job were filled by someone relocating to the area with their entire household, the population of Newport County would still not reach its 2000 population level.

5.2.2.3 Housing and Commercial Property

Minimal, if any, in-migration is anticipated to occur as a result of completion of the proposed redevelopment plan under Alternative 2. Therefore, implementation of Alternative 2 is expected to generate few impacts on the local or regional housing market.

Implementation of Alternative 2 may have a minor impact on the commercial property market in the three communities. The approximately 61,000 square feet of retail space proposed for the former Navy Lodge property would increase total retail space in the town of Middletown by 4.7 percent, and the approximately 28,300 square feet of retail in the proposed hotel at the former Naval Hospital property would increase total retail space in the City of Newport by 1.3 percent. Likewise, total office space in the City of Newport would increase by 26,000 square feet, or 3.6 percent, and total office space in the Town of Portsmouth would increase by 137,600 square feet, or 23.2 percent. Industrial space in the Town of Portsmouth would also increase by 205,000 square feet, or 17.9 percent, under Alternative 2.

The additional retail property in the Town of Middletown and the City of Newport is not expected to substantially affect prices or availability of retail space in the local jurisdictions or in Newport County as a whole. However, the addition of 137,600 square feet of office space and 205,000 square feet of industrial space in the Town of Portsmouth could have implications for existing office and industrial space. This additional supply proposed under Alternative 2, combined with current weak demand, may result in downward pressure on prices at existing office buildings and industrial space in the area. However, as indicated above under Alternative 1, these impacts would not be considered significant and could be considered positive or adverse, dependent upon the stakeholder.

5.2.2.4 Taxes and Revenues

Implementation of the proposed redevelopment plan under Alternative 2 would also have a positive impact on the value of taxable real estate in the City of Newport and in the towns of Middletown and Portsmouth. The estimated annual property tax receipts generated by the proposed redevelopment plan under Alternative 2 at full build-out are shown on Table 5.2-9.

Table 5.2-9 Fair Market Value and Estimated Annual Property Tax Receipts Resulting from Implementation of Alternative 2 at Full Build-Out

Municipality	Fair Market Value[1]	Property Tax Rate	Estimated Annual Property Tax Receipts
Residential Real Estate			
City of Newport	$0	$11.71	$0
Town of Middletown	$0	$15.71	$0
Town of Portsmouth	$0	$14.53	$0
Commercial/Industrial Real Estate			
City of Newport	$16,000,000	$16.23	$260,000
Town of Middletown	$32,000,000	$20.87	$668,000
Town of Portsmouth[2]	$34,000,000	$14.53	$494,000
Total Impacts			
City of Newport	$16,000,000	NA	$260,000
Town of Middletown	$32,000,000	NA	$668,000
Town of Portsmouth	$34,000,000	NA	$494,000

Source: RKG Associates, Inc. et al. 2011; Rhode Island Department of Revenue, Division of Municipal Finance 2014.

Notes:
[1] Fair market value does not equal construction costs; figures have been adapted from the *Redevelopment Plan for Surplus Properties at NAVSTA Newport*.
[2] Includes an estimate for the fair market value of the solar array.

Key:
NA = Not applicable

5.2.2.5 Environmental Justice and Protection of Children

Census block groups and census tracts in which the proposed disposal and redevelopment of surplus properties would occur under Alternative 2 are the same as those identified for Alternative 1. Therefore, the minority and low-income populations and populations aged less than 21 years that were evaluated for disproportionately high or adverse health and safety or environmental impacts under Alternative 1 are the same populations that are evaluated under Alternative 2.

Because no significant unmitigated environmental, human health, or safety impacts are expected to occur in the surrounding communities as a result of Alternative 2, the Navy has determined that implementation of Alternative 2 would not have disproportionately high or adverse health and safety or environmental impacts on minority, Hispanic/Latino, or low-income populations, or populations aged less than 21 years. The properties would be fenced during construction, and access would be permitted only to construction personnel. Removal and disposal of hazardous materials, including LBP and ACM, would comply with all applicable federal laws and regulations. Additionally, no unique environmental health or safety issues would impact children in the affected communities.

5.2.2.6 Summary

In summary, implementation of Alternative 2 is anticipated to have a beneficial economic impact on the regional economy, no noticeable impact on local population and demographic characteristics, no noticeable impact on the local housing market, a minor impact on the retail space market, and a minor

positive fiscal impact on the City of Newport and the towns of Middletown and Portsmouth. In addition no disproportionate impacts on minority, Hispanic/Latino, low-income, or children are anticipated to occur under this alternative.

5.2.3 No Action Alternative

Under the No Action alternative, no redevelopment plan would be implemented and ownership of the properties would be retained by the Navy. The properties would not be developed and would remain in caretaker status. No new economic activity would be generated, and no increased employment opportunities would occur. Regional population and the regional housing market would not be impacted, nor would there be any impact on the regional commercial property market. Local government tax receipts would not increase because the properties would retain their current tax-exempt status. The property would remain fenced, and the Navy would maintain the buildings and fence line to prevent unauthorized access. The No Action alternative would not have disproportionate or adverse human health and safety impacts or environmental impacts on minority, Hispanic/Latino, or low-income populations or populations younger than 21 years.

5.3 Community Facilities and Services

This section provides a discussion of the impacts on community facilities and services in the communities surrounding all four surplus properties—the former Navy Lodge property, the former Naval Hospital property, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property—from implementation of Alternative 1, Alternative 2, and the No Action alternative.

5.3.1 Alternative 1 (Preferred Alternative)

Implementation of Alternative 1 would have a minor impact on community facilities and services in the City of Newport and in the towns of Middletown and Portsmouth. As noted in Section 5.2.1.2, only minor population impacts are expected to occur as a result of Alternative 1. The proposed construction of 36 residential two-bedroom units at the former Naval Hospital property in the City of Newport is expected to increase population in the city by 74 residents; no population increase is anticipated for the towns of Middletown and Portsmouth because redevelopment does not include residential uses in those towns. The employment opportunities that would be created as a result of Alternative 1 would be anticipated to be largely filled by individuals currently living in the area. Therefore, any increase in demand for educational facilities, public safety and emergency services, parks and recreational facilities, and medical facilities is expected to be met by existing facilities and services.

Implementation of Alternative 1 also would create additional recreational facilities in the local communities, including a waterfront park with a public pier on the former Naval Hospital property, and a shoreline park with a fishing pier, picnic areas, a playground, and a multi-use pathway located along the Midway Pier/Greene Lane property.

Finally, since the properties are being converted from tax-exempt federal property to, in most cases, taxable private property, the revenues generated through *ad valorem* real property tax on these properties would more than offset any additional expenses incurred by providers of community services (e.g., police, fire companies, emergency services) for the ultimate redevelopment of these properties, as proposed.

5.3.2 Alternative 2

Implementation of Alternative 2 would have a minor impact on community facilities and services in the City of Newport and in the towns of Middletown and Portsmouth. As described in Section 5.2.2.2, only minor population impacts are expected to occur as a result of implementing Alternative 2. No new residential construction would occur under Alternative 2, and the employment opportunities that would be created would be expected to be largely filled by individuals currently living in the area. Therefore, any

increased demand for educational facilities, public safety and emergency services, parks and recreational facilities, and medical facilities is expected to be met by existing facilities.

Additionally, similar to Alternative 1, implementation of Alternative 2 would create additional recreational facilities in the local communities, including a waterfront park and a yacht club and boating area at the former Naval Hospital property, and a shoreline park (larger than the park designed for Alternative 1) that would be located along the Midway Pier/Greene Lane property.

Finally, since the properties are being converted from tax-exempt federal property to, in most cases, taxable private property the revenues generated through ad valorem real property tax on these properties would more than offset any additional expenses incurred by local service providers associated with the proposed redevelopment of these properties.

5.3.3 No Action Alternative

There would be no impact on community facilities and services resulting from the No Action alternative because the properties would be held in caretaker status by the Navy. No reuse or redevelopment would occur. There would be no change in population or employment resulting from this alternative. In addition, no new recreational facilities would be built if the No Action alternative were to be implemented.

5.4 Transportation

This section summarizes the potential transportation impacts resulting from construction and implementation of the Redevelopment Plan at the former Navy Lodge property under Alternative 1, Alternative 2, and the No Action alternative. The evaluation of transportation impacts upon full build-out is based on the analysis completed for the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013). Roadways and intersections in the vicinity of the former Navy Lodge property that were evaluated include the following:

- West Main Road (Route 114)
- Coddington Highway
- West Main Road (Route 114) and Coddington Highway/Rockwood Road Intersection
- West Main Road (Route 114) and Valley Road (Route 214) Intersection.

Traffic generated from proposed construction was not captured in the traffic impact analysis. An evaluation of the impacts on existing traffic conditions from proposed construction traffic is based on the projected volume of construction vehicles and duration of construction at the former Navy Lodge property.

5.4.1 Alternative 1 (Preferred Alternative)

The proposed driveway for the former Navy Lodge property is located on Coddington Highway, approximately 250 feet west of West Main Road (see Figure 5.4-1). Additionally, as discussed in Section 1.3, the Navy also holds an easement on property owned by the Landings Real Estate Group. The easement provides access from the former Navy Lodge property to Lake Erie Street, located on the western edge of the former Navy Lodge property, and that connects to Coddington Highway. This dog-leg property connecting to Lake Erie Street will pass to the new owners and, therefore, may provide an additional driveway for site access. However, for purposes of this analysis, driveway access to the former Navy Lodge property upon full build-out is assumed to be located directly on Coddington Highway.

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Section 5\Former_Navy_Lodge_Prop_Access_Driveway_ver02.mxd

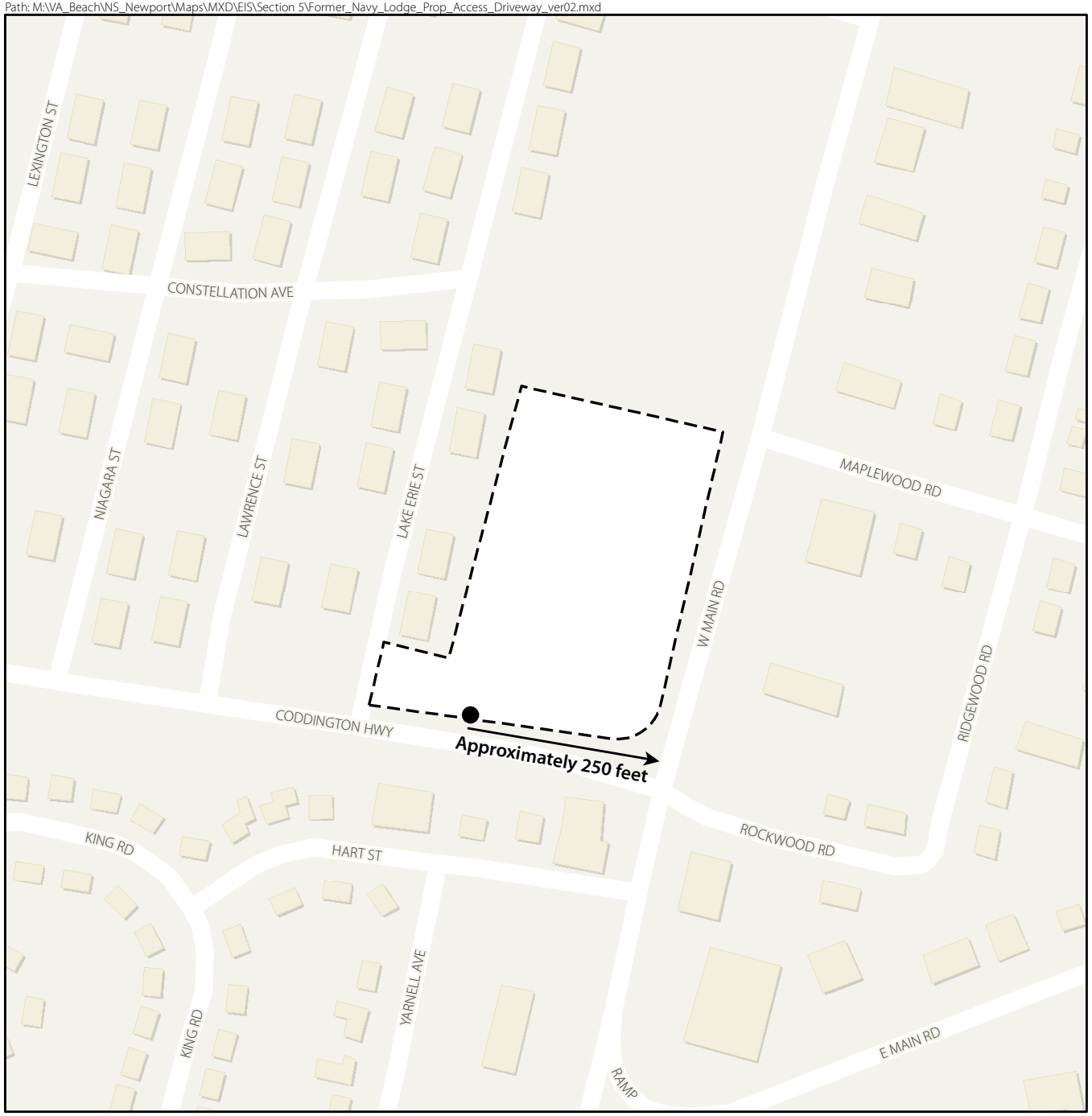

Figure 5.4-1
Former Navy Lodge Property
Proposed Driveway/Access Point,
Alternatives 1 and 2
NAVSTA Newport, Rhode Island

Legend

Access Point

Property Boundary

SCALE

0 150 300 Feet

SOURCE: Pare Corporation 2013

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The driveway may be a full-access driveway or allow only right turns in and out; both options have been analyzed for the EIS. Roadways that would directly feed into the driveway access to the site would be Coddington Highway and West Main Road, both of which have high traffic volumes.

Construction-related traffic would consist of delivery trucks, dump trucks, heavy equipment, and vehicles driven by construction crews. Based on the square footage of the proposed retail space for redevelopment of the former Navy Lodge property, an estimated 20 vehicle trips would occur per day for worker commutes and an estimated two trips would occur per day for delivery of materials and supplies (see Appendix D for the methodology). Local traffic would be impacted in the short-term, particularly along West Main Road and Coddington Highway, from additional truck trips and slower-moving vehicles. However, the impacts would not be significant as they would occur only for the duration of the new construction period. The period of new construction is estimated to be approximately one year. Impacts are therefore expected to be minor.

The evaluation of impacts during the full build-out of the former Navy Lodge property includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS), and recommended mitigation measures.

5.4.1.1 Projected Traffic Volumes

Full build-out of retail space at the former Navy Lodge property under Alternative 1 is projected to add 1,309 daily trips to the surrounding road network (Pare Corporation 2013). This would result in a total of 30 vehicles entering and exiting the property during the peak morning hour, and 114 vehicles entering and exiting during the evening peak hour. Table 5.4-1 shows the morning and evening peak hour trips for the proposed retail space.

Table 5.4-1 Former Navy Lodge Property Trip Distribution (Alternative 1)

Land Use	Projected Weekday Daily Total	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Retail	1,309	18	12	30	56	58	114

Source: Pare Corporation 2013

Over the full build-out period, traffic volume in the area is projected to increase. The total morning peak hour volume at the intersection of West Main Road and Coddington Highway is expected to increase by 476 trips under Alternative 1 compared with the existing conditions. The full build-out period takes into account a 1 percent annual background growth that is expected to occur through the year 2032. Background growth is the growth expected within the study area based on development projects not specifically identified and annual population and traffic increases. The evening peak hour volume is expected to increase by 662 trips over existing conditions. The volume at the West Main Road and Valley Road intersection would increase by 570 trips during the morning peak hour and 714 trips during the evening peak hour. Table 5.4-2 compares existing peak hour traffic volumes at these two intersections with the projected peak hour traffic volumes under Alternative 1.

Utilizing the proposed driveway, a total of 1,375 trips into and out of the redeveloped former Navy Lodge property would result during morning peak hours and 1,995 trips would result during evening peak hours when the background traffic growth is included in the analysis.

Table 5.4-2 Peak Hour Trips and LOS at Intersections near the Former Navy Lodge Property (Alternative 1)

Intersection	Existing Conditions Peak Hour Volume		Existing Conditions LOS		Alternative 1 Peak Hour Volume		Alternative 1 LOS	
	A.M.	P.M.	A.M.	P.M	A.M.	P.M.	A.M.	P.M.
West Main Road (Route 114) and Coddington Highway/Rockwood Road	2,087	2,728	B	C	2,563	3,390	C	D
West Main Road (Route 114) and Valley Road (Route 214)	2,526	3,035	B	B	3,096	3,749	C	C
Coddington Highway and Retail Entrance/Exit – Right Turn Only	NA	NA	NA	NA	1,375	1,995	B	C
Coddington Highway and Retail Entrance/Exit – Full Access	NA	NA	NA	NA	1,375	1,995	C	E

Source: Pare Corporation 2013

The intersections of West Main Road and Coddington Highway and West Main Road and Valley Road are both signalized. As indicated in Section 4.4, accident data from the Town of Middletown indicates that the majority of accidents reported were rear-end collisions, which are typical at signalized intersections and generally low in severity (Pare Corporation 2013). The greatest number of accidents between January 2010 and October 2012 were reported at the intersection of West Main Road and East Main Road. Additionally, accidents were also reported on Coddington Highway; however, recent improvements along that roadway (i.e., striping and the addition of turning lanes) are likely to reduce the number of future accidents. Therefore, any increase in traffic is not expected to pose a significant safety concern at these two signalized intersections (Pare Corporation 2013).

5.4.1.2 Projected Level of Service

LOS under Alternative 1 was determined for the intersections of West Main Road and Coddington Highway and West Main Road and Valley Road as well as the proposed driveway to the property. The intersection of West Main Road and Coddington Highway currently operates at LOS B during morning peak hours, with a delay of approximately 18 seconds per vehicle, and LOS C during evening peak hours, with a delay of 21 seconds per vehicle. Under Alternative 1, the intersection is expected to operate at LOS C during morning peak hours, with a delay of 22 seconds per vehicle, and LOS D during evening peak hours, with a delay of 39 seconds per vehicle under full access.

The signalized intersection of West Main Road and Valley Road currently operates at LOS B during both the morning and evening peak hours, with a delay of approximately 16 to 18 seconds per vehicle. Assuming the access driveway is a right-turn-only lane under Alternative 1, the intersection would operate at LOS C during the morning and evening hours, with a delay of approximately 27 seconds per vehicle. Table 5.4-2 shows the LOS for existing conditions and under Alternative 1.

Exiting the site from the right-turn-only driveway (southbound) onto Coddington Highway is expected to operate at LOS B or better during the morning peak hour, with a delay of 13.9 seconds per vehicle. During the evening peak hour, exiting the site from the right-turn-only driveway is expected to operate at LOS C, with a delay of 22.3 seconds per vehicle under Alternative 1. The primary reason for the drop in LOS compared with the morning peak hour is the higher through-volume on Coddington Highway during the evening peak hour combined with the volume of vehicles travelling to and from the site. Exiting from

a full-access driveway onto Coddington Highway is expected to operate at LOS C during the morning peak hour, with a delay of 19.3 seconds per vehicle, and an LOS of E during the evening peak hour, with a delay of 45.8 seconds per vehicle. As discussed above, the reason for the drop in LOS is the higher through-volume on Coddington Highway combined with the volume of vehicles to and from the site.

5.4.1.3 Summary

The projected increase in the number of traffic trips on the roadway network surrounding the former Navy Lodge property and the resulting changes to the LOS at the intersections would result in a significant and unavoidable impact under Alternative 1.

Public transportation routes are located near the former Navy Lodge property; use of these bus routes to access the proposed retail space would reduce the number of vehicle trips projected under Alternative 1.

Sight distances for the potential driveway location were reviewed and generally found to meet the AASHTO requirements for the 85th percentile travel speeds along Coddington Highway. The developer should reconfirm these distances once the final location of the driveway is determined. The developer should also design the driveway to maximize visibility for motorists turning into and out of the property while providing accurate signs enabling motorists to identify the site.

Other potential mitigation measures, to be implemented by the developer, would depend on the final design of the site driveway and parking lot network. Improvements along the roadway could include revised signs or striping or possibly geometric improvements to the configuration.

Implementation of potential mitigation measures would be the responsibility of the future developer of the property and/or the Town of Middletown. The implementation of these mitigation measures would not reduce the impacts discussed above to “not significant” because of the increase in the number of traffic trips on the roadway network surrounding the former Navy Lodge property and the resulting changes to the LOS at the intersections.

5.4.2 Alternative 2

Access to the former Navy Lodge property under Alternative 2 would be the same as described for Alternative 1 and shown on Figure 5.4-1. In addition, the proposed level of traffic associated with construction of the proposed retail space under Alternative 2 would be similar to that discussed under Alternative 1 and would result in minor impacts on local traffic only during the construction period.

The evaluation of impacts during the full-build out of the former Navy Lodge property under Alternative 2 includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS), and recommended mitigation measures.

5.4.2.1 Projected Traffic Volumes

Full build-out of retail space under Alternative 2 is projected to add 2,619 daily trips to the surrounding road network. This would result in a total of 61 vehicles entering and exiting the property during the peak morning hour and 227 vehicles entering and exiting during the evening peak hour. Table 5.4-3 shows the projected morning and evening peak hour trips for the proposed retail space.

Over the full build-out period, traffic volume in the area is projected to increase. The total morning peak hour volume at the intersection of West Main Road and Coddington Highway is expected to increase by 491 trips under Alternative 2, compared with existing conditions. The full build-out period takes into account a 1 percent annual background growth that is expected to occur through the year 2032. Background growth is the growth expected within the study area based on development projects not

specifically identified and annual population and traffic increases. The evening peak hour volume is expected to increase by 724 trips. The West Main Road and Valley Road intersection would see an increase of 582 trips during the morning peak hour and 760 trips during the evening peak hour. Table 5.4-4 compares existing peak hour traffic volumes at these two intersections with the projected peak hour traffic volumes under Alternative 2.

Table 5.4-3 Former Navy Lodge Property Trip Distribution (Alternative 2)

Land Use	Projected Weekday Daily Total	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Retail	2,619	37	24	61	111	116	227

Source: Pare Corporation 2013

Table 5.4-4 Peak Hour Trips and LOS at Intersections near the Former Navy Lodge Property (Alternative 2)

Intersection	Existing Conditions Peak Hour Volume		Existing Conditions LOS		Alternative 2 Peak Hour Volume		Alternative 2 LOS	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
West Main Road (Route 114) and Coddington Highway/Rockwood Road	2,087	2,728	B	C	2,577	3,452	C	D
West Main Road (Route 114) and Valley Road (Route 214)	2,526	3,035	B	B	3,108	3,795	C	C

5.4.2.2 Projected Level of Service

LOS under Alternative 2 was determined for the intersections of West Main Road and Coddington Highway and West Main Road and Valley Road and for the proposed driveway to the property.

The intersection of West Main Road and Coddington Highway currently operates at LOS B during the morning peak hour, with a delay of approximately 18 seconds per vehicle, and LOS C during the evening peak hour, with a delay of 21 seconds per vehicle. Under Alternative 2, the intersection of West Main Road and Coddington Highway is expected to operate at LOS C during the morning peak hour, with a delay of 22.3 seconds delay per vehicle, and LOS D during evening peak hour, with a delay of 43.3 seconds per vehicle. Table 5.4-4 shows the LOS for existing conditions and under Alternative 2.

The signalized intersection of West Main Road and Valley Road currently operates at LOS B, with approximately 16 to 18 seconds of delay per vehicle during the morning and evening peak hours, respectively. Under Alternative 2, the intersection of West Main Road and Valley Road would operate at LOS C during the morning peak hour, with 22.2 seconds of delay per vehicle, and LOS C during the evening peak hour, with 29.5 seconds of delay per vehicle.

A right-turn-only driveway (southbound) would operate at LOS B during the morning peak hour, with 14.4 seconds of delay per vehicle, and LOS D during the evening peak hour, with 31.2 seconds of delay per vehicle. A full access driveway is expected to operate at LOS C during morning peak hours and LOS F during evening peak hours. The primary reason for the drop in LOS compared with the morning peak hour is the higher through volume on Coddington Highway, combined with the turning volumes to and from the site.

5.4.2.3 Summary

The intersections of West Main Road and Coddington Highway and West Main Road and Valley Road would see a moderate increase in traffic and a decrease in LOS under Alternative 2 over existing conditions. The projected increase in the number of traffic trips on the roadway network surrounding the former Navy Lodge property and the resulting changes to the LOS for the intersections would result in a significant and unavoidable impact under Alternative 2.

The mitigation of impacts due to the implementation of Alternative 2 would be the same as those discussed for Alternative 1.

5.4.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Currently, there is no driveway or road on the property. Access to the property would continue to be from Coddington Highway or West Main Road. No reuse or redevelopment would occur at the property; however, due to background growth, significant impacts on transportation would occur under this alternative.

The evaluation of impacts under the No Action alternative includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS), and recommended mitigation measures. The full build-out period takes into account a 1 percent annual background growth that is expected to occur through the year 2032. Background growth is the growth expected within the study area based on development projects not specifically identified and annual population and traffic increases.

5.4.3.1 Projected Traffic Volumes

Under the No Action alternative, traffic volumes are projected to increase 1 percent annually through the year 2032. Traffic volume increases are associated with development projects not specifically identified and annual population and traffic increases. Table 5.4-5 compares existing peak hour traffic volumes at the intersections of West Main Road and Coddington Highway and West Main Road and Valley Road with the projected peak hour traffic volumes under the No Action alternative.

The traffic volume at the intersection of West Main Road and Coddington Highway is expected to increase by 459 trips during the morning peak hour and by 599 trips during the evening peak hour. The traffic volume at the intersection of West Main Road and Valley Road is expected to increase by 556 trips during the morning peak hour and by 667 trips during the evening peak hour.

Table 5.4-5 Peak Hour Trips and LOS at Intersections near the Former Navy Lodge Property (No Action Alternative)

Intersection	Existing Conditions Peak Hour Volume		Existing Conditions LOS		No Action Alternative Peak Hour Volume		No Action Alternative LOS	
	A.M.	P.M.	A.M.	P.M	A.M.	P.M.	A.M.	P.M.
West Main Road (Route 114) and Coddington Highway/Rockwood Road	2,087	2,728	B	C	2,546	3,327	C	C
West Main Road (Route 114) and Valley Road (Route 214)	2,526	3,035	B	B	3,082	3,702	C	C

Source: Pare Corporation 2013

5.4.3.2 Projected Level of Service

Under the No Action alternative, the level of service at the intersection of West Main Road and Coddington Highway is expected to decrease from LOS B to LOS C during the morning peak hour. No change is expected in LOS for this intersection during the evening peak hour. The LOS at the intersection of West Main Road and Valley Road would decrease from LOS B to LOS C during both the morning and evening peak hours.

5.4.3.3 Summary

The projected increase in the number of trips on the roadway network surrounding the former Navy Lodge property and the resulting changes to the LOS for the intersections would result in a significant and unavoidable impact under the No Action alternative.

Implementation of any mitigation measures associated with the No Action alternative would be the responsibility of the Town of Middletown.

5.5 Environmental Management

This section describes the potential impacts on environmental management from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of the potential impacts on the management of hazardous waste, hazardous materials, and ER Program sites associated with disposal and reuse of the former Navy Lodge property.

As discussed in Section 3.5.1.4, real property transactions under BRAC require the preparation of a FOST(s). The FOST summarizes how the applicable requirements and notifications for hazardous materials, petroleum products, and other regulated materials (such as ACM, LBP, PCBs, and pesticides) have been satisfied and whether the property is environmentally suitable for transfer. The FOST for the former Navy Lodge property will address any restrictions, notifications, or covenants in deeds related to hazardous materials at the surplus properties.

5.5.1 Alternative 1 (Preferred Alternative)

5.5.1.1 Hazardous Waste

Some RCRA hazardous wastes would be generated during construction of the new retail space under Alternative 1. The operation of heavy equipment and machinery and the performance of construction tasks would result in wastes such as waste oils and oily wastes, chemicals, acids, paints, solvents, and degreasers, as well as universal wastes such as batteries and fluorescent light bulbs. Construction contractors would, by contract, be required to manage hazardous waste in accordance with Town of Middletown and state and federal requirements. Retailers or their management/service contractors would routinely produce small quantities of hazardous wastes similar to those generated by construction activities; such wastes would generally be associated with maintenance of the properties. Retailers or their management/service contractors would be required to manage hazardous wastes in accordance with state, federal, and Town of Middletown requirements.

The site of the former Navy Lodge is vacant; therefore, more hazardous waste would be generated by short-term construction and long-term maintenance activities under Alternative 1 than is currently generated at the vacant lot. There would, therefore, be minor short-term and long-term impacts on the generation and management of hazardous waste under Alternative 1. However, these impacts would not be significant because hazardous wastes would be managed in accordance with state, federal, and Town of Middletown requirements.

5.5.1.2 Hazardous Materials

Storage Tanks and Oil/Water Separators

No active USTs are associated with the former Navy Lodge property. The environmental baseline survey checklist prepared for the 2004 demolition of the lodge indicated that a UST might have been located on the property at one time, possibly for fuel oil or diesel for an emergency generator (see Section 4.5.2.2). The construction contract for property redevelopment should note the possibility of an on-site UST. If a UST is encountered during redevelopment of the property, it would need to be closed in accordance with RIDEM's UST regulations. No ASTs or OWSs are associated with the former Navy Lodge property.

Any new fuel/oil tanks that are installed as part of property redevelopment would have to comply with applicable RIDEM regulations. No significant impacts would be associated with storage tanks and OWSs under Alternative 1.

ACM, LBP, and Lead

The former Navy Lodge property is currently vacant and covered with grass, and there are no building sources of ACM or LBP. Underground water and steam lines might be insulated with asbestos-containing pipe wrap. The construction contract for property redevelopment should note the possibility of asbestos wrap on underground utility pipes. Any underground asbestos encountered during building construction would need to be evaluated by a specialized ACM removal contractor. There would be no significant impacts from ACM, LBP, or lead removal under Alternative 1. No asbestos or LBP impacts would be associated with construction and future use of the property because asbestos and LBP are no longer used in new building materials.

PCBs and Pesticides

The one transformer reported to be at the former Navy Lodge property would not contain PCBs because NAVSTA Newport removed all PCB-containing transformers in the 1980s (see Section 4.5.2.7). If the transformer is handled or removed during redevelopment activities under Alternative 1, it should be inspected for a "PCB-free" label. If such a label is not found, the transformer should be evaluated for the presence of PCBs.

Pesticides are currently used at NAVSTA Newport properties as needed and in accordance with the *Integrated Pest Management Plan* (see Section 3.5.1.2). Under Alternative 1, it is expected that any future use of pesticides by the retailers or their management/service contractors would be done responsibly and in accordance with all applicable local or state regulations.

Under Alternative 1, no impacts would be associated with PCB and pesticide management.

Radioactive Materials and Radon

Radioactive materials would not be expected to be used during construction or operation of retail space at the former Navy Lodge property under Alternative 1.

Although there is no record of radon surveys for the former Navy Lodge, base-wide radon surveys indicate that radon is not generally a concern in the NAVSTA Newport area (see Section 3.5.1.2). Similarly low levels would be expected to be seen in any newly constructed buildings. RIDOH regulates radon levels in public buildings, schools, and child care centers (RIDOH 2007b), none of which are proposed for the former Navy Lodge property under Alternative 1.

There would be no impacts from radioactive materials and radon under Alternative 1.

5.5.1.3 Medical Waste

No medical waste would be associated with the proposed reuse of the former Navy Lodge property for retail space under Alternative 1; therefore, there would be no impact.

In summary, although impacts from hazardous materials under Alternative 1 would not be significant, any such impacts would be reduced through standard construction and operational practices.

5.5.1.4 Environmental Restoration Program

The one ER Program site in the general vicinity of the former Navy Lodge property—IRP Study Area 4, Coddington Cove Rubble Fill Area—is about 0.5 miles west of the former Navy Lodge property and is separated from the property by developed areas (see Section 3, Figure 3.5-1). Contaminants in site media have little potential of migrating off-site to other areas and pose minimal risk to human health and the environment (see Section 4.5.3). As a result, no further action has been recommended for the Coddington Cove Rubble Fill Area site. Therefore, there would be no impact associated with ER Program sites under Alternative 1. Redevelopment would be compatible with the Navy's program and commitment to clean up hazardous waste sites.

5.5.2 Alternative 2

5.5.2.1 Hazardous Waste

Hazardous wastes would be routinely generated by the implementation of Alternative 2, and they would be the same as those described under Alternative 1. There would, therefore, be minor short-term and long-term impacts on the management of hazardous waste under Alternative 2. These impacts would not be significant.

5.5.2.2 Hazardous Materials

Storage Tanks and Oil/Water Separators

No significant impacts associated with storage tanks and OWSs would occur under Alternative 2, as described for Alternative 1.

ACM, LBP, and Lead

No significant impacts from ACM, LBP, or lead removal would occur under Alternative 2, as described for Alternative 1. No ACM or LBP impacts associated with construction and reuse of the property would occur because asbestos and LBP are no longer used in new building materials.

PCBs and Pesticides

No impacts associated with PCBs or pesticide management would occur under Alternative 2, as described for Alternative 1.

Radioactive Materials and Radon

No impacts from radioactive materials or radon would occur under Alternative 2, as described for Alternative 1.

5.2.2.3 Medical Waste

No impact associated with medical waste would occur under Alternative 2, as described for Alternative 1.

5.5.2.4 Environmental Restoration Program

As indicated in Section 5.5.1.3, no ER Program sites are close enough to affect or be affected by redevelopment of the former Navy Lodge property under Alternative 2. There would, therefore, be no

impact associated with ER Program sites under Alternative 2, as described for Alternative 1. Redevelopment would be compatible with the Navy's program and commitment to clean up hazardous waste sites.

5.5.3 No Action Alternative

Under the No Action alternative, the former Navy Lodge property would be maintained in a caretaker status with no redevelopment.

5.5.3.1 Hazardous Waste

No hazardous wastes are currently generated at the former Navy Lodge property, which is vacant land. There would be no impact on hazardous waste management under the No Action alternative.

5.5.3.2 Hazardous Materials

Storage Tanks and Oil/Water Separators

There are no known USTs at the former Navy Lodge property, although the environmental baseline survey checklist prepared for the 2004 demolition of the lodge indicated that a UST might have been located on the property at one time (see Section 4.5.2.2). If there is such a UST, it is inactive and not subject to monthly inspection. There are no ASTs or OWSs on the property. There would be no significant impacts associated with storage tanks and OWSs under the No Action alternative.

ACM, LBP, and Lead

The former Navy Lodge property is currently vacant and covered with grass, and there are no building sources of ACM or LBP. If underground water and steam lines are insulated with asbestos-containing pipe wrap, they would not be an immediate hazard while underground. No significant impacts associated with ACM, LBP, or lead would occur under the No Action alternative.

PCBs and Pesticides

The one transformer reported to be at the former Navy Lodge property would not contain PCBs because NAVSTA Newport removed all PCB-containing transformers in the 1980s (see Section 4.5.2.7). Under the No Action alternative, pesticides would continue to be used at the property as needed and in accordance with the installation *Integrated Pest Management Plan*. Therefore, no impacts associated with PCBs or pesticide management would occur under the No Action alternative.

Radioactive Materials and Radon

No radioactive materials are associated with the former Navy Lodge property. Radon is not a concern for open spaces. No impacts from radioactive materials or radon would occur under the No Action alternative.

5.5.3.3 Medical Waste

Medical waste is not generated at the former Navy Lodge property, which is vacant land. No impacts associated with medical waste management would occur under the No Action alternative.

5.5.3.4 Environmental Restoration Program

No ER Program sites are close to the former Navy Lodge property. Therefore, no impact associated with ER Program sites would occur under the No Action alternative, the same as described for Alternatives 1 and 2.

5.6 Air Quality

This section provides a summary of the projected emissions associated with the disposal and reuse of the former Navy Lodge property, including emissions from operation of the proposed retail space and associated vehicle trips on local roadways after full build-out. For purposes of analysis, construction emissions under both Alternatives 1 and 2 for the former Navy Lodge property are assumed to be the same, primarily because the footprints for the proposed redevelopment under both alternatives are similar. Construction emissions have been estimated based on Alternative 2, which has a slightly larger footprint than Alternative 1.

An analysis of the impact of the proposed action on regional air quality is provided in Chapter 12, which includes an evaluation of criteria pollutants, GHG and HAPs from continuing actions at all surplus properties upon final build-out. (See Chapter 12, Summary of Impacts for all Surplus Property, for a discussion of the total impacts from this action in the Providence, Rhode Island, air quality region.) Construction and operation emissions have also been evaluated for each individual surplus property (see Sections 7.6, 9.6, and 11.6).

Construction emissions have been evaluated individually for each surplus property, based on the assumption that construction emissions are temporary and are not likely to occur within the same year at all locations or at the same time as ongoing operational emissions, especially considering a 20-year build-out period for the Redevelopment Plan. Detailed calculations of the estimated construction emissions are provided in Appendix D-1. (Section 3.6 discusses regional air quality, applicable regulations and requirements, and methods used to assess the environmental consequences.)

5.6.1 Alternative 1 (Preferred Alternative)

The 3-acre former Navy Lodge property is proposed for redevelopment as retail space under Alternative 1. Two buildings are proposed, each one-story in size, for a total of approximately 30,500 square feet of space and a building footprint of 0.7 acres. These structures are proposed on the northeastern and southeastern corners of the site, with parking between and around the buildings covering approximately 0.8 acres. Approximately 0.3 acres would be used as access, and the remaining 1.2 acres of the site would be left as open space (see Chapter 2, Figure 2-1).

Construction-related emissions would be primarily exhaust emissions from construction vehicles and equipment, construction materials delivery, construction employee commutes, and dust resulting from ground disturbance and road traffic. Construction emissions resulting from this action at the former Navy Lodge property under Alternative 1 would be similar yet slightly less than emissions estimated under Alternative 2, which are discussed below in Section 5.6.2. These emissions would be short term and localized, resulting in minor impacts on air quality.

Mitigation of construction emissions would be implemented with best management practices, which could include proper maintenance of equipment, idling-reduction measures, and the use of newer, more efficient equipment with diesel retrofits to control fine particulate matter (PM_{10}) emissions. Particle emissions can also be controlled through regularly watering graded areas and cleaning streets after grading activities.

Operational emissions include emissions from building energy use and increased vehicle traffic. Emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. Emissions from increased vehicle use was calculated based on the new vehicle trips attributed only to the proposed retail space at the former Navy Lodge property in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013). Total operational emissions after full build-out of the former Navy

Lodge property under Alternative 1 are provided in Table 5.6-1. (See Chapter 12 for a discussion of regional air quality impacts.) Operational emissions would result in minor impacts on air quality, and mitigation would further reduce adverse impacts.

Table 5.6-1 Building Energy and Vehicle Emissions, Former Navy Lodge Property (Alternative 1)

Energy Type	Emissions per year (tons)					
	CO	NO_X	VOCs	SO_2	PM_{10}	$PM_{2.5}$
Fuel Oil	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.02	0.05	0.00	0.00	0.00	0.00
Electricity	NA	0.19	NA	0.03	NA	NA
New Vehicle Emissions	12.74	1.16	1.50	0.03	0.27	0.18
Total Annual Operational Emissions	**12.76**	**1.40**	**1.51**	**0.06**	**0.27**	**0.18**

Key:
CO = Carbon monoxide.
VOC = Volatile organic compounds.
NA = Not applicable.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.

To mitigate operational emissions, buildings can be designed to meet stringent energy-efficiency standards. Implementation of traffic-easing roadway designs to lower vehicle speed and reduce congestion, in addition to expansion of public transportation and carpooling programs, would reduce vehicle emissions.

5.6.2 Alternative 2

Under Alternative 2, the proposed redevelopment at the former Navy Lodge property includes the development of two two-story retail buildings, resulting in 61,000 square feet of retail uses that would have the same footprint (0.7 acres) as Alternative 1 (see Chapter 2, Figure 2-5). To accommodate the increase in density between the preferred alternative and Alternative 2, an increase in parking is proposed. A total of 1.4 acres of parking/access would be developed under Alternative 2.

Construction emissions resulting from the proposed redevelopment at the former Navy Lodge property under Alternative 2 are provided in Table 5.6-2. These emissions would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. Construction emissions would be short term and localized, resulting in minor impacts on air quality. Measures to mitigate construction emissions are the same as those discussed above under Alternative 1.

Similar to Alternative 1, operational emissions include emissions from building energy use and increased vehicle traffic. Emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating and the indirect use of electricity. As determined in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013), vehicle traffic would increase because of the proposed redevelopment at the former Navy Lodge property, resulting in additional vehicle emissions. Operational emissions would result in minor impacts on air quality, and mitigation would further reduce adverse impacts. Total operational emissions after full build-out of the former Navy Lodge property under Alternative 2 are provided in Table 5.6-3. (See Chapter 12 for a discussion of regional air quality impacts.)

Table 5.6-2 Construction Emissions, Former Navy Lodge Property (Alternative 2)

Source	Emissions per year [tons])					
	VOCs	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Construction Equipment	0.68	3.24	7.18	0.009	0.56	0.56
Worker Commute	0.10	0.97	0.07	0.001	0.22	0.02
Delivery Truck Traffic	0.002	0.01	0.06	0.001	0.02	0.00
VOCs and PM from Paving and Grading	0.039	NA	NA	NA	0.11	0.11
Total Emissions(TPY)	**0.82**	**4.21**	**7.31**	**0.01**	**0.91**	**0.69**

Key:
CO = Carbon monoxide.
NA = Not applicable.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOCs = Volatile organic compounds.

Table 5.6-3 Building Energy and Vehicle Emissions, Former Navy Lodge Property (Alternative 2)

Energy Type	Emissions per year (tons)					
	CO	NO_X	VOCs	SO_2	PM_{10}	$PM_{2.5}$
Fuel Oil	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.04	0.10	0.01	0.00	0.00	0.00
Electricity	NA	0.37	NA	0.06	NA	NA
New Vehicle Emissions	25.48	2.32	3.01	0.06	0.55	0.36
Total Annual Operational Emissions	**25.52**	**2.79**	**3.01**	**0.12**	**0.55**	**0.36**

Key:
CO = Carbon monoxide.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOCs = Volatile organic compounds.

5.6.3 No Action Alternative

The site is currently vacant and covered with grass. Therefore, under the No Action alternative, there would be no new stationary or mobile sources of criteria pollutants, HAPs, or GHG emissions from the use of the property. Therefore, the No Action alternative would not impact air quality at the former Navy Lodge property.

5.6.4 General Conformity Rule Applicability

Rhode Island is in attainment for all NAAQS; therefore, the General Conformity Rule does not apply to this action. While not applicable to the action, the *de minimis* thresholds under the General Conformity Rule have been used to consider the potential level of significance of the air quality impacts under NEPA.

Emissions from construction and operation at the former Navy Lodge property under either alternative would be below the General Conformity Rule *de minimis* thresholds. Thus, changes in air quality would not be significant as a result of this construction, and mitigation would reduce adverse impacts.

5.7 Noise

This section includes an analysis of the potential noise impacts that would result from the proposed redevelopment of the former Navy Lodge property under Alternative 1, Alternative 2, and the No Action alternative

5.7.1 Alternative 1 (Preferred Alternative)

5.7.1.1 Construction

Proposed redevelopment at the former Navy Lodge property under Alternative 1 involves the construction of two one-story buildings. Table 5.7-1 provides an estimate of the number and type of construction equipment that would be required and the associated sound pressure level (SPL) for each type of equipment at a distance of 50 feet from the source and at the nearest residence. The nearest residence has been determined to be at a location on Lake Erie Street at a distance of 185 feet from the center of the former Navy Lodge property (see Figure 5.7-1). The SPL at this location is estimated to range from 61 to 71 dBA. As indicated in Section 3.7.1.1, normal speech has a sound level of 60 dB and a garbage disposal has a sound level of 80 dB. The composite sound level due to construction would be in between these sound levels.

Construction noise impacts would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. In addition, construction would occur between 7:30 a.m. and 7:00 p.m. when the noise would be less disturbing to area residents and in accordance with the zoning regulations of the Town of Middletown.

Temporary increases in construction-related vehicle noise would also be expected. Traffic associated with trucks and construction vehicles (e.g., dump trucks, material deliveries, debris removal, etc.) within and near the former Navy Lodge property would produce localized noise for brief periods, but this would not be expected to create any long-term, adverse noise impacts on the neighboring community.

Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

5.7.1.2 Operation

Noise impacts following full build-out of the former Navy Lodge property are primarily associated with increased vehicle traffic. To characterize the projected traffic noise near the former Navy Lodge property, the evening peak hour traffic volume, vehicle speed, and vehicle mix data for the roadways analyzed in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013) were modeled using TNM version 2.5 at the receptor locations shown in Table 5.7-2. In addition to traffic volume generated by the proposed reuse, a 1 percent growth rate per year from 2012 to 2032 was factored in to provide a conservative estimate of future traffic volumes.

Table 5.7-1 Estimated Construction Equipment Noise Levels Associated with Redevelopment of the Former Navy Lodge Property (Alternatives 1 and 2)

Construction Equipment	Quantity	Usage Factor (%)	SPL @ 50 Feet (dBA)	SPL[1] (dBA) at Specified Distances	
				50 feet (adjusted)[2]	Nearest Residence 185 feet
Building Construction					
Loader	2	40	79	78	67
Crane (Crawler)	2	16	81	76	65
Crane (Hydraulic Truck)	2	16	81	76	65
Generators	2	50	82	82	71
Welder	2	40	74	73	62
Backhoe	1	40	80	76	65
Compressor	2	40	78	77	66
Grading					
Grader	1	40	85	81	70
Bull Dozer	1	40	85	81	70
Water Truck	1	40	76	72	61
Haul Truck	1	40	76	72	61
Paving/Road Construction					
Cement Mixer	1	40	85	81	70
Asphalt Paving Machine	1	50	85	82	71
Vibratory Compactor	1	20	80	73	62
Generators	1	50	82	79	68

Source: Federal Highway Administration 2006

[1] SPL = Sound pressure level.
[2] SPL at 50 feet adjusted to equipment quantity and usage factor.

Table 5.7-2 Peak Evening Hour Traffic Noise Levels, Former Navy Lodge Property (Alternative 1)

Receptor	Location	Hourly L_{eq} Sound Level (dBA)		Alternative 1 Sound Level Change
		Modeled Existing	Alternative 1	
1	Coddington Highway and West Main	66.6	67.6	1
2	Coddington Highway South	61.5	62.5	1
3	Coddington Highway North	65.5	66.5	1
4	West Main Road	60.7	61.5	0.8
5	West Main Road	64.3	65.2	0.9
6	West Main Road	61.4	62.4	1
7	West Main Road and Valley Road Intersection	66.2	67.1	0.9

The predicted traffic noise levels at receptor locations near the former Navy Lodge property are summarized in Table 5.7-2. Noise levels ranged from 61.5 to 67.6 dBA, which differs from existing conditions by 0.8 to 1 dBA (see Figure 5.7-1).

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Section 5\Former_Navy_Lodge_Noise_Receptor_ver02.mxd

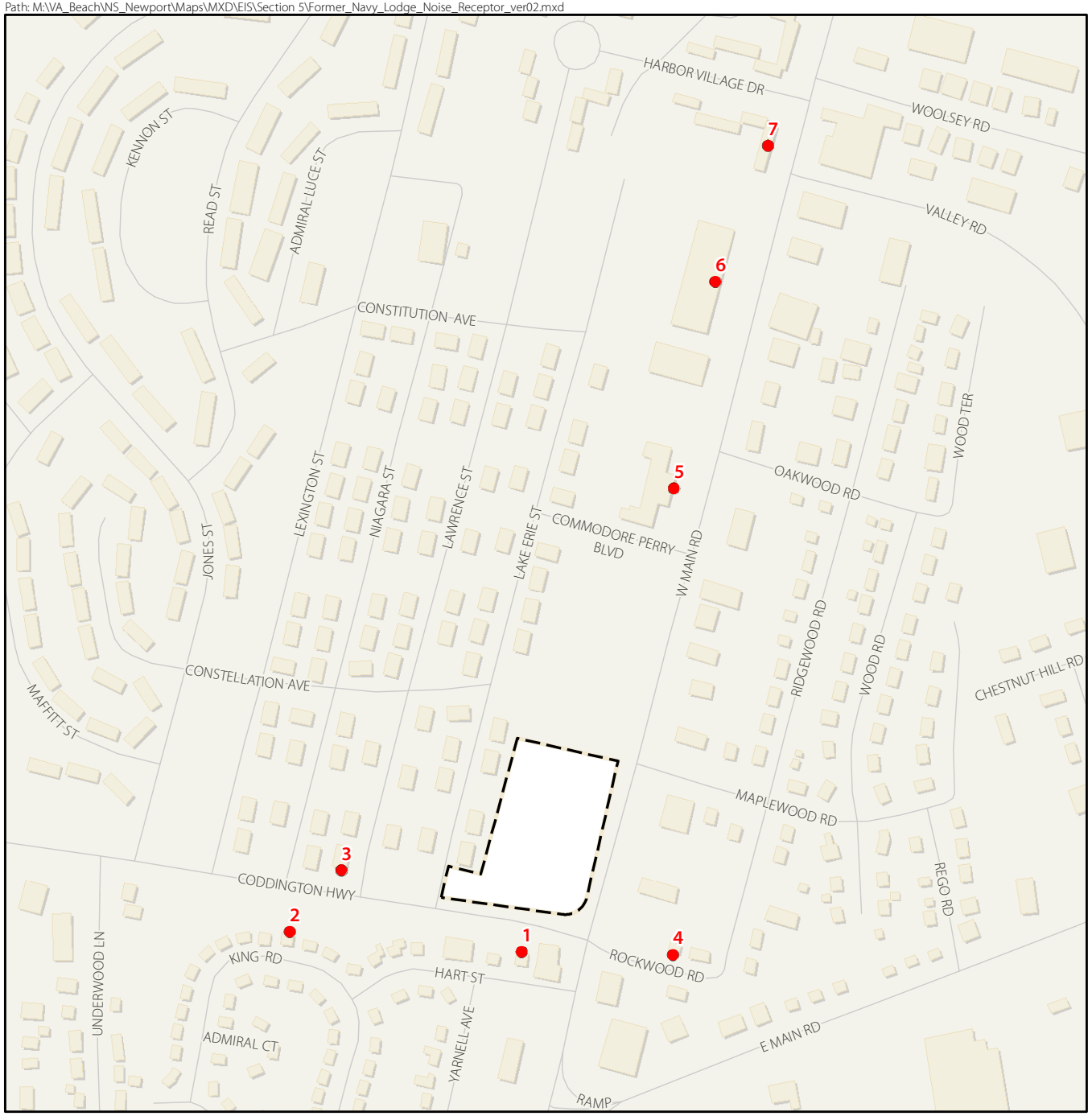

Figure 5.7-1
Former Navy Lodge Property
Noise Receptor Locations
NAVSTA Newport, Rhode Island

Legend

- Noise Receptor Location
- Street
- Property Boundary

SCALE

0 250 500 Feet

SOURCE: U.S. Department of the Navy 2009

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Changes in the traffic-related noise levels would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

5.7.2 Alternative 2

5.7.2.1 Construction

Although the redevelopment of the former Navy Lodge property under Alternative 2 would have increased square footage of retail use and additional parking space, the estimated construction noise levels would be similar to Alternative 1; however, the duration of construction may be slightly longer due to the additional story of the buildings under Alternative 2.

Temporary increases in construction-related vehicle noise would, however, be expected. Traffic associated with trucks and construction vehicles (e.g., dump trucks, material deliveries, debris removal, etc.) within and near the former Navy Lodge property would produce localized noise for brief periods, but this would not be expected to create any long-term, adverse noise impacts on the neighboring community. Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

5.7.2.2 Operation

Implementation of Alternative 2 for the former Navy Lodge property would not be expected to generate significant traffic-related noise impacts within the study area. Traffic-related noise would occur in areas already experiencing such noise and would not be expected to cause additional impacts. The predicted traffic noise levels for the former Navy Lodge property under Alternative 2 are provided below in Table 5.7-3. The largest estimated increase in traffic noise would be 1.2 dBA. An increase in noise of 3 dBA is considered to be barely noticeable. As shown in Table 5.7-3, projected traffic noise levels would slightly exceed FHWA guidance noise abatement criteria thresholds for land uses proposed under Alternative 2 but would not substantially exceed (greater than 15 dBA) existing conditions. Adjacent land uses under Alternative 2 would include FHWA activity categories 'B' and 'C.' The traffic noise abatement criteria threshold is 67 dBA for activity Category B and 72 dBA for activity Category C. (For more information on FHWA traffic noise abatement criteria, see Section 3.7.2.) Changes in the traffic-related noise levels would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

Table 5.7-3 Peak PM Hour Traffic Noise Levels, Former Navy Lodge Property (Alternative 2)

Receptor	Location	Hourly L_{eq} Sound Level (dBA)		Alternative 2 Sound Level Change
		Modeled Existing	Alternative 2	
1	Coddington Highway and West Main	66.6	67.8	1.2
2	Coddington Highway South	61.5	62.6	1.1
3	Coddington Highway North	65.5	66.6	1.1
4	West Main Road	60.7	61.8	1.1
5	West Main Road	64.3	65.3	1
6	West Main Road	61.4	62.4	1
7	West Main Road and Valley Road Intersection	66.2	66.9	0.7

5.7.3 No Action Alternative

Under this alternative, all excess property would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur at the former Navy Lodge property; therefore, no additional noise would be generated.

5.8 Infrastructure and Utilities

This section summarizes the potential impacts on infrastructure and utilities from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of impacts on water supply, wastewater, storm water, other utilities, and solid waste management from disposal and reuse of the former Navy Lodge property.

5.8.1 Alternative 1 (Preferred Alternative)

5.8.1.1 Water Supply

The City of Newport would be expected to have sufficient capacity to meet the future water demands resulting from implementation of Alternative 1.

Water Demand

Full build-out of the former Navy Lodge property under Alternative 1 would create more than 30,000 square feet of retail space. At full occupancy, water demand is estimated to be approximately 3,813 gallons per day (gpd) under Alternative 1. This represents a full increase of 3,813 gpd over 2012 existing conditions because the property is currently vacant. Water demand was projected using planning multipliers for retail land uses based on square footage (see Table 5.8-1) (Nelson 2004). For more information on the methodology and assumptions used to estimate water demand, see Appendix D-3.

Table 5.8-1 Projected Water Supply (gpd) at Build-Out, Former Navy Lodge Property (Alternatives 1 and 2)

Land Use	Alternative 1	Alternative 2
Retail Space	3,813	7,625
Total	**3,813**	**7,625**

Operation and Management

Implementation of Alternative 1 would be expected to have a minor impact on the future capacity of the City of Newport's water treatment and distribution system. The current average daily demand on the City of Newport water supply is 5.59 mgd, including demand by users in the City of Newport and the Town of Middletown, which are supplied through the City of Newport's distribution system, and NAVSTA Newport and the Portsmouth Water and Fire District, which are supplied with water at wholesale by the City of Newport. Total average daily demand is projected to increase to between 7.50 and 7.96 mgd by 2033 (Pare Corporation 2014).

Replacement of one of the existing plants and upgrades to the other plant have increased capacity to 16 mgd (Water World 2012; City of Newport Department of Utilities 2014). The expected 3,813 gpd under Alternative 1 represents less than 1 percent of the average daily demand projected for 2033. The combined current treatment capacity of the two water treatment plants is 16 mgd, and the project average daily demand in 2033 is between 7.50 and 7.96 mgd. Therefore, the increase in projected water demand would represent a minor impact on operation and maintenance of the City of Newport's water treatment plants and would be met with current capacity.

Distribution System

Existing water lines at the former Navy Lodge property have been cut and capped. Redevelopment of the property would require installing a new water supply distribution system, which would be the responsibility of the developer/future property owner and would be considered a moderate impact on the existing distribution system. Ground would be disturbed when new distribution lines are laid, and the developer would be required to comply with local and state regulations to minimize disturbance. All new distribution system(s) would be constructed to ensure that they are adequately sized. In addition, the design and installation of any new water supply infrastructure would require, if applicable, municipal review and approval and would need to comply with applicable local codes, ordinances, and regulations.

In summary, Alternative 1 would result in an increase in water demand and a need for infrastructure. New water distribution infrastructure would be constructed to accommodate redevelopment.

5.8.1.2 Wastewater

The City of Newport and the Town of Middletown would be expected to have sufficient capacity for the collection and treatment of wastewater associated with development of the former Navy Lodge property under Alternative 1.

Wastewater Volume

The former Navy Lodge property is currently vacant; therefore, no wastewater is being produced at this time. Full build-out of the former Navy Lodge property under Alternative 1 would create more than 30,000 square feet of retail space. At full occupancy, wastewater generation is estimated to be approximately 3,630 gpd under Alternative 1 based on standard multipliers for retail land uses (Nelson 2004). Estimates of volumes for Alternatives 1 and 2 are shown in Table 5.8-2. For more information on the methodology and assumptions used to estimate wastewater generation, see Appendix D-3.

Table 5.8-2 Projected Wastewater Generation (gpd) at Build-Out, Former Navy Lodge Property (Alternatives 1 and 2)

Land Use	Alternative 1	Alternative 2
Retail space	3,630	7,259
Total	**3,630**	**7,259**

Operation and Management

Implementation of Alternative 1 would be expected to have a minor impact on the future capacity of the City of Newport's wastewater treatment capacity and the Town of Middletown's collection system. The City of Newport's wastewater treatment plant has a current capacity of 10.7 mgd and in 2012 processed 9.46 mgd. Although historically the Town of Middletown has exceeded its 2.1 mgd allotment, more than $10 million in sewer improvements in Middletown are planned between 2014 and 2018 to reduce inflow and infiltration in the town's sewer collection system. Therefore, the increase in projected wastewater demand would represent a minor impact on operation and maintenance of the City of Newport's wastewater treatment and collection system.

Wastewater flows generated under Alternative 1 would represent less than 1 percent of the town's 2.1 mgd treatment allotment. However, the future developer would need to coordinate with the three local municipalities and their utility providers to identify an alternative for wastewater treatment if the allocation from the City of Newport is exceeded at the time of redevelopment.

Collection System

Existing sewer lines at the former Navy Lodge property have been cut and capped. Redevelopment of the property would require installing a new wastewater collection system, which would be the responsibility

of the developer/future property owner and would be considered a moderate impact. Ground would be disturbed when laying new collection lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new collection system(s) would be constructed to ensure that they are adequately sized. In addition, the design and installation of any new wastewater collection infrastructure would require, if applicable, municipal review and approval and would need to comply with applicable local codes, ordinances, and regulations.

Under Alternative 1, wastewater flows from the former Navy Lodge property would be discharged into the Town of Middletown's sewer system. The Wave Avenue pump station that serves the area surrounding the property is currently operating at capacity, and additional wastewater would need to be directed towards the Coddington Highway pump station (RKG Associates, Inc. et al. 2011). Cost estimates for connecting the property and surrounding parcels to the Coddington Highway gravity sewer would cost between $150,000 and $200,000 for a dedicated pump station and force main (Vanasse Hanglin Brustline Inc. 2011). The Town of Middletown estimates that needed upgrades to the Coddington Highway pump station would cost between $750,000 and $1,000,000 (Vanasse Hanglin Brustlin, Inc. 2011).

In summary, Alternative 1 would result in an increase in demand on wastewater capacity and a need for infrastructure. Wastewater flows generated under Alternative 1 would represent less than 1 percent of the Town of Middletown's 2.1 mgd treatment allotment. New water distribution infrastructure would be constructed to accommodate redevelopment.

5.8.1.3 Storm Water

Implementation of Alternative 1 would increase the amount of impervious surface area on the property, resulting in a greater volume of storm water runoff. Impervious surface is expected to result from the proposed retail space, associated parking, and access to the property. Full build-out under Alternative 1 is estimated to create a total of 78,400 square feet of impervious surface area; 30,500 square feet from the retail structure, 34,800 from parking areas and 13,100 from the access road. This would be an addition of approximately 77,790 square feet to the existing conditions (approximately 610 square feet). The amount of impervious surface area for Alternatives 1 and 2 are shown in Table 5.8-3. For more information on the methodology and assumptions used to calculate existing and future impervious surface, see Appendix D-4.

Table 5.8-3 Impervious Surface (square feet) at Build-Out, Former Navy Lodge Property (Alternatives 1 and 2)

Structure	Alternative 1	Alternative 2
Retail	30,500	30,500
Parking	34,800	47,900
Access	13,100	13,100
Total	**78,400**	**91,500**

The Town of Middletown requires that a storm water management plan be developed before a building permit can be obtained, as per Chapter 153, Stormwater Management Ordinance. The storm water management plan would describe measures to control the volume and quality of storm water runoff and would incorporate BMPs for water quality control as described in the Rhode Island Stormwater Design and Installation Standards Manual (RIDEM and CRMC 2010). Additionally, the storm water management plan must demonstrate soil and erosion control in accordance with the Town of Middletown Construction Site Runoff Ordinance (Chapter 151) and the *Rhode Island Soil Erosion and Sediment Control Handbook* (RIDEM, USDA Soil Conservation Service, and Rhode Island State Conservation Committee 1989).

A General Permit—Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity—would also be necessary because redevelopment of the former Navy Lodge would disturb more than 1 acre. Prior to approval of a Construction General Permit, RIDEM requires submittal of an NOI and a storm water pollution prevention plan (SWPPP), which must include a discussion of erosion and sediment controls. Through compliance with applicable state and local regulations, the addition of impervious surface would not be considered a significant impact.

Additionally, as indicated in Section 3.8, Infrastructure and Utilities, Section 438 of the Energy Independence and Security Act of 2007 requires that any development or redevelopment project involving a federal facility with a footprint exceeding 5,000 square feet shall use site planning, design, construction, and maintenance strategies in order to maintain or restore the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow. Compliance with this requirement can be met through the implementation of LID technologies.

Section 438 applies to the "sponsor of any development or redevelopment project involving a federal facility." The act of transferring the installation will result in the property being no longer federally owned; consequently, Section 438 would not apply to the redevelopment of the former Navy Lodge property. However, as outlined in the *Rhode Island Stormwater Design and Installation Standards Manual*, the use of LID techniques is required as a primary method of storm water control (RIDEM and CRMC 2010). Thus, although not required through federal ownership of the property, it is expected that the redevelopment of the former Navy Lodge property would be consistent with the terms in Section 438 of the EISA.

Storm Water System

The existing storm water collection system may require modifications, and new storm water infrastructure may be necessary to offset new impervious surfaces associated with redevelopment under this alternative. Ground would be disturbed during construction of new infrastructure, and the developer would be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future developer would be required to identify any infrastructure requirements that may be necessary.

Operation and Management

Under Alternative 1, the property would likely be transferred to a non-federal agency and infrastructure would no longer be managed by the Navy. Upon completion of the BRAC disposal process, the future property owner would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 1 would result in a significant increase in impervious surface area, and new storm water infrastructure would be required; however, through compliance with state and local regulations and permit conditions regarding storm water management, the impact would be considered minor.

5.8.1.4 Other Utility Systems

Electricity

Electricity at the property would continue to be supplied by National Grid. Upon full build-out of Alternative 1, total electricity demand is estimated to be 438,036 kWh using U.S. averages for energy use per square foot for specific types of building use (U.S. Department of Energy EIA 2003; 2009). These

averages were used to estimate total energy use by the proposed new retail spaces. (The same assumptions have been applied in Section 5.6, Air Quality.)

As shown in Table 5.8-4, the Town of Middletown consumed 116 million kWh in 2011. The 2011 electric consumption represented a decrease from 2010 but was still an increase over the levels used in 2009. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade.

Table 5.8-4 Annual Electricity Usage (KWh)

	2009	2010	2011
Newport	280,899,087	290,812,794	285,394,308
Middletown	111,125,705	120,527,214	115,994,320
Portsmouth	106,145,675	114,709,999	111,677,038
Total	**498,170,467**	**526,050,007**	**513,065,666**

Source: Rhode Island Energy 2012

The annual electricity demand under Alternative 1 would represent less than one-half percent of 2011 energy usage in the Town of Middletown and less than a tenth of a percent of total annual energy usage for Newport, Middletown, and Portsmouth combined (Rhode Island Energy 2012). Considering the 0.8 percent future annual growth rate in electricity demand at the state level, and that Aquidneck Island comprises approximately 5.5 percent of the state's overall population, the annual growth rate for electricity demand would be expected to be far less than 0.8 percent. Therefore, the electricity demand resulting from redevelopment of the former Navy Lodge under Alternative 1 would be expected to be supported by current electrical capacity and would represent a negligible impact on regional demand. However, the future developer would need to coordinate with the three local municipalities and National Grid to identify an alternative for electricity provision if, at the time of redevelopment, regional capacities are exceeded.

All electrical connections would be constructed to ensure an adequately sized and properly built electric transmission and conveyance system; ground would be disturbed during construction of new systems. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

Natural Gas

Natural gas would continue to be supplied to the property by National Grid. It is expected that a total of 1,018,700 cf of natural gas would be needed each year under full build-out of Alternative 1. Similar to electricity usage, estimates of future natural gas usage were calculated for full build-out as proposed under Alternative 1 using U.S averages for natural gas use per square foot, which were obtained from the U.S. Department of Energy's EIA for specific types of building use. These averages were used to estimate total natural gas use by the proposed new building spaces. (The same assumptions were used in Section 5.6, Air Quality.) An abandoned 2-inch gas pipe connects the property to a main on Coddington Highway. This pipe would need to be extended or replaced, depending on the orientation of the retail buildings. Upon completion of the BRAC disposal process, the future developer would work with National Grid to identify any infrastructure requirements that may be necessary.

The natural gas usage for Middletown and surrounding communities is shown in Table 5.8-5. Middletown consumed more than 105 billion cubic feet (cf) of natural gas in 2011. The quantity of natural gas needed under Alternative 1 equates to one one-thousandth of a percent of the amount consumed in Middletown in 2011 and, therefore, would represent a negligible impact on regional

demand. It is assumed that this additional demand would be accommodated within existing capacities servicing existing demand. Redevelopment under Alternative 1 is not anticipated to create a strain on natural gas resources.

Table 5.8-5 Annual Natural Gas Usage (cf)

	2010	2011
Newport	99,634,495,300	105,210,403,500
Middletown	99,634,696,300	105,210,604,600
Portsmouth	199,269,392,600	210,421,209,200
Total	**398,538,584,200**	**420,842,217,300**

Source: Rhode Island Energy 2012

All natural gas connections would be constructed to ensure an adequately sized and properly built gas transmission and conveyance system; ground would be disturbed during construction of new systems. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

5.8.1.5 Solid Waste

Approximately 270 cubic yards (cy) of C&D wastes would be generated from the construction activities that are planned for redevelopment of the former Navy Lodge property under Alternative 1 (see Appendix D-2). Those wastes would consist of wood, concrete, masonry, metal, building materials, and mechanical components. Much of the C&D waste would be recyclable, and it is anticipated that the demolition and construction contracts would contain traditional terms and conditions requiring the recycling of C&D waste to the extent practicable, which reduces disposal costs and is also protective of the environment. Solid wastes also would be routinely generated by the retailers or their management/service contractors. Such solid wastes would consist of mixed trash, food waste, and traditional recyclables such as paper, cardboard, and containers. There would be a minor impact associated with solid waste management under Alternative 1.

5.8.2 Alternative 2

5.8.2.1 Water Supply

The City of Newport would be expected to have sufficient capacity to meet the future water demands resulting from implementation of Alternative 2.

Water Demand

Full build-out of the former Navy Lodge property under Alternative 2 would create more than 60,000 square feet of retail space. At full occupancy under this alternative, it is expected that the property would need 7,625 gpd of water (see Table 5.8-1). This represents a full increase of 7,625 gpd over 2012 existing conditions because the property is currently vacant. Water demand was projected using planning multipliers for retail land uses based on square footage. For more information on the methodology and assumptions used to project water demand, see Appendix D-3.

Operation and Maintenance

Implementation of Alternative 2 would be expected to have a minor impact on the future capacity of the City of Newport's water treatment and distribution system. The current average daily demand on the City of Newport water supply is 5.59 mgd. Total average daily demand is projected to increase to between 7.50 and 7.96 mgd by 2033 (Pare Corporation 2014). Replacement of one of the existing plants and upgrades to the other have increased capacity to 16 mgd (Water World 2012; City of Newport

Department of Utilities 2014). The expected 7,625 gpd under Alternative 2 represents less than 1 percent of the average daily demand projected for 2033. Therefore, the increase in projected water demand would represent a minor impact on operation and maintenance of the City of Newport's water treatment plants and would be met with current capacity.

Distribution System

As indicated under Alternative 1, existing water lines at the former Navy Lodge have been cut and capped. Redevelopment of the property would require installing a new water distribution system, which would be the responsibility of the developer/future property owner and would be considered a moderate impact. As indicated under Alternative 1, ground would be disturbed when laying new distribution lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new distribution system(s) would be constructed to ensure that they are adequately sized. In addition, the design and installation of any new water supply infrastructure would require, if applicable, municipal review and approval and would need to comply with applicable local codes, ordinances, and regulations.

In summary, similar to Alternative 1, Alternative 2 would result in an increase in water demand and a need for infrastructure. New water distribution infrastructure would be constructed to accommodate redevelopment.

5.8.2.2 Wastewater

The City of Newport and Town of Middletown would be expected to have sufficient capacity for the collection and treatment of wastewater associated with development of the former Navy Lodge property under Alternative 2.

Wastewater Volume

The former Navy Lodge property is currently vacant, and no wastewater is being produced at this time. Full build-out of Alternative 2 would create more than 60,000 square feet of retail space. Based on standard multipliers for retail land uses, it is projected that the proposed retail space would produce 7,259 gpd of wastewater (see Table 5.8-2).

Operation and Management

Similar to Alternative 1, wastewater flows generated under Alternative 2 would represent less than 1 percent of the town's 2.1 mgd treatment allotment. The City of Newport's wastewater treatment plant has a current capacity of 10.7 mgd and processes 9.46 mgd. With implementation of the sewer improvements discussed above under Alternative 1, additional capacity may be realized by reducing the amount of the current wastewater treated, thus allowing for accommodation of the additional wastewater treatment required under Alternative 2. Therefore, the projected increase in wastewater demand would represent a minor impact on operation and maintenance of the City of Newport's wastewater treatment and collection system. However, the future developer would need to coordinate with the three local municipalities and their utility providers to identify an alternative for wastewater treatment if the allocation from the City of Newport is exceeded at the time of redevelopment.

Collection System

Under Alternative 2 and similar to Alternative 1, wastewater flows from the Navy Lodge property would be discharged into the Town of Middletown's sewer system. The Wave Avenue pumping station that serves the area surrounding the property is currently operating at capacity and additional wastewater would have to be directed towards the Coddington Highway pumping station (RKG Associates, Inc. et al. August 2011). The costs of connecting the property and surrounding parcels to the Coddington Highway gravity sewer are estimated to be between $150,000 and $200,000 for a dedicated pump station and force main (Vanasse Hanglin Brustline, Inc. and RKG Associates, Inc. 2011). The Town of Middletown estimates that needed upgrades to the Coddington Highway Pumping station would cost between

$750,000 and $1,000,000 (Vanasse Hanglin Brustlin, Inc. and RKG Associates, Inc. 2011). This would be considered a moderate impact. Ground would be disturbed when laying new collection lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new collection system(s) would be constructed to ensure that they are adequately sized.

In summary, as with Alternative 1, Alternative 2 would result in an increase in demand on wastewater capacity and a need for infrastructure. New wastewater distribution infrastructure would be constructed to accommodate redevelopment.

5.8.2.3 Storm Water

Implementation of Alternative 2 would increase the amount of impervious surface area on the property, resulting in a greater volume of storm water runoff. Impervious surface is expected to be created by construction of the proposed retail space, associated parking, and access to the property. Currently, the amount of impervious surface area is minimal. Full build-out under Alternative 2 is estimated to result in a total of 91,500 square feet of impervious surface area—30,500 square feet from the retail structure, 47,900 from parking areas, and 13,100 from access roads. The amount of impervious surface area is shown in Table 5.8-3. This would be an addition of approximately 90,890 square feet to the existing conditions (approximately 610 square feet). (For more information on the methodology and assumptions used to calculate existing and future impervious surface, see Appendix D-4.)

Similar to Alternative 1, compliance with local and state storm water management regulations would be necessary. The Town of Middletown requires development of a storm water management plan before a building permit can be obtained, as per Chapter 153, Stormwater Management Ordinance. The storm water management plans shall describe measures to control the volume and quality of storm water runoff and shall incorporate BMPs for water quality control, as described in the *Rhode Island Stormwater Design and Installation Standards Manual*. Additionally, the storm water management plan must demonstrate soil and erosion control in accordance with the Town of Middletown Construction Site Runoff Ordinance (Chapter 151) and the *Rhode Island Soil Erosion and Sediment Control Handbook*.

A General Permit—Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity—would also be necessary because redevelopment of the former Navy Lodge would disturb more than 1 acre. Prior to approval of a Construction General Permit, RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. Lastly, as discussed above under Alternative 1, Section 438 would not apply to redevelopment of the former Navy Lodge property. However, as outlined in *Rhode Island Stormwater Design and Installation Standards Manual*, using LID techniques are required as a primary method of storm water control (RIDEM and CRMC 2010). Thus, although not required through federal ownership of the property, it is expected that redevelopment of the former Navy Lodge property would be consistent with the terms contained in Section 438 of the EISA.

Storm Water System

The existing storm water collection system may require modifications, and new storm water infrastructure may be necessary to offset new impervious surfaces associated with redevelopment under this alternative. Ground would be disturbed during construction of new infrastructure, and the developer would be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future developer would be required to identify any infrastructure requirements that may be necessary.

Operation and Management

Under Alternative 2, the property would likely be transferred to a non-federal agency and infrastructure would no longer be managed by the Navy. Upon completion of the BRAC disposal process, the future property owner would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 2 would result in a significant increase in impervious surface area and new storm water infrastructure would be required; however, through compliance with state and local regulations and permit conditions regarding storm water management, the impact would be considered minor.

5.8.2.4 Other Utility Systems

Electricity

National Grid would continue to supply electricity to the property. Under full build-out of Alternative 2, it is expected total electricity demand would be 876,071 kWh, based on U.S. averages for energy use per square foot obtained from the U.S. Department of Energy's EIA for specific types of building use. These averages were used to estimate total energy use by the proposed new building spaces. (The same assumptions have been applied in Section 5.6, Air Quality.)

As discussed under Alternative 1, the Town of Middletown consumed 116 million kWh in 2011. The 2011 electric consumption represented a decrease from 2010 but was still an increase over the levels used in 2009. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade.

The annual electricity demand of Alternative 2 would represent less than three-quarters of a percent of 2011 energy usage in the Town of Middletown and less than a quarter of a percent of total annual energy usage for Newport, Middletown, and Portsmouth combined (Rhode Island Energy 2012). Considering the 0.8 percent future annual growth rate in electricity demand at the state level, and the fact that Aquidneck Island comprises approximately 5.5 percent of the state's overall population, the annual growth rate for electricity demand would be expected to be far less than 0.8 percent. Therefore, the additional electricity demand resulting from redevelopment of the former Navy Lodge property under Alternative 2 would be expected to be supported by current electrical capacity and would represent a negligible impact on regional demand. However, the future developer would need to coordinate with the three local municipalities and National Grid to identify an alternative for electricity provision if, at the time of redevelopment, regional capacities are exceeded.

Similar to Alternative 1, all electrical connections would be constructed to ensure an adequately sized and properly built electric transmission and conveyance system; construction of new systems would be associated with ground disturbance. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

Natural Gas

National Grid would continue to supply natural gas to the property. It is expected that a total of 2,037,400 cf of natural gas would be needed each year under full build-out of Alternative 2. An abandoned 2-inch gas pipe connects the property to a main on Coddington Highway. This pipe would need to be extended or replaced, depending on the position of the shopping center. Upon completion of the BRAC disposal process, the future developer would work with National Grid to identify any infrastructure requirements that may be necessary.

The quantity of natural gas needed under Alternative 2 for redevelopment proposed for the former Navy Lodge property represents less than one-one thousandth of a percent of the amount consumed in Middletown in 2011 and is not anticipated to create a strain on resources (Rhode Island Energy 2012). It would represent a negligible impact on regional demand.

Similar to Alternative 1, all natural gas connections would be constructed to ensure an adequately sized and properly built gas transmission and conveyance system; construction of new systems would be associated with ground disturbance. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

5.8.2.5 Solid Waste

Approximately 540 cy of C&D wastes would be generated from the construction activities that are planned for redevelopment of the former Navy Lodge property under Alternative 2 (see Appendix D-2). Those wastes would consist of wood, concrete, masonry, metal, building materials, and mechanical components. Much of the C&D waste would be recyclable, as described under Alternative 1. Solid wastes would be routinely generated by the retailers or their management/service contractors, as described under Alternative 1. There would be a minor impact associated with solid waste management under Alternative 2.

5.8.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property, there would be no demand for water, electricity, or natural gas, nor would wastewater or solid waste be generated. Some storm water runoff would occur from the existing approximately 610 square feet of impervious surface area.

5.9 Cultural Resources

As discussed in Section 3.9, NEPA guidance requires the evaluation of impacts of a proposed action on cultural resources, including archaeological resources and architectural or built resources (see Sections 5.9.1.1 and 5.9.1.2, respectively) as well as Native American resources (see Section 5.9.1.3). The Navy has also evaluated the potential impacts of the proposed action in terms of their effects on cultural resources that are historic properties, pursuant to Section 106 of the NHPA (see Section 5.9.1.4).

5.9.1 Alternative 1 (Preferred Alternative)

5.9.1.1 Archaeological Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and determined that Alternative 1 would have no impacts on archaeological resources because none are present within the APE at the former Navy Lodge property.

5.9.1.2 Architectural Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and determined that Alternative 1 would have no impacts on architectural resources. Under Alternative 1, once the former Navy Lodge property has been transferred out of Navy ownership, the existing utility shed and the concrete pad would remain on the property.

5.9.1.3 Native American Resources

As indicated in Section 4.9.1.3, the Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at the former Navy Lodge property: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

5.9.1.4 NRHP-Listed or -Eligible Historic Properties

Under Alternative 1, the transfer of the former Navy Lodge property out of federal ownership or control would have no effect on historic properties as none are located within the property. The Navy consulted with the Rhode Island SHPO regarding the lack of historic properties (archaeological or architectural) at the former Navy Lodge property (Lin 2013). The Rhode Island SHPO concurred that transfer of the former Navy Lodge property out of federal ownership or control would have no effect on historic properties (Sanderson 2013b).

5.9.2 Alternative 2

5.9.2.1 Archaeological Resources

The NEPA impacts of Alternative 2 on archaeological resources are the same as those identified for Alternative 1.

5.9.2.2 Architectural Resources

The NEPA impacts of Alternative 2 on architectural resources are the same as those identified for Alternative 1.

5.9.2.3 Native American Resources

The NEPA impacts of Alternative 2 on Native American resources are the same as those identified for Alternative 1.

5.9.2.4 NRHP-Listed or -Eligible Historic Properties

The Section 106 effects of Alternative 2 on historic properties are the same as those identified for Alternative 1.

5.9.3 No Action Alternative

The Navy has evaluated the potential impacts of the No Action alternative under NEPA and determined that the No Action alternative would have no impacts on archaeological resources because none are present. It would have no impacts on architectural resources because there would be no redevelopment of the property. The Navy has evaluated the Section 106 effects of the No Action alternative and determined that the No Action alternative would have no effect on historic properties within the APE at the former Navy Lodge property because none are present.

5.10 Topography, Geology, and Soils

This section summarizes the potential impacts on topography, geology, and soil resources resulting from the implementation of Alternative 1, Alternative 2, and the No Action alternative at the former Navy Lodge property.

5.10.1 Alternative 1 (Preferred Alternative)

The majority of proposed development would be located in areas that have been previously developed by the Navy (buildings have been removed; the site is currently vacant land). Therefore, implementation of

Alternative 1 would be expected to result in minor long-term impacts on topography, geology, and soil resources (e.g., due to construction of new buildings, parking lots, utilities).

5.10.1.1 Topography

As a result of previous development associated with this site, the topography is relatively flat. Based on the proposed development, the flat topography would be maintained and impacts on topography would be minor.

5.10.1.2 Geology

Alternative 1 would not impact geologic resources at the former Navy Lodge property.

5.10.1.3 Soils

The majority of redevelopment proposed under Alternative 1 would be concentrated on approximately 1.8 acres of land in areas that have already been developed by the Navy. Since a lodge previously existed on this property and a small utility building currently exists on the property, it is assumed that urban/man-made soils located within these areas have been modified from their original condition. Therefore, implementation of Alternative 1 would be expected to have both temporary and permanent minor impacts, based on the size of the redevelopment footprint at full build-out as new structures and supporting infrastructure are constructed.

Erosion Potential

All soil types located at the former Navy Lodge have the potential to be impacted by development, including erosion from wind, water, and construction activities. The soil erosion potential for the Newport-Urban land complex is moderate. The soil erodibility factor is 0.24 at depths of 24 to 30 inches, which means the soils are moderately susceptible to detachment and they produce moderate runoff (USDA 2012; IWR 2002). No erosion potential was listed for Urban land (USDA 2012). To varying degrees, all such soils may require specific measures to control soil erosion and limit runoff of sediment during clearing and construction activities. In addition, construction activities (clearing, grading, landscaping, and movement of equipment, material, and vehicles) would expose soils to wind and storm water erosion, compaction, and rutting.

Soils would be impacted during implementation of Alternative 1, but the impact would be mitigated through the implementation of temporary erosion and sediment control measures during construction, permanent storm water management measures, and appropriate building site location and design. Because existing vegetation is limited to maintained grass and because the topography of the site is flat, there would be no need to stabilize slopes after vegetation is removed.

Additionally, to mitigate these impacts, it is expected that the developer would implement appropriate erosion and sediment control measures at construction and demolition sites in accordance with *Rhode Island's Soil Erosion and Sediment Control Handbook* (RIDEM et al. 1989) and other applicable state laws. The handbook provides descriptions of structural measures (e.g., grassed waterway, sediment basin, riprap, etc.) and non-structural measures (e.g., mulching, placing topsoil, silt curtains, etc.). RIDEM requires a General Permit—Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity—for projects that disturb more than 1 acre (RIDEM 2013c). Prior to approval of a Construction General Permit, RIDEM requires submittal of an NOI and a SWPPP that must include a discussion of erosion and sediment controls. This permit is discussed further in Section 5.11.

Farmland

The former Navy Lodge property contains soils that are neither prime nor state-wide important soils (not rated for farmland).

Hydric Soils

The soils at the former Navy Lodge property are non-hydric soils; however, non-hydric soils can contain hydric inclusions and vice versa. However, new construction under Alternative 1 could impact hydric soils (if the non-hydric soils contained hydric inclusions). Hydric soils may require special measures during construction or other uses to overcome limitations caused by wetness. Limitations may include a high water table or low strength for supporting construction equipment and structures. Hydric soils may also present limitations to development activities (e.g., excavation and movement of heavy equipment) due to wet conditions.

Constructability

The restrictions or constraints on commercial development at the former Navy Lodge property include a restrictions on developments with on-site septic systems in Newport-Urban land complex soils and the Urban land soils; however, on-site septic is not anticipated as part of redevelopment. The more common sources of constructability limitations for the soils include shallow excavations (slight limitations due to dense to very dense soils), moderate frost action, and a moderate slope. The moderate frost action is unfavorable, but limitations can be overcome or minimized by special planning or design. The Newport-Urban land complex soils are also dense to very dense, which makes excavation difficult. However, because much of the area where those soils are located may be modified, it is not possible to determine the magnitude or severity of the limitations based on available information. Prior to construction, engineering evaluations will be completed and appropriate engineering techniques identified to mitigate any soil limitations.

Organic Soils

None of the soils located at the former Navy Lodge property are listed as organic soils.

In summary, there would be minor impacts on soils under Alternative 1, and mitigation would reduce any temporary impacts. Mitigation would include implementation of appropriate erosion and sediment control measures in accordance with local and state laws and the Construction General Permit, as discussed in detail above.

5.10.2 Alternative 2

Similar to Alternative 1, the majority of proposed development would be located in areas that have been previously developed by the Navy. Therefore, implementation of Alternative 2 would result in minor temporary impacts on topography, geology, and soils due to redevelopment of the property (e.g., construction of new buildings, parking lots, utilities).

5.10.2.1 Topography

Impacts on topography under Alternative 2 would be similar to those discussed above for Alternative 1.

5.10.2.2 Geology

Alternative 2 would not impact the geologic resources at the former Navy Lodge property.

5.10.2.3 Soils

Implementation of Alternative 2 would be expected to have similar impacts on soils as described for Alternative 1, including impacts associated with erosion potential, hydric soils, and constructability. As with Alternative 1, the proposed redevelopment would be concentrated in areas that have been previously

developed by the Navy. The building footprints for Alternative 2 would be the same as under Alternative 1; because the buildings are two stories under Alternative 2, additional parking would be provided under Alternative 2. Therefore, Alternative 2 would result in approximately 2.1 acres of disturbance associated with the redevelopment footprint, compared with 1.8 acres under Alternative 1. There would be minor impacts on soils. The same mitigation measures discussed for Alternative 1 would be implemented under Alternative 2 to minimize soil impacts.

5.10.3 No Action Alternative

The No Action alternative is retention of the surplus property at the former Navy Lodge property by the U.S. government in caretaker status. No reuse or redevelopment would occur at any of the property. As a result, the No Action alternative would be expected to have no direct or indirect impacts on topography, geology, or soils.

5.11 Water Resources

This section summarizes the potential environmental impacts on water resources resulting from implementation of Alternative 1, Alternative 2, and the No Action alternative at the former Navy Lodge property. It includes a discussion of surface water, water quality, groundwater, floodplains, wetlands, and proposed mitigation measures.

5.11.1 Alternative 1 (Preferred Alternative)

5.11.1.1 Surface Water

No surface water resources exist at the former Navy Lodge property (see Figure 4.11-2), and redevelopment of the former Navy Lodge property would have only a minor indirect impact on a nearby surface water. Indirect impacts on surface waters near this property (i.e., Bailey's Brook) in the form of erosion or sedimentation could temporarily result from construction activities. Bailey's Brook is the nearest waterbody, located approximately 1,000 feet to the east. The distance between the former Navy Lodge property and Bailey's Brook, coupled with the implementation of BMPs, indicate that indirect impacts would be anticipated to be negligible. Redevelopment would require compliance with applicable local and state laws and regulations pertaining to storm water management. These include the Town of Middletown's Stormwater Management Ordinance, the Town of Middletown's Construction Site Runoff Ordinance, and the RIDEM General Construction Permit. All of these are discussed above in Section 5.8.1.3 and Section 5.11.1.2 below.

5.11.1.2 Water Quality

Full build-out of Alternative 1 is projected to result in a total of 1.8 acres (78,400 square feet) of impervious surface area, which would predominantly comprise building roofs and parking areas. This would be a net increase of approximately 1.79 acres above existing conditions (0.01 acre) (see Section 5.8.1.3 for more detail). The additional impervious surface area would generate a long-term increase in precipitation runoff into the watershed and, ultimately, to waterbodies in the area, including Bailey's Brook and Narragansett Bay. It would be expected that full build-out would have a minor impact since the proposed redevelopment is located within a highly developed area, and storm water runoff would be collected into a storm water management system (see Section 5.8.1.3). (For more information on the methodology, assumptions, and calculations used to project the impervious surface area resulting from implementation of Alternative 1, see Appendix D-4.)

The developer would be required to follow all applicable state and local laws to reduce impacts on water quality from storm water runoff. These include the Town of Middletown's Stormwater Management Ordinance and the Town of Middletown's Construction Site Runoff Ordinance, Chapters 151 and 153 of the town code, respectively.

In accordance with these ordinances and prior to redevelopment, the developer would be required to receive a permit from the Town of Middletown. Chapter 153 requires storm water management controls that are consistent with the Rhode Island Stormwater Design and Installation Standards Manual (as amended) (RIDEM and CRMC 2010) and erosion and sediment controls in accordance with both Chapter 151 of the Town Code (Town of Middletown Planning Department 2006) and the Rhode Island Soil Erosion and Sediment Control Handbook (as amended) (RIDEM et al. 1989). Additionally, a General Construction Permit would be required from RIDEM for disturbing more than 1 acre of land. Compliance with these laws and regulations and implementation of BMPs would result in minor impacts on water quality due to storm water runoff.

5.11.1.3 Groundwater

As described in Section 4.11.3, the water table is less than 6 feet from the surface for the primary soil type at the former Navy Lodge property. Construction activities could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion and sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMPs as set forth in the Rhode Island Stormwater Design and Installation Standards Manual (RIDEM and CRMC 2010). Minor impacts on groundwater would result; mitigation would reduce adverse construction impacts.

5.11.1.4 Floodplains

Implementation of Alternative 1 would not result in any impacts on floodplains at the former Navy Lodge property because there are no FEMA-delineated floodplains on the property.

5.11.1.5 Wetlands

Alternative 1 would not result in any impacts on wetlands at the site. No wetlands are within the boundaries of the former Navy Lodge property.

5.11.2 Alternative 2

5.11.2.1 Surface Water

Impacts on surface water under Alternative 2 would be similar to those discussed under Alternative 1.

5.11.2.2 Water Quality

Full build-out of Alternative 2 is projected to result in a total of 2.1 acres (91,500 square feet) of impervious surface area, which would predominantly comprise building roofs and parking areas. This would be a net increase of approximately 2.09 acres over existing conditions (0.01 acre) (see Section 5.8.2.3 above for more detail). The additional impervious surface area would generate a long-term increase in precipitation runoff into the watershed and ultimately into waterbodies in the area, including Bailey's Brook and the Narragansett Bay. It is expected that full build-out would have a minor impact since the proposed redevelopment is located within a highly developed area and storm water runoff would be collected into a storm water management system (see Section 5.8.2.3). (For more information on the methodology, assumptions, and calculations used to project the impervious surface area resulting from implementation of Alternative 2, see Appendix D-4.)

The developer would be required to follow all applicable state and local laws as discussed for Alternative 1 to decrease impacts on water quality from storm water runoff. Compliance with these laws and

regulations and implementation of BMPs would result in minor impacts on water quality from storm water runoff.

5.11.2.3 Groundwater

Similar to Alternative 1, implementation of Alternative 2 would result in construction activities that could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMPs as set forth in the Rhode Island Stormwater Design and Installation Standards Manual (RIDEM and CRMC 2010). Minor impacts on groundwater would result; mitigation would reduce adverse construction impacts.

5.11.2.4 Floodplains

Implementation of Alternative 2 would not result in any impacts on floodplains at the former Navy Lodge property because there are no FEMA-delineated floodplains on the property.

5.11.2.5 Wetlands

Alternative 2 would not result in any impacts on wetlands at the site because there are no wetlands within the boundaries of the former Navy Lodge property.

5.11.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property, there would be no impacts on water resources from redevelopment. Some storm water runoff would occur from the existing approximately 610 square feet of impervious surface area.

5.12 Biological Resources

This section summarizes the potential impacts on biological resources from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of impacts on vegetation, wildlife, threatened and endangered species, and significant wildlife habitat from disposal and reuse of the former Navy Lodge property.

GIS analysis was used to determine the extent of potential impacts on vegetation communities and wildlife habitat from implementation of the redevelopment alternatives (see Section 2 for more information on the proposed redevelopment).

Upon completion of the BRAC disposal process under both Alternatives 1 and 2, any future reuse of the former Navy Lodge property would be required to comply with local, state, and federal laws and regulations pertaining to biological resources.

5.12.1 Alternative 1 (Preferred Alternative)

5.12.1.1 Vegetation

Alternative 1 would result in conversion of approximately 60 percent of the 3-acre former Navy Lodge property from maintained grass to redeveloped land. This would require the permanent removal of grassed areas—a direct impact—to accommodate the new retail building and associated parking and

access. However, because the quality of the habitat provided by maintained grass is low, this conversion is considered a minor impact. Approximately 1.2 acres of the site would be maintained as open space. Temporary indirect impacts on the grass in the form of temporary disturbance could occur during construction. The maintained grass would remain as open space following redevelopment, but it is located next to areas slated for construction. However, any temporarily disturbed areas designated to remain as open space following redevelopment would be restored back to either maintained grass or other maintained conventional landscaping.

5.12.1.2 Wildlife

Terrestrial Mammals

As indicated above, approximately 1.8 acres of maintained grass would be removed as part of the redevelopment associated with Alternative 1. Wildlife that use this habitat would be forced to migrate to other areas with suitable habitat. However, given the lack of habitat diversity at the former Navy Lodge property, permanent removal of the maintained grass is expected to be a minor impact on local wildlife.

Wildlife species may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Species that would be most affected include those with relatively small home ranges, such as small mammals. During construction, short-term impacts may include displacement of mobile species such as eastern gray squirrel, common raccoon, Virginia opossum, white-footed mouse, woodchuck, and striped skunk. These species would avoid areas of construction where equipment and human activities create disturbance.

Herpetofauna

Alternative 1 would not result in any impacts on herpetofauna. There is no suitable habitat for herpetofauna on the site, and no herpetofauna are present.

Avian Species

Short-term impacts on avian species, such as displacement, may result during Alternative 1 construction activities. Birds would avoid areas of construction where equipment and human activities create disturbance. However, because habitat diversity is limited, large numbers of birds are not expected to be present or to use the site for stopover or foraging habitat. In May of 2015, the USFWS initiated a NEPA review of alternatives to authorize take under the MBTA. At the time of the publication of this Draft EIS, it is uncertain if the future implementation of the Redevelopment Plan under Alternative 1 may require a take permit under the MBTA. The future developer would be required to minimize impacts on migratory birds as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. Pursuant to the MBTA and BGEPA, the Navy has determined that implementation of Alternative 1 would have minor impacts on avian species and the disposal and reuse of the former Navy Lodge property would not result in significant impacts on, or harm of, migratory birds and bald and golden eagles.

5.12.1.3 Threatened and Endangered Species

As discussed in Section 4.12.1.3, no federally listed or state-listed threatened and endangered species occur at the former Navy Lodge property (Chapman 2013; Jordan 203). The USFWS designated the northern long-eared bat as a threatened species under the ESA, effective May 4, 2015. However, no northern long-eared bat habitat exists at the former Navy Lodge property. As such, construction and operation of the redevelopment proposed under Alternative 1 would not impact federally listed or state-listed threatened and endangered species.

5.12.1.4 Significant Wildlife Habitat

Submerged Aquatic Vegetation
There is no SAV habitat at the former Navy Lodge property. Alternative 1 would not result in any impacts on SAV at the former Navy Lodge property.

Wetlands
Alternative 1 would not result in any impact on wetlands. The site does not contain wetlands or special aquatic habitats.

Vernal Pools
Alternative 1 would not have any impact on vernal pools. The site does not contain any vernal pools.

Essential Fish Habitat
Alternative 1 would not have any impact on EFH. The site does not contain any EFH.

5.12.2 Alternative 2

5.12.2.1 Vegetation

Compared to Alternative 1, Alternative 2 would result in approximately 0.2 additional acres of impact on the existing grassland habitat cover at the former Navy Lodge property, for a total of 2 acres of permanently removed grassed areas. However, because of the low quality of the habitat provided by maintained grass, this conversion is considered a minor impact. Approximately 1 acre of the site would be maintained as open space. Maintained grassy areas that would remain as open space following redevelopment could experience temporary indirect impacts during construction if located next to areas slated for construction. However, any temporarily disturbed areas designated to remain as open space following redevelopment would be restored back to either maintained grass or other maintained conventional landscaping.

5.12.2.2 Wildlife

Terrestrial Mammals
As indicated above, approximately 2 acres of maintained grass would be removed as part of the redevelopment associated with Alternative 2. Wildlife species that use this habitat would be forced to migrate to other areas with suitable habitat. However, given the lack of habitat diversity at the former Navy Lodge property, permanent removal of the maintained grass is expected to be a minor impact.

Wildlife species may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Species that would be most affected include those with relatively small home ranges, such as small mammals. During construction, short-term impacts may include displacement of mobile species such as eastern gray squirrel, common raccoon, Virginia opossum, white-footed mouse, woodchuck, and striped skunk. These species would avoid areas of construction where equipment and human activities create disturbance.

Herpetofauna
Alternative 2 would not result in any impacts on herpetofauna. There is no suitable habitat for herpetofauna on the site, and no herpetofauna are present.

Avian Species

Similar to Alternative 1, short-term impacts on avian species, such as displacement, may result during construction of Alternative 2. Birds would avoid areas of construction where equipment and human activities create disturbance. However, due to the limited habitat diversity present at the former Navy Lodge property, large numbers of birds are not expected to be present or to use the site for stopover or foraging habitat. Pursuant to the MBTA and BGEPA, the Navy has determined that implementation of Alternative 2 would have minor impacts on avian species and the disposal and reuse of the former Navy Lodge property would not result in significant impacts on, or harm of, migratory birds and bald and golden eagles. The future developer would be required to minimize impacts on migratory birds as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.

5.12.2.3 Threatened and Endangered Species

As discussed in Section 4.12.1.3, no federally listed or state-listed threatened and endangered species occur at the former Navy Lodge. As such, construction and operation of the development proposed under Alternative 2 would not impact federally listed or state-listed threatened and endangered species.

5.12.2.4 Significant Wildlife Habitat

Submerged Aquatic Vegetation

There is no SAV habitat at the former Navy Lodge property. Alternative 2 would not result in any impacts on SAV at the former Navy Lodge property.

Wetlands

Alternative 2 would not result in any impact on wetlands. The site does not contain wetlands or special aquatic habitats.

Vernal Pools

Alternative 2 would not have any impact on vernal pools. The site does not contain any vernal pools.

Essential Fish Habitat

Alternative 2 would not have any impact on EFH. The site does not contain any EFH.

5.12.3 No Action Alternative

No reuse or redevelopment would occur at any portion of the property. As a result, the No Action alternative would be expected to have no direct or indirect impacts on biological resources such as vegetation, wildlife, threatened and endangered species, or significant wildlife habitat. The grass at the former Navy Lodge property would be maintained by periodic mowing; however, this periodic mowing would not result in any adverse impacts on biological resources.

6 Former Naval Hospital Existing Conditions

6.1 Land Use, Zoning, and Coastal Resources

This section summarizes existing land uses at the former Naval Hospital property. A discussion of the land uses and zoning districts surrounding the property and the plans and regulations that guide or direct the development of this land also is provided.

6.1.1 On-Site Land Use

The former Naval Hospital property is located on the western shore of Aquidneck Island, at the southern end of NAVSTA Newport in the City of Newport. The property occupies 8.3 acres of land and 6.9 acres of offshore riparian rights in Narragansett Bay. The site is bounded by Dorsey Road to the north, Cypress Street to the south, Third Street to the east, and the Bay to the west (see Figure 6.1-1). Construction of the Naval Hospital began in 1913 and continued through World War II. When the New England Naval Medical Center was built in 1993, the main building, Building 1, was converted to administrative use. As indicated in Section 1.3, from 1913 through 2007 the Naval Hospital provided outpatient services for Naval shore activities and fleet operating forces at NAVSTA Newport, dependents of armed service personnel, and others authorized for treatment.

Six buildings are on the site—the main hospital building (Building 1) and five administration or storage buildings—and a pier. Building 1, the former main hospital building, is the largest structure at more than 147,000 square feet; Building 1 includes Buildings A72 and 1189. Building 7 was the former morgue and was also used for housekeeping and storage. Building 45, at more than 30,000 square feet, is the second largest building and was used as the former nurses' quarters as well as for drug and alcohol rehabilitation. Buildings 63 and 993 are detached garages and an emergency generator, respectively. Quarters A and B are the former housing units. All of the buildings on the site were vacated by 2007. The buildings and associated parking lots and access driveways cover approximately 4.3 acres of the site (52 percent of the property). The remaining 3.9 acres of the site consist of open space (48 percent of the property). The pier—Pier 71—is the only structure that extends offshore of the site. The site is within the NAVSTA Newport fence line.

6.1.2 Surrounding Land Use

The study area for surrounding land uses includes the area within 0.25 miles of the boundaries of the site (see Figure 6.1-1). Land adjacent to the north of the former Naval Hospital property is part of the NAVSTA Newport main base and contains Navy facilities, parking areas, and maintained open space. This area of the base is designated in the NAVSTA Newport Vision 2035 Master Plan for "medical/dental" land use and includes the Naval Health Clinic New England, which comprises the installation's medical clinic and dental clinic (EDAW/AECOM 2008). These areas are currently gated and designated as restricted access; access is provided through a manned gate. Land adjacent to the east and south of the site is not owned by the Navy and is developed with high-density residential and open space land uses (see Figure 6.1-1). Narragansett Bay is located west of the site. Navy personnel and community support facilities on NAVSTA Newport, including the station's morale, welfare, and recreation (MWR) marina, are located across Narragansett Bay on Coasters Harbor Island. The study area west of the former Naval Hospital property is occupied primarily by the Pell Bridge interchange and associated open space.

6.1.3 Land Use Plans and Zoning

Land surrounding the former Naval Hospital property is in the City of Newport's jurisdiction. Land use and development in the city is regulated by the city's zoning code (Newport Codified Ordinance Chapter

17) and guided by the City of Newport's *Comprehensive Land Use Plan* (City of Newport 2004). In addition, the former Naval Hospital property is included in the study area analyzed in the City of Newport's *2006 North End Master Plan*. The site also is included in the study area considered in the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005).

City of Newport Zoning Code. The former Naval Hospital property is located in the city's Residential R-10 zoning district (RKG Associates, Inc. et al. 2011). The intent of this zoning is to provide for medium-density residential development outside of the high-density residential uses in the city's urban core (Newport Codified Ordinance Section 17.20.010). The following uses are permitted by right in the Residential R-10 zoning district: single-family dwellings, two-family dwellings, home occupations, churches and places of worship, nursery schools/day care centers, parks and playgrounds/playing fields, community residences, family day care homes, municipal and public service corporation buildings and facilities, and accessory uses associated with these permitted uses. The following uses require a special use permit: multi-family dwellings; guest houses; libraries; museums; cemeteries; community institutions; agricultural and horticultural societies; schools of limited instruction; hospitals; convalescent and rest homes; undertaker's establishments; clubs for outdoor recreation; neighborhood parking lots; nonprofit multi-family housing for the elderly and/or handicapped; and federal, state, and municipal buildings.

The zoning regulations for this district include dimensional requirements meant to preserve appropriate residential densities. Minimum lot size in the district is 10,000 square feet, and building coverage on a lot must not exceed 20 percent (Newport Codified Ordinance Sections 17.20.030 and 17.20.050).

City of Newport Comprehensive Land Use Plan. The city's comprehensive plan identifies future land use on the former Naval Hospital property as "Medium Density Residential (<1/4 to 1 acre lots)" (City of Newport 2004). This designation reflects the existing zoning of the site, and the guidelines for land uses in medium density residential areas largely follow the regulations included in the city's zoning ordinance. The comprehensive plan notes that medium-density residential areas are "located on the fringe of the high-density residential and [serve] as a buffer to the low-density residential. Commercial uses are not allowed with the exception of home occupations" (City of Newport 2004). Because the city largely is developed, the guidelines for future land uses presented in the comprehensive plan closely follow existing development patterns and zoning, with some exceptions where there are opportunities for redevelopment of larger properties (City of Newport 2004).

The comprehensive plan addresses reuse and redevelopment of the surplus Navy properties, including the former Naval Hospital property. Several goals and policies identified by the city in the comprehensive plan are relevant to the proposed action at the former Naval Hospital property. One of the city's goals is to "protect Newport's historic character and natural and cultural resources" and the city's policy is to preserve areas of historic significance (City of Newport 2004). The city's stated goal is that redevelopment of surplus Navy property should be compatible with surrounding land uses and should meet the city's economic and housing needs. According to the comprehensive plan, reuse of surplus property should be compatible with NAVSTA Newport, contribute to the city's tax base, and maintain public access to waterfront property.

2006 North End Master Plan. The City of Newport developed the *2006 North End Master Plan* to provide a coordinated planning strategy to take advantage of potential short-term and long-term development opportunities in the North End area that could arise from reconfiguration of the Pell Bridge interchange and transfer of the former Naval Hospital property. The master plan recommends housing and hotel land uses on the former Naval Hospital property, including 100 housing units, 100 hotel rooms,

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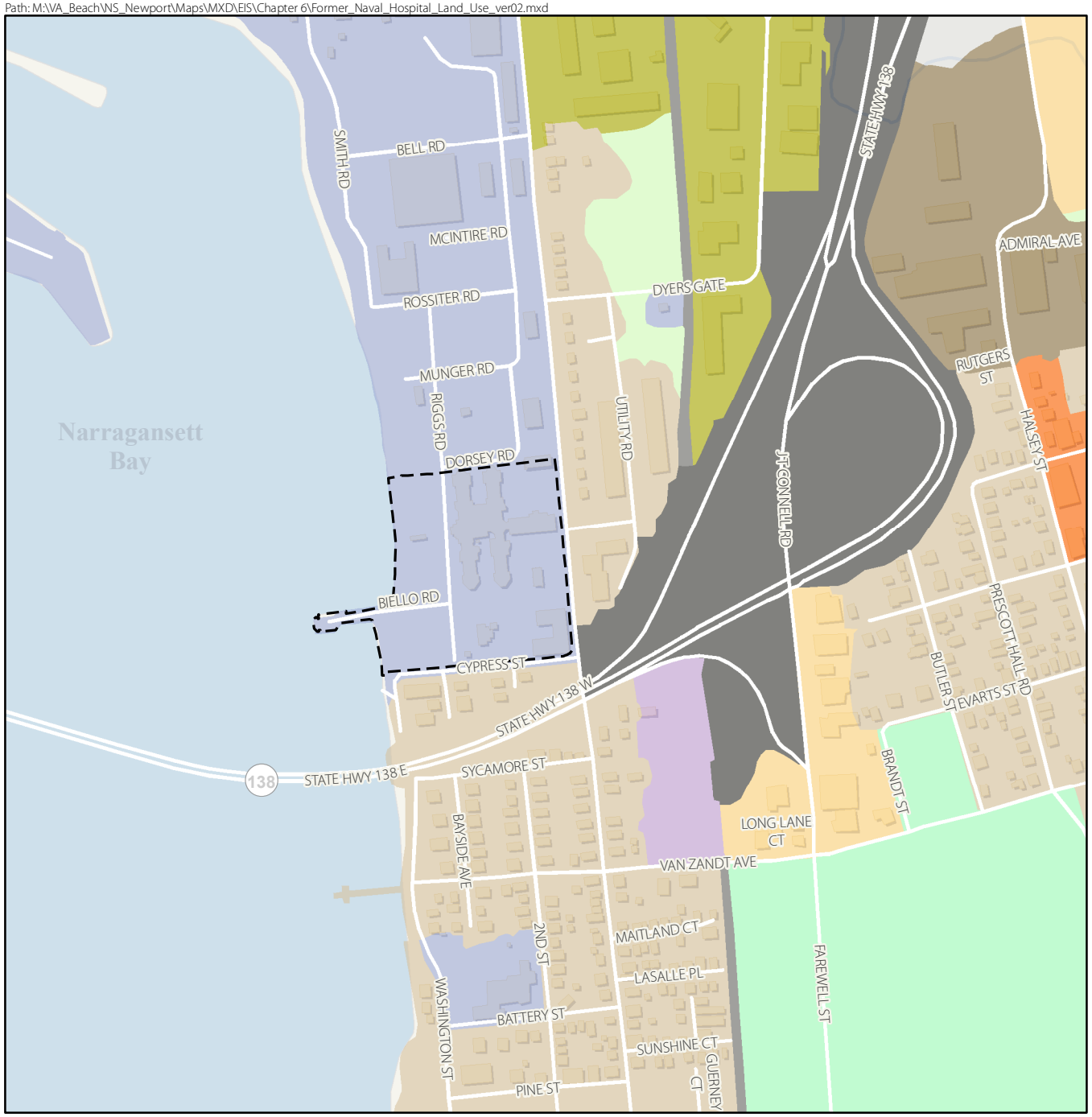

Figure 6.1-1

Former Naval Hospital Property Existing Land Use and Surrounding Land Use

NAVSTA Newport, Rhode Island

Legend

Property Boundary

Land Use

- Cemeteries
- Brushland (shrub and brush areas, reforestation)
- Developed Recreation (all recreation)
- Commercial/Residential Mixed
- Commercial (sale of products and services)
- Commercial/Industrial Mixed
- Industrial (manufacturing, design, assembly, etc.)
- High Density Residential (<1/8 acre lots)
- Institutional (schools, hospitals, churches, etc.)
- Roads (divided highways >200' plus related facilities)
- Railroads (and associated facilities)
- Vacant Land

SCALE

0 200 400 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: Sanborn Map Company 2007; Aquindneck Island Planning Commission 2013

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surface parking, a waterfront park, a public and private marina, and a walkway and bikeway from Third Street to Washington Street along the waterfront and along the northern boundary of the site. The master plan also recommends use of the pier as a public pier with a water shuttle dock. The master plan highlights the fiscal and employment benefits that would be provided by the recommended redevelopment and reuse of the former Naval Hospital property (City of Newport 2006).

In a separate but related planning effort, the City of Newport is proposing to develop an area of the city's North End as the Newport Innovation Hub in partnership with state and federal agencies such as the Chamber of Commerce, RIDOT, the Rhode Island Turnpike and Bridge Authority, Statewide Planning, and the Navy (City of Newport n.d.[b]). Creation of the Innovation Hub as a means to diversify the city's employment base was adopted as city policy with adoption of the city's 2004 comprehensive plan (City of Newport n.d.[c]). The Innovation Hub area includes the former Naval Hospital property (City of Newport n.d.[b]). A development plan for the Innovation Hub area is still in progress but will guide development of properties surrounding the former Naval Hospital property in the future. The current vision for the Newport Innovation Hub is to create a scientific and technological center that focuses on oceanographic research, defense/cyber applications, environmental technology, alternative energy, emerging digital industries, and community resilience (City of Newport 2015). No detailed schedule information is available for the project. The city is working to identify potential funding and will be updating its Comprehensive Plan to incorporate the planning goals and objectives of the Innovation Hub into the new Comprehensive Plan (City of Newport 2014a).

Aquidneck Island West Side Master Plan. The Aquidneck Island Planning Commission cites the need to plan for the reuse of surplus Navy properties as one of the reasons for preparing the *Aquidneck Island West Side Master Plan*. The former Naval Hospital property is located in the southern part of the planning area.

The primary land use goals laid out in the Aquidneck Island master plan include minimizing sprawl, planning for reuse of surplus Navy property, and diversifying land use. Accordingly, the overall recommendation for future land uses in the west side planning area is for "targeted, mixed-use redevelopment that supports existing land uses and provides public economic benefit, within an attractive and accessible open space system" (The Cecil Group et al. 2005). Infill development or redevelopment with commercial and compatible industrial land uses is emphasized. The redevelopment scenario for the former Naval Hospital property proposed in the master plan is reuse of the site as a "technology transfer center" (The Cecil Group et al. 2005). The master plan notes that any reuse and redevelopment of the former Naval Hospital property should be economically beneficial, provide access to and allow use of the waterfront by the public, and include a ferry and water shuttle service point to support expansion of water transportation service along the west side.

6.1.4 Coastal Zone Management

Under the CZMA and the RI CRMP, the CRMC has review authority for all federal actions or activities regardless of their location within a Rhode Island coastal community or state territorial waters. However, only the disposal of the surplus property is a federal action; the subsequent redevelopment would be a non-federal action and would fall under CRMC's direct state permitting authority for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area.

The former Naval Hospital property is located in the 200-foot contiguous area of Narragansett Bay, which the RI CRMP categorizes as a Type 4 Water: Multipurpose Waters. As discussed in Section 3.1.1, tidal waters, shoreline features, and contiguous areas are regulated by the state. Figure 6.1-2 shows the presence of the offshore portion of the site as a Type 4 water and two shoreline features within the site

boundary: a beach and coastal wetland. Enforceable policies applicable to the former Naval Hospital property are outlined in Table 6.1-1 below.

Table 6.1-1 Applicable Policies from the Rhode Island Coastal Resources Management Program

Shoreline Feature	RI CRMP Section	Policy
Type 4 Waters	200.4(C)	1. The [CRMC's] goal is to maintain a balance among the diverse activities that must coexist in Type 4 waters. The changing characteristics of traditional activities and the development of new water-dependent uses shall, where possible, be accommodated in keeping with the principle that the [CRMC] shall work to preserve and restore ecological systems. 2. The [CRMC] recognizes that large portions of Type 4 waters include important fishing grounds and fishery habitats, and shall protect such areas from alterations and activities that threaten the vitality of Rhode Island fisheries.
Coastal Beach	210.1	Policy 3 - Alterations to beaches adjacent to Type 3, 4, 5, and 6 waters may be permitted if: (a) the alteration is undertaken to accommodate a designated priority use for the abutting water area; (b) the applicant has examined all reasonable alternatives and the Council has determined that the selected alternative is the most reasonable; (c) only the minimum alteration necessary to support the designated priority use is made; (d) there is no change in the usage of the property; (e) there is no change in the footprint of existing structures; and (f) the construction will meet all current and applicable policies, standards, and requirements of the RI CRMP.
Coastal Wetlands	210.3	Policy 4 - Coastal wetlands designated for preservation adjacent to Type 3, 4, 5, and 6 waters are identified on maps available for inspection at the Council's offices and at the town halls of coastal cities and towns. Dredging and filling in these designated coastal wetlands are prohibited. The maps of designated coastal wetlands identify individual wetlands; in all cases precise boundaries shall be determined through a field inspection when proposals that could impact these features are being considered. In support of this goal, the Council supports a policy of "no net loss" of coastal wetland acreage and functions as a result of coastal development.
		Policy 7 - All alterations to coastal wetlands shall be carried out in accordance with Section 300.12, Coastal Wetland Mitigation.
Activities in Tidal and Coastal Pond Wetlands, on Shoreline Features, and Their Contiguous Areas	300	Under the Rhode Island CRMP, any alteration or activity proposed within tidal waters, shoreline features, and contiguous areas is regulated and an assent is required from the Council. The requirements for a Category B Assent from CRMC are provided in Section 300.1 of the Rhode Island CRMP and include demonstrating the need for the proposed activity, demonstrating that the activity would not result in significant impacts on erosion and/or deposition processes along the shore and in tidal waters, and demonstrating that there would be no significant deterioration in water quality, as well as other requirements.

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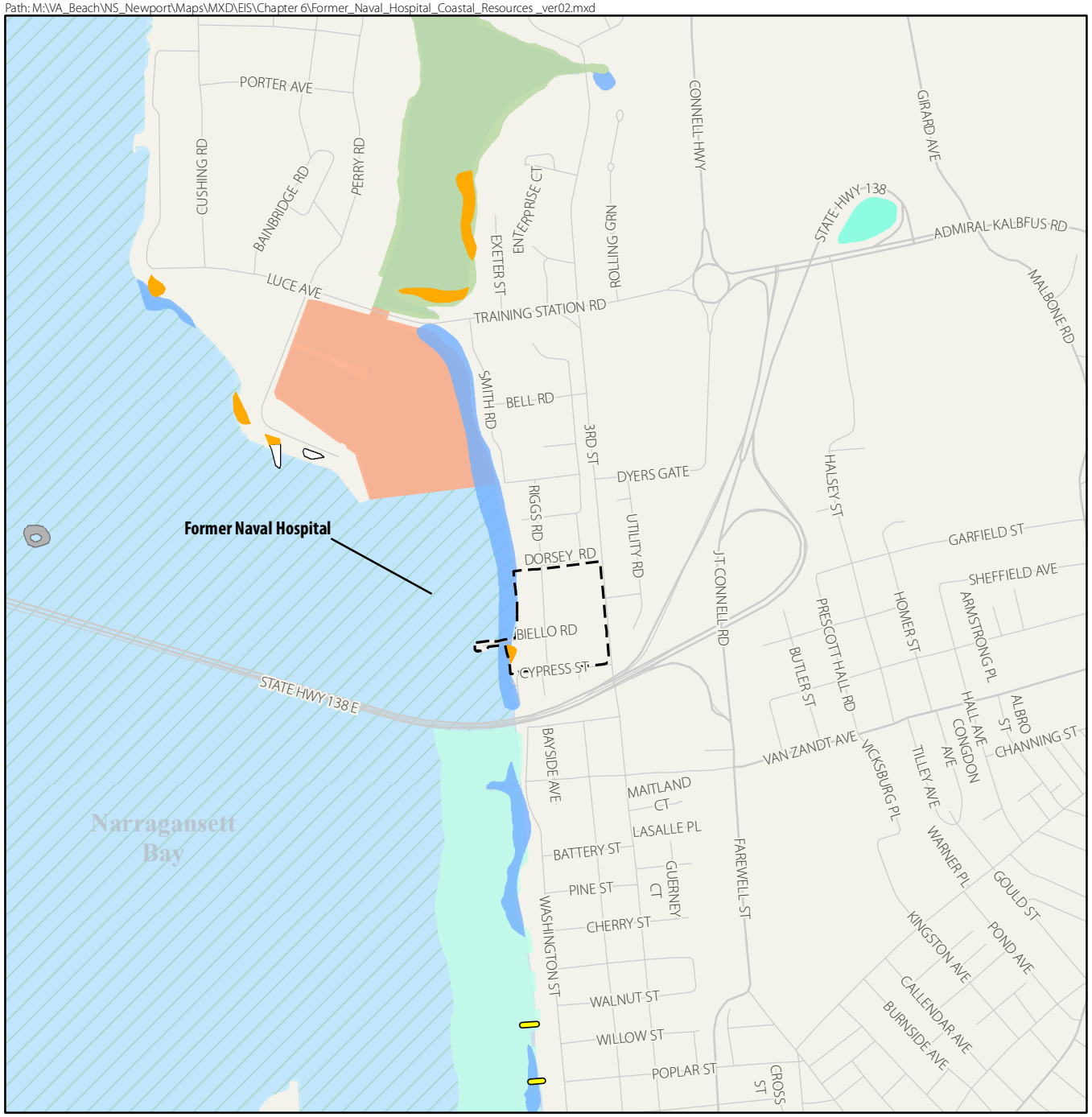

Figure 6.1-2

Former Naval Hospital Property Coastal Resources

NAVSTA Newport, Rhode Island

Legend

- Street
- Breakwaters
- Property Boundary

Shoreline Feature

- Beach
- Coastal Wetland (Estuarine and Marine Wetland)
- Coastal Wetland (Freshwater Emergent Wetland)
- Estuarine Rocky Shores
- Estuarine Salt Marsh

Coastal Water Use Type

- Conservation Area
- Multi-Purpose Water
- Low Intensity Use
- High Intensity Boating

N

SCALE

0 500 1,000 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: RIDEM 2003; USFWS 2011; University of Rhode Island RIGIS 1990; RI CRMC 2008

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The site also is located in the Aquidneck Island SAMP area encompassing the western side of Aquidneck Island and adjacent water. Both the Coastal Development Policies of the Aquidneck Island SAMP and specific policies regarding location within a targeted redevelopment zone apply to the former Naval Hospital property. The former Naval Hospital is located within a specifically defined redevelopment zone called the Aquidneck Island Redevelopment Zone. As indicated in Section 170 of the SAMP, the Aquidneck Island Redevelopment zone comprises areas on the west side of the island that have been specifically designated for high-density development. Actions proposed in a redevelopment zone are provided the option of meeting the setback and buffer requirements for that zone or the requirements in the RI CRMP. Table 6.1-2 provides a summary of the applicable policies of the Aquidneck Island SAMP.

Table 6.1-2 Applicable Policies from the Aquidneck Island Special Area Management Plan

Aquidneck Island SAMP Section	Policy
Section 130.2 Coastal Greenway	Coastal greenways are intended to be vegetated with native plant communities and provide an undeveloped transition zone between the shoreline and adjacent upland development within the 200-foot contiguous area of a coastal feature. Coastal greenway requirements do not apply to municipal projects undertaken to provide public access to the shoreline and other public amenities such as ball fields, parks, playgrounds, public boat ramps, public fishing piers, or boating facilities
Section 130.8 Open Space and Public Access	The primary goal/standard for any development project along the shoreline must be a requirement to provide public access to and along the shoreline within the project property boundary.
Section 130.9 Visual Elements	The scenic and visual qualities of the West Side of Aquidneck Island coastal area shall be considered and protected as a resource of public priority. Development should be sited and designed to protect views to and along coastal areas, minimize the alteration of natural land forms, be visually compatible with the character of surrounding areas, and, where feasible, restore and enhance visual quality in visually degraded areas in accordance with Rhode Island CRMP Section 330.
Section 150.1 Standards Applicable to Entire Development	A) *25% Minimum Vegetation Requirement* – Applicants must include sustainably landscaped areas in their proposals to achieve vegetative coverage of at least 25% of the surface area over the entire development parcel. B) *Storm Water Management* – All new development and redevelopment proposals shall meet the storm water requirements of CRMP Section 300.6 and as specified in the most recent edition of the Rhode Island Stormwater Manual to control peak flow rates and volumes and improve water quality. Communities should be implementing LID practices to meet the 2007 Cleaner Narragansett Bay Act (R.I.G.L. § 45-61.2), which requires LID as the primary means of managing and treating storm water. C) *Open Space* – There are three aspects to open space designations of importance. First is the choice of the land that should be set aside and what qualities that land possesses, and second is the links between the open space parcels that allow greenways throughout the area and improve the value of the land and mobility for residents. The third aspect is the design of the designated areas that will ensure their long-term value.

Table 6.1-2 Applicable Policies from the Aquidneck Island Special Area Management Plan

Aquidneck Island SAMP Section	Policy
	D) *Public Access* – When applicants choose the Coastal Greenway option, the CRMC requires that shoreline and arterial public access pathways be provided by the applicant within the development site, as described in Aquidneck Island SAMP Coastal Development Section 150.5. E) *Construction Setback* – A construction setback of 25 feet is required for all new and existing residential, commercial, mixed-use, and other structures to provide for fire, safety, and maintenance purposes. The setback is measured from the inland edge of the Coastal Greenway or buffer.
Section 170 Redevelopment Zone	170.2 - It is the policy of the CRMC to establish and link public access along the entire west side shoreline within the Aquidneck Island SAMP boundary, including through the areas designated as Redevelopment Zones, that will satisfy the overall goals of the Aquidneck Island SAMP, as well as the applicable redevelopment standards described herein. [The former Naval Hospital is located within the Newport Naval Hospital redevelopment area.]

6.2 Socioeconomics and Environmental Justice

The social, economic, and demographic characteristics of the City of Newport and the towns of Middletown and Portsmouth have been described in Section 4.2.

6.3 Community Facilities and Services

The former Naval Hospital property is located at the southern end of the NAVSTA Newport in the City of Newport. Community facilities and services in that area are provided by the Newport School District, the City of Newport Police Department, and the City of Newport Fire Department. In addition, the city provides recreational facilities for all its residents. Regional medical facilities are the Newport Hospital, the South County Hospital, and St. Anne's Hospital. Figure 6.3-1 illustrates the location of the community facilities and services discussed in this section.

6.3.1 Educational Facilities

During the 2014-2015 school year, the Newport Public School District enrollment totaled 2,072 students (Rhode Island Department of Education 2015). Seven schools serve the district: the Rogers High School and the Newport Area Career & Technical Center (grades 9-12); Thompson Middle School (grades 5-8); Coggeshall Elementary School; Cranston-Calvert Elementary School; Sullivan Elementary School; Underwood Elementary School; and the Claiborne Pell Elementary School (grades PK-4). In The district had an average teacher/student ratio of 1:10 and spent an average of $19,770 per pupil in the 2012-2013 school year (InfoWorks 2014b).

6.3.2 Public Safety and Emergency Services

Public safety at the former Naval Hospital property would be provided by the City of Newport Police Department, which operates from a single police station located at 120 Broadway. In FY 2014, the police department employed 104.5 full-time employees, including 78 sworn officers (City of Newport 2014b). The police department comprises three divisions: the Administrative Services Division, Uniform Patrol

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Figure 6.3-1

Former Naval Hospital Property Community Facilities and Services

NAVSTA Newport, Rhode Island

Legend

- Street
- Schools
- Fire Department
- Police Department
- Parks
- Property Boundary

SCALE

0 1,000 2,000 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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Division, and the Criminal Investigation Division. The Uniform Patrol Division employs 4 lieutenants, 9 sergeants and 36 police officers, and the Criminal Investigation Division employs 2 sergeants and 12 investigators (City of Newport 2014b).

Fire protection and emergency services at the former Naval Hospital property would be provided by the City of Newport Fire Department. The department operates from three stations including the headquarters at 21 West Marlborough Street, and stations located at 100 Old Fort Road and at the corner of Touro and Mary Streets (City of Newport Fire Department 2012). The station closest to the former Naval Hospital property is at West Marlborough Street, approximately 0.7 miles away. The Newport Fire Department is a professional department that employed 203.5 full-time employees in FY ending June 30, 2014 (City of Newport 2014b). The department is composed of the Fire Prevention Division and the Firefighting and Emergency Medical Services. The Fire Prevention Division has 5 staff positions—the Fire Marshall, the Captain of Fire Prevention, the Captain Fire Inspector, the Superintendent of Fire Alarm, and the Lieutenant of Fire Alarm/Maintenance. The Firefighting and Emergency Medical Services employs 92 staff, including 8 captains, 12 lieutenants, and 68 firefighters (City of Newport 2014b).

6.3.3 Parks and Recreation

The City of Newport Recreation Department, which has three full-time employees, oversees the Martin Recreation Center, the Cardines baseball field, the Freebody Park sports complex, and an outdoor skate park (City of Newport 2014b). More than 120 sites in the City of Newport are private or public open space (City of Newport Department of Planning and Development 2008). The majority of these sites are neighborhood parks, playgrounds, and playing fields. The City of Newport owns and operates 12 of these sites while the others are owned by the Newport Public School District and the Newport Housing Authority (Harrigan 2015). There are two large state parks located in the city—the 77-acre Brenton State Park and the 53-acre Fort Adams State Park.

6.3.4 Health Care/Medical Facilities

The regional hospital serving Aquidneck Island is the Newport Hospital located approximately 0.7 miles southeast of the former Naval Hospital property in the City of Newport. The Newport Hospital, which is part of the Lifespan nonprofit health care system, has 129 licensed beds and a staff of 785 and is Newport County's only acute care hospital (Lifespan 2014). The hospital is equipped with an emergency department, a birthing center, a behavioral health unit, inpatient and outpatient surgical facilities, a rehabilitation division, and outpatient services including wound care, physical therapy, and digital diagnostic imaging (Lifespan 2014). Medical services are also provided to residents living on Aquidneck Island at the South County Hospital located in Wakesfield, Rhode Island, and at the Saint Anne's Hospital in Fall River, Massachusetts.

6.4 Transportation

This section describes the current local road network and traffic conditions surrounding the former Naval Hospital property. The information presented in this section is based on a traffic study conducted in 2012 (Pare Corporation 2013). Roadways and intersections close to the former Navy Hospital property specifically analyzed include the following:

- Third Street
- Admiral Kalbfus Road/Training Station Road
- Admiral Kalbfus Road/Training Station Road and Third Street/Third Street Extension Intersection.

Locations of these roadways and intersection are shown on Figure 6.4-1. Information on public transit was gathered from the RIPTA.

6.4.1 Road Network and Access

The former Naval Hospital property is bordered by Third Street to the east, Cypress Street to the south, and Dorsey Road on the northern edge of the property. Riggs Road connects Dorsey Road and Cypress Street on the western side of the property. Dorsey and Riggs Road are currently part of NAVSTA Newport and are not public roadways. Within the surplus property, Biello Road provides access from Riggs Road to the pier and paved parking areas exist along Third Street and Cypress Street on the property. Gated and secured driveways are on Third Street, Cypress Street, and Dorsey Road. Access to the property is primarily from Third Street. The roadways and intersection near the former Naval Hospital property evaluated in the traffic study are described below.

Third Street. Third Street is a two-lane north-south roadway that extends from Admiral Kalbfus Road/Training Station Road north of the property to the Long Wharf waterfront south of the property. Third Street has a posted speed limit of 25 miles per hour and is an unclassified local roadway under the City of Newport's jurisdiction. School bus stops and RIPTA bus stops are located along Third Street.

Admiral Kalbfus Road/Training Station Road. Admiral Kalbfus Road/Training Station Road is a two-lane roadway running in an east-west direction from the west coast of Newport to West Main Road. The roadway transitions from Training Station Road to Admiral Kalbfus Road at Third Street. Training Station Road is classified as an urban collector, while Admiral Kalbfus Road is an urban principal arterial under the jurisdiction of RIDOT. With the exception of Admiral Kalbfus Road, the remainder of the roads discussed in this section are under the jurisdiction of the City of Newport. Admiral Kalbfus Road is designated as Route 138 for its entire length. Turning lanes are also present at the intersections along the roadway. The posted speed limit on Training Station Road is 20 miles per hour, and the posted speed limit on Admiral Kalbfus Road is 25 miles per hour.

Admiral Kalbfus Road/Training Station Road and Third Street/Third Street Extension Intersection. The intersection of Admiral Kalbfus Road/Training Station Road with Third Street and the Third Street Extension forms a four-road signalized intersection controlled by a two-phase traffic signal. Admiral Kalbfus Road/Training Station Road runs in an east-west direction, while the Third Street and the Third Street Extension runs in a north-south direction. Third Street is classified as an urban collector and is called Third Street Extension north of Admiral Kalbfus Road. A right-turning lane exists on Training Station Road in the eastbound direction.

6.4.2 Existing Traffic Volume

Traffic volumes were collected in October 2012 during peak hours at the intersection of Admiral Kalbfus Road/Training Station Road and Third Street/Third Street Extension. In addition, total average daily traffic counts were conducted on Third Street to the north of the property (see Figure 6.4-1). Peak hour traffic volumes for the morning and evening are shown in Table 6.4-1 in addition to the total average daily traffic counts on Third Street. The morning peak traffic occurred between 7:00 a.m. and 8:00 a.m.; evening peak traffic typically occurred between 3:15 p.m. and 4:45 p.m. Traffic volumes on both the intersection and roadway studied were relatively low.

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Figure 6.4-1

Former Naval Hospital Property Traffic Study Area

NAVSTA Newport, Rhode Island

Legend

- Automatic Traffic Recorders (ATR)
- Street
- Major Road
- River/Stream
- Waterbody
- Property Boundary

SCALE

0 300 600 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: Pare Corporation 2013

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Table 6.4-1 Existing Roadway Traffic Conditions near the Former Naval Hospital Property

Peak Hour Traffic Volumes		
Intersection	**A.M. Peak Hour Volume**	**P.M. Peak Hour Volume**
Admiral Kalbfus Road/Training Station Road & Third Street/Third Street Extension	1,103	1,193
Average Daily Traffic Volumes		
Roadway	**Location**	**Average Daily Traffic**
Third Street	South of Dyers Gate Road	5,079

Source: Pare Corporation 2013

6.4.3 Roadway Intersection Level-of-Service

A capacity analysis was conducted to characterize the LOS of the Admiral Kalbfus Road/Training Station Road and Third Street/Third Street Extension intersection. LOS is a qualitative measure that describes general operating conditions based on factors including speed, travel times and delays. LOS is reported on a scale of 'A' to 'F.' 'A' represents the best operating conditions with free-flowing traffic and 'F' represents the worst operating conditions with significant delays. During both morning and evening peak hours, this intersection currently operates at LOS B.

6.4.4 Safety Conditions

Accident data from January 2010 to October 2012 were reviewed for the following road segments near the former Navy Hospital property:

- Admiral Kalbfus Road between Third Street and the Pell Bridge on and off-ramps
- Third Street Road between Admiral Kalbfus Road and Sycamore Street.

During this period, a total of 98 vehicle accidents were recorded, including 60 rear-end collisions, 13 sideswipes, 11 vehicle collisions with an object, 9 involving loss of control of the vehicle, 4 angle crashes, and 1 head-on collision (Pare Corporation 2013). Of the intersections studied in Newport, the majority of accidents were reported at the Route 138 eastbound exit ramp intersection with Admiral Kalbfus Road. Thirty-six accidents were reported at this intersection, 33 of which were rear-end collisions.

A speed study was conducted on Third Street near the former Naval Hospital property. Third Street has a posted speed of 25 mph and 85 percent of vehicles travel above the speed limit (Pare Corporation 2013). The average speed of vehicles on this roadway was 30 mph.

6.4.5 Public Transportation

The RIPTA provides fixed-route bus service throughout Rhode Island, including Aquidneck Island. Several bus routes that serve the City of Newport and the vicinity of the former Naval Hospital property are described below (RIPTA 2013a).

- Route 14 - Route 14 provides service between Newport and Providence. The route begins in Gateway Center, south of the former Naval Hospital and travels north along J.T. Connell Highway before entering SR 138 and crossing Narragansett Bay (RIPTA 2013e).

- Route 63 - Route 63 provides service between Newport and Middletown. The route begins at the Gateway Center in Newport and travels to Newport Towne Center just north of the former Naval Hospital property (RIPTA 2013c).
- Route 60 - Route 60 provides service between Newport and Providence via Middletown and Portsmouth. The route originates at the Gateway Center in Newport and travels along West and East Main Roads (RIPTA 2013d).
- Route 64 - Route 64 connects Newport with the University of Rhode Island in Kingston. The route begins at Gateway Center and travels north to Third Street where it passes in front of the former Naval Hospital property. A bus stop is located on Third Street across from the property (RIPTA 2013d).

6.5 Environmental Management

This section summarizes the existing conditions regarding hazardous waste, hazardous materials, medical waste, and the Environmental Restoration (ER) Program for the former Naval Hospital property.

6.5.1 Hazardous Waste

Between 800 and 1,500 pounds of hazardous waste were generated per year at the former Naval Hospital when it was in operation. Some of the hazardous waste contained heavy metals, mostly silver generated during X-ray development. A 90-day hazardous waste storage area was located in Building 1. After 90-day storage, hazardous waste was transported off-site for disposal in compliance with federal and state regulations. The waste was disposed of by a licensed contractor. The 90-day storage area at Building 1 was decommissioned in 2003 (U.S. Department of the Navy 2009).

Any universal wastes generated at the former Naval Hospital property, such as spent fluorescent light bulbs, batteries, and thermostats, are transferred to universal waste accumulation areas and transported off-site for disposal or recycling by a contractor (see Section 3.5.1.1). No other hazardous waste is currently known to be generated at the complex or Pier 71 (U.S. Department of the Navy 2009).

6.5.2 Hazardous Materials

6.5.2.1 Hazardous Material Control

The Tier II Emergency and Hazardous Chemical Inventory report for 2011 shows that lead (i.e., lead acid batteries) and sulfuric acid (liquid) are stored in Building 993 (NAVSTA Newport 2012b; Malcolm Pirnie 2005). There are no records of hazardous materials currently being stored in any of the other former Naval Hospital buildings or Pier 71. When the hospital was in operation, substances such as alcohol, xylene, and formalin were stored in a chemical storage room in Building 1 near the histology laboratory and flammables were stored in flammables cabinets. Cleaning supplies are presumed to have been stored in Building 7, where housekeeping was located, and it is suspected that chemicals used for preservation also were stored in Building 7 as it was also used as a morgue (Malcolm Pirnie 2005).

According to the installation spill log for 2002 through 2011, 4 gallons of fuel oil were spilled near Building 7 in 2003 and 2 gallons of latex paint were spilled near Building 7 in 2004. The spills were cleaned up and were below the requirements for reporting to the National Response Center or RIDEM (NAVSTA Newport 2012e).

6.5.2.2 Underground Storage Tanks

No USTs are located at the former Naval Hospital property.

6.5.2.3 Aboveground Storage Tanks

Two steel ASTs formerly used to store diesel fuel are located at the emergency generator building, Building 993. One is a 2,000-gallon tank and the other is a 275-gallon tank. They were closed in 1998 and are not active (U.S. Department of the Navy 2009).

6.5.2.4 Oil/Water Separators

There are no OWSs on the former Naval Hospital property.

6.5.2.5 Asbestos-Containing Materials

Various asbestos surveys were conducted between 1988 and 1997 in most of the buildings at the former Naval Hospital property, and a visual survey for ACM was conducted in 2004 in conjunction with the environmental baseline survey for transfer of the property. A focused asbestos survey was conducted in April 2013 to provide information for this EIS and to update and fill in gaps from the previous surveys. The executive summary of the report documenting the April 2013 survey (YU & Associates 2013) is provided in Appendix E.

Table 6.5-1 summarizes the results of the surveys conducted between 1988 and the present. ACM has been identified or observed in all of the structures on the former Naval Hospital property. ACM has been found in materials such as floor and ceiling tiles, pipe insulation, electrical insulation, wall plaster, roofing materials, and window caulk, which is common of construction prior to 1989, when asbestos use was banned.

Much of the ACM identified in Building 45 has been removed, but the ACM identified in the other buildings has not (U.S. Department of the Navy 2009).

6.5.2.6 Lead-Based Paint/Lead

Various locations in the buildings at the former Naval Hospital property were tested for LBP in 1995/1996 and a visual survey was conducted in 2004 in conjunction with the environmental baseline survey for transfer of the property. A focused LBP survey was conducted in April 2013 to provide information for this EIS and to update and fill in gaps from the previous survey. The executive summary of the report documenting the April 2013 survey (YU & Associates 2013) is provided in Appendix E.

Table 6.5-2 summarizes the results of the surveys. LBP has been identified or observed in all of the structures on the former Naval Hospital property with the exception of Building 993. LBP has been commonly found on walls, floors, ceilings, window components, door components, metal pipes, radiators, staircases, and miscellaneous painted wood. The environmental baseline survey reported that much of the paint at Buildings 1, 7, and 45 was peeling (Malcolm Pirnie 2005).

Table 6.5-1 Asbestos Survey Results for the Former Naval Hospital Property

1988 – 2004 Asbestos Survey Results	April 2013 Asbestos Survey Results[a, b]
Building 1	
ACM was identified in various areas. ACM identified: • Pipe insulation • Wall plaster • Floor tiles	<u>Building 1</u> 157 samples, 31% of them were positive for ACM. ACM identified (basement, first floor, second floor, third floor, attic, roof): • 9-inch floor tile and mastic – 2,500 square feet (ft^2) • 12-inch floor tile and mastic – 17,445 ft^2 • Duct expansion cloth and insulation – 162 ft^2

Table 6.5-1 Asbestos Survey Results for the Former Naval Hospital Property

1988 – 2004 Asbestos Survey Results	April 2013 Asbestos Survey Results[a, b]
Much of the ACM was observed to be damaged or in poor condition.	• Floor covering and linoleum with mastic – 8,420 ft^2 • Ceiling plaster – 108,000 ft^2 • Wall plaster – 309,000 ft^2 • Window caulk – 12,315 linear feet • Window glazing – 20 windows • Pipe insulation – 9,600 linear feet • Roof flashing – 50 linear feet • Roofing mastic – 1,200 linear feet • Electrical wire insulation – 18,000 linear feet. <u>Building A72</u> 1 sample, positive for ACM. ACM identified: • Electrical wiring insulation – 100 linear feet • Cable insulation – 60 linear feet • Pipe insulation – 15 linear feet • Built-up roof (tar paper) – 460 ft^2.
Building 7	
Asbestos surveys did not identify any ACM. Visual survey (2004) indicated some ACM. ACM identified: Ceiling tiles and floor tiles (2004 visual survey).	45 samples, 29% of them were positive for ACM. ACM identified (first floor, second floor, attic, roof): • 9-inch floor tile and mastic – 3,750 ft^2 • 12-inch floor tile and mastic – 3,600 ft^2 • Window caulk – 730 linear feet • Electrical wire insulation – 2,400 linear feet • Transite ceiling panels – 2,500 ft^2 • Built-up roof (tar paper and mastic) – 2,250 ft^2.
Building 45	
ACM was identified in various areas. ACM identified: • Pipe insulation • Ceiling tiles • Floor tiles	61 samples, 25% of them were positive for ACM. ACM identified (basement, first floor, second floor, attic, roof): • 9-inch floor tile and mastic – 2,230 ft^2 • 12-inch floor tile and mastic – 12,220 ft^2 • Pipe insulation – 2,560 linear feet • Electrical wire insulation – 3,000 linear feet • Built-up roof (tar paper and mastic) – 8,850 ft^2.
Building 63	
ACM was not identified.	No samples collected. ACM identified: • White base coat and white and brown coats wall plaster – 600 ft^2 • Electrical wiring insulation – 100 linear feet.

Table 6.5-1 Asbestos Survey Results for the Former Naval Hospital Property

1988 – 2004 Asbestos Survey Results	April 2013 Asbestos Survey Results[a, b]
Building 993	
Building was not surveyed for asbestos. Visual survey (2004) did not indicate any ACM.	9 samples, none were positive for ACM. ACM identified (first floor): • Electrical wiring insulation – 200 linear feet • Cable insulation – 30 linear feet.
Quarters A and B	
ACM was identified in various areas. ACM identified: • Floor tiles • Ceiling tiles (2004 visual survey)	32 samples, 13% of them were positive for ACM. ACM identified (basement, first floor, second floor, attic, roof): • Window caulk – 1,260 linear feet • Electrical wire insulation – 1,400 linear feet • Built-up roof (tar paper and roof flashing) – 250 ft^2 • Condensate barrier (kitchen) – 5 ft^2 • Floor tile (9-inch and 12-inch) – 750 ft^2.
Pier 71	
Not assessed for ACM.	No samples collected. ACM identified: • Electrical cable insulation – 50 linear feet.

Source: Malcolm Pirnie 2005; Halliburton 1994; U.S. Department of the Navy 2009; YU & Associates 2013.

[a] In the April 2013 survey ACM was identified based on a combination of analytical results, visual survey and observations, and professional judgment.

[b] Insulation on subsurface/underground insulated steam supply and return lines that run in tunnels from the main boiler facility to individual buildings (Buildings 1, 7, and 45 and Quarters A and B) is assumed to be positive for ACM. Those supply and return lines were not accessed for the April 2013 survey.

Table 6.5-2 LBP Survey Results for the Former Naval Hospital Property

1995/1996 LBP Survey Results	April 2013 LBP Survey Results[a, b, c]
Building 1	
LBP identified on: • Walls • A window sill • A radiator	<u>Building 1</u> • 865 X-ray fluorescence (XRF) screening readings, 29% of the readings were positive for lead. • Eight bulk/chip samples, 25% of the samples were positive for lead. LBP identified on (basement, first floor, second floor, third floor, attic, roof): • Interior: Restroom tiles, walls, door components, window components, metal pipes, miscellaneous painted wood, radiators, staircases, I-beams. • Exterior: Window components, miscellaneous painted wood, drain pipes, hand rails, staircase stringers and treads, sprinkler connections, fire hydrants.

Table 6.5-2 LBP Survey Results for the Former Naval Hospital Property

1995/1996 LBP Survey Results	April 2013 LBP Survey Results[a, b, c]
	Soil around Building 1: Four composite soil samples collected. All four results exceeded the RIDEM residential direct exposure criterion (DEC) for lead of 150 mg/kg; two results exceeded the RIDEM industrial/commercial DEC for lead of 500 mg/kg. <u>Building A72</u> • 52 XRF screening readings, 40% of the readings were positive for lead. • No bulk/chip samples collected. LBP identified on: • Interior: Metal door components, concrete floors, metal floor grates. • Exterior: Wood window components, metal door components. Soil around Building A72: No soil samples were collected because the building is surrounded by asphalt.
Building 7	
Not tested for LBP.	• 180 XRF screening readings, 64% of the readings were positive for lead. • No bulk/chip samples collected. LBP identified on (first floor, second floor, attic, roof): • Interior: Walls, ceilings, door components, window components, metal pipes, metal floors, miscellaneous painted wood, radiators, staircases. • Exterior: Metal lintels, metal door components, drain pipes, concrete soffits and foundations. Soil around Building 7: One composite soil sample collected. Result exceeded the RIDEM residential DEC for lead of 150 mg/kg and industrial/commercial DEC for lead of 500 mg/kg.
Building 45	
One wall paint sample was tested and did not show LBP.	• 644 XRF screening readings, 35% of the readings were positive for lead. • No bulk/chip samples collected. LBP identified on (basement, first floor, second floor, attic, roof): • Door components, wood window casings, metal pipe rails, metal grates. Soil around Building 45: One composite soil sample collected. Result exceeded the RIDEM residential DEC for lead of 150 mg/kg and industrial/commercial DEC for lead of 500 mg/kg.

Table 6.5-2 LBP Survey Results for the Former Naval Hospital Property

1995/1996 LBP Survey Results	April 2013 LBP Survey Results[a, b, c]
Building 63	
No information on LBP is available from the earlier surveys.	• 25 XRF screening readings, 88% of the readings were positive for lead. • No bulk/chip samples collected. LBP identified on: • Interior: Wood door components, wood window components, plaster walls. • Exterior: Wall plaster, wood walls, door components, window components. Soil around Building 63: No soil samples were collected because the building is surrounded by asphalt.
Building 993	
Not tested for LBP.	• 0 XRF screening readings. • No bulk/chip samples collected. LBP identified on: None (based on visual observations and professional judgment). Soil around Building 993: No soil samples were collected because the building is surrounded by asphalt.
Quarters A and B	
• LBP identified as "lead hazardous" was reported for more than 30% of the 201 interior and exterior locations tested for Quarters A. • LBP identified as "lead hazardous" was reported for more than 50% of the 163 interior and exterior locations tested for Quarters B. LBP identified on: • Door components, window components, radiators, walls, ceilings, staircases.	• 258 XRF screening readings, 48% of the readings were positive for lead. • 3 bulk/chip samples collected, 67% of the samples were positive for lead. LBP identified on (basement, first floor, second floor, third floor): • Interior: Wood door components, wood window components, plaster walls, plaster ceilings, miscellaneous painted wood, radiators, staircases, metal pipes. • Exterior: Wall plaster, gypsum walls, wood walls, wood ceilings, wood door components, wood window components, miscellaneous painted wood. Soil around Quarters A and B: 1 composite soil sample collected. Result exceeded the RIDEM residential DEC for lead of 150 mg/kg and industrial/commercial DEC for lead of 500 mg/kg.

Table 6.5-2 LBP Survey Results for the Former Naval Hospital Property

1995/1996 LBP Survey Results	April 2013 LBP Survey Results[a, b, c]
Pier 71	
Not tested for LBP.	• 2 XRF screening readings, 50% of the readings were positive for lead. • No bulk/chip samples collected. LBP identified on: • One painted cleat. Soil near Pier 71: No soil samples were collected because there is no soil near the pier.

Source: Malcolm Pirnie 2005; U.S. Department of the Navy 2009; YU & Associates 2013.

[a] In the April 2013 survey LBP was identified based on a combination of screening and analytical results, visual survey and observations, and professional judgment. XRF measurements were used as a screening and measurement method, with follow-up chip or bulk sampling in cases where XRF readings were inconclusive.

[b] The report for the April 2013 survey identifies specific material types positive for LBP for each building, e.g., concrete floors vs. wood floors.

[c] Soil sampling was performed at facility drip lines where potential LBP was observed to be peeling or chipping.

The April 2013 survey also included an evaluation of lead in soils surrounding the former Naval Hospital buildings. Seven soil samples were collected at facility drip lines where potential LBP was observed to be peeling or chipping. As shown in Table 6.5-2, lead was found in discrete areas of soil around Buildings 1, 7, and 45 and Quarters A and B at levels exceeding the RIDEM residential direct exposure criterion (DEC) for lead of 150 mg/kg. Five of the results also exceeded the RIDEM industrial/commercial DEC for lead of 500 mg/kg. LBP was not evaluated in the environment around Buildings A72, 63, and 993 or Pier 71 because there is no soil around or near those structures.

6.5.2.7 Polychlorinated Biphenyls (PCBs)

There are 11 transformers located on the former Naval Hospital property, primarily near Building 1 and Building 993. "PCB-free" stickers are affixed to six of the transformers. Two other transformers are suspected to be PCB-free because facility personnel indicated that they were manufactured after PCB oil was no longer used in transformers. The remaining three transformers were installed in 2000 to replace three PCB-containing transformers (Malcolm Pirnie 2005). PCB-containing transformers were removed or replaced at NAVSTA Newport in the 1980s (U.S. Department of the Navy 2009) and the Navy is not otherwise aware of any PCB-containing transformers at the installation (CNIC n.d.[d]).

Based on the age of the buildings, PCB-containing light ballasts could be present in fluorescent light fixtures. Window caulking and glazing were evaluated for PCBs in April 2013 to provide information for this EIS. The executive summary of the report documenting the April 2013 evaluation (YU & Associates 2013) is provided in Appendix E. The five window caulking/glazing samples collected (three from Building 1 and two from Building 7), many of which were composite samples, did not contain PCBs.

6.5.2.8 Pesticides

Pesticides are not known to have been stored, nor are they currently stored, at the former Naval Hospital property (Malcolm Pirnie 2005). Pesticides likely have been, and continue to be, applied inside and outside of the buildings as necessary in accordance with the NAVSTA Newport *Integrated Pest Management Plan* (Geo-Marine 2009 [see Section 3.5.1.2]).

6.5.2.9 Radioactive Materials

There are no records of radioactive materials use or radioactive waste generation at the former Naval Hospital property (Malcolm Pirnie 2005). However, because of its use as a hospital, it is possible that radioactive materials were used for diagnosis and treatment purposes during routine activities at Building 1. Radioactive materials have been commonly used for diagnosis and treatment since the early 1900s. The use of radioactive materials in medicine includes brachytherapy, where radioactive sources are inserted into the body near the site of cancerous tissue, and diagnostic tests that use radioactive materials as tracers during imaging and scans.

6.5.2.10 Radon

Several areas of Building 1 were tested for radon from 1991 to 1992 and in 1993. Most of the 1991-1992 results, consisting of more than 100 tests, were well below the EPA (and Navy Radon Assessment and Mitigation Program) indoor-air action level of 4 picocuries per liter (pCi/L). Five of the 1991-1992 results exceeded the limit—radon levels ranged from 6.8 pCi/L to 8.6 pCi/L in the exam room and the military sick call rooms. Radon mitigation was not performed in those rooms following the testing. For the 1993 survey, all of the approximately 20 results for Building 1 were lower than 1.4 pCi/L (Malcolm Pirnie 2005).

Radon detectors were placed in a group of housing units in 1993, including Quarters A and B on the former Naval Hospital property. The results, which were reported for the group as a whole, ranged from 0.1 pCi/L to 2.6 pCi/L (Malcolm Pirnie 2005).

There are no reports of radon testing at the remaining areas of the former Naval Hospital property.

6.5.3 Medical Waste

Medical waste was routinely generated at Building 1 until 1993, when Building 1 was converted to administrative use. The medical waste was burned in an incinerator located east of Building A-33 (which is north of Building 1 and outside the surplus property boundary) until 1988, when medical waste was transported off-site for disposal by an outside contractor. No records of the medical waste generated at Building 1 are available because they are only maintained for five years (Malcolm Pirnie 2005). Based on current activities at Naval Health Clinic New England, medical waste generated in Building 1 likely consisted of sharps, live and attenuated vaccines, human pathological wastes, and human blood and body fluids.

There are no reports of medical waste generation at the other former Naval Hospital buildings.

6.5.4 Environmental Restoration Program

There are no ER Program sites near the former Naval Hospital property. The closest site is IRP Site 9, the Old Fire Fighting Training Area (OFFTA), located at the northern end of Coasters Harbor Island (see Section 3, Figure 3.5-1). The OFFTA is approximately 0.5 miles from the former Naval Hospital property and is separated from it by the waters of Narragansett Bay.

6.6 Air Quality

6.6.1 Existing Air Quality

Section 3.6 provides information about regional air quality and applicable regulations and requirements. The CAA is the primary federal statute governing the control of air quality. The former Naval Hospital property is in the City of Newport, Newport County, RI. This location is within the Providence, RI air

quality region, which encompasses all of Rhode Island and is currently in attainment for all NAAQS. The state is under the jurisdiction of RIDEM for air quality.

6.6.2 Existing Emissions

The former Naval Hospital property comprises six buildings and one pier; by 2007, all buildings within the Naval Hospital complex had been vacated. Since the buildings are not in use, energy usage is minimal, as are activities of maintenance personnel who occasionally visit the property. Therefore, there are no existing stationary or mobile sources of criteria, HAPs, or GHG emissions from the current use of the property.

6.7 Noise

Ambient sound levels are a function of a variety of sources: local traffic, barking dogs, birds, insects, lawnmowers, children playing, and the interaction of the wind with groundcover, buildings, trees, shrubs, power lines, etc. Sound levels vary with time of day, wind speed and direction, and the level of human activity. The acoustic environment around the former Naval Hospital property is mainly characterized by traffic noise during daytime hours.

Table 6.7-1 presents the minimum and maximum hourly average L_{eq} sound levels measured in 2010 at the monitoring station nearest to the former Naval Hospital property (LT-3) (Tech Environmental 2011) (see Figure 3.7-1 in Section 3.7).

Table 6.7-1 Baseline Hourly Average L_{eq} Sound Levels near the Former Naval Hospital

Measurement ID	Location	Daytime		Nighttime	
		Min. L_{eq} (dBA)	Max. L_{eq} (dBA)	Min. L_{eq} (dBA)	Max. L_{eq} (dBA)
LT-3	Nimitz Field	49.2	63.2	49.2	54.7

Source: Tech Environmental 2011

To characterize the existing traffic noise near the former Naval Hospital property, the peak afternoon traffic volume, vehicle speed, and vehicle mix data for the roadways analyzed in the traffic study conducted in October 2012 (Pare Corporation 2013) were modeled, using TNM version 2.5. The modeling results for the existing traffic noise in the vicinity of the former Naval Hospital property ranged from 61.0 to 66.2 dBA.

6.8 Infrastructure and Utilities

This section summarizes the existing infrastructure, utilities, and solid waste management at the former Naval Hospital property.

6.8.1 Water Supply

Drinking water for the former Naval Hospital property was previously provided by the City of Newport through water purchased wholesale from the city and distributed through the Navy-owned water system; that water distribution system is still owned by NAVSTA Newport, although service to the property is no longer operational.

Drinking water in the City of Newport is supplied by the Department of Utilities Water Division, which manages the city's source water, treatment plants and distribution system; this distribution system also serves the Town of Middletown and parts of Portsmouth. In addition to supplying water for Newport and Middletown, the City of Newport sells water wholesale to Portsmouth and NAVSTA Newport (City of

Newport Department of Utilities 2013b). The City of Newport obtains its drinking water from nine fresh water reservoirs (City of Newport Department of Utilities 2012): Easton North Pond, Easton South Pond, Lawton Valley Reservoir, Gardiner Pond, St. Mary's Pond, Paradise Pond, Sisson Pond, Nonquit Pond, and Watson Reservoir. The safe yield for these surface water reservoirs is 12.2 mgd and 14.1 mgd for the Aquidneck region as a whole (Pare Corporation 2014).

Drinking water from the reservoirs is treated at one of two water treatment plants owned by the City of Newport. The Lawton Valley water treatment plant (WTP), located in Portsmouth, was built in 2014, adjacent to the original Lawton Valley WTP built in 1942, which it replaced. The new Lawton Valley WTP has a capacity of 7 mgd (City of Newport Department of Utilities 2014). Station 1, located in Newport, was built in 1991 (NAVSTA Newport 2012a) and has a maximum treatment capacity of 9 mgd; upgrades were recently completed to Station 1, which had been operating at a treatment capacity of only approximately 6 mgd (City of Newport Department of Utilities 2013b).

The City of Newport's water distribution system services the City of Newport, Town of Middletown and parts of Portsmouth and includes 168 miles of transmission and distribution mains and 10,500,000 gallons of storage capacity (City of Newport Department of Finance 2012).

Between 2002 and 2011, the City of Newport replaced 10.8 miles of water mains in Newport and Middletown (City of Newport Department of Utilities 2012). As part of the FY 2011-2012 budget, the City of Newport proposed spending $10.8 million between 2011 and 2016 to replace water mains that were old or in poor condition (City of Newport 2011). Current average daily demand for water distributed through the Newport Water Division is 7.8 mgd (Rhode Island Division of Planning 2012). The Town of Portsmouth, which purchases its water wholesale from the Newport Water Division, has a current demand of 1.3 mgd (Rhode Island Division of Planning 2012).

The total average daily demand from Newport's water supply in 2033 is projected to be between 7.50 and 7.96 mgd (Pare Corporation 2014). Table 6.8-1 shows the projected water demand. Based on the combined treatment capacity of the two water treatment plants of 16 mgd, the anticipated average daily demand in 2033 would be met.

Table 6.8-1 Projected Water Demand

	Current Average Daily Demand (as of CY 2012) (mgd)	5 Year (2018) Anticipated Average Daily Demand (mgd)	20 Year (2033) Anticipated Average Daily Demand (mgd)
Total Demand	5.59	7.00-7.44	7.50-7.96

Source: Pare Corporation 2014

6.8.2 Wastewater

The former Naval Hospital property is currently serviced by the NAVSTA Newport sewer collection system. Because the buildings at the Naval Hospital are not currently in use, no wastewater is being generated from that site.

The Department of Utilities Water Pollution Control Division is responsible for wastewater management in the City of Newport. The city contracts with United Water, Inc. to operate its sewer lines and the City of Newport WWTP (City of Newport Department of Utilities 2013a). The city's wastewater infrastructure includes 88 miles of sanitary sewers, 46.5 miles of storm sewers and 14 pumping stations (City of Newport Department of Finance 2012c; United Water n.d.). The majority of the city has

combined storm water and sewers. The City of Newport also collects and treats wastewater from the Town of Middletown and NAVSTA Newport.

The city's WWTP is located on J.T. Connell Highway and has a licensed capacity of 10.7 mgd (City of Newport Department of Finance 2012a). In 2012, the plant treated 9.46 mgd of wastewater for the City of Newport, Town of Middletown, the Melville area of Portsmouth and NAVSTA Newport (City of Newport Department of Finance 2012a).

6.8.3 Storm Water

Storm water runoff is handled by a network of storm water lines at the former Naval Hospital property, and two outfalls discharge water into the Narragansett Bay (U.S. Department of the Navy 2009). Discharge from the two outfalls at the former Naval Hospital are permitted under NAVSTA Newport's Rhode Island Pollutant Discharge Elimination System General Permit.

Storm water in the City of Newport is handled by the Department of Utilities Water Pollution Control Division. The city has a system of 45 miles of separate storm water lines in addition to combined storm-sewer lines. Additional infrastructure includes 2,500 catch basins and 50 outfalls and 24 pumping stations. During heavy precipitation, large quantities of storm water enter the combined sewer system and can exceed capacity (CH2M Hill 2012). Excess flow is discharged into Newport Bay at one of two outfalls. In an effort to reduce this discharge, the city has completed several projects to separate storm and sewer drains and has constructed partial treatment facilities and a storage facility to control discharges (CH2M Hill 2012).

6.8.4 Other Utility Systems

Electricity

National Grid is the primary electrical utility providing connection and distribution services in the City of Newport. This is a user-supported utility service, and the customers pay for the service and electricity supplied. (Information about electricity uses for the three communities surrounding all four surplus properties is provided in Section 4.8.4.)

Natural Gas

The City of Newport and the surrounding region is serviced by National Grid. This is a user-supported utility service, and the customers pay for service and natural gas supplied. (Information about natural gas uses for the three communities surrounding all four surplus properties is provided in Section 4.8.4.)

6.8.5 Solid Waste

Solid wastes were generated at all of the former Naval Hospital buildings and areas while they were in operation. Nonhazardous solid waste would have consisted of mixed trash, paper, cardboard, food waste, C&D waste (e.g., wood, concrete, building materials), and industrial scrap materials (e.g., wood, metal) (see Section 3.5.1.2). Solid waste was disposed of at the installation landfill until the 1980s, after which it was collected by installation personnel and disposed of at a transfer station in Newport. Since 1995, solid waste generated at NAVSTA Newport has been collected, disposed of, and recycled off-site by a contractor (U.S. Department of the Navy 2009).

6.9 Cultural Resources

This section describes the existing cultural resources and historic properties that are located within the APE for the proposed action at the former Naval Hospital property. The boundary of the APE is the same as the boundary of the property that will be disposed (see Figure 6.9-1). Cultural resources within the

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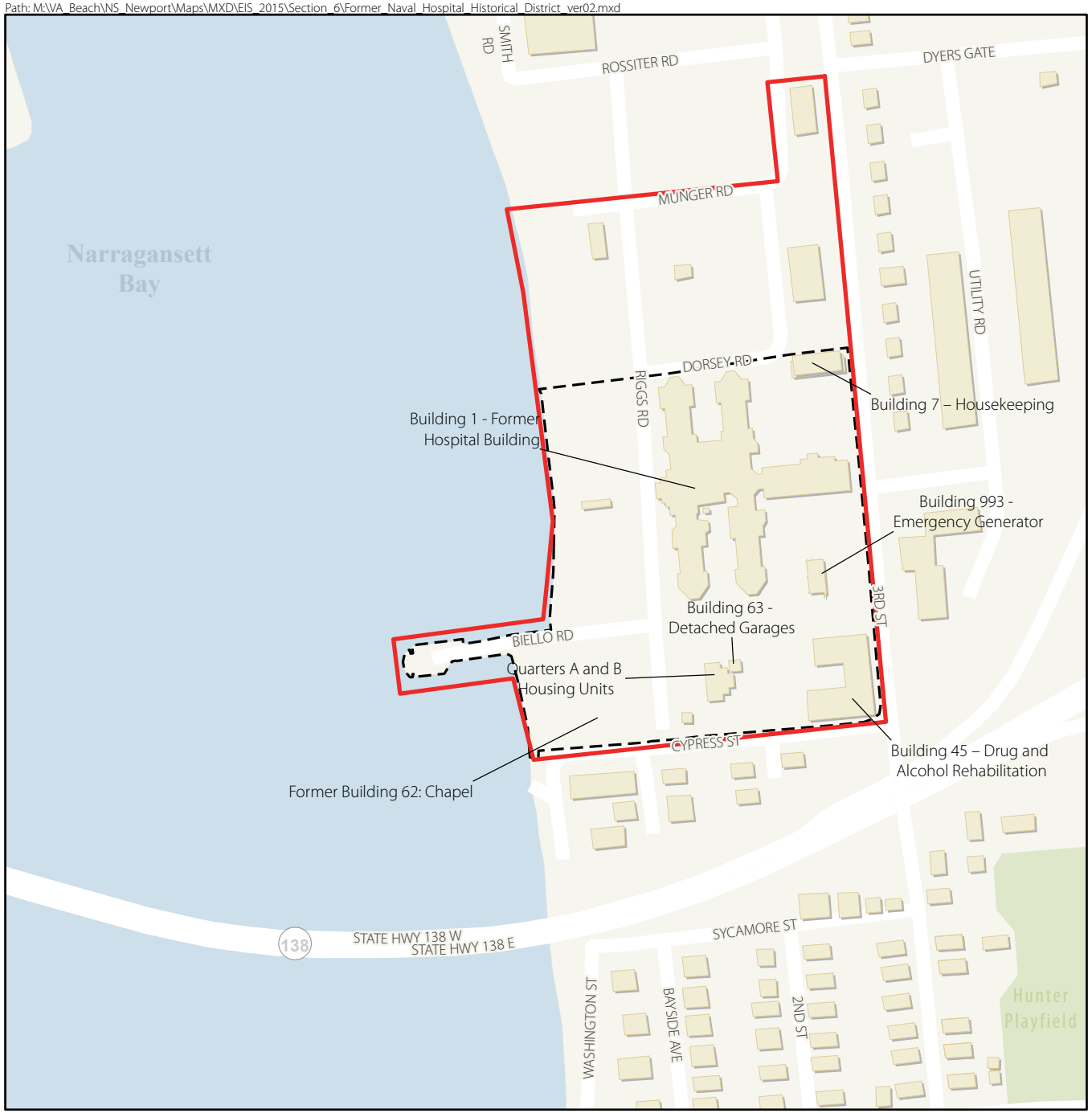

Figure 6.9-1
Former Naval Hospital Property Historic District
NAVSTA Newport, Rhode Island

Legend

Property Boundary
Historic District

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: U.S. Department of the Navy 2009, 2015

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APE would consist of previously recorded archaeological sites and archaeologically sensitive areas, and previously identified and evaluated architectural resources. Archaeological and architectural resources are discussed in greater detail in Sections 6.9.1 and 6.9.2, respectively. A discussion of Native American resources is provided in Section 6.9.3. Resources that were determined historic properties are discussed in greater detail in Section 6.9.4.

In general, the APE was considered sensitive for cultural resources that were associated with a variety of cultural periods of human occupation. Previously recorded archaeological sites or archaeologically sensitive areas were identified in the vicinity of the APE, and indicate prehistoric and historic settlement and/or use of the general project area. Extant buildings and structures in the vicinity of the APE document more recent occupation and use of the area from the mid-nineteenth century to the present, including the construction of the former Naval Hospital at the turn of the twentieth century.

6.9.1 Archaeological Resources

A 2013 Phase I archaeological investigation conducted at the former Naval Hospital property was an investigation of the terrestrial portion of the APE only; offshore portions of the APE at the former Naval Hospital property were not surveyed as part of the 2013 Phase I archaeological investigations (Gould and LeeDecker 2014). A total of 27 shovel tests were excavated in unpaved areas of the terrestrial portion of the APE at the former Naval Hospital property. Two of the 27 shovel tests contained two fragments of historic ceramic; none of the other 25 shovel tests contained artifacts. All of the shovel tests revealed evidence of prior surface and subsurface disturbance in the form of fill overlying cut and truncated natural soils. Based on these results, no archaeological sites were identified within terrestrial portions of the APE at the former Naval Hospital property and no further archaeological investigations of terrestrial portions of the APE at the former Naval Hospital property were recommended (Gould and LeeDecker 2014). The Navy consulted with the Rhode Island SHPO on the lack of archaeological sensitivity of terrestrial portions of the APE at the former Naval Hospital property, and the Rhode Island SHPO concurred that no further archaeological investigations of the terrestrial portion of the APE at the former Naval Hospital property were required (Lin 2013; Sanderson 2013b).

The Navy has not conducted underwater archaeological investigations at the offshore portion of the APE, where Pier 71 of the former Naval Hospital property is located. However, other investigations have indicated that no known submerged or underwater cultural resources or historic properties have been identified within the offshore portion of the APE (Louis Berger and Associates, Inc. 1998; Gould and LeeDecker 2014). The Navy's cultural resources survey of U.S. Naval Complex Newport in 1998 generally assessed the waters of Narragansett Bay offshore of U.S. Naval Complex Newport as being considered sensitive with respect to submerged historic archaeological resources (Louis Berger and Associates, Inc. 1998), and identified one underwater or submerged archaeological site, consisting of a Revolutionary War-era shipwreck, in an offshore location that is outside, but in the vicinity of, the APE at the offshore portion of the former Naval Hospital property. The survey indicated that the Rhode Island Marine Archaeology Project had been working at the site, assisted by a grant from the Department of Defense Legacy Program (Louis Berger and Associates, Inc. 1998).

The 2013 Phase I archaeological investigation conducted for terrestrial portions of the APE at the former Naval Hospital property acknowledged the presence of the previously identified submerged archaeological site RI-2125 (also known as the British Transport Site), describing it as an NRHP-eligible submerged archaeological site comprising an historic (18th century, Revolutionary War) shipwreck and confirming that it is located offshore of the former Naval Hospital property. The site consists of a ballast pile, two cannons, and an exposed timber. Archaeological material recovered from the submerged archaeological site, consisting of wood, leather, kaolin pipe fragments, glass and creamware (ceramics), confirmed the 18th century age of the site (Gould and LeeDecker 2014).

As noted in the 2013 Phase I archaeological investigation report, submerged archaeological site RI-2125 is the remains of a private British transport ship, believed to be one of at least ten private British transports that were documented as being present in Newport Harbor in 1778. These British transport ships were private vessels used to transport men and materiel across the Atlantic for the British Navy and may also have been used as a prison ship to house American sympathizers of the Revolution (Gould and LeeDecker 2014. Additionally, it is possible that the shipwreck comprising Site RI-2125 may be the remains of the ship *Lord Sandwich ex Endeavor*, a British Royal Navy research vessel that was sailed by Captain James Cook of the British Navy on his first voyage to the South Pacific from 1769 to 1771 (Gould and LeeDecker 2014). The *Endeavor* was sold into private hands following this voyage, was subsequently used as a transport, and was documented as being in Newport Harbor during the Revolutionary War. The fate of the *Endeavor* after the Revolutionary War is currently unknown, although its absence from the historical record after 1779 suggests that it is one of the transports that were lost during the British naval blockade of Newport Harbor. Additional information would be necessary to determine whether Site RI-2125 is the remains of the *Lord Sandwich ex Endeavor* (Gould and LeeDecker 2014*)*.

In 2006, during the Navy's consultation with the Rhode Island SHPO for another project involving excess property disposal at the former Naval Hospital property, the Rhode Island SHPO noted that the 18th century shipwreck (RI 2125) was located offshore of the former Naval Hospital property but indicated that the full extent of the site and its boundaries was unknown (Sanderson 2006). While the Rhode Island SHPO further recommended that possible effects of this other project on this underwater archaeological site should be taken into account (Sanderson 2006), the Navy did not undertake an assessment of possible effects on Site RI-2125 because this other earlier project was not carried forward by the Navy.

In 2013, during the Navy's consultation with the Rhode Island SHPO on the results of the Phase I archaeological investigations for the current proposed action, including archaeological investigations of terrestrial portions of the APE at the former Naval Hospital property, the Rhode Island SHPO noted that offshore land off of the former Naval Hospital property had not been surveyed as part of this study and indicated that offshore land off of the former Naval Hospital property will need to be surveyed to determine if currently unknown significant sites are present. The Rhode Island SHPO also indicated that an evaluation of preservation or mitigation options for the known shipwreck site (RI-2125), a possible Revolutionary War era transport vessel, must be conducted before the off-shore land is disposed of by the Navy (Sanderson 2013b).

6.9.2 Architectural Resources

As a result of the Navy's cultural resources survey of U.S. Naval Complex Newport in 1998, the U.S. Naval Hospital Newport Historic District was recommended NRHP-eligible under Criterion C. The original permanent buildings of the Newport Naval Hospital were largely intact and, as a group, represented the Navy's plan for hospital construction just prior to World War I. As such, the district was considered representative of the theme of architecture and engineering of twentieth century military buildings. Although alterations and additions had diminished the integrity of some of the buildings, collectively they were still able to clearly portray the distinctive characteristics of their type and time (Louis Berger and Associates, Inc. 1998). The Rhode Island SHPO concurred with the eligibility recommendations for the U.S. Naval Hospital Newport Historic District (U.S. Department of the Navy 2010a).

The 2013 architectural survey and evaluation update conducted for the proposed action confirmed that the U.S. Naval Hospital Newport Historic District has retained its integrity since the previous NRHP-eligibility evaluation in 1998 and remains eligible for the NRHP in the areas of Health/Medicine,

Architecture, and Military under Criteria A and C. Additionally, the boundaries of the historic district have been expanded to include the Pier (Structure 71) and the period of significance has been revised to begin in 1913 and end in 1942 (Groesbeck and Bedford 2014). With the results of the 2013 architectural survey and evaluation, a total of 16 elements of the NRHP-eligible U.S. Naval Hospital Newport Historic District have been identified (nine contributing elements and six non-contributing elements). Nine of the 16 elements are within the APE at the former Naval Hospital property, including five that are contributing elements of the historic district and four that are non-contributing elements (see Table 6.9-1 and Figure 6.9-1). The Navy consulted with the Rhode Island SHPO on the evaluation of the buildings and structures within the APE at the former Naval Hospital property for NRHP-eligibility and the Rhode Island SHPO concurred that these buildings and structures were NRHP-eligible (Lin 2013; Sanderson 2013b).

Table 6.9-1 Extant Buildings and Structures within the APE at the Former Naval Hospital Property that are Contributing and Non-Contributing Elements of the NRHP-Eligible U.S. Naval Hospital Newport Historic District

Building/ Structure Number	Name	Construction Date	Historic Use	Current Use	NRHP-Eligibility Status
Contributing Elements					
1	Main Hospital Building	1913	Military (Naval) hospital	Vacant	NRHP-eligible as a contributing element of the U.S. Naval Hospital Newport Historic District
7	Hospital Garage	1914	Garage for Main Hospital Building	Vacant	NRHP-eligible as a contributing element of the U.S. Naval Hospital Newport Historic District
45	Nurses' Home	1942	Nurses' quarters	Vacant	NRHP-eligible as a contributing element of the U.S. Naval Hospital Newport Historic District
71	Pier	1942	Pier	Pier	Recommended NRHP-eligible as a contributing element of the U.S. Naval Hospital Newport Historic District
A/B	Quarters A and B	1923	Officer's quarters	Vacant	NRHP-eligible as a contributing element of the U.S. Naval Hospital Newport Historic District
Non-Contributing Elements					
63	Detached Garage	1948	Garage for Quarters A and B	Vacant	Not NRHP-eligible – a noncontributing element of the U.S. Naval Hospital Newport Historic District
993	Switchgear and Generator Building	1974	Unidentified	Unknown	Not NRHP-eligible – a noncontributing element of the U.S. Naval Hospital Newport Historic District

Table 6.9-1 Extant Buildings and Structures within the APE at the Former Naval Hospital Property that are Contributing and Non-Contributing Elements of the NRHP-Eligible U.S. Naval Hospital Newport Historic District

Building/ Structure Number	Name	Construction Date	Historic Use	Current Use	NRHP-Eligibility Status
None	Gate House	Original construction unknown; replace by current modern gate house	Gate house	Gate house	Not NRHP-eligible – a noncontributing element of the U.S. Naval Hospital Newport Historic District
None	Retaining Wall	Original construction ca. 1915; replaced by current wall after World War II	Retaining wall	Retaining wall	Not NRHP-eligible – a noncontributing element of the U.S. Naval Hospital Newport Historic District

Source: Groesbeck and Bedford 2014; U.S. Department of the Navy 2010a; Louis Berger & Associates, Inc. 1998

6.9.3 Native American Resources

The Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at the former Naval Hospital property: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

6.9.4 NRHP-Listed or -Eligible Historic Properties

The 2013 Phase I archaeological investigation and the 2013 architectural survey and evaluation update conducted for the proposed action resulted in the identification of a portion of one historic property that is located within the APE at the former Naval Hospital property. This historic property is the NRHP-eligible U.S. Naval Hospital Newport Historic District. The Navy has determined that the previously identified U.S. Naval Hospital Newport Historic District remains NRHP-eligible under Criteria A and C and as a result of the 2013 architectural survey and evaluation, expanded the boundaries of the district to include the pier (Pier 71) and revised the period of significance to between 1913 and 1942. With these changes, the historic district would comprise 16 elements (nine contributing and seven non-contributing elements). The APE at the former Naval Hospital property overlaps a portion of the historic district. As discussed in Section 6.9. 2 and summarized in Table 6-9.1, nine of the 16 elements of the historic district are also in the APE for the proposed action at the former Naval Hospital property: five contributing elements (Buildings 1, 7, and 45; Pier 71; and Quarters A and B) and four non-contributing elements (Buildings 63, 993, the gate house, and the retaining wall).

The Navy consulted with the Rhode Island SHPO on the identification of historic properties for the proposed action at the former Naval Hospital property (Lin 2013). The Rhode Island SHPO concurred with the identification of historic properties within the APE for the proposed action at the former Naval Hospital property (Sanderson 2013b).

6.10 Topography, Geology, and Soils

This section summarizes the existing topography, geology, and soil conditions at the former Naval Hospital property. This section also includes a discussion of existing conditions for bathymetry and marine sediment in Narragansett Bay off-shore of the former Naval Hospital property.

6.10.1 Topography

The former Naval Hospital property topography is relatively flat. Elevations range from approximately 20 feet amsl at its eastern land boundary to sea level at the western land boundary. From the western land boundary, the site extends into Coasters Harbor (part of Narragansett Bay, approximately 550 feet west).

6.10.2 Geology

The former Naval Hospital property lies within the New England Physiographic Province (USGS 2002). The site is located on the Rhode Island Formation of the stratified Narragansett Bay Group of the Pennsylvanian period (323 to 290 million years ago). The Narragansett Bay Group rocks are part of the Esmond-Dedham subterrane of the Southeastern New England Avalon zone. The Esmond-Dedham Subterrane Narragansett Bay Group is deposited upon older rocks of both West Bay and East Bay parts of the Esmond-Dedham subterrane. The Narragansett Bay Group – Rhode Island Formation consists of meta-sandstone, meta-conglomerate, schist, carbonaceous schist, and graphite. Plant fossils are common (USGS 2013).

The former Naval Hospital is not near any known fault locations (USGS 2005). According to the USGS, only one earthquake has ever been recorded as possibly being centered in the State of Rhode Island. This earthquake was recorded on February 27, 1883 (USGS 2009). No other earthquakes have been recorded in the state. The former Naval Hospital property is located in an earthquake zone where in a 50-year period, there is only a 2 percent chance of an earthquake occurring with a peak acceleration (ground movement) of 8 percent to 10 percent acceleration due to gravity (%g). Because it takes a peak acceleration of 10%g to cause damage to buildings, there is minimal risk of an earthquake that would cause damage to the former Naval Hospital property (USGS 2009).

6.10.3 Soils

6.10.3.1 Soil Types

The soil type present on the former Naval Hospital property is the Newport-Urban land complex (see Table 6.10-1 and Figure 6.10-1). The remaining portion of the site is water.

Table 6.10-1 Soil Types, Former Naval Hospital Property

Soil Name	% Slope Range	Acres
Newport-Urban land complex (NP)	0% to 15%	8.3

Source: USDA 2012.

Newport-Urban Land Complex (NP)

Newport-Urban land complex consists of well-drained Newport soils and areas of urban land. The main limitation of the Newport soils for development is the slow or very slow permeability in the substratum. Roads and streets require special design to prevent frost heaving (USDA 1981).

6.10.3.2 Soil Characteristics and Limitations

As indicated in Section 3.10, the USDA rates soils according to characteristics that could limit development. These characteristics include:

- **Erosion Potential**. The soil erosion potential for the Newport-Urban land complex is moderate. The soil erodibility factor is 0.24 at a depth of 24" to 30", which means the soils are moderately susceptible to detachment and they produce moderate runoff (USDA 2012; IWR 2002).
- **Hydric Soils**. Newport-Urban land complex soils are listed as dominantly non-hydric, although non-hydric soil can contain hydric inclusions (USDA 2012).
- **Constructability.** There are moderate constraints on development on Newport-Urban land complex soils and a few restrictions on residential or commercial development if on-site septic tanks are to be used. The more common sources of constructability limitations for the soils include shallow excavations (slight limitations due to dense to very dense soils), moderate frost action, and a moderate slope. The moderate slope and moderate frost action is unfavorable, but limitations can be overcome or minimized by special planning or design. These soils are dense to very dense, which makes excavation difficult; however, there is a low shrink-swell potential (USDA 1981; USDA 2012).

6.10.3.3 Farmland Soils

Soils on the former Naval Hospital property are not rated for farmland uses (USDA 2012).

6.10.4 Bathymetry

The bathymetric contours for the Narragansett Bay offshore of the former Naval Hospital property range from 0 to 20 feet and from 20 to 40 feet (see Figure 6.10-2).

6.10.5 Marine Sediment

Eleven sediment types have been identified in Narragansett Bay, ranging from clayey silt to coarse gravel (NBNERR 2009 [see Figure 6.10-3]). The distribution of these sediment types depends on two key factors: currents and circulation patterns. These factors generally result in finer grained materials such as sand-silt-clay and clayey silt being located in the middle and upper portions of the Bay and in protected coves and harbors. Coarser sediments, mostly sandy, are found in the lower reaches of the Bay and in constricted areas. The most prevalent sediment types found in Narragansett Bay are clay-silt and sand-silt-clay sediments (Raposa n.d.).

Offshore of the former Naval Hospital property, within approximately 0.1 mile of the shoreline, marine sediment types are largely unsampled (see Figure 6.10-3). Farther out, the dominant sediment type is clay-silt (Raposa n.d.).

6.11 Water Resources

The following sections summarize the existing conditions and physical characteristics of water resources found on and in the vicinity of the former Naval Hospital property.

6.11.1 Surface Water

No surface freshwaters exist on the former Naval Hospital property other than Narragansett Bay. The waters offshore of the former Naval Hospital property are also classified by the CRMC as a Type 4 Water: Multipurpose Waters (see Section 6.1.4).

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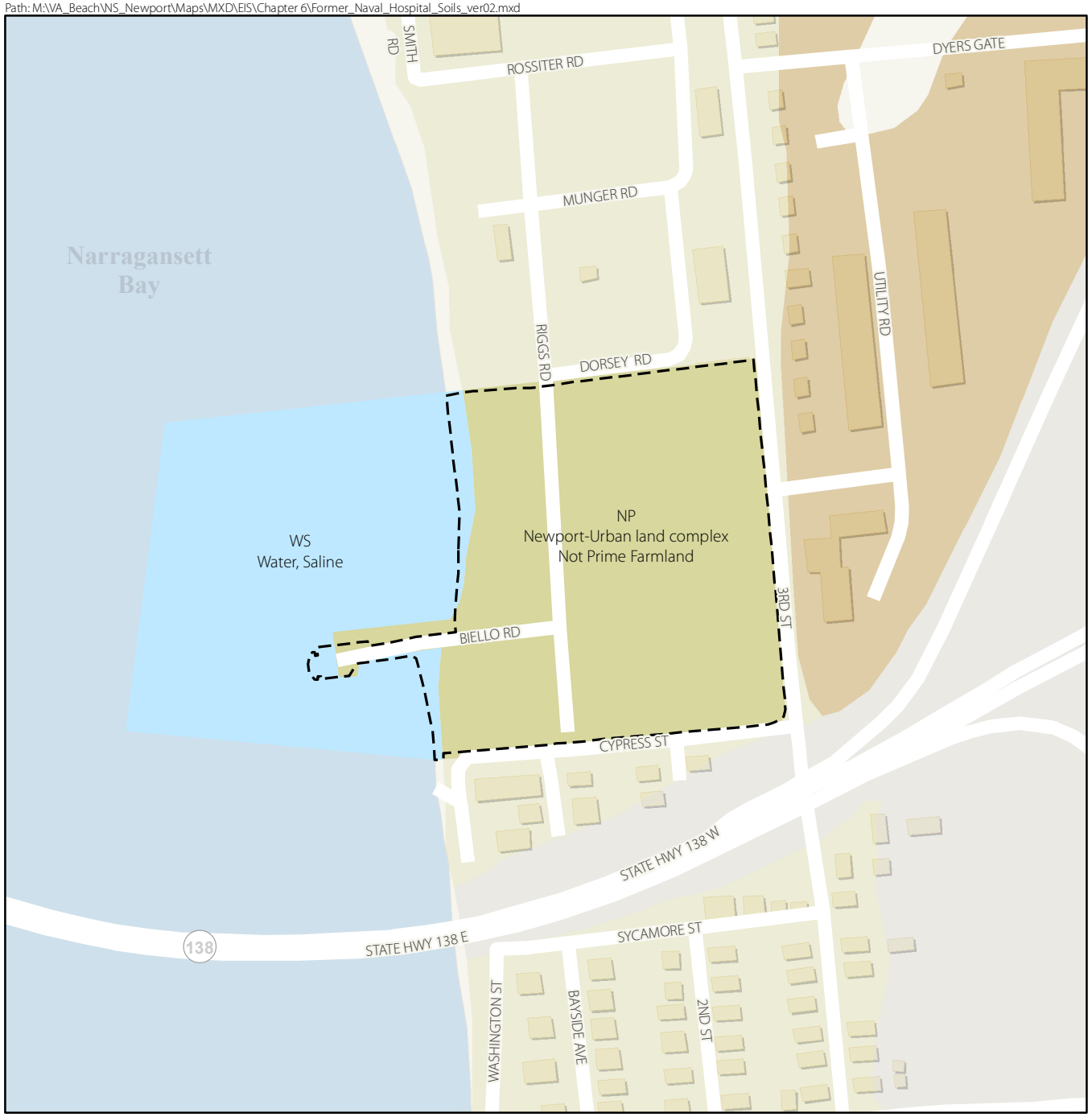

Figure 6.10-1

Former Naval Hospital Property Soils

NAVSTA Newport, Rhode Island

Legend

Property Boundary

Soil Type

- NP - Newport-Urban land complex
- Ws - Water, saline
- NeA - Newport silt loam, 0 to 3 % slopes
- UD - Udorthents-Urban land complex

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: U.S. Department of Agriculture, Natural Resources Conservation Service, Rhode Island State Office 2012

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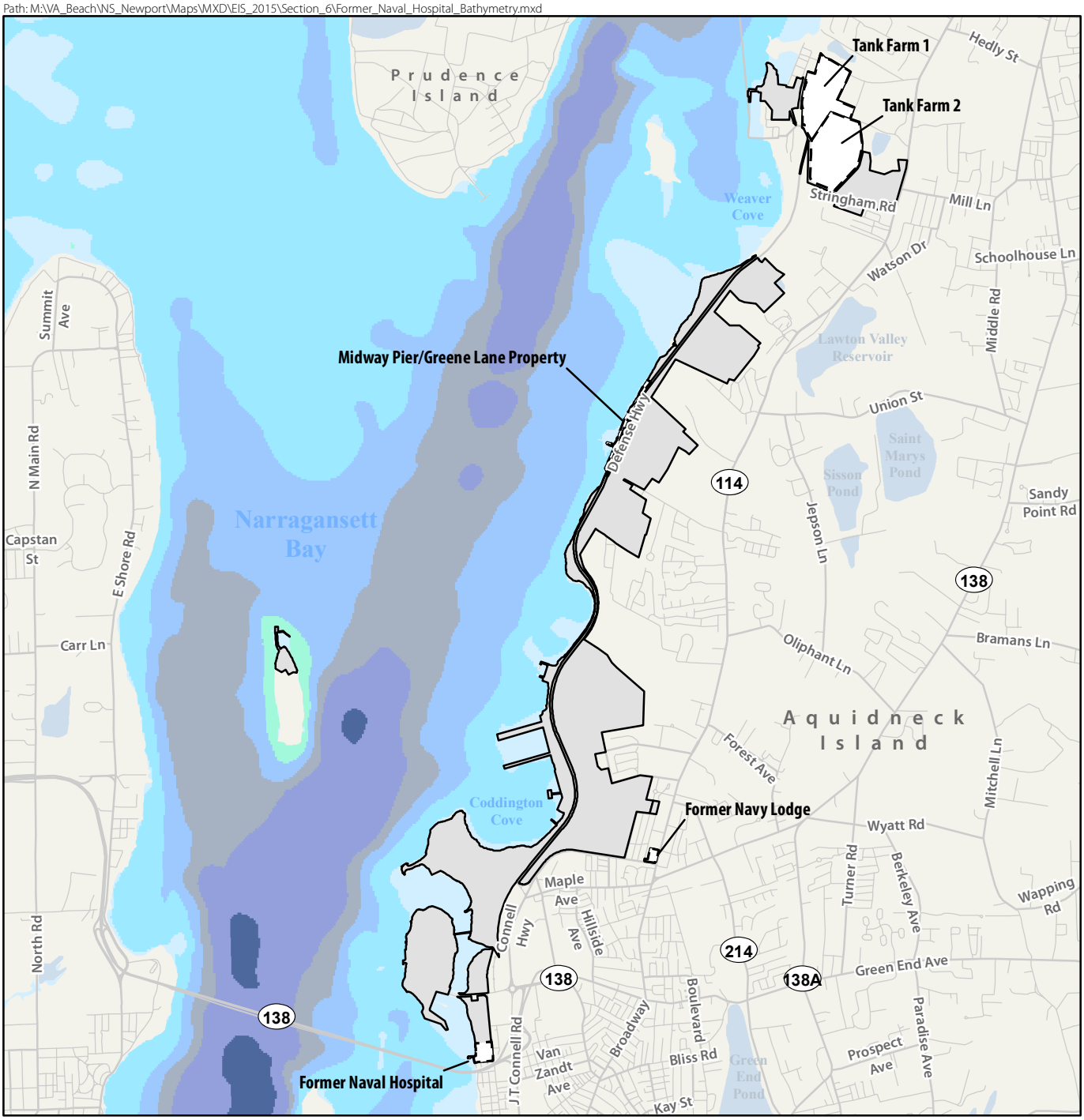

Legend

- Street
- Surplus Properties
- Installation Boundary

Bathymetry

- 0-40 ft
- 0-20 ft
- 20-40 ft
- 40-60 ft
- 60-80 ft
- 80-100 ft
- >100 ft

SCALE

0 2,000 4,000 Feet

Figure 6.10-2

Bathymetry of Narragansett Bay

NAVSTA Newport, Rhode Island

SOURCE: RIGIS 1989

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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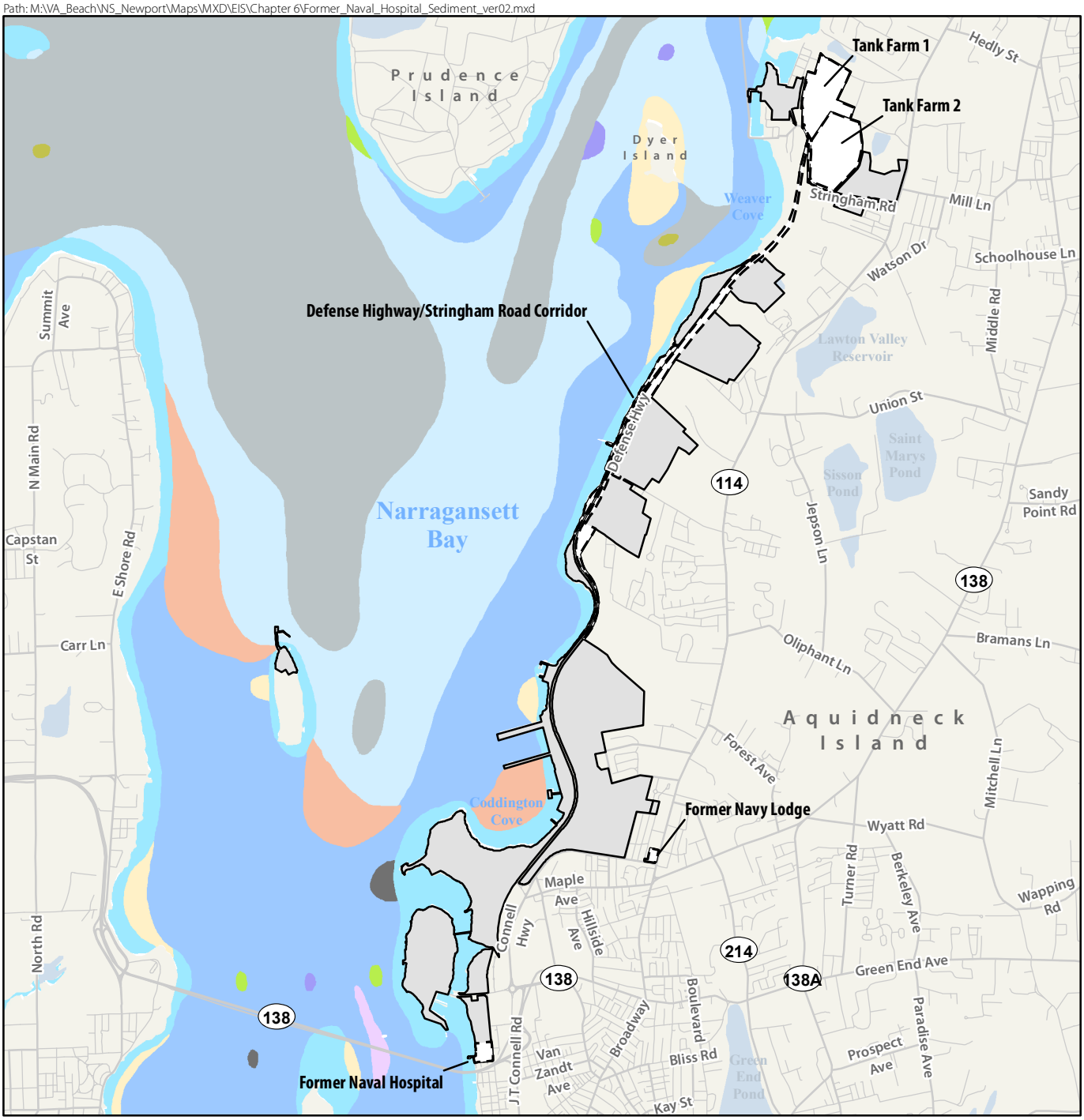

SCALE

0 2,000 4,000 Feet

Legend

- Street
- Surplus Properties
- Installation Boundary

Sediment

- Gravel
- Sandy Gravel
- Gravel-Sand-Silt
- Sand
- Gravelly Sand
- Silty Sand
- Sandy Silt
- Clay-Silt
- Sand-Silt-Clay
- Gravel-Silt-Clay
- Not Sampled

SOURCE: RIDEM Narragansett Bay Estuary Program 1960

Figure 6.10-3

Narragansett Bay Marine Sediments

NAVSTA Newport, Rhode Island

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

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Narragansett Bay has a mean depth of 27 feet and the mean tidal range at Newport is 3.5 feet, with extremes ranging to 7.5 feet (NAVFAC Mid-Atlantic 2001). Offshore of the former Naval Hospital property, depth to bottom ranges between 0 and 40 feet (see Section 6.10.4 for additional discussion of Narragansett Bay).

The former Naval Hospital property is located in the Lower East Passage subwatershed (HUC 010900040909) of the Narragansett Bay watershed. Developed land (residential, commercial, and industrial) comprises the largest land use within the watershed—approximately 16.8 percent of the total watershed—followed by forested land, which is approximately 15 percent of the land use (University of Rhode Island Environmental Data Center 2013b).

6.11.2 Water Quality

Narragansett Bay is classified as an SB water by the RIDEM in the RIDEM Water Quality Regulations. As defined in Section 3.11, Class SB waters are designated for primary and secondary contact recreational activities, shellfish harvesting for controlled relay and depuration, and fish and wildlife habitat.

The section of Narragansett Bay next to the former Naval Hospital property is not listed as impaired by the RIDEM on the *State of Rhode Island 2012 303(d) List – List of Impaired Waters*; however, the section of Newport Harbor/Coddington Cove located north of the Training Station Road bridge in Newport does not support the fish and wildlife habitat designated use because sediments in that area require monitoring (RIDEM 2012a) (see Section 4.11.2 for additional discussion regarding the overall water quality of Narragansett Bay).

6.11.3 Groundwater

Groundwater in the east bay section of Rhode Island is generally provided by aquifers in till and bedrock. Groundwater resources at NAVSTA Newport can be found at relatively shallow depths due to the low elevation of the installation relative to sea level (NAVFAC Engineering Field Activity Northeast 2006). Depth to the water table in the primary soil type at the surplus property (Newport-Urban land) is less than 6 feet (University of Rhode Island Cooperative Extension and Rhode Island Health Source Water Assessment Program 2003). The groundwater is susceptible to saltwater intrusion because of its proximity to sea level (Tetra Tech, Inc. 2014a).

Groundwater in the vicinity of the former Naval Hospital property is classified by the RIDEM as GB (RIDEM 2010d). As described in Section 3.11 of this EIS, GB groundwater resources are designated as known to be or presumed to be unsuitable for drinking water use without treatment. No wellhead protection areas exist around the former Naval Hospital property; the closest wellhead protection area is located approximately 1.8 miles to the east (RIDEM 2010d).

6.11.4 Floodplains

Areas in the 100-year floodplain have been mapped by FEMA. Approximately 2 acres of FEMA-delineated floodplains exist on the western portion of the former Naval Hospital property, along Narragansett Bay (see Figure 6.11-1). During a 100-year storm, flooding may be expected to inundate extensive areas between the Newport-Pell Bridge and upland areas on Coddington Point, leaving only isolated upland areas on Coasters Harbor Island and areas along Third Street north of Gate 10 unflooded (Tetra Tech, Inc. 2014a).

6.11.5 Wetlands

The former Naval Hospital property has one linear estuarine and marine wetland located on the site (see Figure 6.11-2). It is associated with the coastline along Narragansett Bay and is approximately 0.2 acres. This wetland is discussed in more detail in Section 6.12.1

6.12 Biological Resources

This section summarizes the existing vegetation and wildlife, including threatened and endangered species and significant wildlife habitat, at the former Naval Hospital property.

6.12.1 Vegetation

The former Naval Hospital property is highly developed with buildings and impervious surfaces. Vegetation is limited primarily to maintained grass and several trees. As indicated in Table 6.12-1, more than 40 percent of the property at the former Naval Hospital is developed, while the remaining areas comprise upland (13 percent), open water (45 percent), wetland marine/estuarine (2 percent) and beach (0.5 percent).

Table 6.12-1 Habitat Cover at the Former Naval Hospital Property

Habitat Cover	Approximate Acreage	Percent
Former Naval Hospital Property		
Beach	0.08	0.5
Developed	6.2	40
Upland (maintained grass and trees)	2.0	13
Wetland Marine/Estuarine	0.2	2
Open Water	6.9	45

Source: RIDEM, Narragansett Bay Estuary Program, and CRMC 2003; USFWS 2011

Open Water

The former Naval Hospital property abuts Narragansett Bay. The land offshore of the property is under the control of the CRMC, although the Navy maintains offshore riparian rights to 6.9 acres, which provides the Navy the right of access to use Narragansett Bay offshore of the former Naval Hospital property. These 6.9 acres are open water habitat, characteristically subtidal sand with the benthos defined as a dredged channel. The most common vegetation found in the open water in Narragansett Bay is phytoplankton, which nourishes all other life in the bay. The open water area south of Coddington Point is mapped as a macroalgal bed (NAVFAC Mid-Atlantic 2001). Shoreline and aquatic habitat typical of this region include eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*) (NBNERR 2009). Neither of these types of SAV occur at the former Naval Hospital property.

Marine/Estuarine Wetland

The former Naval Hospital property hosts approximately 0.2 acres of marine/estuarine wetland (see Figure 6.11-2). Low marsh vegetation in estuarine wetlands is dominated by tall smooth cordgrass (*Spartina alterniflora)* (NBNERR 2009). Cordgrass is shorter along the high-tide line and is a high marsh species like the following: spike grass (*Distichlis spicata*), glassworts (*Salicornia spp.*), sea lavender (*Limonium nashii*), salt marsh aster (*Aster tenuifolius*), black grass (*Juncus gerardii*), and hightide bush (*Iva frutescens*). Much of the vegetation in this habitat cover breaks down to create a decomposing plant material called detritus. Detritus is a critical component in the health of wildlife found in these wetlands (NBNERR 2009).

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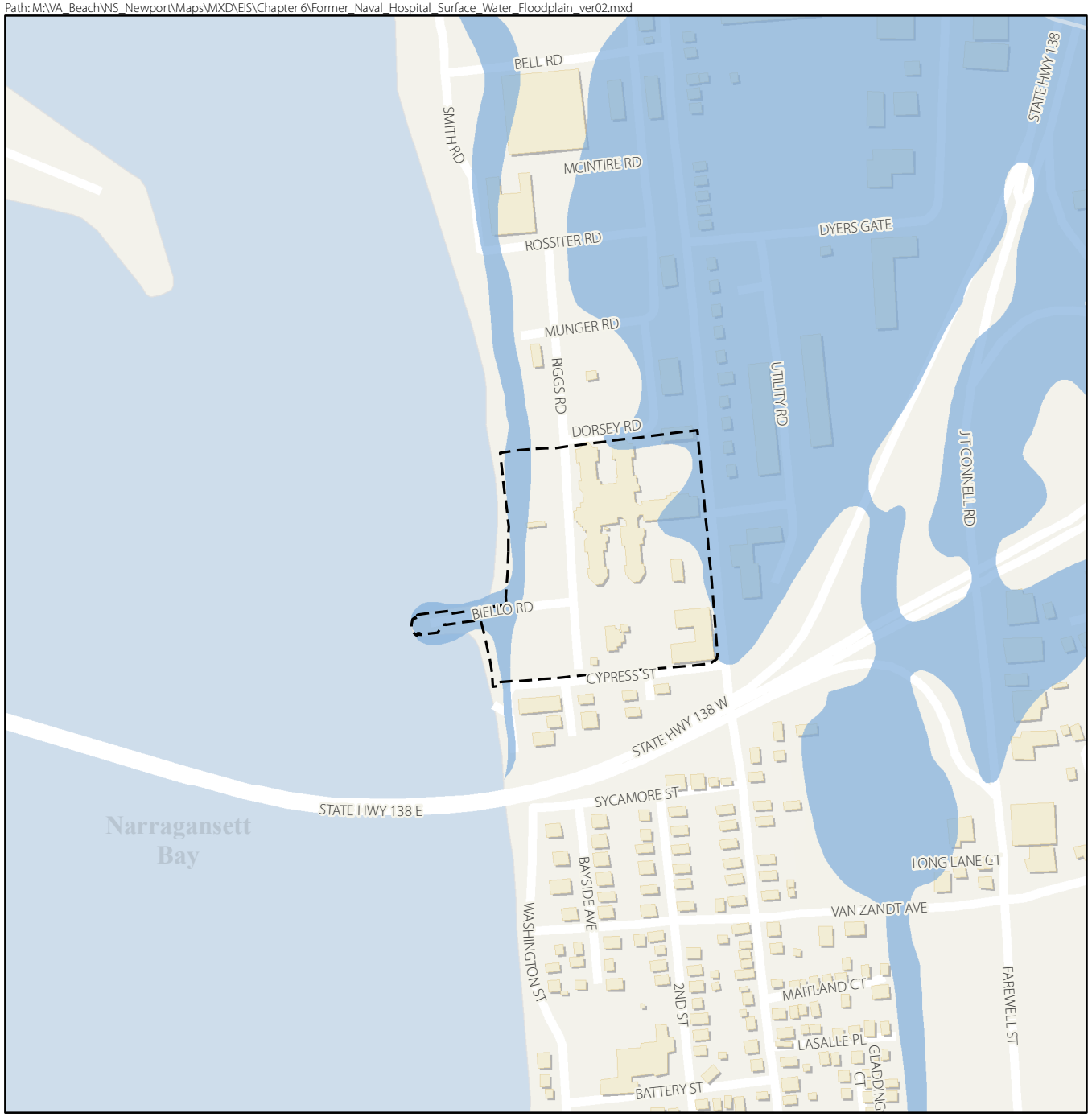

Figure 6.11-1

Former Naval Hospital Property Surface Water and Floodplains

NAVSTA Newport, Rhode Island

Legend

Rivers/Streams

Property Boundary

FEMA Floodplain

AE

Zone AE: 100 year floodplains in which base flood elevation exists

SCALE

0 200 400 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: FEMA 2010; RIDEM, Office of Water Resources 2010

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Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Chapter 6\Former_Naval_Hospital_Wetlands_ver02.mxd

Figure 6.11-2

Former Naval Hospital Property Wetlands

NAVSTA Newport, Rhode Island

Legend

- Rivers/Streams
- Property Boundary
- NWI Wetlands
- Estuarine and Marine Wetland

SCALE

0 100 200 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: U.S. Fish and Wildlife Service 2011

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Beach

A small portion of the former Naval Hospital property, approximately 0.08 acres, is sandy beach (see Figure 6.12-1). Little vegetation is present in this habitat. The vegetation that does occur is along the upper edges of the beach where tidal influence is limited and consists of a variety of herbaceous plants, mostly nonnative (NAVFAC Mid-Atlantic 2001). Vegetation in this area is subject to harsh extremes of temperature, salinity, desiccation, and wave action (NBNERR 2009).

6.12.2 Wildlife

The potential for the presence of wildlife species on the former Naval Hospital property is limited because of the predominance of maintained grass and impervious surfaces.

Terrestrial Mammals

Mammals occurring at the former Naval Hospital property are limited to species adapted to urban/suburban conditions such as the eastern gray squirrel (*Sciurus carolinensis*), common raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Small mammals such as the white-footed mouse (*Peromyscus leucopus*), and woodchuck also are likely to be present (U.S. Department of the Navy 2009).

Marine Mammals

Harbor seals are frequently found at Coddington Cove, north of the former Naval Hospital property, and could potentially be found along other areas of the installation (Tetra Tech, Inc. 2014a). Harbor seals make use of seaweed covered and rocky-ledged haul-out sites for resting, mating, and protection. There are no haul-outs at the former Naval Hospital property, but harbor seals and other marine mammals still have the potential to occupy the property (see Section 3.12.1.2 for discussion of marine mammals likely to occur at the former Naval Hospital property). Reports of harbor porpoises also have been documented in the winter in Coddington Cove.

Herpetofauna

The herpetofauna common to Rhode Island are not likely to be present at the former Naval Hospital property because of the lack of ponds, forested/shrubland wetlands, and woodland ponds, the preferred habitat for such species.

Benthos

Benthic species likely to occur in the open water and tidal flat areas of the surplus areas, including the former Naval Hospital property, include annelids (Phylum *Annelida*), nematodes (Phylum *Nematoda*), gastropods (Class *Gastropoda*), bivalves (Class *Bivalvia*), and mollusks (Phylum *Mollusca*) (Frithsen 1989).

Avian Species

A discussion of avian species common to the areas around the surplus properties, including the former Naval Hospital property and respective nearby IBAs is provided in Section 3.12.1.2.

Finfish

An ichthyoplanktonic survey of fish species likely to occur in Narragansett Bay was conducted by the Narragansett Bay Project from November 1989 to November 1990 (Keller et al. 1999). The results of this survey are provided in Table 6.12-2.

Table 6.12-2 Fish Species

Family	Common Name	Scientific Name
Angelita	American eel	*Anguilla rostrate*
Clupeidae	Alewife and Blueback	*Alosa spp.*
	Atlantic herring	*Clupea harengus*
	Atlantic menhaden	*Brevoortia tyrannus*
Engraulidae	Bay anchovy	*Anchoa mitchilli*
	Striped anchovy	*A. hepsetus*
Gadidae	Fourbeard rockling	*Enchelyopus cimbrius*
	Atlantic Cod	*Gadus marhua*
	Silver hake	*Merluccius bilinearis*
	Hakes	*Urophycis spp.*
	Pollock	*Pollachius virens*
Atherinidae	Atlantic silverside	*Menidia menidia*
Syngnathidae	Northern pipefish	*Syngnathus fuscus*
Serranidae	Sea basses	*Morone sp., Morone americanus, Morone saxatilis, Morone americana*
Sparidae	Scup	*Stenotomus chrysops*
Chaetodontidae	Spotfin butterflyfish	*Chaetodon ocellatus*
Sciaenidae	Northern kingfish	*Menticirrhus saxitilis*
Labridae	Tautog	*Tautoga onitis*
	Cunner	*Tautogolabrus adspersus*
Stichaeidae	Radiated shanny	*Ulvaria subbifurcata*
	Snake blenny	*Lumpenus lumpretaeformis*
Pholidae	Rock gunnel	*Pholis gunnellus*
Ammodytidae	American sand launce	*Ammodytes americanus*
Gobiidae	Seaboard goby	*Gobiosoma ginsburgi*
Scombridae	Atlantic mackerel	*Scomber scombrus*
Stromateidae	Butterfish	*Peprilus triacanthus*
Triglidae	Searobin	*Prionotus carolinus*
Cottidae	Grubby sculpin	*Myoxocephalus aeneus*
	Longhorn sculpin	*Myoxocephalus octodecimspinosus*
Cyclopteridae	Seasnail	*Liparis atlanticus*
Bothidae	Windowpane	*Scophthalmus aquosus*
	Summer flounder	*Paralichthys dentatus*
	Fourspot flounder	*Paralichthys oblongus*
	Gulfstream flounder	*Citharichthys arctifrons*
Pleuronectididae	Winter flounder	*Pleuronectes americanus* *Pseudopleuronectes americanus*
	Yellowtail	*Pleuronectes ferrugineus*
	American plaice	*Hippoglossoides platessoides*
Soleidae	Hogchoker	*Trinectes maculatus*
Tetraodontidae	Puffer	*Sphoeroides maculatus*

Source: Narragansett Bay National Estuarine Research Reserve 2009

Note: List is of species whose eggs or larvae were collected in Narragansett Bay from December 1989 - November 1990.

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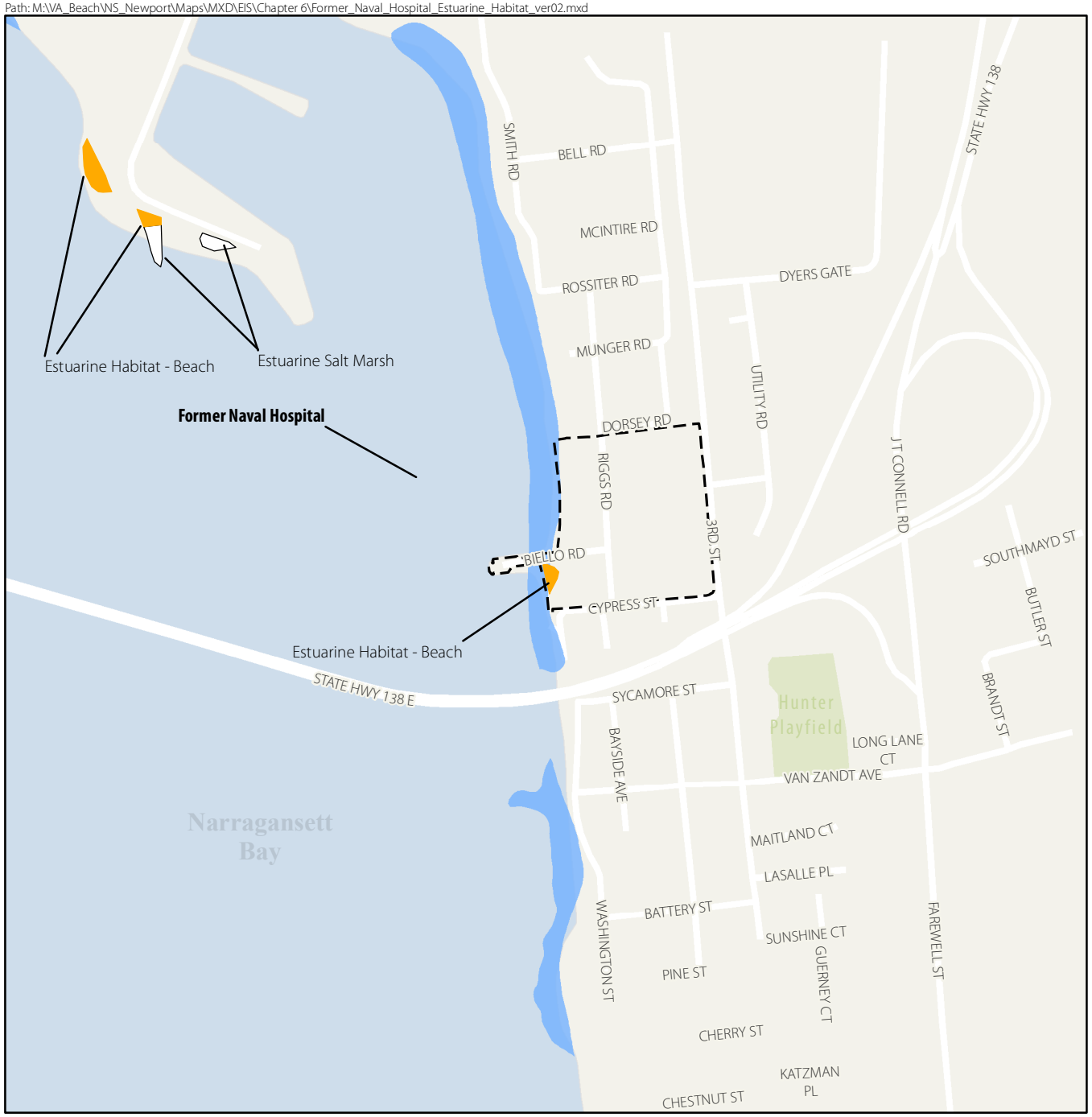

Figure 6.12-1

Former Naval Hospital Property Estuarine Habitat

NAVSTA Newport, Rhode Island

Legend

- Property Boundary
- Narragansett Bay Estuarine Habitat
  - Beach
  - Estuarine Salt Marsh
- NWI Wetlands
  - Estuarine and Marine Wetland

SCALE

0 500 1,000 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: RIDEM Narragansett Bay Estuary Program 2003; USFWS 2011

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Shellfish and Crustacea

As indicated in Section 3.12.1.2, species typical of Narragansett Bay include quahog, soft-shelled clam, mussel, American lobster, and squid. All of these species are harvested from the Bay. These species could occur off shore of the former Naval Hospital property (NAVFAC Mid-Atlantic 2014).

6.12.3 Threatened and Endangered Species

As indicated in Section 3.12.2, agency-review letters were sent to the USFWS, NMFS, and RIDEM in order to obtain updated information regarding listed species. A response from the USFWS received on February 13, 2013, indicated that no federally listed or proposed threatened or endangered species or critical habitat within its jurisdiction are known to occur on the former Naval Hospital property (Chapman 2013). Subsequent to this correspondence, the northern long-eared bat was listed as a threatened species and is discussed below. Also, a response from RIDEM received on February 12, 2013 indicated that no state-listed or candidate rare, threatened, or endangered species are located at the former Naval Hospital property (Jordan 2013). The American oystercatcher (*Haematopus palliatus*) is a state-protected avian species that has been observed on NAVSTA Newport, although no nests have ever been found. The glossy ibis (*Plegadis falcinellus*), a state-listed species of concern, has also been observed at NAVSTA Newport. The 2014 INRMP indicates observations of both species at the former Naval Hospital property (Tetra Tech, Inc. 2014a).

NMFS stated that certain New England coastal waters support various listed species under its jurisdiction, including whales, sea turtles, and five DPSs of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) (Colligan 2013) (Table 6.12-3).

Table 6.12-3 Threatened and Endangered Species under the Jurisdiction of NMFS Potentially Occurring Offshore of the Former Naval Hospital Property

Common Name	Scientific Name	Federal Status
North Atlantic right whale	*Eubalaena glacialis*	E
Humpback whale	*Megaptera novaengliae*	E
Kemp's ridley turtle	*Lepidochelys kempi*	E
Loggerhead turtle[1]	*Caretta caretta*	T[1]
Leatherback turtle	*Dermochelys coriacea*	E
Green turtle[2]	*Chelonia mydas*	T
Atlantic sturgeon New York Bight DPS	*Acipenser oxyrinchus oxyrinchus*	E
Atlantic sturgeon Chesapeake Bay DPS	*Acipenser oxyrinchus oxyrinchus*	E
Atlantic sturgeon South Atlantic	*Acipenser oxyrinchus oxyrinchus*	E
Atlantic sturgeon Carolina DPS	*Acipenser oxyrinchus oxyrinchus*	E
Atlantic sturgeon Gulf of Maine DPS	*Acipenser oxyrinchus oxyrinchus*	T

Source: Colligan 2013

[1] Northwest Atlantic Distinct Population Segment.
[2] Instances of this species in New England waters is rare.

Key:
E = Federally Endangered
T = Federally Threatened

The NMFS also indicated the potential occurrence of two listed whales in the waters off of Rhode Island: the federally listed as endangered North Atlantic right whale (*Eubalaena glacialis*) (from December 1 – June 30) and the federally listed as endangered humpback whale (*Megaptera novaeangliae*) (from March 15 – November 30). Three additional whales were also noted as occurring in New England: the fin whale (*Balaenoptera physalus)*; sei whale (*Balaenoptera borealis)*; and sperm whale (*Physter macrocephalus)*.

But because of their preference for deeper water depths and the near-shore location of the proposed action, these species were deemed unlikely to exist in the vicinity of the project area (Colligan 2013).

Sea turtles potentially occurring in northeastern New England, and potentially in Narragansett Bay, are typically small juveniles. NMFS identified sea turtle species potentially occurring in New England waters as the federally listed as endangered leatherback (*Dermochelys coriacea*) and Kemp's ridley (*Lepidochelys kempi*). The federally listed as threatened green sea turtle (*Chelonia mydas*) has the potential to occur sporadically in New England waters, but its occurrence is rare. The federally listed threatened Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus)* was also referenced by NMFS as potentially occurring in Narragansett Bay and potentially originating from the endangered New York Bight, Chesapeake Bay, South Atlantic, or Carolina DPSs, or the threatened Gulf of Maine DPS. Two federal species of concern, alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*), also have been identified as potentially occurring near the project area (Colligan 2013). However, in August 2013, the NMFS determined that these two species were not warranted for listing as threatened under the ESA.

Following Navy's initial informal consultation with the USFWS, the northern long-eared bat was listed as a threatened species, as discussed in Section 3.12.1.3. The northern long-eared bat is a migratory bat that is found in the U.S. from Maine to North Carolina on the Atlantic Coast, westward to eastern Oklahoma and north through the Dakotas, and into eastern Montana and Wyoming (USFWS 2014a). Historically, this species has been documented as common throughout its range and has not been considered at risk in the U.S. The USFWS listed the northern long-eared bat as federally threatened based on the species' risk of extinction predominantly due to the threat of white-nose syndrome, which is a fungal infection that is decimating certain bat species. Northern long-eared bat numbers have declined by 99 percent in the northeast due to white-nose syndrome (USFWS 2013b). Additional threats to the northern long-eared bat include destruction or degradation of habitat and hibernacula (USFWS 2013a).

The Navy conducted various passive acoustic monitoring surveys for bats between 2009 and 2013 at NAVSTA Newport in support of a proposed 20-megawatt wind energy facility within the NAVSTA Newport installation. The general survey areas were coastal areas at the southern end of the station (such as the Bishop Rock peninsula and a coastal met tower) and Tank Farms 4 and 5. Results for northern long-eared bats are summarized in Table 6.12-4. The 2009 and 2010 surveys did not report results for northern long-eared bats, which was not a named species for those surveys. During a survey conducted in the spring and late summer of 2011, northern long-eared bats were detected at two of the three locations monitored: the coastal met tower and a 1.5-meter-high stake at Tank Farm 4. The third survey location used in 2011 consisted of a met tower at Tank Farm 4, at which the northern long-eared bat was not detected (Tetra Tech, Inc. 2011c). Fifteen northern long-eared bat calls were reported for the 2013 survey: three calls at Bishop Rock peninsula, two calls at a stake location at Tank Farm 4, five calls at a stream location at Tank Farm 4, and five calls at a wetland location at Tank Farm 5 (Tetra Tech, Inc. 2014b, 2014c). The Bishop Rock peninsula is the closest monitoring location to the former Naval Hospital property, located approximately 1.1 miles to the northwest. No monitoring was conducted in 2012 (Tetra Tech, Inc. 2014b). Of the 8,826 total call sequences reported at NAVSTA Newport from the passive acoustic monitoring conducted for bats from 2009 to 2013, 73 calls were documented as non-specific *Myotis* species calls, and 1,397 were documented as "unknown high-frequency" calls, which can be attributable to *Myotis* (Tetra Tech, Inc. 2014c).

Active acoustic monitoring for bats was conducted in summer 2013 along transects in the same general areas of the station—coastal areas at the southern end of the station and Tank Farms 4 and 5. Northern long-eared bat calls were not specifically reported as a result of the active acoustic monitoring. The Navy conducted mist netting for bats over seven nights in July 2013 at various locations; however, the closest location to the former Naval Hospital was over three miles to the northeast. Few bats were caught, and

none were northern long-eared bats; therefore, radiotelemetry has not been performed for northern long-eared bats. Echolocation bat passes that were documented in conjunction with the mist-netting survey did not attribute any of the passes to the genus *Myotis* (Tetra Tech, Inc. 2014b).

Table 6.12-4 Passive Acoustic Monitoring Results for Northern Long-eared Bat, NAVSTA Newport, 2009 - 2013[1]

Monitoring Location at NAVSTA Newport	Number of Northern Long-eared Bat Call Sequences			
	Fall 2009	Fall 2010	Spring/Summer 2011	Spring/Summer 2013
Coastal met tower (Coddington Point portion of station, which is at the southern end of the station)	Survey did not monitor for NLE bat	—	1	—
Bishop Rock peninsula (Coddington Point)	Survey did not monitor for NLE bat	Survey did not monitor for NLE bat	—	3
Tank Farm 4 met tower	—	Survey did not monitor for NLE bat	0	—
Tank Farm 4: 1.5-meter-high stake	—	—	1	2
Tank Farm 4: stream	—	—	—	5
Tank Farm 5 stake: wetland	—	—	—	5

Source: Tetra Tech, Inc. 2010, 2011a, 2011b, 2014b, 2014c.

[1] Passive acoustic monitoring for bats was not conducted in 2012.

Key:
NLE = northern long-eared.
— = location not studied.

The former Naval Hospital property is primarily developed land, with areas of maintained lawn and scattered trees. These trees do not meet the characteristics of northern long-eared bat roosting trees, as described in Section 6.12.3.2. Additionally, the scattered trees on the former Naval Hospital property are located more than 1,000 feet from a forest stand. USFWS Interim Guidance for northern long-eared bat indicates that individual trees that are more than 1,000 feet from other forested habitats are not considered suitable roost trees (USFWS 2014b). Developed land on and off-base dominates the land use within the 1,000 ft-radius around the former Naval Hospital property, and the coastline is largely comprised of developed areas with maintained grass up to the water's edge, further excluding the potential for suitable habitat in proximity to the former Naval Hospital property.

The Navy contacted the USFWS regarding the potential presence of the northern long-eared bat at the surplus properties on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b), To date, USFWS has not provided a response, and informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing.

6.12.4 Significant Wildlife Habitat

The RIDEM Division of Planning and Development's review of the Rhode Island Natural Heritage Program database indicated that no unique natural communities or other significant wildlife communities exist at or near the surplus property (Jordan 2013).

Submerged Aquatic Vegetation

No eelgrass habitat exists at the former Naval Hospital property according to the RIDEM, Narragansett Bay Estuary Program, and RI CRMC (2003) and Applied Science Associates (2011) data.

Wetlands

Approximately 0.2 acres of marine/estuarine wetlands are associated with the former Naval Hospital property. These wetlands provide one of the few areas for potential cover, nesting, and feeding opportunities for wildlife. (See Section 6.12.1 for further discussion.)

Vernal Pools

There are no vernal pools at the former Naval Hospital property.

Essential Fish Habitat

As indicated in Section 3.12.2, agency consultation with the NMFS was completed during the scoping phase of the EIS to assist in identifying species of EFH in Narragansett Bay. As identified in Table 6.12-5, the waters off the coast of the former Naval Hospital property are designated EFH for Atlantic sea herring (*Clupea harengus*), Atlantic plaice (*Hippoglossoides platessoides*), haddock (*Melanogrammus aeglefinus*), Atlantic mackerel (*Scomber scombrus*), king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), red hake (*Urophycis chuss*), cobia (*Rachycentron canadum*), windowpane flounder (*Scopthalmus aquosus*), winter flounder (*Pleuronectes americanus*), summer flounder (*Paralicthys dentatus*), winter skate (*Leucoraja ocellata*), little skate (*Leucoraja erinacea*), bluefish (*Pomatomus saltatrix*), scup (*Stenotomus chrysops*), black sea bass (*Centropristus striata*), and sand tiger shark (*Carcharias taurus*) (NOAA Fisheries Northeast Regional Office n.d.).

Table 6.12-5 Essential Fish Habitat at the Former Naval Hospital Property

Common Name	Scientific Name	Eggs	Larvae	Juveniles	Adults	Spawning Adults
Atlantic Herring	*Clupea harengus*		X	X	X	
Atlantic plaice	*Hippoglossoides platessoides*		X	X	X	
Haddock	*Melanogrammus aeglefinus*		X			
Atlantic mackerel	*Scomber scombrus*	X	X	X	X	
King mackerel	*Scomberomorus cavalla*	X	X	X	X	
Spanish mackerel	*Scomberomorus maculatus*	X	X	X	X	
Red Hake	*Urophycis chuss*		X	X	X	X
Windowpane Flounder	*Scophthalmus aquosus*	X	X	X	X	X
Winter Flounder	*Pseudopleuronectes americanus*	X	X	X	X	X
Winter Skate	*Leucoraja ocellata*	X	X	X	X	X
Cobia	*Rachycentron canadum*	X	X	X	X	
Summer flounder	*Paralicthys dentatus*		X	X	X	
Little skate	*Leucoraja erinacea*	X	X	X	X	X
Bluefish	*Pomatomus saltatrix*			X	X	
Scup	*Stenotomus chrysops*	X	X	X	X	
Black sea bass	*Centropristus striata*			X	X	
Sand tiger shark	*Carcharias Taurus*		X			

Source: NOAA Fisheries Northeast Regional Office n.d.

7 Former Naval Hospital Environmental Consequences

7.1 Land Use, Zoning, and Coastal Resources

This section describes the potential land use impacts resulting from disposal and reuse of the former Naval Hospital property under Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of site-specific land use, direct and indirect[12] impacts on surrounding existing land uses, consistency with local zoning and land use plans, and consistency with the enforceable policies of the RI CRMP. The study area includes the former Naval Hospital and land within 0.25 miles in the City of Newport.

Upon completion of the BRAC disposal process under both Alternatives 1 and 2, the former Naval Hospital property would be under the jurisdiction of the City of Newport. The use of the land and the development of new buildings or structures on the site would be regulated by the City of Newport, the city's zoning code, and other applicable plans and regulations.

7.1.1 Alternative 1 (Preferred Alternative)

7.1.1.1 On-Site Land Use

Implementation of Alternative 1 would change the use of the former Naval Hospital property from a vacant, institutional (e.g., hospital) land use to a mixture of commercial, residential, and recreational land uses (see Figure 7.1-1). A total of 4.5 acres (54 percent of the property) would be developed, including land-based and in-water activities (construction of floating piers), while 1.8 acres (46 percent of the property) would be maintained as open space. As a comparison, in its existing condition, 52 percent of the property is developed and 48 percent is open space.

Existing structures on-site, including the main hospital building and five administrative or storage buildings, would be demolished. The upland portion of the site would be redeveloped with a three-story hotel (120 rooms) with retail and restaurant space on the first floor (1.3 acres), a three-story residential building with 36 two-bedroom units (0.6 acres), and parking and roadway access (2.2 acres). The shoreline and open water would be primarily maintained as open space and natural areas associated with the waterfront park. The waterfront park would include a pier, pedestrian path, water taxi dockage, a 1,300-square-foot boat storage facility and two new concrete floating docks, which would be constructed on either side of the existing pier. The existing pier would be reused in its current condition.

Therefore, Alternative 1 would impact the existing land use conditions at the site. These impacts would result from demolition of the existing buildings, replacement of the existing institutional land use with the mixture of the new land uses identified above, and creation of additional open space; these impacts would be considered moderate. Implementation of Alternative 1 also would result in open public access to the formerly restricted military property.

7.1.1.2 Surrounding Land Use

Implementation of Alternative 1 would introduce a new mixed-use area to the study area, which primarily includes institutional (Navy) land, roads, and open space associated with the Pell Bridge interchange, and high-density residential land use. The waterfront park use proposed under Alternative 1 would be similar to and consistent with these surrounding land uses. Redevelopment of a portion of the property with a multi-family residential building and a hotel would introduce new types of land use into the study area

[12] Indirect impacts on surrounding land uses are based on the potential for the proposed action to generate changes in the land use type, pattern, or density.

and a more dense residential land use but, because the proposed redevelopment would be contained entirely within the site boundaries, there would be no direct impacts on surrounding land uses, which are predominantly residential on the south and east sides. However, adjacent land uses may be indirectly impacted by increased traffic associated with the change to mixed uses at the property that was previously vacant. Access to the site would be provided off of Third Street and would require the creation of new access points. Cypress Street could serve as an additional potential access point. Third Street currently provides access to nearby Navy facilities and other institutional land uses. Therefore, creating new access points to a more populated land use such as the proposed hotel and multi-family residential building would have a moderate, long-term impact on the adjacent land uses and adjacent roadways. Indirect impacts on the surrounding transportation network are discussed in Section 7.4.

While the residential and park uses proposed under Alternative 1 would be consistent with surrounding land uses, the city's zoning code currently does not allow hotels in any high-density or medium-density residential districts. A hotel would introduce a larger-scale building and additional people and vehicle traffic into the study area.

Mixed-use redevelopment of the former Naval Hospital property could result in growth-induced changes in land use on other undeveloped or vacant properties in the vicinity. Because the surrounding area is largely built-out, these growth-induced impacts are likely to be limited. Open space in the study area consists primarily of lawns in surrounding residential neighborhoods and undeveloped ROWs associated with the Pell Bridge interchange. Therefore, any additional development in the study area would occur as infill redevelopment of existing property or development of the limited open space around the Pell Bridge interchange. The City of Newport considers redevelopment of the Pell Bridge interchange area following the planned reconfiguration of the interchange in the *2006 North End Master Plan* (City of Newport 2006). The city received funding in early 2012 to continue the planning assessment for future development in the area of the former Naval Hospital property and the Pell Bridge interchange (Rhode Island Office of the Governor 2012). Reconfiguration of the interchange could provide the city opportunities to create new parcels for redevelopment, and any redevelopment of these parcels would be undertaken in conjunction with redevelopment and reuse of the former Naval Hospital property, as indicated by the continuing planning efforts. Thus, implementation of Alternative 1 could influence the type and scale of redevelopment of vacant parcels in the study area and, therefore, would have moderate, indirect impacts on land use.

Local sensitivity to Alternative 1 at the former Naval Hospital property, although limited, was documented during public outreach conducted during the development of the AIRPA's Redevelopment Plan. One comment was received at the final public hearing for the Redevelopment Plan on July 14, 2011 (RKG Associates, Inc. et al. 2011). The commenter, an abutting property owner, expressed concerns regarding existing traffic congestion and requested that the city address traffic concerns before redeveloping the former Naval Hospital property (RKG Associates, Inc. et al. 2011). As noted, indirect impacts on the surrounding transportation network resulting from the proposed action are discussed in Section 7.4. It is expected that the final design of the redevelopment would include vegetation buffering and other measures to minimize impacts from operation of the new buildings on adjacent properties.

7.1.1.3 Consistency with Land Use Plans and Zoning

The former Naval Hospital property is located in the City of Newport's Residential R-10 zoning district, which is intended to include primarily medium-density residential development. The waterfront park proposed under Alternative 1 would be consistent with this zoning designation. Multi-family residential buildings are included as special uses in the R-10 zoning district and require special use permits from the city's zoning board of review. Any developer proposing to construct a multi-family residential building on the site would be required to obtain a special use permit to ensure consistency with the zoning

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Figure 7.1-1

Former Naval Hospital Property Alternative 1 Proposed Site-specific Land Use and Surrounding Land Use

NAVSTA Newport, Rhode Island

Legend

Property Boundary

Proposed Land Use

- Boat Storage Facility
- Floating Dock
- Hotel/Retail/Restaurant
- Open Space
- Parking/Access
- Path
- Residential
- Waterfront Park

Land Use

- Brushland (shrub and brush areas, reforestation)
- High Density Residential (<1/8 acre lots)
- Institutional (schools, hospitals, churches, etc.)
- Commercial (sale of products and services)
- Developed Recreation (all recreation)
- Commercial/Industrial Mixed
- Railroads (and associated facilities)
- Roads (divided highways > 200' plus related facilities)

N

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013; RKG Associates et al. 2011.

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ordinance. The proposed hotel would not conform to the zoning designation, which does not permit hotels or commercial uses in this district. The Redevelopment Plan acknowledged this and indicated that the proposed redevelopment at this site was based on the assumption that zoning would be modified to enable the proposed uses (RKG Associates, Inc. et al. 2011). To permit the hotel proposed in the Redevelopment Plan, the City of Newport would need to change the site's zoning designation by rezoning the area or revising the types of uses permitted in the Residential R-10 zoning district. Alternately, any developer proposing to construct a hotel or commercial use on the site would be required to obtain a use variance from the requirements of the zoning ordinance from the city's zoning board of review. Adherence to the city's process for amending the zoning ordinance or obtaining a variance would ensure consistency with the zoning ordinance.

Reflecting the existing zoning designation, future land use on the site is identified as "Medium Density Residential" in the *City of Newport Comprehensive Land Use Plan* (City of Newport 2004). The comprehensive land use plan notes that there are some multi-family residential land uses in medium-density residential zones, but, like the zoning ordinance, notes that commercial uses are not allowed. The waterfront park and residential development proposed under Alternative 1 would be consistent with the planned future land use, which largely reflects existing conditions in the city's residential areas. The proposed hotel and associated commercial uses would not be consistent with the planned future land use; however, as discussed below, these uses would be consistent with the *2006 North End Master Plan*.

As noted in Section 6.1.3, the city wants to redevelop surplus Navy properties with uses that are compatible with surrounding land uses and meet the city's economic and housing needs. As noted above the proposed park and multi-family residential building would be compatible with surrounding land uses in the study area but, based on the permitted land uses for medium- and high-density residential districts included in the city's zoning ordinance, the hotel would not be consistent. However, redevelopment of the site with the mixture of commercial, residential, and recreational land uses would increase the city's tax base through increased property tax, hotel occupancy tax and, indirectly, through increases in sales tax revenue. The commercial land uses proposed under Alternative 1 also would provide opportunities for job creation. Through its potential to create tax revenue and jobs for the local community, Alternative 1 would be consistent with the economic goal of the comprehensive plan.

The *City of Newport Comprehensive Land Use Plan* notes a lack of affordable housing in the city: "[T]he gap between the cost of housing and the income needed to purchase housing is greater in Newport than in any other Rhode Island community except the east side of Providence" (City of Newport 2004). Additionally, the number of Navy personnel and tourists or seasonal residents seeking rental housing in the city contributes to high rental prices. The lack of available land for new residential construction contributes to these issues. Alternative 1 would provide needed new housing. The city has implemented various federal, state, and local programs to construct and maintain affordable housing. As of 2010, just under 16 percent of the city's housing stock was designated low and moderate income housing (City of Newport Department of Planning and Development n.d.), which is higher than the state goal of 10 percent laid out in the Rhode Island Low and Moderate Income Housing Act (Rhode Island General Laws, Section 45-53-3[4][i]). However, the AIRPA's preferred redevelopment plan does not identify the percentage of units in the proposed residential building, if any, that would be designated "affordable housing" with appropriate price controls. Because the city currently exceeds the state goal for low- and moderate-income housing, Alternative 1 would have no effect on the city's affordable housing goals if the residential units are priced at market rate. Including mixed-income housing in the residential building, however, could provide additional support for these goals, as identified in the city's comprehensive plan.

Because the Redevelopment Plan assumes the existing buildings and structures on the former Naval Hospital property would be demolished under Alternative 1, this alternative would not be consistent with the city's goal, included in the comprehensive land use plan, of protecting Newport's cultural resources.

Alternative 1 would have direct and indirect adverse effects on historic properties as discussed in Section 7.9.1.

The proposed redevelopment of the site under Alternative 1 would be consistent with the recommended use of the site included in the city's *2006 North End Master Plan*. The master plan recommends changing the zoning of the former Naval Hospital property to "Mixed-use District 2." This proposed district would allow land uses that include multi-family residential, transient guest facilities, private or public marinas or yacht clubs, and parks. Alternative 1 would be consistent with the allowable uses in the proposed zoning district. A development plan for the Innovation Hub area in the city's North End is still in progress. While the former Naval Hospital property is included in the Innovation Hub, potential impacts on the city's Innovation Hub concept as a result of implementation of Alternative 1 cannot be determined at this time because specific development details and a timeline for development of the Innovation Hub are not available.

Consistent with the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005), Alternative 1 would provide for economically beneficial, mixed-use redevelopment of the former Naval Hospital property and public access to the shoreline on the property. While AIRPA's preferred redevelopment plan is not the "technology transfer center" proposed in the master plan, the preferred redevelopment plan would support the goals of the master plan. And as noted above, Alternative 1 would be economically beneficial, provide access to the waterfront, and provide facilities to support ferry or water shuttle service at the property.

In summary, Alternative 1 would be consistent with the *2006 North End Master Plan* and the *Aquidneck Island West Side Master Plan*; it would not be consistent with the *City of Newport Comprehensive Land Use Plan*, which does not provide for commercial uses of the land. Additionally, the proposed hotel and commercial uses would not be consistent with the existing zoning. Some inconsistencies with local planning would result, but mitigation in the form of rezoning by the City of Newport or obtaining a variance by the development would reduce adverse impacts.

7.1.1.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 1 is reasonably likely to affect the use or natural resources of Rhode Island's coastal zone. Disposal of the property under Alternative 1 would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP and the Aquidneck Island SAMP. However, redevelopment of the former Naval Hospital property would not be a direct federal action and would, therefore, fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area. Following disposal of the property, the local entity implementing redevelopment would be responsible for completing the state permitting process with the CRMC.

For purposes of analysis, consistency of the reuse of the former Naval Hospital property with the applicable policies of the RI CRMP and the Aquidneck Island SAMP is summarized below. For additional information see Appendix B.

RI CRMP

- **Section 200.4 Type 4 Waters** – Redevelopment activities at the former Naval Hospital property focus, in part, on the development of a waterfront park that the public could use for boating, fishing, kayaking, and beachcombing. Redevelopment of the former Navy

Hospital property would include reusing the existing Pier 71 and adding two concrete floating docks on each side.

The Navy informally consulted with the NMFS regarding designated EFH in Narragansett Bay and has evaluated the effects of the proposed action on the 17 species of EFH designated for the bay.

This evaluation has been completed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act and, as a result of the evaluation the Navy has determined environmental impacts from the proposed reconstruction of the piers will not adversely affect designated EFH within Narragansett Bay. All impacts are expected to be minor and short-term.

Thus, the redevelopment activities proposed for the former Naval Hospital property would be consistent to the maximum extent practicable with the abovementioned policies of CRMP Section 200.4(C).

- **Section 210.1. Coastal Beach -** Under the proposed action, there would be no permanent impact on existing beach habitat at the former Naval Hospital property. Temporary disturbance of beach habitat could occur during construction of the floating docks, but any areas disturbed by equipment staging or other activities will be restored following completion of construction. Use of the waterfront portion of the property— currently a mixture of beach, open space, and the pier— would not change. Future use would be a waterfront park with the same elements. Before initiating any redevelopment activities, the developer(s)/property owner would coordinate with the CRMC as part of the state permitting process to obtain the appropriate approvals and authorizations; this review process will ensure that construction will meet all current and applicable policies. Thus, the proposed action would be consistent to the maximum extent practicable with CRMP Section 210.1.

- **Section 210.3 Coastal Wetlands** - The former Naval Hospital property includes approximately 0.3 acres of marine/estuarine wetland; this area, adjacent to Type 4 waters, has not been designated for preservation. The only redevelopment feature proposed to be located within this wetland under Alternative 1 is a portion of one of the floating docks, which would impact approximately 0.04 acres. Conservative estimates show that this floating dock would need a corresponding 0.04 acres of fill in the form of the pilings to be used to anchor the floating dock in place; however, final design would determine the actual location of the piling(s).

  Filling a coastal wetland requires a permit from the CRMC and a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer will be required to coordinate wetland mitigation plans with the USACE and the CRMC. For the CRMC, filling in a coastal wetland located in a Type 4 water is considered an alteration of a coastal wetland under Section 300.12 of the CRMC regulations and requires a Category A assent. Section 300.12(F), Coastal Wetland Mitigation, outlines the mitigation requirements for alterations to coastal wetlands.

  The loss of wetlands would be mitigated through the state and federal permitting processes. Therefore, the proposed action is consistent with these policies to the maximum extent practicable.

- **Section 300 Activities in Tidal and Coastal Pond Wetlands, on Shoreline Features, and their Contiguous Areas** - Consistency with the policies listed in this section would be addressed through the state permitting process initiated by the developer. Through the permitting process, all applicable local zoning ordinances, flood hazard standards, and

environmental requirements will be addressed. Therefore, the proposed action is consistent with these policies to the maximum extent practicable.

Aquidneck Island SAMP

- **Section 130.2 Coastal Greenway** - Redevelopment under Alternative 1 at the former Naval Hospital property would enhance public access to the shoreline and would likely be considered municipal projects not subject to Section 130.2. Nevertheless, redevelopment would include either the establishment and maintenance of a coastal greenway or the standards for setbacks and buffers stipulated in Sections 140 and 150 of the Aquidneck Island SAMP, as stipulated in 130.2(c) of the Aquidneck Island SAMP. With adherence to one of the two options, the future developer/property owner would be in compliance with this policy. As such, the proposed action would be fully consistent with this policy.
- **Section 130.8 Open Space and Public Access** - The former Naval Hospital property would be consistent with Coastal Policy 130.8 by creating both open space and public access as part of the proposed action. This previously federally held property along Narragansett Bay would be opened to the public and would include waterfront uses along Narragansett Bay. Therefore, the proposed action would be fully consistent with this policy.
- **Section 130.9 Visual Elements** - The proposed action is based upon the Redevelopment Plan developed by AIRPA, which targets specific types of development on each property based on each site's physical and environmental setting and location. The Plan, in summary, is consistent with Coastal Policy 130.9 because reuse and redevelopment at the former Naval Hospital property will restore and enhance visual quality in visually degraded areas. The visual quality of the former Naval Hospital property would be enhanced due to the creation of a waterfront park and coastal greenway. As such, the proposed action would be fully consistent with this policy.
- **Section 150.1 Standards Applicable to the Entire Development** – The developer/property owner will be responsible during redevelopment of the former Naval Hospital property for providing separate and appropriate environmental documentation and obtaining all the necessary permits from state and federal agencies that meet the applicable standards addressing areas such as storm water management (i.e., *Rhode Island Stormwater Design and Installation Standards Manual* and CRMP 300.6), groundwater protection, infrastructure, vegetation cover (i.e., *Section 150.1 Standards Applicable to Entire Development*), SAV, open space, public access (i.e., CRMP *Section 335. Protection and Enhancement of Public Access to the Shore* and Aquidneck Island SAMP *Section 150.5 Public Access Standards for all Coastal Greenways*), construction setback, and water quality associated with the proposed activity (i.e., Water Quality Certificate from RIDEM and USACE permit, concurrent with their application to CRMC). Therefore, the proposed action would be consistent with these standards to the maximum extent practicable.
- **Section 170 Redevelopment Zone** - The Aquidneck Island SAMP recognizes the importance of the coastal zone for meeting several public needs, provides guidance for striking a balance among the various uses that afford the public maximum benefit, seeks harmony rather than conflict among these uses, and regulates the balance among the competing uses of the state's coastal resources. Therefore, reuse and redevelopment of the former Naval Hospital property under Alternative 1 will be required to provide public access along the shoreline in accordance with Aquidneck Island SAMP Section 170.2.

> Pursuant to *Section 170.3 Standards*, applicants in the redevelopment zone may choose between setback and buffer requirements set forth in CRMP Sections 140 and 150 or a coastal greenway 50 feet wide that includes a public access path, as described in the Aquidneck Island SAMP. Reuse and redevelopment also will be required to meet either the optional development standards included in Section 170.3 of the SAMP or meet the setback and buffer requirements in Rhode Island CRMP Sections 140 and 150, as discussed above. The former Naval Hospital property would include a waterfront park spanning the extent of the property along the Narragansett Bay, with a public pathway. This waterfront park is assumed to meet the requirements of SAMP Sections 140 and 150. Therefore, the proposed action would be consistent with this policy to the maximum extent practicable.

Official consultation with the Rhode Island CRMC was initiated on February 11, 2014 with a letter outlining the Navy's CCD. The CRMC concurred with the Navy's determination that disposal of the surplus property under Alternative 1 would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP and that the developer of the former Naval Hospital property would be required to comply with the applicable policies of the RI CRMP and the Aquidneck Island SAMP (Willis 2014). A copy of the letter is included in Appendix B.

7.1.2 Alternative 2

7.1.2.1 On-Site Land Use

Alternative 2 plans for a higher density of mixed-use redevelopment of the former Naval Hospital property (see Figure 7.1-2). A total of 4.8 acres (58 percent of the property) would be developed under Alternative 2, which would be 4 percent larger than the area that would be developed under Alternative 1 and 6 percent larger than existing conditions. Under Alternative 2, a commercial use would replace the residential use proposed under Alternative 1, and a conference center would be developed adjacent to the proposed hotel. The commercial use would occupy the same 0.6-acre footprint that would be occupied by the residential land use under Alternative 1. The conference center would be constructed on 0.2 acres behind the hotel along Third Street. The same facilities at the waterfront park proposed under Alternative 1 would be developed under Alternative 2. Additional development at the waterfront park under Alternative 2 would include a third concrete floating dock, which would be constructed at the end of the existing pier, and a yacht club/office. The yacht club/office would be constructed next to the boat storage facility within the footprint of the former chapel. Impacts on on-site land use under Alternative 2 would be slightly greater, given the larger area that would be redeveloped and the higher density of development. While implementation of Alternative 2 would result in additional open space on the property, compared with existing conditions, less open space would be created under this alternative than under Alternative 1.

Therefore, Alternative 2 would impact the existing land uses at the site. These impacts would result from demolition of the existing buildings, replacement of the existing institutional land use with the mixture of the new land uses identified above, and creation of additional open space; these impacts would be considered moderate. Implementation of Alternative 2 also would result in opening public access to the formerly restricted military property.

7.1.2.2 Surrounding Land Use

Like Alternative 1, Alternative 2 would introduce a new mixed-use area to the study area. The waterfront park would be similar to and consistent with these surrounding land uses; however, redevelopment of a portion of the property with a hotel and conference center and a commercial use would introduce new types of land uses into the study area. The conference center and commercial use proposed under

Alternative 2 would increase the number of people who could potentially use the site, with associated increases in traffic and parking needs, compared with Alternative 1. Because the proposed redevelopment would be contained entirely within the site boundaries, there would be no direct impacts on surrounding land uses. However, adjacent land uses may be indirectly impacted by increased traffic associated with the change to mixed uses at property that had been vacant. Like Alternative 1, Alternative 2 would require construction of new access points on Third Street, which would have a minor, long-term impact on the adjacent land uses and roadways.

Similar to Alternative 1, the waterfront park proposed under Alternative 2 would be consistent with surrounding land uses in the study area. As noted, the city's zoning code does not allow hotels or commercial uses in any high-density or medium-density residential districts. The hotel and conference center and commercial use proposed under Alternative 2 would introduce larger-scale buildings and additional people and vehicle traffic in the study area. Implementation of Alternative 2 could influence the type and scale of redevelopment of vacant parcels in the study area, as discussed under Alternative 1. Therefore, Alternative 2 also would have moderate, indirect impacts on land use. It is expected that the final design of the redevelopment would include vegetation buffering and other measures to minimize impacts from operation of the new buildings on adjacent properties. Alternative 2 may generate concerns regarding traffic similar to those expressed at the public hearing for AIRPA's Redevelopment Plan, described in Section 7.1.1.2. Section 7.4 discusses indirect impacts on the surrounding transportation network resulting from the proposed action.

7.1.2.3 Consistency with Land Use Plans and Zoning

Under Alternative 2, the waterfront park would be consistent with the city's Residential R-10 zoning district. The proposed hotel and conference center and commercial use, however, would not be consistent with the existing zoning of the site, which does not permit hotels or commercial uses, as noted in the Redevelopment Plan. In order to redevelop the site as proposed under Alternative 2, the city would need to change the site's zoning designation, or developers proposing to construct nonconforming uses on the site would need to obtain a use variance from the city's zoning board of review, as noted under Alternative 1. Adherence to the city's process for amending the zoning ordinance or obtaining a variance would ensure consistency with the zoning ordinance under Alternative 2.

The hotel and commercial uses proposed under Alternative 2 would not be consistent with the future medium-density residential land use designation for the site, which reflects the existing residential land uses around the site, included in the *City of Newport Comprehensive Land Use Plan*. As noted under Alternative 1, the waterfront park would be consistent with the planned future land use. Alternative 2 would be consistent with the comprehensive land use plan's goals for redevelopment of surplus Navy properties with economically beneficial land uses. However, the proposed hotel and commercial uses under Alternative 2 would not be compatible with surrounding land uses, based on the permitted land uses in the city's medium- and high-density residential districts. Alternative 2 would not provide any new housing stock for the city. While Alternative 2 would have no effect on the creation or maintenance of affordable housing in the city, the potential benefits of developing housing on the site would not be realized. Similar to Alternative 1, Alternative 2 would not be consistent with the comprehensive land use plan goal of protecting Newport's cultural resources because the Redevelopment Plan assumed the existing historic buildings on the site would be demolished. Alternative 2 would have direct and indirect adverse effects on historic properties as discussed in Section 7.9.2.

Alternative 2 would not be consistent with the recommended use of the former Naval Hospital property included in the *2006 North End Master Plan*. While Alternative 2 would increase the city's tax base, provide opportunities for job creation, and allow public access to the shoreline, this alternative would not include the housing recommended in the master plan. However, Alternative 2 would be consistent with

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Figure 7.1-2

Former Naval Hospital Property Alternative 2 Proposed Site-specific Land Use and Surrounding Land Use

NAVSTA Newport, Rhode Island

Legend

Property Boundary

Proposed Land Use

- Boat Storage Facility
- Commercial
- Conference Center
- Yacht Club/Office
- Floating Dock
- Hotel/Retail/Restaurant
- Open Space
- Parking/Access
- Path
- Waterfront Park

Land Use

- Brushland (shrub and brush areas, reforestation)
- High Density Residential (<1/8 acre lots)
- Institutional (schools, hospitals, churches, etc.)
- Commercial (sale of products and services)
- Developed Recreation (all recreation)
- Commercial/Industrial Mixed
- Railroads (and associated facilities)
- Roads (divided highways > 200' plus related facilities)

N

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013; RKG Associates et al. 2011.

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the "Mixed-use District 2" zoning designation proposed for the site in the master plan. As noted, a development plan for the Innovation Hub area in the city's North End is still in progress, and potential impacts on the Innovation Hub concept as a result of implementation of Alternative 2 cannot be determined at this time.

Alternative 2 would be consistent with the applicable goals of the *Aquidneck Island West Side Master Plan* for the same reasons noted under Alternative 1.

In summary, Alternative 2 would be consistent with the *Aquidneck Island West Side Master Plan*; it would not be consistent with the *City of Newport Comprehensive Land Use Plan*, which does not provide for commercial uses of the land or the *2006 North End Master Plan* because it does not include housing as recommended in that plan. Additionally, the proposed hotel and commercial uses would not be consistent with the existing zoning. Some inconsistencies with local planning would result, but mitigation in the form of rezoning by the City of Newport or obtaining a variance by the development would reduce adverse impacts.

7.1.2.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 2 is reasonably likely to affect the uses or natural resources of Rhode Island's coastal zone. Disposal of the surplus property under Alternative 2 would be conducted in a manner that is consistent to the maximum extent practicable with the enforceable policies of the RI CRMP and the Aquidneck Island SAMP. However, redevelopment of the former Naval Hospital under Alternative 2 would not be a direct federal action and would, therefore, fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area.

If Alternative 2 is selected, the Navy would be required to prepare a coastal zone consistency determination for the proposed disposal and reuse of the property under Alternative 2 and submit it to the Rhode Island CRMC for concurrence.

The enforceable policies of the RI CRMP and applicable policies of the RI CRMP and the Aquidneck Island SAMP are outlined in Section 6.1.4. Due to the similarities in land use types proposed, and the same geographic area of the proposed action under Alternative 2 compared to Alternative 1, consistency of the proposed action on the use and natural resources of the coastal zone under Alternative 2 would be similar to those under Alternative 1.

7.1.3 No Action Alternative

Under the No Action alternative, the surplus property at the former Naval Hospital property would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur, and the 15.2-acre property would remain vacant and closed to public access. Implementation of the No Action alternative would have no direct or indirect impacts on surrounding land uses. City zoning regulations would not be enforceable since the property would continue to be owned by the federal government and would be outside the jurisdiction of the City of Newport. This alternative would not be consistent overall with the *City of Newport Comprehensive Land Use Plan*, the *2006 North End Master Plan*, or the *Aquidneck Island West Side Master Plan*. These plans recommend redevelopment of the site with a mixture of land uses that would provide economic benefits while maintaining public access to the city's shoreline. Under the No Action alternative, none of the potential economic benefits associated with redevelopment of the site would be realized. Under this alternative, the historic buildings on the site would not be demolished. However, the Navy would need to implement a plan to preserve the properties to be consistent with any cultural resources requirements.

7.2 Socioeconomics and Environmental Justice

7.2.1 Alternative 1 (Preferred Alternative)

A detailed discussion of the socioeconomic and environmental justice consequences associated with the redevelopment of all four surplus properties, including the former Naval Hospital property under Alternative 1 (Preferred Alternative) can be found in Section 5.2.1.

In summary, implementation of Alternative 1 is anticipated to have a beneficial economic impact on the regional economy, a minor impact on local population and demographic characteristics, a minor impact on the local housing and commercial property market, and a minor positive fiscal impact on the City of Newport. In addition no disproportionate impacts on minority, Hispanic/Latino, low-income populations or children are expected to occur under this alternative.

7.2.2 Alternative 2

A detailed discussion of the socioeconomic and environmental justice consequences associated with the redevelopment of all four surplus properties, including the former Naval Hospital property under Alternative 2 can be found in Section 5.2.2.

In summary, implementation of Alternative 2 is expected to have a beneficial economic impact on the regional economy, no noticeable impact on local population and demographic characteristics, a minor impact on the local housing and commercial property market, and a minor positive fiscal impact on the City of Newport. In addition no disproportionate impacts on minority, Hispanic/Latino, low-income, or children are expected to occur under this alternative.

7.2.3 No Action Alternative

Under the No Action alternative, no redevelopment plan would be implemented and ownership of the properties would be retained by the Navy. The properties would not be developed and would remain in caretaker status. No new economic activity would be generated and no increased employment opportunities would occur. Regional population and the regional housing market would not be impacted, nor would the regional commercial property market be impacted. Local government tax receipts would not increase because the properties would retain their current tax-exempt status.

7.3 Community Facilities and Services

7.3.1 Alternative 1 (Preferred Alternative)

A discussion of the expected impacts on community facilities and services in the City of Newport and the towns of Middletown and Portsmouth associated with the redevelopment of all four surplus properties, including the former Naval Hospital property under Alternative 1 (the Preferred Alternative) can be found in Section 5.3.1.

7.3.2 Alternative 2

A discussion of the expected impacts on community facilities and services in the City of Newport and the towns of Middletown and Portsmouth associated with the redevelopment of all four surplus properties, including the former Naval Hospital property under Alternative 2 can be found in Section 5.3.2.

7.3.3 No Action Alternative

There would be no impact on community services and facilities resulting from the No Action alternative because the properties would be held in caretaker status by the Navy. There would be no change in

population or employment resulting from this alternative. In addition, no new recreational facilities would be built.

7.4 Transportation

This section summarizes the potential transportation impacts resulting from construction and implementation of the Redevelopment Plan at the former Naval Hospital under Alternative 1, Alternative 2, and the No Action alternative. The evaluation of transportation impacts upon full build-out is based on the analysis completed for the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013). Roadways and intersections evaluated in the vicinity of the former Naval Hospital property include:

- Third Street
- Admiral Kalbfus Road/Training Station Road
- Admiral Kalbfus Road/Training Station Road and Third Street/Third Street Extension Intersection

Locations of these roadways and intersection are shown on Figure 6.4-1.

Traffic generated from construction was not captured in the traffic impact analysis. An evaluation of the impacts on existing traffic conditions from the construction traffic is based on the number of buildings to be demolished, the volume of construction vehicles and duration of demolition/construction at the former Naval Hospital property.

7.4.1 Alternative 1 (Preferred Alternative)

The former Naval Hospital property would continue to be accessed from Third Street under Alternative 1. Three new driveways proposed would be accessed from Third Street between Cypress Street and Dorsey Road (see Figure 7.4-1). The northernmost driveway is expected to provide entry access only directly to the proposed hotel. Exit from the hotel would be from the center driveway. The southernmost driveway is expected to provide access to and from the proposed residential building. Improvements would be required at each site entrance to accommodate the new site and the potential traffic. In addition to the three driveways discussed above, Cypress Street could serve as an additional potential access point to/from the redeveloped site. There is an existing but unused and barricaded driveway along Cypress Street at the intersection with Riggs Road. This potential access point was not assessed as part of the traffic impact analysis as it was not depicted in the figures within the Redevelopment Plan. Approximately 160 parking spaces would be needed to accommodate the hotel, residential units, and park.

Construction-related traffic would consist of delivery trucks, dump trucks, heavy equipment, and vehicles driven by construction crews. Based on the square footage of the proposed demolition/new construction, an estimated 30 vehicle trips would occur per day for worker commutes, an estimated nine daily trips would occur for demolition removal, and 4 delivery truck trips would occur per day (see Appendix D for the methodology). This could result in short-term impacts on traffic from additional truck trips and slower-moving vehicles. However, the impacts would not be significant as the impacts would occur for the duration of the new construction period only. The period of new construction is estimated to be approximately one year. Impacts are therefore expected to be minor.

The evaluation of impacts during the full build-out of the former Naval Hospital property includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS) and recommended mitigation measures.

7.4.1.1 Projected Traffic Volumes

Full build-out of Alternative 1 is projected to add 1,248 daily trips to the surrounding road network (Pare Corporation 2013). This would result in a total of 91 vehicles entering and exiting the property during the peak morning hour and 98 vehicles during the peak evening hour. The majority of trips would be generated by the hotel; the waterfront park is expected to generate only a small number of trips. Table 7.4-1 shows the morning and evening peak hour trips for each proposed land use at the former Naval Hospital property.

Table 7.4-1 Former Naval Hospital Trip Distribution (Alternative 1)

Land Use	Weekday Daily Total	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Hotel[1]	980	41	26	67	38	33	71
Residential	264	4	19	23	17	9	26
Waterfront Park[2]	4	1	0	1	0	1	1
Total	**1,248**	**46**	**45**	**91**	**55**	**43**	**98**

Source: Pare Corporation 2013

1 Vehicle trips projected for the hotel include trips for the retail use and restaurant associated with the hotel.
2 Vehicle trips projected for use of the waterfront park did not include trips associated with the boat storage facility or the expanded use of the pier (i.e., the addition of the floating piers).

Over the full build-out period, traffic volume in the area is projected to increase, such that the total morning peak hour volume at the intersection of Admiral Kalbfus Road and Third Street is expected to increase by 286 trips under Alternative 1, compared with existing conditions. The full build-out period takes into account a 1 percent annual background growth that is expected to occur through the year 2032. Background growth is the growth expected within the study area based on development projects not specifically identified as well as annual population and traffic increases. The evening peak hour volume is expected to increase by 314 trips over existing conditions. Table 7.4-2 compares existing peak hour traffic volumes at the Admiral Kalbfus Road and Third Street intersection and the projected vehicle trips for each of the three driveways.

Table 7.4-2 Peak Hour Trips and LOS at Intersections Points of Access on and near the Former Naval Hospital Property (Alternative 1)

Intersection	Existing Conditions Peak Hour Volume		Existing Conditions LOS		Alternative 1 Peak Hour Volume		Alternative 1 LOS	
	A.M.	P.M.			A.M.	P.M.		
Admiral Kalbfus Road/Training Station Road and Third Street	1,103	1,193	B	B	1,389	1,507	D	C
Third Street and Hotel Entrance	N/A	N/A	N/A	N/A	679	609	B	B
Third Street and Hotel Exit	N/A	N/A	N/A	N/A	675	606	B	B
Third Street and Residential Entrance/Exit	N/A	N/A	N/A	N/A	664	605	B	B

Source: Pare Corporation 2013

Key:
N/A = Not applicable

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Figure 7.4-1

Former Naval Hospital Property Proposed Driveways/Acess Points, Alternatives 1 and 2

NAVSTA Newport, Rhode Island

Legend

- Access Points
- Property Boundary

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: Pare Corporation 2013

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As discussed in Section 6.4, accident data from the City of Newport indicates that the majority of reported accidents were rear-end collisions, which are typical at signalized intersections in urban areas (Pare Corporation 2013). The highest number of accidents in the City of Newport occurred at the Route 138 eastbound exit ramp intersection with Admiral Kalbfus Road. The RIDOT recently configured approaches to the rotary at the intersection of J.T. Connell Highway and Admiral Kalbfus Road, and future improvements are planned as part of the Pell Bridge interchange project (Pare Corporation 2013). The intersection of Admiral Kalbfus Road and Training Station Road is already signalized, and increased traffic is not expected to pose a significant safety concern (Pare Corporation 2013).

The projected increase in the number of traffic trips on the roadway network surrounding the former Naval Hospital property would result in a significant and unavoidable impact under Alternative 1.

7.4.1.2 Projected Level of Service

LOS under Alternative 1 was determined for the intersection of Admiral Kalbfus Road/Training Station Road and Third Street as well as the three proposed driveways into the property.

The intersection of Admiral Kalbfus Road/Training Station Road and Third Street currently operates at an LOS of B, with approximately 17.8 seconds of delay, during the morning peak hour, and an LOS B, with 10.4 seconds of delay, during the evening peak hour. Under Alternative 1, the intersection is expected to operate at LOS D with 36.5 seconds of delay per vehicle for the morning peak hour, and LOS C with delays of approximately 26.5 seconds per vehicle during the evening peak hour. Table 7.4-2 shows the LOS for existing conditions and under Alternative 1.

During the morning and evening peak hour the approaches to the northernmost and central driveways are expected to operate at LOS B or better, with delays less than 14 seconds per vehicle. The approaches to the southern driveway for the proposed residential use is expected to operate at LOS B with between 11.8 to 13 seconds of delay for both morning and evening peak hours (see Table 7.4-2).

The projected increase in the number of trips on the roadway network surrounding the former Naval Hospital property and the resulting changes to the LOS for Admiral Kalbfus Road/Training Station Road and Third Street, specifically, would result in a significant and unavoidable impact under Alternative 1.

7.4.1.3 Summary

The projected increase in the number of traffic trips on the roadway network surrounding the former Naval Hospital property and the resulting changes to the LOS for the intersections would result in a significant and unavoidable impact under Alternative 1.

Public transportation routes located near the former Naval Hospital property would be used to access the proposed residential area, hotel, and/or waterfront park and would also reduce the projected number of vehicle trips.

Sight distances for the potential driveway locations were reviewed and generally were found to meet the AASHTO requirements for the 85th percentile travel speeds along Third Street. These distances should be reconfirmed once the final location of the driveways is determined. The driveways should also be designed to maximize the visibility for motorists turning into and out of the property while providing accurate information to the motorist to identify the site. Current on-street parking next to the former Naval Hospital property should be reviewed to ensure that they remain appropriate for all users.

Other potential mitigation measures would depend on the final design of the site driveways and internal site roadway network. Improvements along the roadway could include revised signs or striping, or

possibly geometric improvements. The implementation of these mitigation measures would be the responsibility of the future developer and/or the City of Newport.

7.4.2 Alternative 2

Similar to Alternative 1, the former Naval Hospital property would be accessed from three driveways off of Third Street. The northernmost and center driveway would provide entrance to and exit from the hotel/conference center property. The southernmost driveway is expected to provide access to and from the proposed commercial use. Additionally, as discussed under Alternative 1, the potential exists for the use of Cypress Street for access to the redeveloped site. Approximately 204 parking spaces would be needed for the hotel, commercial space, and park.

In addition, the proposed level of traffic associated with the construction of the hotel/conference center, commercial space, and waterfront park under Alternative 2 would be similar to that discussed under Alternative 1 and would result in minor impacts on local traffic during the construction period only; no significant impacts would result.

The evaluation of impacts during the full build-out of the former Naval Hospital property under Alternative 2 includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS), and recommended mitigation measures.

7.4.2.1 Projected Traffic Volumes

Full build-out of Alternative 2 is projected to generate 1,576 daily weekday trips. This will result in a total of 149 vehicles entering and exiting the property during the morning peak hour and 190 vehicles entering and existing during the evening peak hour. As with Alternative 1, the hotel would generate the most trips. Table 7.4-3 shows the morning and evening peak hour trips for each proposed land use.

Table 7.4-3 Former Naval Hospital Trip Distribution (Alternative 2)

Land Use	Weekday Daily Total	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Hotel/Conference Center	980	41	26	67	38	33	71
Commercial	592	71	10	81	20	98	118
Waterfront Park[1]	4	1	0	1	0	1	1
Total	**1,576**	**113**	**36**	**149**	**58**	**132**	**190**

Source: Pare Corporation 2013

[1] Vehicle trips projected for use of the waterfront park did not include trips associated with the boat storage facility or the expanded use of the pier (i.e., the addition of the floating piers).

Over the full build-out period, traffic volume in the area is projected to increase, such that the total morning peak hour volume at the intersection of Admiral Kalbfus Road and Third Street is expected to increase to 300 trips compared with existing conditions. The full build-out period takes into account a 1 percent annual background growth that is expected to occur through the year 2032. The evening peak hour volume is expected to increase by 356 trips. Table 7.4-4 compares existing peak hour traffic volumes at the Admiral Kalbfus Road and Third Street intersection with the projected peak hour traffic volume under Alternative 2).

The projected increase in the number of traffic trips on the roadway network surrounding the former Naval Hospital property would result in a significant and unavoidable impact under Alternative 2.

7.4.2.2 Projected Level of Service

LOS under Alternative 2 was determined for the intersection of Admiral Kalbfus and Third Street and for the three proposed access driveways. The LOS for the intersection of Admiral Kalbfus Road and Third Street is currently LOS B for both morning and evening peak hours. Under Alternative 2, the intersection of Admiral Kalbfus and Third Street is expected to operate at LOS D during the morning peak hour, with 39 seconds of delay per vehicle. During the evening peak hour, the intersection is expected to operate at LOS C, with delays of approximately 33 seconds per vehicle. Table 7.4-4 shows the LOS for existing conditions and under Alternative 2.

Table 7.4-4 Peak Hour Trips and LOS at Intersections on and near the Former Naval Hospital Property (Alternative 2)

Intersection	Existing Conditions Peak Hour Volume		Existing Conditions LOS		Alternative 2 Peak Hour Volume		Alternative 2 LOS	
	A.M.	P.M.			A.M.	P.M.		
Admiral Kalbfus Road/Training Station Road and Third Street	1,103	1,193	B	B	1,403	1,549	D	C
Third Street and Hotel Entrance	N/A	N/A	N/A	N/A	690	651	B	B
Third Street and Hotel Exit	N/A	N/A	N/A	N/A	686	648	B	B
Third Street and Commercial Entrance/Exit	N/A	N/A	N/A	N/A	712	697	C	B

Source: Pare Corporation 2013

Key:
N/A = Not applicable

During the morning and evening peak hour the approaches to the northernmost and central driveways are expected to operate at LOS B or better, with delays less than 14 seconds per vehicle. The approaches to the southern driveway for the proposed commercial use is expected to operate at LOS C or better with delays of 15 seconds during morning peak hours and LOS B or better with delays of less than 14 seconds during evening peak hours.

Similar to Alternative 1, the projected increase in the number of traffic trips on the roadway network surrounding the former Naval Hospital property and the resulting changes to the LOS for Admiral Kalbfus Road and Third Street, specifically, would result in a significant and unavoidable impact under Alternative 2.

7.4.2.3 Summary

Similar to Alternative 1, the projected increase in the number of traffic trips on the roadway network surrounding the former Naval Hospital property and the resulting changes to the LOS for Admiral Kalbfus Road and Third Street, specifically, would result in a significant and unavoidable impact under Alternative 2.

Mitigation of impacts due to the implementation of Alternative 2 would be the same as those discussed for Alternative 1.

7.4.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Access to the property would continue to be through existing driveways

off of Third Street No reuse or redevelopment would occur at the property and therefore no significant impacts on transportation would occur under this alternative.

7.4.3.1 Projected Traffic Volumes

Under the No Action alternative, traffic volumes are projected to increase 1 percent annually through the year 2032. Traffic volume increases are associated with development projects not specifically identified as well as annual population and traffic increases. Table 7.4-5 compares existing peak hour traffic volumes at the intersection of Admiral Kalbfus Road and Third Street with the projected peak hour traffic volume under the No Action alternative. An additional 265 trips are expected during the evening peak hours; an additional 242 trips are expected during the morning peak hours.

7.4.3.2 Projected Level of Service

Currently, the intersection of Admiral Kalbfus and Third Street operates at a LOS B during the morning and evening peak hours. This is expected to change to LOS C for both peak hours under the No Action alternative (see Table 7.4-5).

Table 7.4-5 Peak Hour Trips and Level of Service at Intersections on and near the Former Naval Hospital Property (No Action Alternative)

Intersection	Existing Conditions Peak Hour Volume		Existing Conditions LOS		No Action Alternative Peak Hour Volume		No Action Alternative LOS	
	A.M.	P.M.			A.M.	P.M.		
Admiral Kalbfus Road/Training Station Road and Third Street	1,103	1,193	B	B	1,345	1,458	C	C

Source: Pare Corporation 2013

7.5 Environmental Management

This section describes the potential impacts on environmental management from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of the potential impacts on the management of hazardous waste, hazardous materials, and ER Program sites associated with disposal and reuse of the former Naval Hospital property.

As discussed in Section 3.5.1.5, real property transactions under BRAC require the preparation of an FOSTs). The FOST summarizes how the applicable requirements and notifications for hazardous materials, petroleum products, and other regulated materials (such as ACM, LBP, PCBs, and pesticides) have been satisfied and whether the property is environmentally suitable for transfer. The FOST for the former Naval Hospital property will address any restrictions, notifications, or covenants in deeds related to hazardous materials at the surplus properties.

7.5.1 Alternative 1 (Preferred Alternative)

7.5.1.1 Hazardous Waste

Some RCRA hazardous wastes would be generated during the demolition of existing facilities and construction of the new hotel (with retail and restaurant uses), residential, and waterfront facilities planned under Alternative 1. The operation of heavy equipment and machinery and demolition and construction tasks would result in waste oils and oily wastes, chemicals, acids, paints, solvents, degreasers, and PCB-containing light ballasts (from the removal of old fluorescent light fixtures), as well as universal wastes such as batteries, mercury-filled switches in thermostats, and fluorescent light bulbs. Demolition and construction contractors would be required under contract to manage hazardous waste in

accordance with City of Newport and state and federal requirements. Operation of the new businesses and daily residential living also would result in the routine generation of small quantities of similar hazardous wastes as well as waste pesticides. The new commercial businesses, their management/service contractors, and residents would be required to manage hazardous wastes in accordance with City of Newport and state and federal requirements. There would be a minor short-term and long-term impact from the generation and management of hazardous waste under Alternative 1. However, these impacts would not be significant because hazardous wastes would be managed in accordance with City of Newport and state and federal requirements.

7.5.1.2 Hazardous Materials

Storage Tanks and Oil/Water Separators

Under Alternative 1, the two closed steel ASTs located at the emergency generator building, Building 993, would be demolished, repurposed, or sold for scrap by the purchaser. The ASTs contain no hazardous material. There are no USTs or OWSs associated with the former Naval Hospital property. Any new fuel/oil tanks or OWSs that are installed as part of property redevelopment would have to comply with applicable RIDEM regulations. There would be no significant impacts associated with storage tanks and OWSs under Alternative 1.

ACM, LBP, and Lead

ACM and LBP would have to be removed or otherwise properly managed at the former Naval Hospital buildings before they are demolished to allow for new development. ACM has been confirmed in all of the structures at the former Naval Hospital property in a variety of building materials, including ceiling tiles, floor tiles, pipe insulation, electrical insulation, wall plaster, roofing materials, and window caulk. As summarized in Section 6.5.2.5, hundreds of thousands of square feet of building material have been identified as containing ACM, and much of the ACM is damaged or in poor condition. Similarly, LBP has been confirmed in all of the structures at the former Naval Hospital property with the exception of Building 993. LBP has been identified throughout interior and exterior areas on walls, floors, ceilings, window components, door components, pipes, radiators, staircases, and painted wood. Much of the paint at Buildings 1, 7, and 45 has been reported to be peeling (YU & Associates 2103).

Specialized ACM and LBP removal contractors will have to be used to ensure that ACM and LBP are managed safely and that human health and the environment are protected. ACM and LBP removal/disposal would have to be conducted in accordance with federal and state requirements, which are described in Section 3.5.1.2. Collectively, those regulations address ACM and LBP removal, ACM and LBP disposal, worker safety, and air quality. For example, NESHAPS (40 CFR Part 61) requires that each owner or operator of a demolition activity subject to NESHAPS remove regulated ACM from the facility being demolished before any activity that would break up, dislodge, or disturb the materials. Regulated ACM need not be removed before demolition if the ACM is considered non-friable (e.g., vinyl asbestos floor tiles), is not in poor condition, and would not be rendered friable during the demolition process. Contractual specifications for demolition involving ACM would be developed by an accredited Asbestos Hazard Emergency Response Act (AHERA) professional to ensure the proper removal of regulated ACM.

Lead from LBP above the RIDEM residential DEC for lead has been identified in discrete areas of soil near Buildings 1, 7, and 45 and Quarters A and B, and most of those results were also above the industrial/commercial DEC for lead (see Section 6.5.2.6). Under Alternative 1, soils in the affected areas near those buildings could require investigation and potential remediation in accordance with the federal and state requirements discussed in Section 3.5.1.2.

In accordance with RCRA, demolition waste streams that might contain lead would be evaluated, either by applying knowledge of the waste or by testing using the toxicity characteristic leaching procedure (TCLP), to determine whether hazardous waste disposal regulations are applicable. LBP- or lead-containing wastes generated from demolition would be temporarily stored on-site, in compliance with RCRA requirements, before being transported and disposed of off-site by an authorized contractor.

Alternative 1 would provide a long-term beneficial impact from the removal of ACM, LBP, and lead in soil because such materials would be removed and would no longer be present in the built environment. There would be a minor short-term impact from the human and environmental hazards of removing and disposing of the ACM, LBP, and lead-containing soil. These impacts would not be significant and would be mitigated by a future developer through the use of specialized and authorized removal contractors. There would be no impacts associated with construction and future use of the property because asbestos and LBP are no longer used in new building materials.

PCBs and Pesticides

NAVSTA Newport removed any PCB-containing transformers in the 1980s (see Section 6.5.2.7). Any transformers that are handled or removed during demolition and redevelopment activities under Alternative 1 should be inspected for "PCB-free" labels. If such labels are not found, the transformers should be evaluated for PCBs. Small quantities of PCB-containing fluorescent light ballasts would likely be generated during the demolition and removal of the former hospital buildings and would be handled as a hazardous waste (see Section 7.5.1.1). PCBs were not found in window caulking and glazing during a recent evaluation conducted in April 2013 (YU & Associates 2013).

Pesticides are currently used at the former Naval Hospital property as needed and in accordance with the NAVSTA Newport *Integrated Pest Management Plan* (see Section 3.5.1.2). It is expected that pesticides would similarly be used responsibly and in accordance with any applicable local or state regulations in the future for pest control by the commercial businesses, their management/service contractors, and residents that would occupy the new developments proposed under Alternative 1. There would be no significant impacts associated with PCB and pesticide management under Alternative 1.

Radioactive Materials and Radon

Although there are no records of radioactive materials use or radioactive waste generation at the former Naval Hospital buildings, it is considered possible that radioactive materials were used for diagnosis and treatment (see Section 6.5.2.9). Therefore, the demolition contractor will need to watch for potential sources of radioactive materials, and it is recommended that the demolition contract contain this caution. If radioactive materials are found, the Navy should be notified so they can assist with the proper disposal of the materials in accordance with the broad radioactive materials license that the Navy holds (see Section 3.5.1.2). No radioactive materials would be expected to be used by the businesses planned to occupy proposed redevelopment uses under Alternative 1.

Prior radon testing at Building 1, Quarters A and B, and throughout NAVSTA Newport indicates that radon is not generally a concern. Of the more than 120 tests that have been conducted at Building 1 and Quarters A and B, only five contained radon in excess of the EPA standard of 4 pCi/L and the highest of those values was 8.6 pCi/L (Malcolm Pirnie 2005) (see Section 6.5.2.10). The vast majority of the more than 2,500 radon results obtained to date for NAVSTA Newport have been below 4 pCi/L (see Section 3.5.1.2). Those same levels would be expected to be seen in any new construction because radon in buildings comes primarily from underground sources. RIDOH regulates radon levels in public buildings, schools, and child care centers (RIDOH 2007b), none of which are included in Alternative 1. RIDOH recommends radon-resistant new construction and radon testing and mitigation for residential buildings (RIDOH 2007b). There would be no significant impacts from radioactive materials and radon under Alternative 1.

7.5.1.3 Medical Waste

Although medical waste was generated in the past at Building 1, it is no longer generated and would not be generated by any of the proposed uses planned for Alternative 1; therefore there would be no impact associated with medical waste.

7.5.1.4 Environmental Restoration Program

There are no ER Program sites near the former Naval Hospital property. The closest sites are the conjoined IRP Site 9, Old Fire Fighting Training Area, and IRP Site 20, Surface Warfare Officers School, which are located on Coasters Harbor Island and are separated from the former Naval Hospital property by Narragansett Bay (see Section 6.5.4). Therefore, there would be no impact associated with ER Program sites under Alternative 1. Redevelopment would be compatible with the Navy's program and commitment to clean up hazardous waste sites.

7.5.2 Alternative 2

7.5.2.1 Hazardous Waste

As described under Alternative 1, additional hazardous wastes would be routinely generated from the implementation of Alternative 2. There would be minor short-term and long-term impacts from the generation and management of hazardous wastes under Alternative 2. However, these impacts would not be significant because hazardous wastes would be managed in accordance with City of Newport and state and federal requirements.

7.5.2.2 Hazardous Materials

Storage Tanks and Oil/Water Separators

There would be no significant impacts associated with storage tanks and OWSs under Alternative 2, as described for Alternative 1.

ACM, LBP, and Lead

As discussed under Alternative 1, ACM and LBP would have to be removed from the former Naval Hospital buildings before they are demolished to allow for new development, and lead-containing soil would require investigation and potential remediation. There would be a beneficial long-term impact from the removal of ACM, LBP, and lead in soil under Alternative 2 because such materials would be removed and would no longer be present in the built environment. There would similarly be a minor short-term impact from the human and environmental hazards of removing and disposing of the ACM, LBP, and lead-containing soil. These impacts would not be significant and would be mitigated by the use of specialized and authorized removal contractors. There would be no impacts associated with construction and reuse of the property because asbestos and LBP are no longer used in new building materials.

PCBs and Pesticides

Like Alternative 1, there would be no significant impacts associated with PCB and pesticide management under Alternative 2.

Radioactive Materials and Radon

As described under Alternative 1, demolition contractors should be made aware of the past uses of the former hospital buildings and the possibility that radioactive materials might inadvertently remain and would require specialized handling and management, in consultation with the Navy.

Under Alternative 2, residential development would be replaced by additional commercial development. Radon levels in any new construction on the former Naval Hospital property would be expected to be low, based on the results of past radon testing, as noted under Alternative 1. RIDOH regulates radon levels in public buildings, schools, and child care centers (RIDOH 2007b), none of which are included in Alternative 2.

There would be no significant impacts from radioactive materials and radon from implementing Alternative 2, as described for Alternative 1.

7.5.2.3 Medical Waste

Under Alternative 2, there would be no impact associated with medical waste, as described under Alternative 1.

7.5.2.4 Environmental Restoration Program

There are no ER Program sites near the former Naval Hospital property. There would be no impact associated with ER Program sites under Alternative 2, as described under Alternative 1. Redevelopment would be compatible with the Navy's program and commitment to clean up hazardous waste sites.

7.5.3 No Action Alternative

Under the No Action alternative, the former Naval Hospital would be maintained in a caretaker status with no redevelopment.

7.5.3.1 Hazardous Waste

Hazardous wastes are not routinely generated at the former Naval Hospital property or Pier 71, with the exception of small quantities of universal wastes such as spent batteries, fluorescent light bulbs, and thermostats. The hospital buildings are vacant and unused. Therefore, there would be no impact on hazardous waste management under the No Action alternative.

7.5.3.2 Hazardous Materials

Storage Tanks and Oil/Water Separators

The two steel ASTs located at the emergency generator building, Building 993, are already closed in accordance with RIDEM regulations and there are no USTs or OWSs at the former Naval Hospital property. Therefore, there would be no impacts from storage tanks and OWSs under the No Action alternative.

ACM, LBP, and Lead

ACM has been confirmed in all of the structures at the property, comprising hundreds of thousands of square feet of affected building materials, and much of the ACM is damaged or in poor condition. LBP has been confirmed in all structures except Building 993, and much of the paint at Buildings 1, 7, and 45 is peeling. Lead in LBP above the RIDEM residential DEC has been identified in discrete areas of soil near Buildings 1, 7, and 45 and Quarters A and B and most of those results were also above the industrial/commercial DEC for lead. Under the No Action alternative, ACM, LBP, and lead in soil would remain and would not be remediated unless they posed an immediate risk to human or environmental health and safety. Therefore, under the No Action alternative, there would be a long-term impact from ACM, LBP, and lead in soil that remain in the built environment at NAVSTA Newport. This impact is minor and not significant because the ACM and LBP are in buildings that would remain unoccupied and the lead in soil is associated with LBP that has peeled off and become embedded in discrete areas near the buildings where it has collected via precipitation and dripping.

PCBs and Pesticides

There are no longer any PCB-containing transformers at NAVSTA Newport, and window caulking and glazing at the former Naval Hospital buildings have not been found to contain PCBs. Small quantities of intact, PCB-containing fluorescent light ballasts likely remain in light fixtures in the buildings on the property. Under the No Action alternative, pesticides would continue to be applied at the former Naval Hospital property as necessary to control pests and in accordance with the installation's *Integrated Pest Management Plan*. Therefore, there would be no impacts associated with PCB and pesticide management under the No Action alternative.

Radioactive Materials and Radon

Under the No Action alternative, the former Naval Hospital buildings would remain unoccupied. There would be no exposure to any radioactive materials that might inadvertently remain and radon exposure would be negligible. The majority of the areas tested for radon in Building 1 were below the EPA standard of 4 pCi/L. Therefore, there would be no impacts from radioactive materials or radon under the No Action alternative.

7.5.3.3 Medical Waste

Medical waste is not currently generated at the former Naval Hospital property; therefore, there would be no impact on medical waste management under the No Action alternative.

7.5.3.4 Environmental Restoration Program

There are no ER Program sites near the former Naval Hospital property. As with Alternatives 1 and 2, there would be no impact associated with ER Program sites under the No Action alternative.

7.6 Air Quality

This section provides a summary of the projected emissions associated with the disposal and reuse of the former Naval Hospital property, including emissions from the operation of all new buildings and new vehicle usage on local roadways after full build-out.

For purposes of analysis, construction emissions under both Alternatives 1 and 2 for the former Naval Hospital property are assumed to be the same, primarily because the footprints for the proposed redevelopment under both alternatives are similar. Construction emissions have been estimated based on Alternative 2, which has a slightly larger footprint than Alternative 1.

An analysis of the impact of the proposed action on regional air quality is provided in Chapter 12, which includes an evaluation of criteria pollutants, GHG and HAPs from continuing actions at all surplus properties upon final build-out (see Chapter 12, Summary of Impacts for all Surplus Property, for a discussion of the total impacts from this action in the Providence, Rhode Island air quality region). Both construction and operation emissions have also been evaluated for the other individual surplus properties (see Sections 5.6, 9.6, and 11.6).

Construction emissions are temporary and are not likely to occur within the same year at all locations or at the same time as ongoing operational emissions, especially considering a 20-year build-out period for the Redevelopment Plan. Detailed calculations that support the estimated construction emissions are provided in Appendix D-1. (Section 3.6 discusses regional air quality, applicable regulations and requirements, and methods used to assess the environmental consequences.)

7.6.1 Alternative 1 (Preferred Alternative)

The proposed redevelopment at the former Naval Hospital property includes demolition of the six existing, vacant buildings. New construction would include a three-story hotel (120 rooms) with

additional space for retail and/or restaurants comprising approximately 1.3 acres at the northeastern corner of the site; a three-story 36-unit residential building with a ground level footprint of approximately 0.60 acres over at-grade parking in the southeastern corner of the site; and a waterfront park of approximately 2.4 acres that would include a pier with floating docks, pedestrian path, and boat storage facility. Parking and access would comprise an additional 2.2 acres (see Chapter 2, Figure 2-2).

Construction-related emissions would be primarily exhaust emissions from demolition and construction vehicles and equipment, demolition material removal, construction materials delivery, construction employee commutes, and dust resulting from ground disturbance and road traffic. Construction emissions resulting from this action at the former Naval Hospital property under Alternative 1 would be similar yet slightly less than emissions estimated under Alternative 2, which are discussed below in Section 7.6.2. These emissions would be short-term and localized, resulting in minor impacts on air quality.

Mitigation of construction emissions would be implemented with best management practices that could include proper maintenance of equipment, idling reduction measures, and the use of newer, more efficient equipment with diesel retrofits to control fine particulate matter(PM_{10}). Particle emissions can also be controlled through regular water applications on graded areas and cleaning streets after grading activities.

Operational emissions include emissions from building energy use and increased vehicle traffic. Emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. Emissions from increased vehicle use were calculated based on the new vehicle trips modeled for the proposed redevelopment at the former Naval Hospital property in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013). Total operational emissions after full build-out of the former Naval Hospital property under Alternative 1 are provided in Table 7.6-1 (see Chapter 12 for the discussion of regional air quality impacts). Operational emissions would result in minor impacts on air quality, but the mitigation discussed below would reduce adverse impacts.

Table 7.6-1 Building Energy and Vehicle Emissions, Former Naval Hospital Property (Alternative 1)

Energy Type	Emissions per year (tons)					
	CO	NO_X	VOC	SO_2	PM_{10}	$PM_{2.5}$
Fuel Oil	0.05	0.18	0.01	0.44	0.01	0.01
Natural Gas	0.20	0.46	0.03	0.00	0.01	0.01
Electricity	NA	1.06	NA	0.18	NA	NA
New Vehicle Emissions	12.14	1.11	1.43	0.03	0.26	0.17
Total Annual Operational Emissions	**12.39**	**2.81**	**1.47**	**0.64**	**0.28**	**0.19**

Key:
CO = Carbon monoxide
NA = Not applicable
NO_x = Nitrous oxides
PM_{10} = Particulate matter less than 10 microns in diameter
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter
SO_2 = Sulfur dioxide
VOC = Volatile organic compounds

To mitigate operational emissions, buildings can be designed to meet stringent energy-efficiency standards. Implementation of traffic-easing roadway designs to lower vehicle speed and reduce congestion, in addition to expansion of public transportation and carpooling programs, would reduce vehicle emissions.

7.6.2 Alternative 2

Under Alternative 2, the residential use proposed under Alternative 1 would be replaced by commercial use, and a conference center would be added to the proposed hotel. The commercial use would have the same footprint as the residential use under Alternative 1 (0.6 acres). The 0.2-acre conference center would be developed behind the hotel, along Third Avenue (see Chapter 2, Figure 2-5). The remainder of the site would require demolition and be developed as described under Alternative 1. At 4.8 acres (58 percent) of the land-based portion of the site, the development footprint is slightly higher than under Alternative 1.The intensity of use also is higher under Alternative 2.

Construction emissions resulting from the proposed redevelopment at the former Naval Hospital property under Alternative 2 are provided in Table 7.6-2. These emissions would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. Construction emissions would therefore result in minor impacts on air quality. Measures to mitigate construction emissions are the same as those discussed above under Alternative 1.

Table 7.6-2 Construction Emissions, Former Naval Hospital Property (Alternative 2)

Source	Emissions per year (TPY)					
	VOCs	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Construction Equipment	3.06	18.16	41.61	0.059	3.78	3.78
Worker Commute	0.31	2.90	0.22	0.003	0.65	0.07
Demolition Removal/ Delivery Truck Traffic	0.012	0.035	0.22	0.005	0.095	0.018
VOCs and PM from Paving and Grading	0.02	NA	NA	NA	0.11	0.11
Total Emissions (TPY)	**3.40**	**21.09**	**42.06**	**0.07**	**4.64**	**3.99**

Key:
CO = Carbon monoxide
NA = Not applicable
NO_x = Nitrous oxides
PM_{10} = Particulate matter less than 10 microns in diameter
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter
VOCs = Volatile organic compounds

Operational emissions include emissions from building energy use and increased vehicle traffic. Emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. As determined in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013), vehicle traffic would increase due to the proposed redevelopment at the former Naval Hospital property, resulting in new vehicle emissions. Operational emissions would result in minor impacts on air quality. Total operational emissions after full build-out of the former Naval Hospital property under Alternative 2 are provided in Table 7.6-3 (see Chapter 12 for the discussion of regional air quality impacts).

7.6.3 No Action Alternative

The site and existing buildings are currently unoccupied and would remain in this condition under the No Action alternative. There would be no new stationary or mobile sources of criteria, HAPs, or GHG emissions from the use of the property, and the No Action alternative would not impact air quality at the former Naval Hospital property.

7.6.4 General Conformity Rule Applicability Determination

Since Rhode Island is in attainment for all NAAQS, the General Conformity Rule does not apply to this action. While not applicable to the action, the *de minimis* thresholds under the General Conformity Rule have been used to consider the potential level of significance of the air quality impacts under NEPA.

Emissions from construction and operation at the former Naval Hospital property under either alternative would be below the General Conformity Rule *de minimis* thresholds. Thus, changes in air quality would not be significant as a result of the proposed construction and mitigation would reduce adverse impacts.

Table 7.6-3 Building Energy and Vehicle Emissions, Former Naval Hospital Property (Alternative 2)

Energy Type	Emissions per Year (tons)					
	CO	NOx	VOCs	SO_2	PM_{10}	$PM_{2.5}$
Fuel Oil	0.06	0.20	0.01	0.48	0.01	0.01
Natural Gas	0.19	0.45	0.03	0.00	0.01	0.01
Electricity	NA	1.21	NA	0.20	NA	NA
New Vehicle Emissions	15.33	1.40	1.81	0.04	0.33	0.22
Total Annual Operational Emissions	**15.58**	**3.26**	**1.84**	**0.72**	**0.35**	**0.24**

Key:
CO = Carbon monoxide
NA = Not applicable
NO_x = Nitrous oxides
PM_{10} = Particulate matter less than 10 microns in diameter
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter
VOCs = Volatile organic compounds

7.7 Noise

This section includes an analysis of the potential noise impacts resulting from the proposed redevelopment of the former Naval Hospital property under Alternative 1, Alternative 2 and the No Action alternative. It includes an analysis of the potential impacts resulting from construction and future operation of the proposed redevelopment plan for the former Naval Hospital property.

7.7.1 Alternative 1 (Preferred Alternative)

7.7.1.1 Construction

Proposed redevelopment at the former Naval Hospital property under Alternative 1 involves demolishing the existing buildings, constructing a three-story hotel with additional space for retail and/or restaurants, a three-story 36-unit residential building, and a waterfront park. Table 7.7-1 provides an estimate of the number and types of construction equipment that would be needed and the associated sound pressure level for each type of equipment at a distance of 50 feet from the source and at the nearest residence. Figure 7.7-1 illustrates the locations of the noise receptors used for analysis. The nearest residence from the center of the former Naval Hospital property has been determined to be a location along Third Street at a distance of approximately 350 feet. The SPL at this location is estimated to range from 50 to 71 dBA. The nearest residence from Pier 71 is a location along Cypress Street at a distance of approximately 350 feet. The SPL at this location from the pilings/dock construction is estimated to be 71 dBA. The composite sound level due to construction would be between 60 dB, the sound level of normal speech, and 80 dB, the sound level of a garbage disposal (see Chapter 3, Table 3.7-1, Decibel Levels of Some Common Sounds).

Construction noise impacts would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. In addition, construction would take place between the hours of 7:30 a.m. to 7:00 p.m., when the noise would be less disturbing and in accordance with the zoning regulations of the City of Newport.

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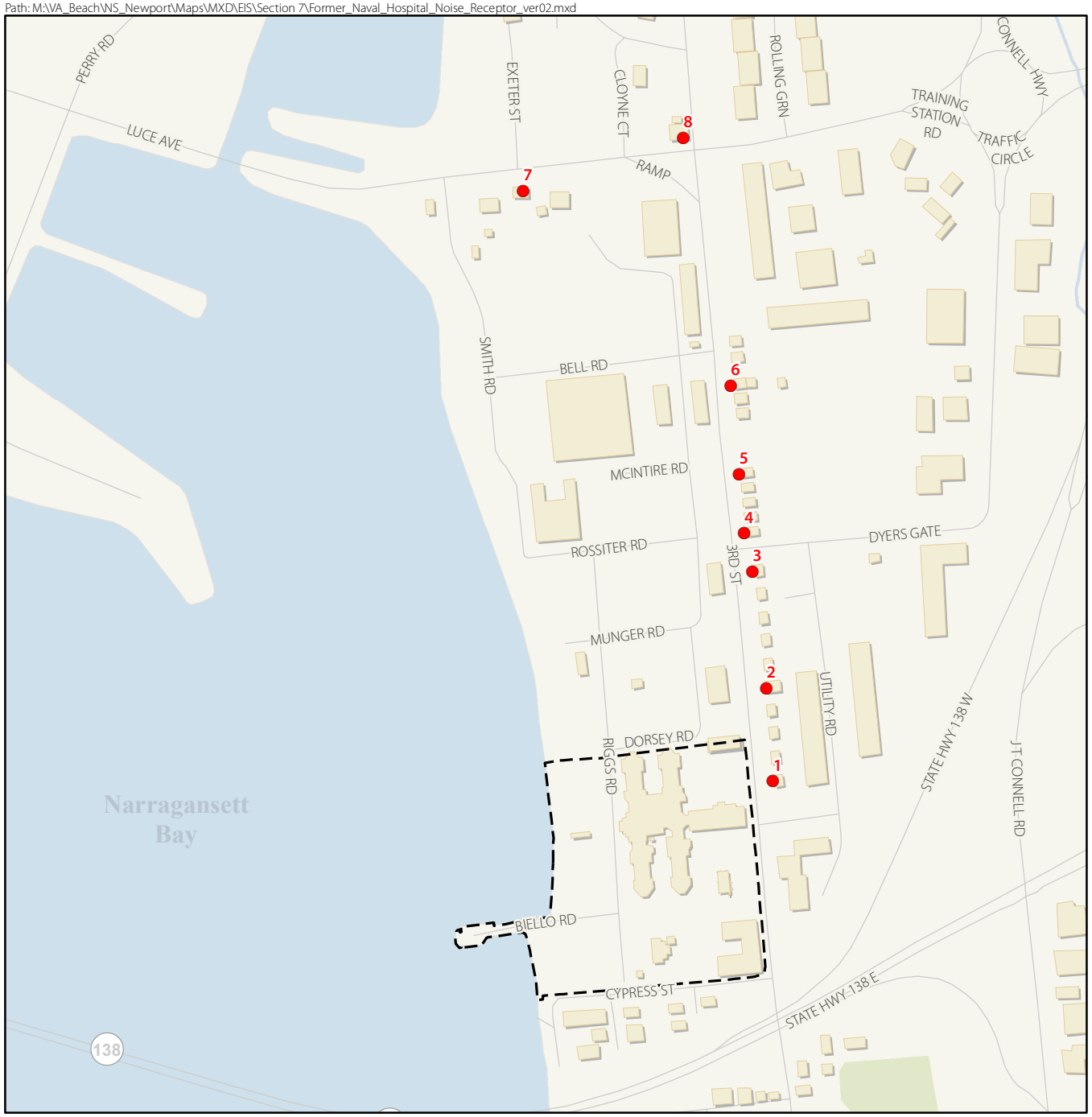

Figure 7.7-1

Former Naval Hospital Property Noise Receptor Locations

NAVSTA Newport, Rhode Island

Legend

- Noise Receptor Location
- Street
- Property Boundary

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: U.S. Department of the Navy 2009

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Table 7.7-1 Redevelopment Estimated Construction Equipment Noise Levels, Former Naval Hospital Property (Alternatives 1 and 2)

Construction Equipment	Quantity	Usage Factor %	SPL @ 50 Feet (dBA)	SPL[1] (dBA) at Specified Distance	
				50 feet (adjusted)[2]	Nearest Residence 350 feet
Building Demolition					
Loader	2	40	79	78	61
Crane (Crawler)	2	16	81	76	59
Hydraulic Breaker	2	10	90	83	66
Concrete Saw	2	20	90	86	69
Grader	2	40	85	84	67
Haul Truck	2	40	76	75	58
Building Construction					
Loader	2	40	79	78	61
Crane (Crawler)	2	16	81	76	59
Crane (Hydraulic Truck)	2	16	81	76	59
Generators	2	50	82	82	65
Welder	2	40	74	73	56
Backhoe	1	40	80	76	59
Compressor	2	40	78	77	60
Grading					
Grader	2	40	85	84	67
Bull Dozer	2	40	85	84	67
Water Truck	2	40	76	75	58
Haul Truck	2	40	76	75	58
Paving/Road Construction					
Cement Mixer	1	40	85	81	64
Asphalt Paving Machine	1	50	85	82	65
Vibratory Compactor	1	20	80	73	56
Generators	1	50	82	79	62
Pilings/ Dock Construction					
50-ton Crane	1	16	85	77	56
Diesel Generator	1	50	82	79	62
600 cfm Air Compressor	1	40	80	76	59
Diesel Drill Rig	1	20	84	77	60
Impact Pile Driver	1	20	95	88	71
600 hp Tug Boat	1	20	87	80	63
50 hp Service Boat	1	5	80	67	50

Source: Federal Highway Administration 2006

1 SPL = Sound pressure level
2 SPL at 50 feet adjusted to equipment quantity and usage factor

Temporary increases in construction-related vehicle noise would also be expected. Truck and construction vehicle (e.g., dump trucks, material deliveries, debris removal, etc.) traffic within and near the former Naval Hospital property would produce localized noise for brief periods, but this would not be expected to create any long-term, adverse noise impacts on the neighboring community.

Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

7.7.1.2 Operation

Operation of the mixed uses and waterfront park on the former Naval Hospital property under Alternative 1 would include noise sources such as traffic to and from the parking lots, children playing and other recreational activities that would not be expected to result in a noise impact above ambient noise levels during the daytime, when the property would have the greatest use.

To characterize the projected traffic noise near the former Naval Hospital property, the evening peak hour traffic volume, vehicle speed, and vehicle mix data for the roadways in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013) were modeled using TNM version 2.5 at the receptor locations shown in Table 7.7-2.

The predicted traffic noise levels for the Naval Hospital property under Alternative 1 are summarized below in Table 7.7-2. Noise levels would range between 62.0 and 67.2 dBA, which differs from existing conditions by 1 dBA or less. An increase in noise of 3 dBA is considered to be barely noticeable. As shown in Table 7.7-2, projected traffic noise levels would slightly exceed FHWA guidance noise abatement criteria thresholds for the land uses proposed under Alternative 1 but would not substantially exceed (greater than 15 dBA) existing conditions. Land uses proposed under Alternative 1 would include FHWA activity categories 'B' and 'C.' The traffic noise abatement criterion threshold for activity Category B is 67 dBA and 72 dBA for Category C. (For more information on FHWA traffic noise abatement criteria see Section 3.7.2).

Table 7.7-2 Peak PM Hour Traffic Noise Levels Former Naval Hospital Property (Alternative 1)

Receptor	Location	Hourly L_{eq} Sound Level (dBA)		Alternative 1 Sound Level Change
		Modeled Existing	Alternative 1	
1	Third Street	64.0	65.0	1
2	Third Street	61.2	62.1	0.9
3	Third Street	61.0	62.0	1
4	Third Street	62.1	63.1	1
5	Third Street	61.7	62.7	1
6	Third Street	62.6	63.6	1
7	Training Station Road	66.2	67.2	1
8	Training Station and Third Street	66.2	67.2	1

Key:
dBA = Average-weighted decibel
L_{eq} = Continuous equivalent sound level

Changes in the traffic-related noise levels would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

7.7.2 Alternative 2

7.7.2.1 Construction

Although the redevelopment of the former Naval Hospital property under Alternative 2 would replace residential uses with commercial uses and a conference center at the proposed hotel, the estimated

construction noise levels would be similar to Alternative 1; however, the duration of construction may be slightly longer.

Temporary increases in construction-related vehicle noise would, however, be expected. Truck and construction vehicle (e.g., dump trucks, material deliveries, debris removal, etc.) traffic on and near the former Naval Hospital property would produce localized noise for brief periods, but this would not be expected to create any long-term, adverse noise impacts on the neighboring community. Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

7.7.2.2 Operation

Implementation of Alternative 2 would not be expected to generate significant traffic-related noise impacts within the study area. Traffic-related noise would occur in areas already experiencing such noise and would not be expected to cause additional impacts. The predicted traffic noise levels for the former Naval Hospital property under Alternative 2 are provided in Table 7.7-3. The largest estimated increase in traffic noise would be 1.3 dBA. An increase in noise of 3 dBA is considered to be barely noticeable. As shown in Table 7.7-3, projected traffic noise levels would slightly exceed FHWA guidance noise abatement criteria thresholds for the land uses proposed under Alternative 2 but would not substantially exceed (greater than 15 dBA) existing conditions. Land uses under Alternative 2 would include FHWA activity categories 'B' and 'C'. The traffic noise abatement criterion threshold for activity Category B is 67 dBA and 72 dBA for Category C. (For more information on FHWA traffic noise abatement criteria, see Section 3.7.2.) Changes in the traffic-related noise levels would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

Table 7.7-3 Peak PM Hour Traffic Noise Levels, Former Naval Hospital Property (Alternative 2)

Receptor	Location	Hourly L_{eq} Sound Level (dBA)		Alternative 2 Sound Level Change
		Modeled Existing	Alternative 2	
1	Third Street	64.0	65.3	1.3
2	Third Street	61.2	62.4	1.2
3	Third Street	61.0	62.3	1.3
4	Third Street	62.1	63.4	1.3
5	Third Street	61.7	63	1.3
6	Third Street	62.6	63.9	1.3
7	Training Station Road	66.2	67.2	1
8	Training Station and Third Street	66.2	67.3	1.1

Key:
dBA = average-weighted decibel
L_{eq} = continuous equivalent sound level

7.7.3 No Action Alternative

Under this alternative, all excess property would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur at the former Naval Hospital property and no additional noise would be generated.

7.8 Infrastructure and Utilities

This section summarizes the potential impacts on infrastructure and utilities from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of impacts on water supply, wastewater, storm water, other utilities, and solid waste management from disposal and reuse of the former Naval Hospital property.

7.8.1 Alternative 1 (Preferred Alternative)

7.8.1.1 Water Supply

The City of Newport would be expected to have sufficient capacity to meet the future water demands resulting from implementation of Alternative 1.

Water Demand

Full build-out of the former Naval Hospital property under Alternative 1 would create a mix of uses and, at full occupancy, water demand is estimated to be approximately 25,243 gpd. All buildings on the property have been vacated and there is no current demand for water. Water demand was projected using planning multipliers for the proposed land uses based on square footage (see Table 7.8-1) (Nelson 2004). For more information on the methodology and assumptions used to estimate water demand, see Appendix D.

Table 7.8-1 Projected Water Demand (gpd) at Build-Out, Former Naval Hospital (Alternatives 1 and 2)

Land Use	Alternative 1	Alternative 2
Hotel	15,000	15,000
Shopping Center	3,538	3,538
Conference Center	NA	1,063
Commercial	NA	3,250
Residential	6,480	NA
Boat Storage Facility	225	225
Yacht Club/Office	NA	325
Total	**25,243**	**23,400**

Key:
NA = Not applicable

Operation and Management

Implementation of Alternative 1 would be expected to have a minor impact on the future capacity of the City of Newport's water treatment and distribution system. The current average daily demand on the City of Newport water supply is 5.59 mgd, including demand by users in the City of Newport and the Town of Middletown, which are supplied through the City of Newport's distribution system, and on NAVSTA Newport and in the Portsmouth Water and Fire District, which are supplied water wholesale by the City of Newport. Total average daily demand is projected to increase to between 7.50 and 7.96 mgd by 2033 (Pare Corporation 2014).

Replacement of one of the existing plants and upgrades to the other increased capacity to 16 mgd (Water World 2012; City of Newport Department of Utilities 2014). The expected 25,243 gpd under Alternative 1 represents less than 1 percent of the average daily demand projected in 2033. Therefore, the increase in projected water demand would represent a minor impact on the operation and maintenance of the City of Newport's water treatment plants and would be met with current capacity.

Distribution System

Existing water lines at the former Naval Hospital property are owned by NAVSTA Newport. Redevelopment of the property would require installing a new distribution system for water supply, which would be the responsibility of the developer/future property owner and would be considered a moderate impact on the existing distribution system. Ground disturbance would be associated with laying new distribution lines, and the developer will be required to comply with local and state regulations to minimize disturbance. All new distribution system(s) will be constructed to ensure that they are adequately sized. In addition, the design and installation of any new water supply infrastructure will require, if applicable, municipal review and approval and will have to comply with applicable local codes, ordinances, and regulations.

In summary, Alternative 1 would result in an increase in water demand and a need for infrastructure. New water distribution would be constructed to accommodate redevelopment.

7.8.1.2 Wastewater

The City of Newport would be expected to have sufficient capacity for the collection and treatment of wastewater associated with development of the former Naval Hospital property under Alternative 1.

Wastewater Volume

The former Naval Hospital property contains only vacant buildings and no wastewater is being produced. Full build-out of Alternative 1 would create a mix of uses. At full occupancy, wastewater generation is expected to be approximately 23,670 gpd of wastewater under Alternative 1 (see Table 7.8-2). The largest quantity of wastewater would be produced from the residential units, which are expected to generate 14,280 gpd. Table 7.8-2 shows the projected generation of wastewater for both alternatives by land use. For more information on the methodology and assumptions used to project wastewater demand, see Appendix D-3.

Table 7.8-2 Projected Wastewater Generation (gpd) at Build-Out, Former Naval Hospital Property (Alternatives 1 and 2)

Land Use	Alternative 1	Alternative 2
Hotel	14,280	14,280
Shopping Center	3,368	3,368
Conference Center	NA	1,012
Commercial	NA	3,094
Residential	5,832	NA
Boat Storage Facility	190	190
Yacht Club/Office	NA	309
Total	**23,670**	**22,253**

Key:
NA = Not applicable

Operation and Management

The plant has a current capacity of 10.7 mgd and in 2012 processed 9.46 mgd. Wastewater flows generated under Alternative 1 would represent less than 1 percent of the plant's current processing total (9.46 mgd). Therefore, the projected increase in wastewater demand would represent a minor impact on operation and maintenance of the City of Newport's wastewater treatment and collection system.

Collection System

Wastewater from the Naval Hospital property formerly flowed through the NAVSTA sewer system before reaching Pump Station 68 and being pumped to Newport's wastewater treatment plant (RKG

Associates, Inc. et al. 2011). Under Alternative 1, future redevelopment is expected to access the City of Newport's sewer system (Carlson 2012). Redevelopment of the property would require installing a new wastewater collection system, which would be the responsibility of the developer/future property owner and would be considered a moderate impact on the existing collection system. Ground disturbance would be associated with laying new distribution lines, and the developer will be required to comply with local and state regulations to minimize disturbance. All new collection system(s) will be constructed to ensure that they are adequately sized. In addition, the design and installation of any new wastewater collection infrastructure will require, if applicable, municipal review and approval and will have to comply with applicable local codes, ordinances, and regulations.

Flow through Newport's collection system along Third Street and Cypress Street is handled by Pump Station 68 (RKG Associates, Inc. et al. 2011). The pump station is currently in good overall condition. No major upgrades have been identified as being needed (RKG Associates, Inc. et al. 2011).

In summary, Alternative 1 would result in an increase in demand on wastewater capacity and a need for new infrastructure. New wastewater distribution infrastructure would be constructed to accommodate redevelopment.

7.8.1.3 Storm Water

Implementation of Alternative 1 would increase the amount of impervious surface area on the property, resulting in a greater volume of storm water runoff. Some of the existing impervious surface would be replaced or expanded as a result of Alternative 1 in addition to new impervious surfaces. Full build-out under Alternative 1 is estimated to result in a total of approximately 195,243 square feet of impervious surface area, an increase of four percent above existing conditions. The hotel, parking and access roadways are a large component of the total impervious surfaces under the proposed redevelopment. Total impervious surface area is shown for both alternatives in Table 7.8-3. For more information on the methodology and assumptions used to calculate existing and future impervious surface, see Appendix D-4.

Table 7.8-3 Impervious Surface (square feet) at Build-Out, Former Naval Hospital Property (Alternatives 1 and 2)

Structure	Alternative 1	Alternative 2
Hotel[1]	56,600	56,600
Conference Center	NA	8,500
Access	56,600	47,900
Parking	40,350	52,270
Commercial	NA	26,000
Residential	26,033	NA
Park Path	4,360	4,360
Boat Storage Facility	1,300	1,300
Yacht Club/ Office	NA	2,600
Pier	8,700	8,700
Floating Dock	1,300	2,180
Total	**195,243**	**210,410**

Key:
NA = not applicable

Notes:
[1] The proposed hotel is expected to consist of three floors; therefore, the total square footage (169,800 sq.ft.) was divided by three.

The City of Newport requires that a storm water management plan be prepared as part of the development plan review stipulated in Chapter 17.88, Development Plan Review of Newport's Code of Ordinances. This development plan review is required for certain types of development, namely commercial and multi-family dwelling units of a certain size, to ensure that they do not significantly impact the city's infrastructure and utilities. The required storm water management plan must conform to the current edition of the *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010) and the minimum standards set forth in Chapter 17.88.030, Development Plan Controls (T).

A General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity, would be necessary because redevelopment of the former Naval Hospital property would disturb more than 1 acre. Prior to approval of a Construction General Permit, the RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. Through compliance with applicable state and local regulations, the addition of impervious surface would not be considered a significant impact.

Additionally, as indicated in Section 3.8, Infrastructure and Utilities, Section 438 of the EISA requires that any development or redevelopment project involving a federal facility with a footprint exceeding 5,000 square feet shall use site planning, design, construction, and maintenance strategies in order to maintain or restore the pre-development hydrology of the property with regard to temperature, rate, volume, and duration of flow. Compliance with this requirement can be met through the implementation of LID technologies.

Section 438 applies to the "sponsor of any development or redevelopment project involving a federal facility." The act of transferring the installation will result in the property being no longer federally owned; consequently, Section 438 would not apply to the redevelopment of the former Naval Hospital property. However, as outlined in *Rhode Island's Stormwater Design and Installation Standards Manual*, use of LID techniques are required as a primary method of storm water control (RIDEM and CRMC 2010). Thus, although not required through federal ownership of the property, it is expected that the redevelopment of the former Naval Hospital property would be consistent with the terms contained in Section 438 of the EISA.

Storm Water System

The existing storm water collection system may require modifications, and new storm water infrastructure may be necessary to offset new impervious surfaces associated with redevelopment under this alternative. Ground would be disturbed during construction of new infrastructure, and the developer will be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future developer will be required to identify any infrastructure requirements that may be needed.

Operation and Management

Under Alternative 1, the property would likely be transferred to a non-federal agency, and the infrastructure would no longer be managed by the Navy. Upon completion of the BRAC disposal process, the future property owner or developer would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 1 would result in a significant increase in impervious surface area, and new storm water infrastructure would be required; however, mitigation will render the impact not significant. Mitigation will include required compliance with state and local regulations and permit conditions regarding storm water management.

7.8.1.4 Other Utility Systems

Electricity

Electricity at the property would continue to be supplied by National Grid. Upon full build-out of Alternative 1, total electricity demand is estimated to be approximately 2,470,529 kWh (estimated using U.S. averages for energy use per square foot for specific types of building uses [U.S. Department of Energy EIA 2003; 2009]). These averages were used to estimate total energy use in the proposed new building spaces. The same assumptions were applied in Section 7.6, Air Quality. The majority of electricity usage, approximately 2.3 million kWh, would originate from the hotel. Residential units would consume more than 162,000 kWh annually. Electricity demand for the proposed land uses is shown in Table 7.8-4. The property is currently vacant and not consuming electricity; however, service is available via overhead wires along Third Street.

Table 7.8-4 Projected Electricity Use at Build-Out, Former Naval Hospital Property (Alternatives 1 and 2)

Structure	Alternative 1 (kwh)	Alternative 2 (kwh)
Hotel	2,299,097	2,299,097
Conference Center	NA	105,737
Commercial	NA	373,407
Residential	162,144	NA
Boat Storage Facility	9,288	9,288
Yacht Club/ Office	NA	44,938
Total	**2,470,529**	**2,832,468**

Key:
NA = Not applicable

As shown in Table 5.8-4 in Section 5.8, Infrastructure and Utilities, the City of Newport consumed more than 285 million kWh of electricity in 2011. The 2011 electric consumption represented a decrease from 2010 but was still an increase over the levels used in 2009. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade.

The annual electricity demand under Alternative 1 would represent less than 1 percent of 2011 energy usage in Newport and less than a half percent of total annual energy usage for Newport, Middletown, and Portsmouth combined (Rhode Island Energy 2012). Considering the 0.8 percent future annual growth rate in electricity demand at the state level and that Aquidneck Island comprises approximately 5.5 percent of the state's overall population, the annual growth rate for electricity demand would be expected to be far less than 0.8 percent. Therefore, the demand for electricity from the redevelopment of the former Naval Hospital under Alternative 1 would be expected to be supported by current electrical capacity and would represent a negligible impact on regional demand. However, the future developer would need to coordinate with the three local municipalities, and National Grid to identify an alternative for electricity provision if, at the time of redevelopment, regional capacities are exceeded.

All electric connections would be constructed to ensure an adequately sized and properly built electric transmission and conveyance system; ground would be disturbed during construction of new systems. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

Natural Gas

Natural gas would continue to be supplied by National Grid. An estimated 8,335,116 cf of natural gas would be needed each year under full build-out of Alternative 1. Similar to electricity usage, estimates of future natural gas usage were calculated for full build-out as proposed under Alternative 1 using U.S. averages for natural gas use per square foot, which were obtained from the U.S. Department of Energy's EIA (2003; 2009) for specific types of building use. These averages were used to estimate total natural gas use by the proposed new building spaces. The same assumptions were applied in Section 7.6, Air Quality. As with electricity usage, the majority of natural gas would be consumed by the proposed hotel. More than 8,300,000 cf of natural gas would be used by the hotel annually. The boat storage facility would consume more than 30,000 cf. The proposed residential units would consume less than 1 percent of the natural gas demand under Alternative 1. Table 7.8-5 compares natural gas usage for the two alternatives. Upon completion of the BRAC disposal process, the future developer would work with National Grid to identify any infrastructure requirements that may be needed.

Table 7.8-5 Projected Natural Gas Use at Build-Out, Former Naval Hospital Property (Alternatives 1 and 2)

Structure	Alternative 1 (cf)	Alternative 2 (cf)
Hotel	8,303,220	8,303,220
Conference Center	NA	309,400
Commercial	NA	868,400
Residential	1,476	NA
Boat Storage Facility	30,420	30,420
Yacht Club/ Office	NA	82,680
Total	**8,335,116**	**9,594,120**

Key:
NA = Not applicable

The natural gas usage for the City of Newport in 2011 was more than 105 billion cf (see Table 5.8-5 in Section 5.8, Infrastructure and Utilities). The quantity of natural gas needed under Alternative 1 represents less than one-one hundredth of a percent of the amount consumed in Newport in 2011 (Rhode Island Energy 2012), and, therefore, is assumed would be accommodated with existing capacities servicing existing demand. It would represent a negligible impact on regional demand. Redevelopment under Alternative 1 is not anticipated to create a strain on natural gas resources.

All natural gas connections would be constructed to ensure an adequately sized and properly built gas transmission and conveyance system. Ground would be disturbed during construction of new systems, and the developer will be required to comply with local and state regulations to minimize disturbance. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

7.8.1.5 Solid Waste

Large quantities of solid wastes would be generated from the implementation of Alternative 1. C&D wastes would be generated from the demolition and construction activities that are planned for redevelopment of the former Naval Hospital property and would consist of wood, concrete, masonry, metal, building materials, and mechanical components. Estimates of solid waste generated from demolition and construction activities are included in Appendix D-2. Approximately 62,000 cy of C&D waste would be generated from demolishing the former Naval Hospital buildings, and approximately 2,200 cy of C&D waste would be generated from constructing the commercial, residential, and

recreational facilities planned for Alternative 1. Much of the C&D waste would be recyclable, and it is expected that the demolition and construction contracts would contain traditional terms and conditions requiring recycling C&D waste to the extent practicable, which reduces disposal costs and is also protective of the environment. Solid wastes also would be routinely generated during the future operation of the commercial businesses that are planned for the property and from residential living. Such solid wastes would consist of mixed trash, food waste, and traditional recyclables such as paper, cardboard, and containers. It is expected that non-C&D solid wastes would be managed by existing local solid waste management services.

Implementation of Alternative 1 would have moderate short-term and minor long-term impacts on solid waste management. The impacts would not be significant because of the relatively small scale of the proposed reuse and redevelopment and the availability and capacity of existing solid waste management programs in the City of Newport and Newport County.

7.8.2 Alternative 2

7.8.2.1 Water Supply

The City of Newport would be expected to have sufficient capacity to meet the future water demands resulting from implementation of Alternative 2.

Water Demand

Full build-out of the former Naval Hospital property under Alternative 2 would create a mix of uses and would result in an estimated demand of approximately 23,400 gpd, slightly less than the projected water demand under Alternative 1. The proposed retail/commercial uses would be the largest consumers of water. Table 7.8-1 shows the projected water demand for Alternative 1 and Alternative 2. Demand was projected using planning multipliers for proposed land uses based on square footage (Nelson 2004). For more information on the methodology and assumptions used to project water demand, see Appendix D-3.

Operation and Management

Implementation of Alternative 2 would be expected to have a minor impact on the future capacity of the City of Newport's water treatment plant and distribution system. The current average daily demand on the City of Newport water supply is 5.59 mgd, including demand by users in the City of Newport and the Town of Middletown, which are supplied through the City of Newport's distribution system, and on NAVSTA Newport and in the Portsmouth Water and Fire District, which are supplied water wholesale by the City of Newport. Total average daily demand is projected to increase to between 7.50 and 7.96 mgd by 2033 (Pare Corporation 2014).

Replacement of one of the existing plants and upgrades to the other increased capacity to 16 mgd (Water World 2012; City of Newport Department of Utilities 2014). The expected 23,400 gpd under Alternative 2 represents less than 1 percent of the average daily demand projected in 2033. Therefore, the increase in projected water demand would represent a minor impact on operation and maintenance of the City of Newport's water treatment plants and would be met with current capacity.

Distribution System

As indicated under Alternative 2, existing water lines at the former Naval Hospital property are owned by NAVSTA Newport and would need to be cut and capped by the developer prior to redevelopment. Installing a new distribution system for water supply would be required, which would be the responsibility of the developer/future property owner and would be considered a moderate impact. As indicated under Alternative 1, ground would be disturbed when laying new distribution lines, and the developer will be required to comply with local and state regulations to minimize disturbance. All new distribution system(s) would be constructed to ensure that they are adequately sized. In addition, the

design and installation of any new water supply infrastructure will require, if applicable, municipal review and approval and will need to comply with applicable local codes, ordinances, and regulations.

In summary, similar to Alternative 1, Alternative 2 would result in an increase in water demand and a need for new infrastructure. New water distribution infrastructure would be constructed to accommodate redevelopment.

7.8.2.2 Wastewater

The City of Newport would be expected to have sufficient capacity for the collection and treatment of wastewater associated with development of the former Naval Hospital property under Alternative 2.

Wastewater Volume

The former Naval Hospital property is currently vacant and so no wastewater is being produced at this time. Based on standard multipliers for the proposed land uses under Alternative 2 (Nelson 2004), at full occupancy, wastewater generation is expected to be approximately 22,253 gpd. Wastewater generation by uses is similar to Alternative 1; however, residential generation would be replaced by a lower volume of wastewater for the proposed conference center, commercial space, and yacht club/ office. Table 7.8-2 shows the projected generation of wastewater for the alternatives by land use.

Operation and Management

The City of Newport's plant has a current capacity of 10.7 mgd and in 2012 processed 9.46 mgd. Wastewater flows generated under Alternative 2 would represent less than 1 percent of the plant's current processing total (9.46 mgd). Therefore, the projected increase in wastewater demand would represent a minor impact on operation and maintenance of the City of Newport's wastewater treatment and collection system.

Collection System

Similar to Alternative 1, wastewater from the former Naval Hospital property previously flowed through the NAVSTA sewer system before reaching Pump Station 68 and being pumped to Newport's wastewater treatment plant (RKG Associates, Inc. et al. 2011). Under Alternative 2, future development is expected to access the City of Newport's sewer system (Carlson 2012). Redevelopment of the property would require installing a new wastewater collection system, which would be the responsibility of the developer/future property owner and would be considered a moderate impact. Ground would be disturbed when laying new collection lines, and the developer will be required to comply with local and state regulations to minimize disturbance. All new collection system(s) would be constructed to ensure that they are adequately sized. In addition, the design and installation of any new wastewater collection infrastructure will require, if applicable, municipal review and approval and will have to comply with applicable local codes, ordinances, and regulations.

Flow through Newport's collection system along Third Street and Cypress Street is handled by Pump Station 68 (RKG Associates, Inc. et al. 2011). The pump station is currently in good overall condition. No major upgrades have been identified as being needed (RKG Associates, Inc. et al. 2011).

In summary, similar to Alternative 1, Alternative 2 would result in an increase in demand on wastewater capacity and a need for new infrastructure. New wastewater distribution infrastructure would be constructed to accommodate redevelopment.

7.8.2.3 Storm Water

Implementation of Alternative 2 would increase the amount of impervious surface area on the property, resulting in a greater volume of storm water runoff. Existing impervious areas from buildings would be

replaced by new structures and parking and access roads would be expanded. Full build-out under Alternative 2 is estimated to result in a total of approximately 210,410 square feet of impervious surface area, an increase of 12 percent over existing conditions. Most of the impervious surfaces would be part of the hotel and retail land uses. Parking and access roadways are also a large component of the total amount of impervious surfaces under the proposed redevelopment. Impervious surfaces from commercial space in Alternative 2 would replace impervious surfaces from residential uses in Alternative 1. Total impervious surface area is shown for both alternatives in Table 7.8-3.

As discussed under Alternative 1, compliance with local and state storm water regulations would be required. A storm water management plan would be required as part of the development plan review specified in the City of Newport's Code of Ordinances (Chapter 17.88). A General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity, would also be necessary because redevelopment of the former Naval Hospital property would disturb more than 1 acre. Prior to approval of a Construction General Permit, the RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. Lastly, as discussed above under Alternative 1, Section 438 would not apply to the redevelopment of the former Naval Hospital property. However, as outlined in *Rhode Island's Stormwater Design and Installation Standards Manual*, use of LID techniques are required as a primary method of storm water control (RIDEM and CRMC 2010). Thus, although not required through federal ownership of the property, it is expected that the redevelopment of the former Naval Hospital property would be consistent with the terms of Section 438 of the EISA.

Storm Water System

The existing storm water collection system may require modifications and new storm water infrastructure may be necessary to offset new impervious surfaces associated with redevelopment under this alternative. Ground would be disturbed during construction of new infrastructure, and the developer will be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future developer would be required to identify any infrastructure that may be needed.

Operation and Management

Under Alternative 2, the property would be transferred to a non-federal agency, and infrastructure would no longer be managed by the Navy. Upon completion of the BRAC process, the future property owner would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 2 would result in a significant increase in impervious surface area, and new storm water infrastructure would be needed; however, mitigation will render the impact not significant. Mitigation will include required compliance with state and local regulations and permit conditions regarding storm water management.

7.8.2.4 Other Utility Systems

Electricity

Electricity would continue to be supplied by National Grid. Upon full build-out of Alternative 2, it is expected total electricity demand would be approximately 2,832,468 kWh. The majority of electricity usage would originate from the hotel. A considerable increase in electricity consumption compared with Alternative 1 would occur with the replacement of residential units with commercial space and the addition of a conference center and yacht club/office. The property is currently vacant and no electricity is used; however, service is available via overhead wires along Third Street.

As discussed under Alternative 1, the City of Newport used more than 285 million kWh of electricity in 2011. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade. The annual electricity demand under Alternative 2 would represent just under 1 percent of 2011 energy usage in Newport and approximately 0.50 percent of total annual energy usage for Newport, Middletown, and Portsmouth combined (Rhode Island Energy 2012). Considering the 0.8 percent future annual growth rate in electricity demand at the state level and that Aquidneck Island comprises approximately 5.5 percent of the state's overall population, the annual growth rate for electricity demand would be expected to be far less than 0.8 percent. Therefore, the electricity demand from the redevelopment of the former Naval Hospital under Alternative 2 would be expected to be supported by current electrical capacity and would represent a negligible impact on regional demand. However, the future developer would need to coordinate with the three local municipalities and National Grid to identify an alternative for electricity provision if, at the time of redevelopment, regional capacities are exceeded.

Similar to Alternative 1, all electric connections would be constructed to ensure an adequately sized and properly built electric transmission and conveyance system; ground would be disturbed during construction of new systems, and the developer will be required to comply with local and state regulations to minimize disturbance. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

Natural Gas

Natural gas to the property would continue to be supplied by National Grid. It is expected that a total of approximately 9,594,120 cf of natural gas would be needed each year under full build-out of Alternative 2. Similar to electricity use, the largest consumers of natural gas include the proposed hotel, commercial space, and conference center, respectively. Table 7.8-5 compares natural gas usage of the two alternatives. Upon completion of the BRAC disposal process, the future developer would work with National Grid to identify any infrastructure requirements that may be needed.

The natural gas usage for the City of Newport in 2011 was more than 105 billion cf (see Table 5.8-5 in Section 5.8, Infrastructure and Utilities). The quantity of natural gas needed under Alternative 2 represents less than one-tenth of one percent of the amount used in Newport in 2011 (Rhode Island Energy 2012) and therefore it is assumed that existing capacities servicing existing demand can accommodate this small increase. Redevelopment under Alternative 2 is not expected to create a strain on natural gas resources. It would represent a negligible impact on regional demand.

Similar to Alternative 1, all natural gas connections would be constructed to ensure an adequately sized and properly built gas transmission and conveyance system; ground would be disturbed during construction of new systems and the developer will be required to comply with local and state regulations to minimize disturbance. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

7.8.2.5 Solid Waste

Large quantities of solid wastes would be generated from the implementation of Alternative 2, similar to Alternative 1. C&D wastes would be generated from the demolition and construction activities that are planned for redevelopment of the former Naval Hospital property and would consist of wood, concrete, masonry, metal, building materials, and mechanical components. Approximately 62,000 cy of C&D waste would be generated from demolishing the former Naval Hospital buildings, and approximately

1,800 cy of C&D waste would be generated from constructing the commercial and recreational facilities planned for Alternative 2 (see Appendix D-2). Like Alternative 1, much of the C&D waste would be recyclable. Solid wastes would be routinely generated during the future operation of the commercial businesses that are planned for the property, as described under Alternative 1.

Implementation of Alternative 2 would have moderate short-term and minor long-term impacts on solid waste management, as described under Alternative 1. The impacts would not be significant because of the relatively small scale of the proposed reuse and redevelopment and the availability and capacity of existing solid waste management programs in the City of Newport and Newport County.

7.8.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property there would be no demand for water, electricity, or natural gas, nor would wastewater or solid waste be routinely generated. Storm water runoff from the existing 187,310 square feet of impervious surface area would continue to be managed in accordance with NAVSTA Newport's Rhode Island Pollutant Discharge Elimination System General Permit.

7.9 Cultural Resources

As discussed in Section 3.9, NEPA guidance requires the evaluation of impacts of a proposed action on cultural resources, including archaeological resources and architectural or built resources (see Sections 7.9.1.1 and 7.9.1.2, respectively) as well as Native American resources (see Section 7.9.1.3). The Navy has also evaluated the potential impacts of the proposed action in terms of their effects on cultural resources that are historic properties, pursuant to Section 106 of the NHPA (see Section 7.9.1.4).

7.9.1 Alternative 1 (Preferred Alternative)

7.9.1.1 Archaeological Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and determined that Alternative 1 would have no direct impacts on archaeological resources because none are present within the APE at the former Naval Hospital property. However, redevelopment implemented under Alternative 1 has the potential to result in indirect impacts on one archaeological resource, Site RI-2125 (the British Transport Site), which is located outside of, but in the vicinity of, the APE at the former Naval Hospital property. Site RI-2125 is considered historically important because it has been previously determined NRHP-eligible. While this site is located outside of the APE for Alternative 1, the underwater setting of this submerged archaeological site means that the site could be indirectly disturbed by activities within the APE, such as on-site sediment disruption caused by the indirect actions of underwater waves or currents or sediments that are dispersed through water from the APE. Impacts on this historically important archaeological site are discussed in Section 7.9.1.4.

7.9.1.2 Architectural Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and determined that Alternative 1 would have direct impacts on architectural resources. Under Alternative 1, once the former Naval Hospital property has been transferred out of Navy ownership, the majority of the existing buildings and structures within the terrestrial portions of project area would be demolished except the pier (Pier 71) and the retaining wall. Two of the six architectural resources that would be demolished (Buildings 63 and 993) are not considered historically important because they are non-contributing elements of the NRHP-eligible U.S. Naval Hospital Newport Historic District, so demolition of these two buildings would not require measures to avoid, minimize, or mitigate these direct impacts. The retaining

wall, which is also a non-contributing element of the historic district, would not be directly or indirectly impacted by Alternative 1.

The four architectural resources that would be demolished (Buildings 1, 7, 45, and Quarters A and B) are considered historically important because they are contributing elements of the NRHP-eligible U.S. Naval Hospital Newport Historic District. The pier (Pier 71), which is also a historic resource because it is a contributing element of the NRHP U.S. Naval Hospital Newport Historic District, would not be demolished but would be altered by the addition of concrete floating docks on the sides of the pier. Impacts on historically important architectural resources are discussed in Section 7.9.1.4.

7.9.1.3 Native American Resources

As indicated in Section 6.9.3, the Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at the former Naval Hospital property: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

7.9.1.4 NRHP-Listed or -Eligible Historic Properties

Under Alternative 1, the transfer of the former Naval Hospital property out of federal ownership and the subsequent redevelopment of the former Naval Hospital property, particularly any in-water activities associated with redevelopment such as the alteration of Pier 71, could result in adverse effects on the NRHP-eligible 18th century shipwreck underwater archaeological site RI-2125 (the British Transport Site). Site RI-2125 is located outside the APE for Alternative 1 and is not owned by the Navy or located on Navy property. However, the underwater setting of this submerged archaeological site means that the site could be indirectly affected by redevelopment activities within the APE, such as the in-water construction or pile-driving that would result in on-site sediment disruption caused by underwater waves, currents, or sediments dispersed through or carried by water (Kam 2015; Mueller 2015). The Navy is in the process of consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA, including consulting on the effects of the proposed action on historic properties within the APE (Preston 2013; Lin 2013; Sanderson 2013a, 2013b). As part of this ongoing consultation, the Rhode Island SHPO has indicated that land off-shore of the former Naval Hospital property, which has not been surveyed as part of this study, will need to be surveyed to determine if currently unknown significant sites are present. Additionally, the Rhode Island SHPO has indicated that an evaluation of preservation or mitigation options for the previously identified NRHP-eligible shipwreck site (RI-2125) must be conducted before these offshore lands are disposed of by the Navy (Sanderson 2013b). The Navy has confirmed that the Rhode Island SHPO should be consulted if any water-related construction is done in the future, although the Navy does not own the shipwreck or any submerged land in the off-shore portions of the APE at the former Naval Hospital property (Mueller 2015; Anderson 2015). The evaluation of the indirect impacts and effects on this historic property will be updated upon completion of consultation with the Rhode Island SHPO.

Under Alternative 1, the transfer of historic properties out of federal ownership or control, the subsequent demolition of Buildings 1, 7, 45, and Quarters A and B, and the alteration of Pier 71, which are contributing elements of the NRHP-eligible U.S. Naval Hospital Newport Historic District, could be considered an indirect adverse effect on historic properties without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (ACHP 2004; 36 CFR 800.5(a)(2)(vii)). The Navy is in the process of consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA, including consulting on the effects of the proposed action on historic properties within the APE (Preston 2013; Lin 2013; Sanderson 2013b). As part of this ongoing consultation, the Rhode Island SHPO has acknowledged that once the Navy has disposed of the property, subsequent redevelopment is outside of the Navy's control and has indicated that a standard treatment to

mitigate any indirect adverse effects of subsequent redevelopment on historic properties would be to include a historic preservation provision in a deed of transfer (Sanderson 2013a). The evaluation of impacts and effects on these historic properties will be updated upon completion of consultation with the Rhode Island SHPO.

7.9.2 Alternative 2

7.9.2.1 Archaeological Resources

The NEPA impacts of Alternative 2 on archaeological resources are the same as those identified for Alternative 1.

7.9.2.2 Architectural Resources

The NEPA impacts of Alternative 2 on architectural resources are the same as those identified for Alternative 1.

7.9.2.3 Native American Resources

The NEPA impacts of Alternative 2 on Native American resources are the same as those identified for Alternative 1.

7.9.2.4 NRHP-Listed or -Eligible Historic Properties

The Section 106 effects of Alternative 2 on historic properties are the same as those identified under Alternative 1.

7.9.3 No Action Alternative

The Navy has evaluated the potential impacts of the No Action alternative under NEPA and has determined that the No Action alternative would have no impacts on archaeological resources because none are present. The No Action alternative could result in direct impacts on architectural resources resulting from continued deterioration of the buildings, particularly if routine maintenance activities associated with the retention of the property by the U.S. government in caretaker status ceases or is deferred.

The Navy has evaluated the Section 106 effects of the impacts of the No Action alternative and determined that the No Action alternative could have an adverse effect on historic properties within the APE at the former Naval Hospital property, including the NRHP-eligible U.S. Naval Hospital Newport Historic District and Buildings 1, 7, and 45, Pier 71, and Quarters A and B, which are contributing elements to the historic district. The No Action alternative could contribute to the historic district being neglected in a manner that causes its deterioration (ACHP 2004; 36 CFR 800.5(a)(2)(vi)) or is otherwise treated in a manner not consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Weeks and Grimmer 1995).

7.10 Topography, Geology, and Soils

This section summarizes the potential impacts on topography, geology, and soils resulting from the implementation of Alternative 1, Alternative 2, and the No Action alternative at the former Naval Hospital property. This section also includes a discussion of the potential impacts on the bathymetry and marine sediment present in Narragansett Bay off-shore of the former Naval Hospital property.

7.10.1 Alternative 1 (Preferred Alternative)

The majority of proposed development would be located in areas that have been previously developed by the Navy. (One building has been removed, the remaining buildings are vacant, and there are parking and access areas on the property). Implementation of Alternative 1 (e.g., construction of new buildings, parking lots, utilities) thus would be expected to result in minor impacts on topography and soils.

7.10.1.1 Topography

Under Alternative 1, development would largely occur in areas that have already been developed by the Navy. These areas would have either been previously graded for development or are generally flat (minimal topographic relief). Some alteration of existing topography would be expected as a result of grading and associated cut-and–fill activities necessary to accommodate new building sites. The extent of grading and cut-and-fill activities would be localized and would depend on the building design and location. As a result of previous development associated with the site and preservation of open space areas, impacts on topography would be minor, based on the size of the redevelopment project; no significant impact would result.

7.10.1.2 Geology

Alternative 1 would not impact geologic resources at the former Naval Hospital property.

7.10.1.3 Soils

The majority of redevelopment proposed under Alternative 1 would be concentrated on approximately 4 acres of land in areas that have already been developed by the Navy. Since vacant buildings currently exist on this property, it is assumed that urban/manmade soils located within these areas have been modified from their original condition. Therefore, implementation of Alternative 1 would be expected to result in temporary and permanent minor impacts, based on the size of the redevelopment project, as new structures and supporting infrastructure are constructed.

Erosion Potential

All soil types located at the former Naval Hospital property have the potential to be impacted by erosion from wind, water, and construction activities. The soil erosion potential for the Newport-Urban land complex is moderate. The soil erodibility factor is 0.24 at a depth of 24" to 30," which means the soils are moderately susceptible to detachment and they produce moderate runoff (USDA 2012; IWR 2002). To varying degrees, all such soils may require specific measures to control soil erosion and limit runoff of sediment during clearing and construction activities. In addition, construction activities (clearing, grading, landscaping, and moving equipment, material, and vehicles) would expose soils to wind and storm water erosion, compaction, and rutting.

Soils would be impacted during implementation of Alternative 1, but the impact would be mitigated by using temporary erosion and sediment control measures during construction, permanent storm water management measures, and appropriate building site location and design. Soils can be affected by sedimentation when soils from exposed areas are deposited over undisturbed areas after water runoff. Because existing vegetation is limited to maintained grass, with some trees, and the topography is flat, there would be no need to stabilize the slopes following vegetation removal.

To mitigate these impacts, it is expected that the developer would implement appropriate erosion and sediment control measures at construction and demolition sites in accordance with the *Rhode Island Soil Erosion and Sediment Control Handbook* (RIDEM et al. 1989) and other applicable state laws. The handbook describes structural measures (e.g., grassed waterway, sediment basin, riprap, etc.) and non-structural measures (e.g., mulching, topsoiling, silt curtains, etc.). RIDEM requires a General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with

Construction Activity, for projects that disturb more than 1 acre (RIDEM 2013c). Before approval of a Construction General Permit, RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. Additionally, the developer will be required to comply with the provisions of City of Newport's Code of Ordinances, Chapter 15.26, Soil Erosion and Sediment Control.

Farmland

Soils located at the former Naval Hospital property are not rated for farmland.

Hydric Soils

The soils on the property are non-hydric and thus reuse of the existing structures at the former Naval Hospital property would have no impact on hydric soils. However, non-hydric soils can contain hydric inclusions and hydric soils can contain non-hydric soils. Therefore, new construction under Alternative 1 could impact hydric soils (if the non-hydric soils contained hydric inclusions). Hydric soils may be associated with wetlands that are subject to regulation by federal and/or state regulation. Hydric soils also may require special measures during construction or other uses to overcome limitations caused by wetness. Limitations may include a high water table or low strength for supporting construction equipment and structures. Hydric soils may also present limitations on development activities (e.g., excavation and movement of heavy equipment) due to wet conditions.

Constructability

Newport-Urban land complex soil at the former Naval Hospital property poses moderate constraints on residential or commercial development that would use on-site septic tank systems; however, on-site septic would not be used for redevelopment, as centralized sewer facilities are assumed to be part of the redevelopment.

The more common sources of constructability limitations for the soils include shallow excavations (slight limitations due to dense to very dense soils), moderate frost action, and a moderate slope. The moderate frost action is unfavorable, but limitations can be overcome or minimized by special planning or design. These soils are dense to very dense, which makes excavation difficult, but there is a low shrink-swell potential. However, because much of the area where these soils are located may be modified, it is not possible to determine the magnitude or severity of the limitations based on available information. Before construction, engineering evaluations will be completed and appropriate engineering techniques identified to mitigate any soil limitations.

Organic Soils

None of the soils located at the former Naval Hospital property are listed as organic soils.

In summary, impacts on soils under Alternative 1 would be minor, and mitigation would reduce temporary impacts. Mitigation will include implementation of appropriate erosion and sediment control measures in accordance with local and state laws and the Construction General Permit, as discussed in detail above.

7.10.1.4 Bathymetry

Under Alternative 1, installation of the piles associated with the floating docks would displace a volume of sediment at least equal to the volume of pilings below the subsurface. The number of pilings needed would be determined during the pier design stage; however, displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short-term impact on bathymetry due to the small amount of bottom sediment to be removed.

7.10.1.5 Marine Sediment

As indicated above, installation of the piles associated with the floating docks would displace a volume of sediment at least equal to the volume of pilings below the subsurface. However, the impact on marine sediments would be minor and short-term during the construction period and localized within the Bay and is not expected to affect the overall marine sediment dynamics in the Bay.

7.10.2 Alternative 2

Similar to Alternative 1, the majority of proposed development would be in areas that have already been developed by the Navy. Therefore, implementation of Alternative 2 (e.g., construction of new buildings, parking lots, utilities) would be expected to result in minor impacts on topography and soils.

7.10.2.1 Topography

Impacts on topography under Alternative 2 would be similar to those discussed above for Alternative 1.

7.10.2.2 Geology

Alternative 2 would not impact the geologic resources at the former Naval Hospital property.

7.10.2.3 Soils

Implementation of Alternative 2 would be expected to have impacts on soils similar to those for Alternative 1, including impacts associated with erosion potential, hydric soils, and constructability. As with Alternative 1, the proposed redevelopment would be concentrated in areas that have been previously developed by the Navy. Alternative 2 would result in approximately 5 acres of disturbance associated with the redevelopment footprint, compared with 4 acres under Alternative 1, due to the addition of the yacht club/office, greater site access, and decrease in the amount of open space. These would be minor impacts and mitigation would reduce temporary impacts. The same mitigation measures discussed for Alternative 1 will be implemented to minimize soil impacts.

7.10.2.4 Bathymetry

Impacts on bathymetry under Alternative 2 would be similar to those under Alternative 1.

7.10.2.5 Marine Sediment

Impacts on marine sediment under Alternative 2 would be similar to those under Alternative 1.

7.10.3 No Action Alternative

The No Action alternative is retention of the surplus property at the former Naval Hospital property by the U.S. government in caretaker status. No reuse or redevelopment would occur on the property. As a result, the No Action alternative would be expected to have no direct or indirect impacts on topography, geology, soils, bathymetry, or marine sediment.

7.11 Water Resources

This section summarizes the potential environmental impacts on water resources resulting from implementation of Alternative 1, Alternative 2, and the No Action alternative at the former Naval Hospital property. It includes a discussion of surface water, water quality, groundwater, floodplains, wetlands, and proposed mitigation measures.

7.11.1 Alternative 1 (Preferred Alternative)

7.11.1.1 Surface Water

Redevelopment of the former Naval Hospital property would have direct impacts on surface water, by disturbing the sediment and substrate of Narragansett Bay during pile installation. Installation of the pilings to support the floating docks would also result in filling in the floodplain and coastal wetlands in Narragansett Bay. These impacts are discussed under Sections 7.11.1.3 and 7.11.1.4, respectively. Indirect impacts on Narragansett Bay are discussed below in Section 7.11.1.2.

To protect surface water, the future developer would be required to consult with the USACE, EPA, and RIDEM, for any in-water work associated with the construction of the floating docks at the former Naval Hospital property for potential impacts regulated under Sections 401 and 404 of the CWA (discussed in Section 7.11.1.5) and/or Section 10 of the Rivers and Harbors Act of 1899. Given the BMPs developed during future permitting of the redevelopment, the Navy has determined that any adverse impacts associated with surface waters would be minor and the disposal and future reuse of the Naval Hospital property would be in compliance with the CWA.

7.11.1.2 Water Quality

Redevelopment of the former Naval Hospital property could have indirect impacts on Narragansett Bay. Temporary indirect impacts on Narragansett Bay in the form of erosion or sedimentation could result from construction activities, both land-based and in-water. All redevelopment will require compliance with applicable local and state laws and regulations pertaining to storm water management. These include the City of Newport Code of Ordinances Chapter 15.26, Soil Erosion and Sediment Control and Chapter 17.88, Development Plan Review, and the RIDEM Construction General Permit (see also Section 7.8.1.3, Storm Water).

In accordance with these ordinances, before redevelopment, the developer would be required to receive a permit from the City of Newport. Erosion and sediment controls must be implemented in accordance with both Chapter 15.26 of the Code of Ordinances and the *Rhode Island Soil Erosion and Sediment Control Handbook* (as amended) (RIDEM et al. 1989). As part of the development plan review process (Chapter 17.88 of the Code of Ordinances), a storm water management plan must be prepared. Additionally, a Construction General Permit would be required from the RIDEM for disturbing land that is larger than 1 acre. Compliance with these laws and regulations and implementation of BMPs would decrease the magnitude of impacts on water quality from storm water runoff.

Redevelopment of the pier would require in-water work. After constructing two 8-foot by 90-foot concrete floating docks, the docks would be anchored in place with pilings and cables. It is assumed that the pilings would be square pre-stressed concrete piles measuring 1 foot by 1 foot. Installing the concrete pilings would have a minor impact on surface water and water quality in Narragansett Bay from re-suspension of sediments as the pilings are driven into the sediment and substrate. As shown on Figure 6.10-3, marine sediments in the vicinity of the pier are silty sand. At this time, it is expected that the pilings would be constructed off-site, cured, and then driven into the substrate cured. During construction, sediment would be displaced as the pilings are embedded in bottom sediments. This would displace a volume of sediment at least equal to the volume of the pilings below the subsurface. The displaced sediment and the turbidity would settle soon thereafter (i.e., typically within one to several hours). Anchoring construction vessels may additionally scour the substrate of Narragansett Bay and cause an increase in suspended sediment in the construction site area.

Once in place, concrete pilings would not impact surface water because concrete is an inert material and not chemically coated. Thus, construction of the new concrete pilings and sediment re-suspension during

construction activities would have only a minor, short-term impact on surface waters and water quality in Narragansett Bay.

Construction vessel operation could also impact water quality through debris and trash losses, deck drainage, wastewater discharges, bilge pumping, vessel transport, and anchoring. Debris and trash are frequently associated with construction sites and may float, sink, or become suspended in the water column. Debris and trash may contain plastics, petroleum, or other biohazards that can be transported through currents to other areas.

Deck drainage is runoff that is introduced to the natural system during deck cleanings or as wash from rainfall. Drop pan and work areas are other sources of deck drainage, which often includes petroleum. Extra efforts will be made to avoid any and all oil spills. The potential for petroleum run-off, for example, may be mitigated by installing gutters and filtration devices along the deck. In the event of an accidental spill, the construction contractor would implement an emergency response plan.

Recreational vessel traffic would increase in Narragansett Bay offshore of the former Naval Hospital property as a result of the implementation of Redevelopment Plan under Alternative 1. However, as Narragansett Bay is already used by boaters, impacts from the additional recreational vessel traffic (e.g., propeller wash and potential for spills) in the offshore area at the former Naval Hospital property would be negligible.

Full build-out under Alternative 1 is projected to result in a total of 4.5 acres (195,243 square feet) of impervious surface area, which would be composed mostly of building roofs and parking areas. This would be a net increase of approximately 0.2 acres above existing conditions (4.3 acres) (see Section 7.8.1.3 for a complete listing of these impervious surfaces). The additional impervious surface area would generate a long-term increase in precipitation runoff into the watershed and ultimately to waterbodies in the area, including Narragansett Bay. (See Appendix D-4 for more information on the methodology, assumptions, and calculations used to project the impervious surface area resulting from implementation of Alternative 1.)

Erosion, sedimentation, resuspension, and storm water runoff could collectively impact the water quality of Narragansett Bay. As described in Section 6.11, the section of the Newport Harbor/Coddington Cove located north of the Training Station Road bridge in Newport does not support the fish and wildlife habitat designated use because the sediments in that area require monitoring (RIDEM 2012a). This area is approximately 0.6 miles north of the former Naval Hospital property and its offshore waters. Increased re-suspension and sedimentation from construction activities are not anticipated to impact this already impaired waterbody because of its distance from the site and because the existing impairment stems from contaminated sediment.

Alternative 1 would result in minor impacts on water quality, and mitigation, as outlined above, would reduce adverse impacts. The future developer would be required to consult with the USACE, EPA, and RIDEM under the CWA to minimize any adverse impacts on water quality. Given the BMPs developed during permitting of the future redevelopment, the Navy has determined that any adverse impacts on water quality would be minor and the disposal and future reuse of the Naval Hospital property would be in compliance with the CWA.

7.11.1.3 Groundwater

As described in Section 6.11.3, the water table is less than 6 feet from the surface of the primary soil type at the former Naval Hospital property. Construction activities could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion sediment control plans and BMPs that would

involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMPs as set forth in the *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010). Minor impacts on groundwater would result; mitigation will reduce adverse construction impacts.

7.11.1.4 Floodplains

Under Alternative 1, approximately 1.6 acres of the 100-year floodplain would be permanently impacted by the proposed redevelopment features. As shown in Figure 7.11-1, floodplains are located along Third Street and along the shoreline. A portion of the redevelopment footprint (i.e., the hotel, residential units, and paved access) along the eastern property boundary would be located within the 100-year floodplain. The area slated for the proposed hotel and access ways is currently developed with buildings and pavement and other impervious surfaces that do not provide flood storage capacity. Therefore, redevelopment of this portion of the property would have a negligible effect on floodplain storage capacity.

A portion of the path through the proposed waterfront park as well as the floating piers would also be located within the 100-year floodplain of Narragansett Bay. Approximately 0.06 acres of the path would be located within the floodplain. The floating docks would comprise an area of approximately 0.03 acres and would be associated with an undetermined number of concrete pilings to anchor the docks into place. Conservatively estimating, these floating docks could result in a corresponding 0.03 acres of fill in the form of the pilings; however, the final design would determine the actual location of the pilings. In the absence of hydraulic modeling, it is assumed that the approximately 0.09 acres of permanent floodplain fill would not result in a loss of floodplain storage capacity or a rise in the 100-year floodplain for Narragansett Bay.

The future developer of the former Naval Hospital property will be required to minimize or offset impacts from redevelopment that could potentially degrade floodplain values[13] and increase the flood risk to upstream and downstream activities and will be subject to the permitting and regulatory requirements that exist at the local, state, or federal level. The local building permit process in the City of Newport will require that site plans be prepared showing flood hazard areas, floodways, and design flood elevations. Additionally, the building permit application must include flood design data.

At the state level, the buildings proposed in the flood hazard zones (a portion of the hotel and a small portion of residential use) will be required to meet the specific requirements for flood zone construction included in the Rhode Island State Building Code (RISBC). Additionally, the CRMC requires all applicants proposing construction within flood hazard areas to demonstrate that all portions of the RISBC are to be met. Therefore, Alternative 1 would result in moderate impacts on floodplains.

7.11.1.5 Wetlands

The former Naval Hospital property has one linear estuarine and marine wetland located along the shoreline. The only redevelopment feature within this wetland under Alternative 1 is a portion of one of the floating docks, the construction of which would result in approximately 0.04 acre of impact (see Figure 7.11-1). Conservatively estimating, this floating dock could result in a corresponding 0.04 acre of

[13] Floodplains provide many natural values, including storing flood waters, stabilizing the shoreline in coastal areas, providing habitat for terrestrial and aquatic wildlife, controlling erosion and sedimentation, and improving water quality by filtering pollutants.

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Section 7\Former_Naval_Hospital_Alt1_Floodzone_Wetland_ver02.mxd

Figure 7.11-1

Former Naval Hospital Property Alternative 1 FEMA Flood Zones and Wetlands

NAVSTA Newport, Rhode Island

Legend

- Property Boundary

FEMA Floodplain

- AE

Proposed Land Use

- Boat Storage Facility
- Floating Dock
- Hotel/Retail/Restaurant
- Open Space
- Parking/Access
- Path
- Residential
- Waterfront Park

NWI Wetlands

- Estuarine and Marine Wetland

N

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: FEMA 2010;
U.S. Fish and Wildlife Service 2011; RKG Associates et al. 2011.

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fill in the form of the pilings to be used to anchor the floating dock in place; however, final design would determine the actual location of the piling(s).

Filling a coastal wetland requires a permit from the CRMC and a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer will be required to coordinate wetland mitigation plans with the USACE and CRMC. For the CRMC, filling in a coastal wetland located in a Type 4 water is considered an alteration of a coastal wetland under Section 300.12 of the CRMC regulations, and requires a Category A assent. Section 300.12(F), Coastal Wetland Mitigation, outlines the mitigation requirements for alterations to coastal wetlands. As indicated in the regulations, the following requirements apply:

- Replacement by a similar type of wetland, which provides an ecological value equal to or greater than that of the altered wetland
- A 2:1 mitigation ratio for the area of coastal wetland restored to the area permanently altered or lost.

Section 404 of the CWA authorizes the USACE to issue permits regulating the discharge of dredged or fill materials into waters of the U.S., including wetlands. The USACE and the EPA issued regulations governing compensatory mitigation for authorized impacts on wetlands; these are codified in 40 CFR Part 230 as the Final Rule for Compensatory Mitigation for Losses of Aquatic Resources. Compensation requirements typically vary based on the impacted wetland communities. Specific mitigation requirements for future development projects would be determined in coordination with the USACE and CRMC. Therefore, Alternative 1 may result in potential impacts on wetlands, but future development conducted in compliance with existing CWA regulations would ensure that any impacts on wetlands would be minor, as any permanent impacts would be mitigated through the USACE's compensatory mitigation process under Section 404 of the CWA.

7.11.2 Alternative 2

7.11.2.1 Surface Water

Impacts on surface water under Alternative 2 would be similar to those discussed under Alternative 1. Direct impacts on surface waters would result due to pile driving. Indirect impacts, in the form of sedimentation and turbidity would result, with the potential of being slightly greater than under Alternative 1.

Similar to Alternative 1 to protect surface water, the future developer would be required to consult with the USACE, EPA, and RIDEM, for any in-water work associated with the construction of the floating docks at the former Naval Hospital property for potential impacts regulated under Sections 401 and 404 of the CWA (discussed in Section 7.11.1.5 above) and/or Section 10 of the Rivers and Harbors Act of 1899. Given the BMPs developed during future permitting of the redevelopment, the Navy has determined that any adverse impacts associated with surface waters would be minor and the disposal and future reuse of the Naval Hospital property would be in compliance with the CWA.

7.11.2.2 Water Quality

Similar to Alternative 1, the redevelopment of the former Naval Hospital property under Alternative 2 could have indirect impacts on Narragansett Bay. Indirect impacts on Narragansett Bay in the form of erosion or sedimentation could temporarily result from construction activities, both land-based and in-water. These impacts could be potentially greater under Alternative 2 due to the increased area of redevelopment and impervious surface, which would result in additional disturbance. All redevelopment would require compliance with applicable local and state laws and regulations pertaining to storm water

management. These include the City of Newport Code of Ordinances Chapter 15.26, Soil Erosion and Sediment Control; Chapter 17.88, Development Plan Review; and the RIDEM Construction General Permit.

As under Alternative 1, construction vessel operation could also impact water quality through debris and trash losses, deck drainage, wastewater discharges, bilge pumping, vessel travel, and anchoring. Anchoring construction vessels may additionally scour the sediment bed and cause an increase in suspended sediment in the construction site area. Extra efforts will be implemented to avoid any and all oil spills. The potential for petroleum run-off, for example, may be mitigated by installing gutters and filtration devices along the deck. In the event of an accidental spill, the construction contractor would implement an emergency response plan.

Recreational vessel traffic would increase in Narragansett Bay offshore of the former Naval Hospital as a result of the implementation of Alternative 2. However, as Narragansett Bay is already used by boaters, impacts from the additional recreational vessel traffic associated with use of the offshore area at the former Naval Hospital would be negligible.

Full build-out of Alternative 2 is projected to result in a total of 4.8 acres (210,410 square feet) of impervious surface area, which would be composed mostly of building roofs and parking areas. This would be a net increase of approximately 0.5 acres above existing conditions (4.3 acres) (see also Section 7.8.1.3). The additional impervious surface area would generate a long-term increase in precipitation runoff into the watershed and, ultimately, to waterbodies in the area, including Narragansett Bay. For more information on the methodology, assumptions, and calculations used to project the impervious surface area resulting from implementation of Alternative 1, see Appendix D-4.

Similar to Alternative 1, construction and operations associated with redevelopment of the former Naval Hospital property under Alternative 2 are not expected to impact the already impaired water quality of the Newport Harbor/Coddington Cove, located approximated 0.6 miles to the north.

Alternative 2 would result in minor impacts on water quality, and mitigation, as outlined above, would reduce adverse impacts. The future developer would be required to consult with the USACE, EPA, and RIDEM under the CWA to minimize any adverse impacts on water quality. Given the BMPs developed during permitting of the future redevelopment, the Navy has determined that any adverse impacts on water quality would be minor and the disposal and future reuse of the Naval Hospital property would be in compliance with the CWA.

7.11.2.3 Groundwater

Similar to Alternative 1, construction activities could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion and sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMPs as set forth in the *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010). Minor impacts on groundwater would result; mitigation would reduce adverse construction impacts.

7.11.2.4 Floodplains

Approximately 1.6 acres of 100-year floodplain would be permanently impacted by the proposed redevelopment features of Alternative 2, the same acreage impacted as under Alternative 1. As shown in Figure 7.11-2, floodplains are located along Third Street and along the shoreline. A portion of the redevelopment footprint (i.e., the hotel, conference center, commercial use, and paved access) along the eastern property boundary would be located within a 100-year floodplain. The area slated for the proposed hotel and driveways is currently developed with buildings and pavement and other impervious surfaces that do not provide flood storage capacity. Therefore, redevelopment of this portion of the property would have a negligible effect on floodplain storage capacity.

Similar to Alternative 1, a portion of the path through the proposed waterfront park as well as the floating piers would also be located within the 100-year floodplain of Narragansett Bay. Approximately 0.06 acres of the path would be located within the floodplain. The floating docks would comprise an area of approximately 0.03 acres and would be associated with an undetermined number of concrete pilings to anchor the docks into place; the third floating dock at the end of the pier under Alternative 2 would not be located within the 100-year floodplain, as indicated on Figure 7.11-2. Using the most conservative estimate, these floating docks could result in a corresponding 0.03 acres of fill in the form of the pilings; however, final design would determine the actual location of the pilings. In the absence of hydraulic modeling, it is assumed that the approximately 0.09 acres of permanent floodplain fill would not result in a loss of floodplain storage capacity nor a rise in the 100-year floodplain for the Narragansett Bay.

The future developer of the former Naval Hospital property will be required to minimize or offset impacts from redevelopment that could potentially degrade floodplain values and increase the flood risk to upstream and downstream activities and will be subject to the permitting and regulatory requirements that exist at the local, state, or federal level. The local building permit process in the City of Newport will require that site plans be prepared showing flood hazard areas, floodways, and design flood elevations. Additionally, the building permit application must include flood design data.

At the state level, the buildings proposed to be constructed in the flood hazard zones (a portion of the hotel and a small portion of commercial uses) will be required to meet the specific requirements for flood zone construction included in the RISBC. Additionally, the CRMC requires all applicants proposing construction within flood hazard areas to demonstrate that all portions of the RISBC are to be met. Therefore, Alternative 2 would result in moderate impacts on floodplains.

7.11.2.5 Wetlands

The only redevelopment feature within the coastal wetland under Alternative 2 is a portion of one of the floating docks, resulting in approximately 0.04 acre of impact (see Figure 7.11-2), the same size of impact as discussed under Alternative 1 due to the similar sized floating docks. Using the most conservative estimate, this floating dock could result in a corresponding 0.04 acres of fill in the form of the pilings to be used to anchor the floating dock in place; however, final design would determine the actual location of the piling(s).

Filling a coastal wetland requires a permit from the CRMC and a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer will be required to coordinate wetland mitigation plans with the USACE and CRMC. Under the CRMC, Section 300.12(F), Coastal Wetland Mitigation outlines the mitigation requirements for alterations to coastal wetlands. As indicated in the regulations, the following requirements apply:

- Replacement by a similar type of wetland, which provides an ecological value equal to or greater than that of the altered wetland

- A 2:1 mitigation ratio for the area of coastal wetland restored to the area permanently altered or lost.

Section 404 of the CWA authorizes the USACE to issue permits regulating the discharge of dredged or fill materials into waters of the U.S., including wetlands. Compensation requirements typically vary based on the impacted wetland communities. Specific mitigation requirements for future development projects would be determined in coordination with the USACE and CRMC. Therefore, Alternative 2 may result in potential impacts on wetlands, but future development conducted in compliance with existing CWA regulations would ensure that any impacts on wetlands would be minor, as any permanent impacts would be mitigated through the USACE's compensatory mitigation process under Section 404 of the CWA.

7.11.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property there would be no impacts on water resources from redevelopment. Some storm water runoff would continue to occur from the existing approximately 4.3 acres of impervious surface area.

7.12 Biological Resources

This section summarizes the potential impacts on biological resources at the former Naval Hospital property from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of impacts on vegetation, wildlife, threatened and endangered species, and significant wildlife habitat from disposal and reuse of the former Naval Hospital property.

GIS analysis was used to determine potential impacts on vegetative communities and wildlife habitat from implementation of the redevelopment alternatives.

Upon completion of the BRAC disposal process under both Alternatives 1 and 2, any future reuse of the former Naval Hospital property would be required to comply with local, state, and federal laws and regulations pertaining to biological resources. Specifically, consultation with the USFWS and NMFS for any species protected under the ESA would be required for any activities proposed within habitat known to support state-listed threatened or endangered species. The USFWS and RIDEM have indicated that no federally or state-listed or candidate species are located on the former Naval Hospital property (Chapman 2013; Jordan 2013); however, the NMFS has indicated the potential presence of several marine mammals and fish offshore of the former Naval Hospital property (Colligan 2013). Because of the length of time assumed between consultation for this EIS and the actual redevelopment of this surplus property, future consultation will be necessary. Additionally, in-water construction activities by a future developer would likely require Section 10 and/or Section 404 permits from the USACE. As a federally permitted project, USFWS and NMFS would be responsible for reviewing impacts on fish and wildlife pursuant to the Fish and Wildlife Coordination Act and the ESA.

7.12.1 Alternative 1 (Preferred Alternative)

7.12.1.1 Vegetation

The majority of proposed development for Alternative 1 would be located in areas within the current development footprint (i.e., buildings and pavement). As such, implementation of Alternative 1 would result in minor long-term impacts on upland vegetation. Implementation of the Redevelopment Plan under Alternative 1 would not change the current acreage of habitat cover at the former Naval Hospital property. Previously developed areas would be used and new development would be sited within these areas, with the exception of the approximately 0.10-acre path through the waterfront park and the boat storage facility, which would be located within the footprint of the former chapel.

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Figure 7.11-2

Former Naval Hospital Property Alternative 2 FEMA Flood Zones and Wetlands

NAVSTA Newport, Rhode Island

Legend

- Property Boundary

FEMA Floodplain

- AE

Proposed Land Use

- Boat Storage Facility
- Commercial
- Conference Center
- Yacht Club/Office
- Floating Dock
- Hotel/Retail/Restaurant
- Open Space
- Parking/Access
- Path
- Waterfront Park

NWI Wetlands

- Estuarine and Marine Wetland

N

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: FEMA 2010;
U.S. Fish and Wildlife Service 2011; RKG Associates et al. 2011.

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Approximately 1.8 acres of the site would be maintained as open space, in addition to the approximately 2 acres that would comprise the waterfront park. The area proposed for the waterfront park would largely comprise the maintained grass and trees that currently exist. Temporary indirect impacts in this area in the form of temporary disturbance could occur during construction because it is next to areas that would be disturbed during construction. However, following redevelopment, any temporarily disturbed areas designated as waterfront park will be restored to existing conditions.

Marine/Estuarine Wetland

Approximately 0.04 acres of marine/estuarine wetland along the shoreline would be impacted by the concrete pilings associated with the floating docks under Alternative 1 (see Figure 7.12-1). These pilings would be considered wetland fill. The total amount of wetland fill would be determined during the final design of the pier redevelopment project because the proposed design is for analysis purposes and a final design would be part of the actions taken after property transfer.

Beach

Under Alternative 1, there would be no permanent impact on existing beach habitat. Temporary disturbance of beach habitat could occur during construction of the floating docks, but any areas disturbed by equipment staging or other activities will be restored following completion of construction.

7.12.1.2 Wildlife

Terrestrial Mammals

As indicated above, the majority of the proposed redevelopment would take place within the existing development footprint, and vegetation disturbance would be limited. Wildlife species may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Species that would be most affected include those with relatively small home ranges. During construction, short-term impacts may include displacement of mobile species such as eastern gray squirrel, common raccoon, Virginia opossum, white-footed mouse, woodchuck, and striped skunk. These species would avoid areas of construction where equipment and human activities create disturbance. Minor impacts on terrestrial mammals would result from the implementation of Alternative 1.

Marine Mammals

Construction under Alternative 1 at the former Naval Hospital property includes in-water work to build two concrete floating docks along the existing pier. Once complete, each floating dock would measure 8 feet x 90 feet and would be anchored by pilings and cables. Construction of the floating docks would disturb open water habitat (in the form of hydroacoustic noise) at the former Naval Hospital property as well as the substrate.

While construction would occur in water, it is unlikely that the activity would result in a take of a marine mammal. As discussed in Section 6.12.2, harbor seals are frequently found at Coddington Cove, north of the former Naval Hospital complex. Additional marine mammals with the potential to be present off-shore are discussed in Section 7.12.1.3 below. Marine mammals are likely to avoid the area during construction activities. However, if a marine mammal such as a harbor seal or harbor porpoise were to stray into the waters immediately adjacent to the former Naval Hospital property, potential short-term negligible impacts would be related to noise generated during construction activities.

Activities assumed to have hydroacoustic noise impacts include the following: installing concrete piers using a diesel impact hammer, dredging with a clamshell bucket, and possible piling removal. Pilings would be removed by either direct-pull or vibratory extraction. New pilings would be installed using an impact hammer, in addition to a barge with a crane. Other noise would also be generated by support vessels, small boat traffic, and barge-mounted equipment; however, this other noise is likely consistent

with existing vessel traffic in the Bay and in the nearby NAVSTA Newport and East Passage Yachting Center/Melville marinas.

The focus of this analysis is the hydroacoustic noise impacts of pile driving; non-hydroacoustic noise impacts are discussed in Section 7.7. Other noise would also be generated by construction vessels and barge-mounted equipment; however, these noises are not likely to create a short-term adverse effect on marine mammals. Marine mammals in the area are already exposed to similar noise levels from existing vessel traffic in the Bay and in the nearby NAVSTA Newport and the East Passage Yachting Center/Melville marinas. Pile-driving associated with the proposed action would result in increased underwater noise levels, potentially affecting marine mammals found in Narragansett Bay.

Three metrics are commonly used in evaluating hydroacoustic impacts on fish and marine mammals (ICF Jones and Stokes 2009; Illingworth and Rodkin 2007):

- Peak sound pressure level (LPeak) – The absolute value of the maximum variation from neutral
- Root mean square (RMS) – The square root of the sum of the squares of the pressure contained within a defined period of time
- Sound exposure level (SEL) – The constant sound level over 1 second.

Sound in the water has different properties than sound in the air. Sound moves 4.5 times faster in water than it does in air, making it a very effective sensory mechanism for species that spend a large part, if not all of their life, underwater. Similar to in-air sound, in-water sound uses the decibel (dB) scale for measurement; however, the reference pressure in water is referenced at (re) 1 micro Pascal (µPa), whereas in air it is re 20 µPa.

Potential impacts on marine mammals due to pile driving include auditory injury or permanent threshold shift (PTS) in hearing, temporary threshold shift (TTS), and behavioral disturbance. PTS refers to permanent hearing loss, whereas TTS refers to a temporary elevation in a hearing threshold. Marine mammal behavioral responses to sound are highly variable and situation-specific (Bailey et al. 2010).

To address potential impacts of pile driving on fish and marine mammals, available research was reviewed for similar pile types and sizes and the sound measured during pile driving. One of the primary documents reviewed was the *Compendium of Pile Driving Sound Data* (Illingworth and Rodkin 2007). This document provides information on sound pressures resulting from pile driving measured throughout Northern California. The information presented in the compendium can be used to predict underwater sound levels from marine pile-driving projects and determine the effectiveness of measures used to control the noise (Illingworth and Rodkin 2007). This compendium includes information on major and minor projects with a variety of different pile and hammer types that were completed.

Eight projects involving concrete piles, ranging from 16 to 24 inches, were reviewed for inclusion in the compendium section on concrete piles. Based on these projects, average sound pressure for near-source (10 meters or approximately 33 feet) unattenuated sound pressures for in-water pile driving using an impact hammer for a 24-inch concrete pile were summarized and are provided in Table 7.12-1. (Note: This pile size is larger than that to be used for the piles that are part of the proposed action; those piles are 12-inch concrete piles.) As indicated in Table 7.12-1, the peak average sound pressure was 185 dB re 1µPa. The findings in Table 7.12-1 are similar to typical sound levels associated with a 24-inch concrete pile as reported in the *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish* (ICF Jones and Stokes and Illingworth and Rodkin 2009), a document used in the preparation of the Ocean SAMP.

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Figure 7.12-1
Former Naval Hospital Property
Alternative 1
Estuarine and Significant Habitat
NAVSTA Newport, Rhode Island

Legend

- Property Boundary

Narragansett Bay Estuarine Habitat

- Beach

Proposed Land Use

- Boat Storage Facility
- Floating Dock
- Hotel/Retail/Restaurant
- Open Space
- Parking/Access
- Path
- Residential
- Waterfront Park

NWI Wetlands

- Estuarine and Marine Wetland

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: RIDEM Narragannset Bay Estuary Program 2003; RKG Associates et al. 2011; U.S. Fish and Wildlife Service 2011

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Table 7.12-1 Summary of Pile-driving Sound Levels

Pile Type and Approximate Size	Relative Water Depth	Average Sound Pressure (at 33 feet from the source)		
		Peak	RMS	SEL
16-inch concrete pile[1]	~7 meters (23 feet)	186 dB re 1μPa	169 dB re 1μPa	160 dB re 1μPa^2·sec
24-inch concrete pile[1]	~ 5 meters (15 feet)	185 dB re 1μPa	170 dB re 1μPa	160 dB re 1μPa^2·sec
24-inch concrete pile[2]	Unknown	183-193 dB re 1μPa	171-175 dB re 1μPa	160 dB re 1μPa^2·sec

Sources:
[1] Illingworth and Rodkin 2007
[2] ICF Jones and Stokes and Illingworth and Rodkin 2009

Three of the eight projects included in the compendium are summarized below (Illingworth and Rodkin 2007).

- Pier project at Concord Naval Weapons Station, CA – This project involved pile driving 16-inch concrete piles to a depth of 10 meters (33 feet) by steam-powered drop hammer; underwater sound measurements were taken at approximately 10 meters (33 feet) from the piles. Measurements made during the driving of unattenuated piles in approximately 7 meters (24 feet) of water yielded peak pressure levels of 176 to 186 dB re 1μPa and RMS sound pressure levels of 165 to 173 dB re 1μPa. An air bubble curtain system was used for two of the seven piles to compare the effects of sound attenuation. The air bubble curtain attenuated sound pressures by approximately 5 to 8 dB re 1μPa at one of the piles, and 0 to 4 dB re 1μPa at the other due to the effects of the tidal current.
- Pier project in Benicia, CA – This project involved 24-inch octagonal concrete piles. Water depth at the piles was 3 to7 meters (10 to 23 feet) and water depth at measurement locations ranged from 4 to 13 meters (13 to 43 feet). Piles were driven to a depth of approximately 25 to 30 meters (82 to98 feet) below mud line using a diesel impact hammer. An air bubble attenuation system was used and sound measurements were made at 10 meters (33 feet) for all piles and at 20 meters (66 feet) for some. Peak sound pressures for unattenuated piles were typically 180 to 183 dB re 1μPa. RMS levels for unattenuated piles typically ranged from 168 to 172 dB re 1μPa. With sound attenuation, in shallower waters, the attenuation system was found to reduce sound pressures by 15 to 20 dB re 1μPa.
- Pier project as part of marina construction in San Francisco, CA – Eight square, 24-inch piles were driven with a diesel impact hammer. Water depth ranged from 2.5 to 4 meters (8 to 13 feet); sound measurements were taken at 10 meters (33 feet) from the piles. With the hammer set on a higher fuel setting, average and maximum sound levels at 10 meters (33 feet) were 185 and 190 dB re 1μPa peak and 172 and 177 dB re 1μPa RMS, respectively. At 20 meters (66 feet), sound pressure levels were about 3 to 5 dB lower. On the lowest fuel setting, average and maximum sound levels at 10 meters (33 feet) were 175 and 178 dB re 1μPa peak and 162 and 165 dB re 1μPa RMS respectively. At 20 meters (66 feet), sound levels were about 10 dB re 1μPa lower.

NMFS-developed criteria for estimating the effects of noise on marine mammals. These criteria indicate that underwater SPLs above 190 dB re 1µPa RMS could cause injury (Level A harassment) in pinnipeds[14]. SPLs above 180 dB re 1µPa RMS could cause injury (Level A harassment) in cetaceans[15] (Illingworth and Rodkin 2007) (see Table 7.12-2).

Table 7.12-2 NMFS Criteria for Estimating Effects of Noise on Marine Mammals

Criteria	NMFS Criteria (RMS)
Level A Injury (Pinnipeds)	190 dB re 1µPa (impulse)
Level A Injury (Cetaceans)	180 dB re 1µPa (impulse)
Level B Harassment/Behavior	160 dB re 1µPa (impulse)

The MMPA prohibits the intentional harassment of marine mammals. NMFS defines harassment as "any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment) or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption to behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment)."

To determine potential effects of in-water sound on marine mammals it is important to understand both the potential source level and how the sound will travel away from that source. As sound travels away from a source it loses power with increasing distance. This is known as transmission loss (TL). How a sound travels away from a source depends on a variety of factors, including the original source level, the local salinity and water temperature, substrate composition, and water depth.

Considering these components can help to determine the path that the sound could travel through the water column. However, because it is not always possible to obtain all this information to determine site-specific TL, as with Alternative 1, the NMFS recognizes the practical spreading loss model as the best method to generally determine how sound could travel away from a source if modeling the site-specific TL is not possible.

As noted above, the source level information available is mostly for 24-inch diameter concrete piles in various water depths. Using these source levels would likely overestimate the potential ensonified area during pile driving because the proposed action would be associated with 12-inch diameter concrete piles. Therefore, the most applicable source levels are those reported from the 16-inch diameter concrete pile driven in approximately 7 meters (23 feet) of water. While the pile diameter is 4 inches larger than those proposed for use in Alternative 1, this represents the best available information. To be conservative, the source levels used for TL analysis were those indicated as the highest source levels within the range recorded for the 16-inch diameter concrete piles (see Table 7.12-3). Also, as this set of source levels did not report the SEL, the SEL from the previously reported 24-inch diameter concrete piles (see Table 7.12-1) is used. It can be assumed that this is also a conservative estimate, as the SEL from impact pile driving a smaller concrete pile is expected to be less.

Using this information as a reference source level, the practical spreading loss model was used to determine the distance from the source where each species hearing threshold would be reached (Table 7.12-4).

[14] Pinnipeds include seals and sea lions.
[15] Cetaceans include whales, dolphins, and porpoises.

Table 7.12-3 Reference Source Level for Transmission Loss Calculations

Pile Type and Approximate Size	Relative Water Depth	Average Sound Pressure[1] (at 33 feet from the source)			
		Peak	RMS	SEL	Accumulated SEL
16-inch concrete pile	~23 feet	186 dB re 1µPa	169 dB re 1µPa	--	--
24-inch concrete pile	various			160 dB re 1µPa^2·sec	187 dB re 1µPa^2·sec

Source: Illingworth and Rodkin 2007

Notes:
[1] The source levels (i.e., average sound pressure) used are the highest source levels within the range recorded for the 16-inch diameter pile.

Table 7.12-4 Estimated TL Distance from Noise Source to Marine Mammal Harassment Sound Pressure Thresholds

Functional Hearing Group	Estimated Distance to Threshold Ranges (feet)	
	Level A Injury	Level B Behavioral Harassment
Pinniped	N/A	130
Cetacean	N/A	130

Notes:
N/A = Not applicable because the source level of the impact hammer (16-inch concrete pile: 169 dB re 1µPa RMS) is less than that of the injury threshold for cetaceans (180 dB re 1µPa RMS) and pinnipeds (190 dB re 1µPa RMS)

A comparison of the NMFS criteria for estimating effects of noise on marine mammals with the estimated TL ranges in Table 7.12-4 indicates there is no risk of injury to either cetaceans or pinnipeds as a result of impact pile driving concrete piles. According to the reference source levels, impact pile driving of 16-inch diameter concrete piles would produce SPLs of approximately 169 dB re 1µPa RMS at 33 feet from the source (unattenuated). This source level is less than NMFS Level A threshold criteria for both pinnipeds and cetaceans. Therefore, no marine mammals would be injured as a result of Alternative 1. Although there is the potential for Level B behavioral harassment within 130 feet of active impact pile driving, it is expected that the implementation of possible mitigation measures such as the use of a bubble curtain would reduce the source level and, therefore, the distance to the threshold range for Level B harassment. A bubble curtain is a type of sound attenuating measure that can have two effects on sound: 1) acting as a barrier for the sound to pass through once the sound is radiated from the pile; and 2) reducing the radiation of sound from the pile into the water through the presence of low-density bubbles very close to the pile (ICF Jones and Stokes and Illingworth and Rodkin, Inc. 2009). As indicated in the example pile driving projects previously discussed, the implementation of a bubble curtain can reduce sound pressures by as little as 5 dB re 1µPa to as much as 15 to 20 dB re 1µPa in shallower waters.

To mitigate potential impacts on marine mammals, possible BMPs that could be used by the future developer include the following:

- Monitor for the presence of marine mammals with a trained marine mammal/protected species observer stationed at shore-side locations or from a boat in the harbor during all pile-driving activities. Work would be stopped if marine mammals are spotted within a minimum distance of 130 feet of active pile driving.

- Install a bubble curtain to reduce in-water noise during pile driving.
- Drive piles with a cushion made of wood to reduce pressure pulse (Miller et al. 2010).

Additional direct impacts include the potential for vessel strikes with marine mammals during construction and operation. During construction, vessels such as tugs and barges would be present within the waters to facilitate construction of the floating docks. The risk of vessel collisions during construction would be low due to the slow movement of the construction vessels. Once construction is completed and the enhanced public pier is used by local watercraft, including the potential use by the harbor shuttle, the potential for vessel collisions also exists. However, any marine mammals that are present are likely to be already habituated to the level of the existing vessel traffic occurring in the greater Narragansett Bay.

Indirect impacts on marine mammals include temporary displacement as they avoid areas of turbidity. Turbidity could also affect foraging success and prey availability. Suspended sediment can irritate the gills of fish that serve as prey, causing them to leave the area. Reduced visibility in turbid waters may also decrease foraging success. However, these impacts would only be expected to be minor because the increased turbidity levels would be temporary and localized, allowing marine mammals to forage in nearby waters until the turbidity plume dissipates. Necessary precautions to avoid any contamination to the water resulting from fuel spills would follow those oil and hazardous spill response procedures identified in a spill prevention, control, and countermeasures (SPCC) plan.

Overall, direct impacts in the form of vessel strikes could occur; however, they would be expected to be minor due to the abilities of the animals to avoid the vessels. Indirect impacts (reduced foraging success and prey availability, and turbidity) would also be minor due to the abilities of the animals to avoid the project area when necessary, availability of suitable habitat elsewhere throughout the coastal area, and incorporation of BMPs to reduce impacts on the water column (see Section 7.11).

Measures to reduce impacts on marine mammals would be implemented by the developer through state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. This would result in the future developer's coordination with NMFS under the ESA and MMPA to minimize impacts on regulated marine mammals. Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. Therefore, the disposal and reuse of the former Naval Hospital property under Alternative 1 would have minor impacts on marine mammals.

Other Marine Wildlife

In-water construction activities under Alternative 1 would generate minor, short-term effects on finfish, shellfish, crustacean, and benthic resources in Narragansett Bay. Direct impacts would include temporarily displacing fish by the operation of construction equipment and noise generated during pile driving. Noise generated during pile driving would likely startle fish in the immediate vicinity, potentially displacing them. Once construction noise has stopped, fish would likely move back into the area.

Potential physiological impacts on fish from underwater noise include impacts on the swim bladder as well as on fish hearing. Bony fish maintain buoyancy through an internal air sac called a swim bladder (ICF Jones and Stokes and Illingworth and Rodkin 2009). When a fish is exposed to a sound wave, gas in the swim bladder expands more than surrounding tissue during periods of under pressure and contracts more than surrounding tissue during periods of overpressure. This can cause the swim bladder to oscillate and result in tissue damage, including rupture of the swim bladder (Popper and Hastings 2009). Therefore, human-generated sources of noise can be fatal to fish.

Additionally, fish hearing can be impacted by noise such as that generated by pile driving. The primary auditory structures in a fish's inner ear are sensory hair cells and otoliths, which are dense, calcified

structures that overlie a tissue layer containing numerous sensory hair cells (Georgia Institute of Technology 2012). Exposure to higher levels of sound for shorter periods of time may result in damage to the sensory hair cells of the ear or temporary hearing loss, also referred to as TTS in fish (Popper 2003; ICF Jones and Stokes and Illingworth and Rodkin 2009).

The potential for injury to fish species from pile driving is based on dual criteria thresholds. These thresholds were developed by the 2004 Fisheries Hydroacoustic Working Group (FHWG) composed of the FHWA; departments of transportation in California, Oregon, and Washington; representatives from NOAA Fisheries, the USFWS, and the USACE. These thresholds were developed to take into account the three major effects associated with pile driving: non-auditory tissue damage, auditory tissue damage (hair cell damage), and TTS (ICF Jones and Stokes and Illingworth and Rodkin 2009). NMFS recognizes these thresholds as the accepted criteria to determine injury to fish species. To determine potential behavioral effects on fish species of all sizes, NMFS uses 150 dB re 1μPa RMS SPL as the threshold criteria (see Table 7.12-5).

Table 7.12-5 NMFS Noise Thresholds for Fish

Functional Hearing Group	Injury Criteria	Behavioral Criteria
Fish (*greater than 2 grams*)	206 dB re 1μPa (Peak) and 187 dB re 1μPa^2-sec (accumulated SEL)	150 dB re 1μPa (RMS)
Fish (*less than 2 grams*)	206 dB re 1μPa (Peak) and 183 dB re 1μPa^2-sec (accumulated SEL)	150 dB re 1μPa (RMS)

Source: ICF Jones and Stokes and Illingworth and Rodkin 2009; Morris 2012

To address potential impacts of pile driving on fish, the same literature discussed above under marine mammals was also reviewed for fish. The practical spreading loss model was also used to estimate the distance range from active impact pile driving that the threshold for potential behavioral impacts would reach. The accumulated SEL was also calculated based on an average number of strikes it could take to drive a concrete pile to depth. According to ICF Jones and Stokes and Illingworth and Rodkin (2009), a 24-inch concrete pile would take approximately 580 individual strikes for each pile to be driven to the expected depth. (Because more project-specific information was not available, this pile strike average was used for calculations and thus the accumulated SEL can be considered conservative.) Based on these conservative calculations, it is expected that injury based on accumulated SEL could occur to fish greater than 2 grams within 33 feet of impact pile driving and to fish less than 2 grams within 66 feet of impact pile driving. Behavioral disturbance could occur to fish of all sizes within 83 feet of impact pile driving (see Table 7.12-6). However, because the ensonified area is very small and possible mitigation measures such as a bubble curtain will be put in place, it is expected that these areas would be reduced in size and that impacts thus would be minor and temporary. Appropriate mitigation measures will be identified through the developer's consultation with NMFS as part of the Section 7/EFH process; this is discussed in detail in Section 7.12.1.4.

Table 7.12-6 Estimated TL Distance from Noise Source to Fish Noise Thresholds

Threshold Criteria	Estimated Distance to Threshold (feet)
Injury (*Peak*)	N/A
Injury (*accumulated SEL for fish less than 2 grams*)	66 feet
Injury (*accumulated SEL for fish greater than 2 grams*)	33 feet
Behavioral Disturbance	83 feet

Notes:
N/A = Not Applicable because the peak source level of the impact hammer (16-inch concrete pile: 198 dB re 1μPa peak) is less than that of the peak SPL injury threshold for all fish (206 dB re 1μPa peak)

In its response to the Navy's informal consultation letter, NMFS indicated that it cannot concur with the Navy's determination that the project would have minimal impacts on EFH because specific project details are lacking (i.e., specific project design and/or engineering plans that indicate the exact location of proposed piers and in-water work, location and amount of material to be dredged, etc.). Additional project-specific details would be made available prior to the construction of the in-water components of the proposed action by the future developer(s). At such time, authorization from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act of 1899 would be required. These USACE authorizations would be expected to trigger the requirement to consult with NMFS under the ESA and MSFCMA. Effects on EFH would be re-evaluated at that time.

After the pile-driving stops, fish would likely return to the area. Popper and Hastings (2009) reported that various fish species have been found to abandon areas when the sound from human activities surpasses the local ambient noise levels, only to return after the sound source has been removed and ambient noise levels return to normal. Therefore, it could be assumed that fish may alter their normal behavior, including startle response and avoidance of the immediate construction area, but as pile driving and dredging would be short-term, occurrence of these species near the construction areas would not change significantly.

Mobile species of shellfish (e.g., lobster) would either be temporarily displaced or killed during demolition or construction activities. Given the small size of the construction area, compared with the available area for shellfish colonization in Narragansett Bay, this disturbance is expected to be minor and to not have any adverse impacts on the larger shellfish population.

It is assumed that the pilings would be constructed off-site. During construction, sediment would be displaced as the pilings are embedded in bottom sediments. This would displace a volume of sediment at least equivalent to the volume of pilings below the subsurface. The displacement of this sediment volume would increase suspended sediment and turbidity during the pile-driving operation but it would settle soon thereafter (i.e., typically within one to several hours). Once in place, concrete pilings would not impact surface waters because concrete is an inert material and not chemically coated and therefore does not leach creosote, heavy metals, or other coating agents.

Resuspended bottom sediments may also contain contaminants formerly buried in the sediments. Subsequent oxidation of sulfides, reduced iron, and organic matter associated with the suspended sediments would consume some dissolved oxygen (DO) in the water column. Overall, the impacts of

sediment resuspension from these activities on DO concentrations would be minimal because of the small area of disturbance, compared with the greater Narragansett Bay area, and the effects would be spatially limited to the areas immediately surrounding the project sites. Furthermore, the suspended sediments would settle soon thereafter (i.e., typically within one to several hours).

Increased suspended sediment concentrations generated by propeller wash from construction vessel traffic and pile driving activities could result in reduced light transmittance and increased oxygen demand, the latter leading to reduced DO concentrations. Increases in turbidity and decreases in DO concentrations are known to be harmful to fisheries resources. Both finfish and shellfish would likely be temporarily displaced or killed as a result of these impacts; however, these impacts would be short-term and limited to the time of in-water construction. Minor long-term effects on finfish and shellfish resources could result from increased boat traffic in Narragansett Bay as a result of the pier and floating docks following completion of construction.

Fish and other marine wildlife are expected to move back into the vicinity of the pilings and pier following completion of in-water construction activities. Overall, finfish and shellfish species occurring in the area are already exposed to turbidity and to noise from existing vessel traffic in the Bay and the nearby NAVSTA Newport marina. Therefore, impacts on fisheries resources from the proposed action are expected to be minor and short-term. Fish should not be affected by the small loss of bottom habitat from the installation of pilings for the floating docks. Increased vessel traffic associated with the operation of the expanded pier would have negligible impacts on the fisheries populations due to the existing vessel traffic in the area.

Under Alternative 1, the following BMPs would be implemented by the developer to minimize adverse effects on fisheries resources:

- An SPCC plan for the proposed action would be implemented, which would minimize the adverse effects of any spill and provide procedures for clean-up efforts.
- Bottom contours and shoreline areas in the vicinity of the construction activities would be restored.

In summary, Alternative 1 would result in minor impacts on other marine life and fish, and BMPs and/or protective measures implemented by the future developer following consultations with the USACE and NMFS would ensure that no significant impacts occur to other marine wildlife.

Benthic Organisms

The primary direct impacts on benthic organisms include mortality during pile-driving and loss of habitat due to the placement of piles associated with the floating docks. Indirect impacts would include turbidity that could disturb the ability of certain organisms to feed, but this effect would be temporary and limited. Increased turbidities would temporarily cause difficulty in locating prey for predatory taxa but would not be expected to cause significant adverse effects on species in the area because they can easily migrate to another area to feed. Benthic organisms, especially slow-moving, fixed, or sediment-dwelling organisms (such as clams, small crustaceans, marine snails, sea cucumbers, worms, urchins, and sea stars) would be most vulnerable to this impact. Larger or more mobile benthic species such as the crab, shrimp, or groundfish would likely sense the construction activity and could move out of the area. Nevertheless, it is possible that these species may not sense which direction to move to avoid dredging or become disoriented and could be caught directly by the dredge. The amount of suspended sediments settling in the surrounding area would not be significant enough to bury benthic species in the area. Within a few hours of the dredging, mobile benthic scavenger species such as crab, shrimp, and sea stars would likely migrate to the impact area to feed on benthic organisms that had been crushed or injured.

The decrease in soft-bottom habitat (the footprint of the piles) and increase in hard substrate habitat would result in a localized change in species composition over the long-term. Benthic species that burrow into a substrate, such as clams and worms, thrive in particular types of materials. By replacing (very small) portions of the seafloor with pilings, pre-construction benthic communities would be slightly altered by the proposed action. The pilings would increase the available in-water surface area and create colonization sites for hard-bottom species such as mussels (*Mytilus* spp.), barnacles (*Balanus* spp.), and sea anemones (the fouling community, or the community of organisms found on artificial surfaces). The new community also would support other species such as copepods, amphipods, annelids, gastropods, and sea stars that would feed and take refuge in the newly created environment (Kozloff 1996).

Filter- and suspension-feeding invertebrates (e.g., bivalves, tunicates, crustaceans, and some polychaetes) may close their shells, suspend feeding, or increase feeding rates in response to turbidity increases (LaSalle et al. 1991; Cruz-Rodriguez and Chu 2002). However, because of the limited time pile-driving and dredging would occur (i.e., minutes at a time for several days) along with the limited increase in turbidity levels, there would not be a significant loss of benthic species in the vicinity of project areas.

Overall, the direct and indirect impacts under Alternative 1 would be considered minor impacts on the regional benthic community because the regional benthic community can recolonize over time and because impacts on the benthic organisms would be localized in relation to the larger regional benthic community of the Narragansett Bay.

Herpetofauna

Due to the lack of preferred habitat for herpetofauna common to Rhode Island at the former Naval Hospital property, Alternative 1 would not result in any impacts on herpetofauna.

Avian Species

Narragansett Bay is home to a variety of shorebirds and waterfowl, both breeding and migratory. Because the former Naval Hospital property is in the Atlantic Flyway and within 2 miles of two designated IBAs, the potential for birds to be on-site does exist. However, due to the developed nature of the site and lack of nesting habitat along the beach at the former Naval Hospital property, breeding birds are not likely. Waterfowl and waterbirds could forage in the project area and, as mobile species, would likely move to adjacent foraging areas with suitable habitat during construction. Short-term impacts on avian species, such as displacement, would result during construction under Alternative 1. In general, birds would avoid areas of construction where equipment and human activities create disturbance. No long-term adverse impacts on birds are anticipated. In May of 2015, the USFWS initiated a NEPA review of alternatives to authorize take under the MBTA. At the time of the publication of this Draft EIS, it is uncertain if the future implementation of the Redevelopment Plan under Alternative 1 may require a take permit under the MBTA. The future developer would be required to minimize impacts on migratory birds as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. Pursuant to the MBTA and BGEPA, the Navy has determined that implementation of Alternative 1 would have minor impacts on avian species and the disposal and reuse of the former Naval Hospital property would not result in significant impacts on, or harm of, migratory birds and bald and golden eagles.

7.12.1.3 Threatened and Endangered Species

7.12.1.3.1 Marine Species

As discussed in Section 6.12.1.3, NMFS Northeast Region has identified various listed species, including whales, sea turtles, and Atlantic sturgeon, as well as two federal species of concern (alewife and blueback herring) that have the potential to occur in the waters of Narragansett Bay because they are prevalent in New England waters (Colligan 2013). The Navy has informally consulted with the NMFS under Section

7 of the ESA concerning the effects of the proposed action on any federally listed threatened or endangered species. The results of that informal consultation are summarized below.

Whales

The North Atlantic right, humpback, and fin whales occur along the U.S. Atlantic Coast at various times of the year. None of these species are common in Narragansett Bay, although all have been documented in stranding and live sighting data in Narragansett Bay or along the south shore of Rhode Island (NBNERR 2009). These species are not likely to be present in Narragansett Bay near the former Naval Hospital property. As such, disposal and reuse of the former Naval Hospital under Alternative 1 would have no effect on these species. Pursuant to the ESA, the Navy has determined that the disposal and reuse of the former Naval Hospital would have no effect on the federally endangered North Atlantic right, humpback, or fin whale. NMFS concurred with the determination, based on the species preference for deeper water depths and the near-shore location of the proposed action, such that these species were deemed unlikely to exist in the vicinity of the project area (Colligan 2013). BMPs are included within this Draft EIS, to minimize the potential for noise-related affects.

Sea Turtles

As discussed in Section 6.12.1.3, four listed species of sea turtles (loggerhead, green, Kemp's ridley, and leatherback) are seasonally present in New England from early summer through late fall. Although sea turtle abundance at the project location in Narragansett Bay is unknown, sea turtles are regular summer visitors to Rhode Island waters during their southern migration to wintering grounds (NBNERR 2009). Both the loggerhead and Kemp's ridley turtles have been documented within Narragansett Bay around Aquidneck Island (NBNERR 2009). Despite a documented occurrence in 2007, due to its highly pelagic nature, the leatherback does not usually make its way into Narragansett Bay north of the bay's mouth (NBNERR 2009). NMFS Northeast Region stated that the possibility may occur for the green sea turtle to occur in New England waters, but that it is rare and sporadic (Colligan 2013).

Direct and indirect dredging impacts on sea turtles would be insignificant. Sea turtles are not known to be vulnerable to capture in mechanical dredges. Additionally, even if a transient sea turtle were present, no sea turtles are likely to be injured or killed as a result of dredging operations (Bullard 2014). The dredge sites within the bay may provide suitable forage habitat for sea turtles; however, given the water depths in those areas, it is unlikely that sea turtles would be present in the area. Opportunistic foraging may occur at these sites and, thus, dredging could cause a short-term reduction in prey species through the alteration of existing biotic assemblages and habitat. Any such reduction would be temporary and recolonization would begin within two months (Bullard 2014). Sedimentation from dredging would be short-term, with suspended sediment settling out of the water column within a few hours following dredging activities. Therefore, any change in behavior due to the presence of suspended sediment is likely to be insignificant.

Similar to marine mammals and fish, in-water noise may also be audible to sea turtles within the vicinity of the project area. Sea turtles are expected to avoid disturbing levels of sound originating from impulsive sources (O'Hara & Wilcox 1990; McCauley et al. 2000). There are currently no official threshold criteria for either potential injury or behavioral disturbance/harassment for sea turtles. However, McCauley et al. (2000) reported that impulsive source levels of 166 dB re 1μPa RMS were required to induce a behavioral reaction in captive green and loggerhead sea turtle. Based on this information, NMFS has determined that source levels of 166 dB re 1μPa RMS or greater could cause behavioral disturbance and/or other behavioral or physiological impacts (Lecky 2009).

Based on the threshold level used by NMFS, there is the potential for disturbing sea turtles if impact pile driving occurs when sea turtles are present in Narragansett Bay (early summer through late fall). Based on the Practical Spreading Loss model, it is expected that disturbance to sea turtles could occur within 50 feet (15 meters) of active pile driving. It is likely that sea turtles would avoid the areas where in-water

construction was occurring. Therefore, it is expected that impacts on sea turtles would be temporary and result in temporary displacement during pile driving and construction activities. However, large numbers of sea turtles are not expected to be exposed to pile driving noise during the time frame of in-water work due to the limited spatial scale of the construction and the low density of sea turtles within Narragansett Bay and, in particular, the habitat characteristics of the project area in the vicinity of the former Naval Hospital property. NMFS indicated that it is extremely unlikely that sea turtles would occur within 0 to 66 feet (0 to 20 meters) of the pile driving and therefore would not be exposed to underwater noise at or above the 166 dB re 1μPa RMS (Bullard 2014).

The installation of the docks may create new shaded areas. However, because the area of the bay that would be covered by the new docks is small, dissolved oxygen levels in the project area are not expected to be impacted by the minor increase in shading. Additionally, the project area is not a known foraging ground and it is likely not used as a major source of forage (Bullard 2014). Thus, alteration of habitat through shading and pile installation is not expected to remove critical amounts of prey resources from the project area for the sea turtle.

Pursuant to the ESA, the Navy has determined that the disposal and reuse of the former Naval Hospital may affect, but is not likely to adversely affect the loggerhead, green, Kemp's ridley, or leatherback sea turtles. NMFS concurred with the Navy's determination (Bullard 2014). BMPs and protective measures referenced by NMFS for sea turtles included implementing construction activities between November and May (a period when listed species are not likely to be present) and the installation of piles for the pier with an impact hammer (a technique that minimizes the generation of underwater noise).

Atlantic Sturgeon

The Atlantic sturgeon is distributed within estuarine and marine waters along the entire East Coast, and potentially Narragansett Bay. Atlantic sturgeon travel wide ranges from their natal river. They spend spring months spawning upriver where the salt front and fall line of large rivers meet and inhabit estuarine and coastal waters when not spawning (NOAA Fisheries Office of Protected Resources 2012). Due to their broad distribution, any individuals from the threatened population of Atlantic sturgeon of the Gulf of Maine DPS or the endangered populations from the New York Bight, Chesapeake Bay, South Atlantic, and Carolina DPSs may occur in the waters of Narragansett Bay (Colligan 2013). Their reliance on benthic organisms for food and their affinity for shallow nearshore areas may bring them to the waters near the former Naval Hospital property. The potential occurrence of Atlantic sturgeon near the surplus property would include the juvenile and adult life stages, since juvenile Atlantic sturgeon can spend months to years in estuaries. However, only transient Atlantic sturgeon are likely to be in the project area (Bullard 2014). It is expected that any adult Atlantic sturgeon potentially occurring in the vicinity of the former Naval Hospital property during in-water construction would avoid the areas and therefore impacts on the Atlantic sturgeon from operation of construction equipment, including a mechanical dredge and pile driving equipment, and resulting increased turbidity levels would not be significant.

Direct and indirect impacts of dredging on sturgeon would be insignificant. It is likely that subadult or adult Atlantic sturgeon would easily be able to avoid the dredge. Additionally, because no overwintering sturgeon are likely to occur in the project area, there would be no increased risk of capture due to the lack of overwintering areas in the project area (Bullard 2014). Similar to the discussion above about the sea turtle, the dredge sites within the bay may provide suitable forage habitat for sturgeon. Opportunistic foraging may occur at these sites and, thus, dredging could cause a short-term reduction in prey species through the alteration of existing biotic assemblages and habitat. Any such reduction would be temporary and recolonization would begin within two months (Bullard 2014). Sedimentation from dredging would be short-term, with suspended sediment settling out of the water column within a few hours following dredging activities.

Pile-driving activities associated with the proposed action under Alternative 1 would generate underwater noise that the Atlantic sturgeon could be exposed to; however, no adverse effects on the sturgeon would be expected. As stated above, Atlantic sturgeon would not be expected to come close to the former Naval Hospital property during construction. Any Atlantic sturgeon present within the general vicinity would be able to detect pile-driving noises which, as a result, may elicit an avoidance response to the waters around the surplus property. If they were present, using the established injury thresholds for fish and comparing them with the summary of pile driving sound levels (Table 7.12-3), the peak threshold for injury would not be exceeded, as discussed above in Section 7.12.1.2. There is a potential for impact based on accumulated SEL for a single pile within 33 feet of active impact pile driving and behavioral disturbance with 83 feet of impact pile driving (Table 7.12-6).

As discussed above for the sea turtle, the installation of the docks may create new shaded areas. However, because the area of the bay that would be covered by the new docks is small, dissolved oxygen levels in the project area are not expected to be impacted by the minor amounts of increased shading and the alteration of habitat through shading and pile installation is not expected to remove critical amounts of prey resources from the project area for the sturgeon.

Pursuant to the ESA, the Navy has determined that disposal and reuse of the former Naval Hospital property may affect, but is not likely affect, the federally threatened Atlantic sturgeon. NMFS concurred with this determination (Bullard 2014). BMPs and protective measures referenced by NMFS for Atlantic sturgeon included implementing construction activities between November and May (a period when listed species are not likely to be present) and the installation of piles for the pier with an impact hammer (a technique that minimizes the generation of underwater noise).

Results of Informal Consultation with NMFS

In a letter dated May 5, 2014, NMFS concluded that, based on the analysis above, any effects on listed species of sea turtles or the Atlantic sturgeon would be insignificant or discountable; therefore, concurrence was provided with the Navy's determination that the proposed action may affect, but is not like to adversely affect any listed species of sea turtles or the Atlantic sturgeon, and consultation per Section 7 of the ESA has been completed (Bullard 2014).

7.12.1.3.2 Non-Marine Species

Northern Long-Eared Bat

The Navy has documented the presence of the northern long-eared bat within approximately 1 mile of the former Naval Hospital, as discussed below. Based on the results of passive acoustic monitoring, three call sequences for the northern long-eared bat in 2013 at Bishops Rock, the closest monitoring location (approximately 1 mile away) to the former Naval Hospital, were documented by the Navy. Of the 8,826 total call sequences reported at NAVSTA Newport from the passive acoustic monitoring conducted for bats from 2009 to 2013, 73 calls were documented as non-specific *Myotis* species calls, and 1,397 were documented as "unknown high-frequency" calls, which can be attributable to *Myotis* (Tetra Tech, Inc. 2014c).

The potential effects of the proposed action include permanent loss of roosting habitat and potential impacts on forage habitats and animal behavior in the project area. As discussed in Section 6.12.3.2, no suitable habitat exists on or adjacent to the former Naval Hospital property.

Therefore, redevelopment of the former Naval Hospital property would have no effect on the northern long-eared bat. The Navy contacted the USFWS regarding its concurrence on the potential effects of the proposed action on the northern long-eared bat at the former Naval Hospital (Preston 2015). The

evaluation of impacts and potential for adverse effects to the northern long-eared bat will be updated upon completion of consultation with the USFWS.

7.12.1.4 Significant Wildlife Habitat

Submerged Aquatic Vegetation

There is no SAV habitat at the former Naval Hospital property. Alternative 1 would not result in any impacts on SAV at the former Naval Hospital property.

Wetlands

Construction of the two floating docks under Alternative 1 would impact approximately 0.04 acres of the 0.3 acres of marine/estuarine wetlands associated with the former Naval Hospital property. These wetlands provide one of the few areas for potential cover, nesting, and feeding opportunities for wildlife along the developed shoreline. The pilings needed to support the floating docks would be considered as wetland fill. The total amount of wetland fill would be determined during the final design of the pier redevelopment project, as the proposed design is for analysis purposes and a final design would be part of the actions taken after property transfer (see Section 7.11 for a discussion of required wetland permit and a discussion of wetland impact mitigation). The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processed of the CRMC/SAMP and Section 404 of the CWA.

Vernal Pools

There are no vernal pools at the former Naval Hospital property. Alternative 1 would not result in any impact on vernal pools.

Essential Fish Habitat

As indicated in Section 6.12, there are 17 species of EFH off the coast of the former Naval Hospital. The proposed action would not adversely affect EFH under Alternative 1. The Navy has consulted with the NMFS, consistent with the Magnuson Stevens Fishery Conservation and Management Act for the effects of the proposed action on EFH (2014).

As discussed in Section 7.12.1.2, Other Marine Wildlife, during construction a volume of sediment at least equivalent to the volume of pilings below the subsurface would be displaced as the pilings are embedded in the bottom sediments. The displacement of this sediment volume would increase suspended sediment and turbidity within the water column habitat during the pile-driving operation, but it would be localized in the project area and would settle soon thereafter (i.e., typically within one to several hours). Water column habitat would be affected as would habitat serving as EFH for some species. The portions of benthic communities within the footprint of the individual piles supporting the fishing pier and floating piers, as well as in the proposed area for dredging, would likely be destroyed, resulting in a minor, permanent loss of benthic substrate in the Narragansett Bay. Impacts on benthic habitat and species are discussed in Section 7.12.1.2, Benthic Organisms.

Marine fish use aquatic vegetation habitat for foraging and refuge. One of the most important marine vegetation types in the marine ecosystem is eelgrass. This environment offers habitat for various life stages of many marine species, including shellfish such as crabs and bivalves. No eelgrass is present in the vicinity of the former Naval Hospital property; therefore, there would be no impacts on summer flounder EFH, which NMFS considers a HAPC.

Research has shown that light-blocking overwater structures can directly impact benthic productivity in underlying substrates (Simenstad et al. 1999). The overwater floating docks at the former Naval Hospital property would increase shading in the immediate area, more so than if they were fixed and elevated.

However, no eelgrass beds or other marine vegetation are located near the Naval Hospital property; so there would be no impact on these resources (see Appendix A and the informal consultation letter to NMFS dated March 27, 2014 for additional background information regarding potential impacts of shading).

Designated EFH within the vicinity of each project site would be affected as a result of temporary disturbance and displacement of fish, temporary increase in sediment loads and turbidity in the water column, and a minor but permanent disruption of benthic communities within the footprint of the individual piles and dredged area. The effects would generally be minor and short term and would be further offset by implementation of mitigation measures. No eelgrass beds would be directly impacted by the proposed activity. In its response to the Navy's informal consultation letter, NMFS indicated that it cannot concur with the Navy's determination that the project would have minimal impacts on EFH because of the lack of specific project details (i.e., specific project design and/or engineering plans, which indicate the exact location of proposed piers and in-water work, location and amount of material to be dredged, etc.) (Bullard 2014). Additional project-specific details would be made available prior to the construction of the in-water components of the proposed action by the future developer(s). At such time, authorization from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act of 1899 would be required. These USACE authorizations would be expected to trigger the requirement to consult with NMFS under the MSFCMA, where any potential effects on EFH would be minimized through the development of BMPs, to minimize adverse impacts on EFH. Pursuant to the MSFCMA, the Navy has determined that the project would not adversely affect designated EFH in the Narragansett Bay.

7.12.2 Alternative 2

7.12.2.1 Vegetation

Similar to Alternative 1, the majority of proposed development for Alternative 2 would be located in the existing development footprint. As such, implementation of Alternative 2 is expected to result in minor long-term impacts on upland vegetation.

7.12.2.2 Wildlife

Terrestrial Mammals

Impacts on terrestrial mammals under Alternative 2 are similar to those discussed under Alternative 1.

Marine Mammals

The impacts associated with the in-water construction of Alternative 1 also apply to Alternative 2, as discussed in Section 7.2.1.2. Due to the addition of the third floating dock under Alternative 2, however, the increase in in-water construction proposed would result in greater potential impacts on marine mammals. The additional floating dock would measure 8 feet by 70 feet and would be constructed at the end of the existing pier with mooring piles.

Measures to reduce impacts on marine mammals would be implemented by the developer through state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. This would result in the future developer's coordination with NMFS under the ESA and MMPA to minimize impacts on regulated marine mammals. Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. Therefore, the disposal and reuse of the former Naval Hospital property under Alternative 2 would have minor impacts on marine mammals.

Other Marine Wildlife

Implementation of Alternative 2 would have minor short-term impacts on finfish, shellfish, crustacean, and benthic resources in Narragansett Bay, similar to those discussed for Alternative 1. However, as the extent of the proposed in-water construction is greater under Alternative 2 compared with Alternative 1, due to the addition of a third floating dock, the potential impacts on these resources would be greater. The additional floating dock would measure 8 feet by 70 feet and would be constructed at the end of the existing pier with mooring piles. The impacts associated with the in-water construction of Alternative 1 also apply to Alternative 2, as discussed in Section 7.2.1.2. Alternative 2 would result in minor impacts on other marine life and fish, and BMPs developed through the future developer's consultations with the USACE under the CWA and NMFS under the ESA and MMPA, will ensure that no significant impacts occur to other marine wildlife.

Benthic Organisms

The impacts associated with the in-water construction of Alternative 1 also apply to Alternative 2 for benthic organisms. Due to the addition of the third floating dock under Alternative 2, however, the increase in in-water construction proposed would result in greater potential impacts on marine mammals. The additional floating dock would measure 8 feet by 70 feet and would be constructed at the end of the existing pier with mooring piles. Refer to the discussion under Alternative 1 above.

Herpetofauna

Due to the existing habitat at the former Naval Hospital, Alternative 2 would result in no impacts on herpetofauna.

Avian Species

Impacts on avian species under Alternative 2 are similar to those discussed under Alternative 1.

7.12.2.3 Threatened and Endangered Species

Impacts on threatened and endangered species under Alternative 2 are similar to those discussed under Alternative 1.

7.12.2.4 Significant Wildlife Habitat

Submerged Aquatic Vegetation

No impacts from Alternative 2 would occur to SAV at the former Naval Hospital site due the lack of this habitat type.

Wetlands

Alternative 2 would impact approximately 0.03 acres of the existing 0.3 acres of marine/estuarine wetlands associated with the former Naval Hospital from the construction of the two of the three floating docks (see Figure 7.12-2). The impacts would result from the placement of pilings to support the floating docks. These wetlands provide one of the few areas for potential cover, nesting, and feeding opportunities for wildlife. For a discussion on minimization of impacts on wetlands during construction of Alternative 1, see Section 7.11.

Vernal Pools

There are no vernal pools at the former Naval Hospital site. Alternative 2 would not have any impact on vernal pools.

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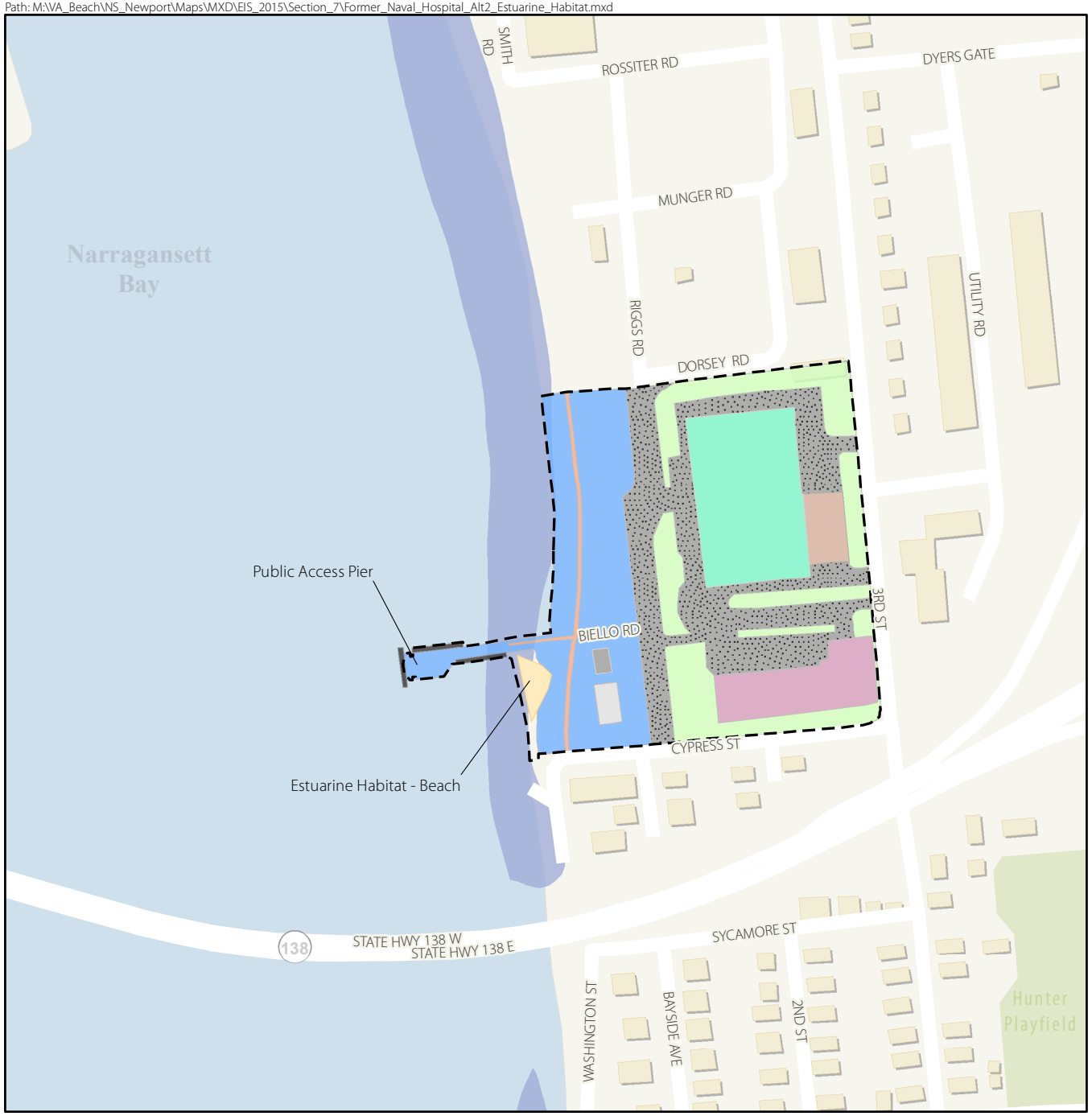

Figure 7.12-2
Former Naval Hospital Property
Alternative 2
Estuarine and Significant Habitat
NAVSTA Newport, Rhode Island

Legend

- Property Boundary
- Narragansett Bay Estuarine Habitat
  - Beach
- Proposed Land Use
  - Boat Storage Facility
  - Commercial
  - Conference Center
  - Yacht Club/Office
  - Floating Dock
  - Hotel/Retail/Restaurant
  - Open Space
  - Parking/Access
  - Path
  - Waterfront Park
- NWI Wetlands
  - Estuarine and Marine Wetland

SCALE

0 150 300 Feet

Note: *Property boundaries as shown will be confirmed by surveys and therefore may be modified.*

SOURCE: RIDEM Narragannset Bay Estuary Program 2003; RKG Associates et al. 2011; U.S. Fish and Wildlife Service 2011

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Essential Fish Habitat

Implementation of Alternative 2 would have short-term adverse impacts on EFH resources at the former Naval Hospital, similar to those discussed for Alternative 1. However, the extent of the proposed in-water construction and expansion of the existing pier (through the addition of a total of three floating docks) would result in no significant long-term adverse impacts on fish or their respective EFH. There would be slightly more minor and short-term impacts on EFH resources under Alternative 2 than Alternative 1.

The future developer's consultation with the USACE under the CWA and NMFS under the MSFCMA would ensure the development of BMPs to minimize any adverse effects to EFH. Pursuant to the MSFCMA, the Navy has determined that the project would not adversely affect designated EFH in the Narragansett Bay.

7.12.3 No Action Alternative

The No Action alternative would result in no impacts on biological resources. No construction or expansion of the existing pier would occur and nothing would be disturbed.

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8 Tank Farms 1 and 2 Existing Conditions

8.1 Land Use, Zoning, and Coastal Resources

This section summarizes existing land use conditions at former Tank Farms 1 and 2. A discussion of the land use and zoning districts surrounding the properties and the plans and regulations that guide or direct the development of this land also is provided.

8.1.1 On-Site Land Use

Tank Farms 1 and 2 are located at the northern end of NAVSTA Newport between the Melville fuel-loading area (Melville Backyard) and the Navy's Melville housing area. The tank farms are in the southeastern part of the Town of Portsmouth. Tank Farm 1 occupies approximately 62 acres of land, and Tank Farm 2 occupies approximately 74 acres of land. Tank Farm 1 is bounded by Melville Park to the north, Tank Farm 2 to the south, open space and a recreational campground to the east, and the Melville fuel-loading area and Stringham Road to the west (see Figure 8.1-1). Tank Farm 2 is bounded by Tank Farm 1 to the north, Stringham Road to the south and west, and the Melville housing area to the east. An existing COX Cable facility is located in the southeastern corner of Tank Farm 2. No existing easement is associated with this facility.

As discussed in Section 1.3, Tank Farms 1 and 2 were used by the Navy from the 1940s to 1974 to store various oils and fuels. In 1974, the Navy licensed both tank farms to the DESC to store and distribute petroleum fuel. The DESC ceased operations at the tank farms in 1998, and the properties and facilities were vacated.

Tank Farm 1 is developed with eight vacant operational structures (three pump houses, a valve house, an ethyl blending plant, a transformer building, and two transformer vaults), and eight inactive USTs/OWSs. A community center was demolished in 2011/2012, and two ASTs were demolished and removed in 2012. In addition, a 1,000-gallon underground water reservoir is located beneath Building 30 (pump house) in the northern portion of the property. The surface of Tank Farm 1 in the areas overlying the USTs is a mix of cover types: non-vegetated areas where active remediation is ongoing and low-lying shrub-scrub and trees in other areas. Tank Farm 2 is developed with four small, vacant buildings (a former fire station, an electrical substation, and two transformer buildings) and 11 USTs. Undeveloped surface areas of both tank farms consist of open space (scrub land and wooded areas) (RKG Associates, Inc. et al. 2011). Similar to Tank Farm 1, the surface of Tank Farm 2 in the areas overlying the USTs is a mix of cover types: grassland, scrub-shrub and trees, and non-vegetated areas where active remediation is ongoing.

The status of clean-up activities at Tank Farms 1 and 2 under the Navy's ER Program is discussed in Section 8.5. Land use controls have not yet been designated for the tank farms but may be a component of the cleanup remedy selected for this area.

8.1.2 Surrounding Land Use

The study area for surrounding land uses includes the area within 0.25 miles of the boundaries of the tank farms (see Figure 8.1-1). The study area is relatively sparsely developed with areas of open space (Melville Ponds and scrub land and woodland) interspersed between the various land uses. A low-density, single-family residential neighborhood is located north of the tank farms. The Navy's Melville housing area with duplex housing units is located to the east (see Figure 8.1-1). Other land uses include industrial and business properties south of the tank farms and the Melville Ponds Recreation Area and Melville Elementary School to the east. As noted, the Navy's Melville fuel-loading area is located west

of Tank Farm 1. Two marinas and additional commercial land uses also are located in this area on Portsmouth's shoreline along Narragansett Bay.

8.1.3 Land Use Plans and Zoning

The land surrounding Tank Farms 1 and 2 is in the jurisdiction of the Town of Portsmouth. Land use and development in the town is regulated by the town's zoning ordinance (Town of Portsmouth 2008a) and guided by the town's *Comprehensive Community Plan* (Town of Portsmouth 2002). The Town of Portsmouth is developing a *Portsmouth Tank Farm Redevelopment Plan* (Town of Portsmouth 2008a) to address redevelopment of Navy surplus property at the tank farms. The tank farms also are included in the study area considered in the *Aquidneck Island West Side Master Plan*, prepared by The Cecil Group et al. (2005).

Town of Portsmouth Zoning Ordinance. Tank Farms 1 and 2 are located in a zoned Redevelopment District, created to accommodate planned unit developments (PUDs) on larger parcels of land. The Redevelopment District allows three types of PUDs: planned corporate development, planned marine trade development, and planned retail/service development. The permitted uses and other regulations for these types of PUDs are discussed below:

- **Planned Corporate Development.** Permitted uses include manufacturing; professional and medical offices, including laboratories; research and development facilities; radio, television, or recording studios; antennas and communications towers; public or private utilities; printing, binding, publishing, and graphic arts; plumbing, electrical, carpentry shop, or similar services; day care centers; public or private trade schools; restaurants; indoor entertainment and recreational facilities; catering, food processing, or preparation; and wholesale storage in an enclosed and roofed structure. Dimensional requirements for planned corporate developments include a minimum lot size of 40,000 square feet, 40 percent maximum building coverage on a lot, and a 40-foot height limitation (RKG Associates, Inc. et al. 2011).
- **Planned Marine Trade Development.** Permitted uses include manufacture, repair, or rebuilding boats; support industries for boat manufacture or repair; marinas; stores for sale of marine supplies, including boats, accessories, and equipment; restaurants; commercial parking structures; research and development facilities; antennas and communications towers; enclosed and roofed storage structures; outdoor storage of boats and related equipment; schools; and day care centers. Dimensional requirements for planned marine trade developments include a minimum lot size of 30,000 square feet, 40 percent maximum building coverage on a lot, and a 40-foot height limitation (RKG Associates, Inc. et al. 2011).
- **Planned Retail/Service Development.** Permitted uses include retail business and consumer services; professional and medical offices, including laboratories; radio, television, or recording studios; printing, binding, publishing, and graphic arts; plumbing, electrical, carpentry shop, or other similar services; day care centers; public or private trade schools; restaurants; indoor entertainment and recreational facilities; catering, food processing, or preparation; stores for sale of marine supplies and associated items, including boats and trailers; commercial parking structures; schools; and multi-family housing. Dimensional requirements for planned retail/service developments include a minimum lot size of 20,000 square feet, 25 percent maximum building coverage on a lot, and a 35-foot height limitation (RKG Associates, Inc. et al. 2011). For multi-family housing, the developed area, including developed open space, cannot exceed 35 percent of the total developable land area.

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Chapter 8\Tank_Farms_1_and_2_LU_ver02.mxd

Legend

Rail Road
Property Boundary

Land Use

- Beaches
- Sandy Areas (not beaches)
- Pasture (agricultural not suitable for tillage)
- Brushland (shrub and brush areas, reforestation)
- Cropland (tillable)
- Deciduous Forest (>80% hardwood)
- Mixed Forest
- Softwood Forest (>80% softwood)
- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)
- Medium Density Residential (1 to 1/4 acre lots)
- Industrial (manufacturing, design, assembly, etc.)
- Institutional (schools, hospitals, churches, etc.)
- Railroads (and associated facilities)
- Other Transportation (terminals, docks, etc.)
- Vacant Land
- Waste Disposal (landfills, junkyards, etc.)
- Wetland
- Water

SCALE

0 300 600 Feet

SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013

Figure 8.1-1

Tank Farm 1 and 2 Properties Existing Land Use and Surrounding Land Use

NAVSTA Newport, Rhode Island

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Town of Portsmouth Comprehensive Community Plan. Portsmouth's comprehensive plan was last revised in 2002. The comprehensive plan identifies future land use for Tank Farms 1 and 2 as a waterfront district, intended to include industrial and business land uses related to boat building and servicing, marinas, and other marine trades (Town of Portsmouth 2002). The comprehensive plan's larger goals, objectives, and policies related to land use generally seek to balance the level of development in the town to the capacity of public services and the ability of the town to pay for public improvements. The comprehensive plan further notes that future development should not increase "urban sprawl," should maintain the town's existing rural character, create job opportunities, and maintain the town's tax base (Town of Portsmouth 2002).

Portsmouth Tank Farm Redevelopment Plan. The Town of Portsmouth prepared a draft redevelopment plan to coordinate land use planning and economic development on a total of approximately 269 acres of Navy property in the town with the potential to be declared surplus property in the foreseeable future, including Tank Farms 1 and 2 (Town of Portsmouth 2008a). This draft redevelopment plan was used in the development of AIRPA's *Redevelopment Plan for Surplus Properties at NAVSTA Newport* (RKG Associates, Inc. et al. 2011), but the town's planning considerations regarding redevelopment of the Tank Farms 1 and 2 are ongoing. The redevelopment plan is being prepared in conjunction with the town's *Comprehensive Community Plan* (see above) and the *Aquidneck Island West Side Master Plan*. The redevelopment plan emphasizes the importance of non-residential development on Tank Farms 1 and 2 that would generate additional economic activity in the town (Town of Portsmouth 2008a, 2009) The town's overall goal for redevelopment of Tank Farms 1 and 2 is to promote mixed-use redevelopment that supports similar nearby businesses (marine and marina-related, commercial, and light industrial) along the Melville shoreline. This development should be situated within a publicly accessible open space system that protects environmentally sensitive areas that are unsuitable for development (e.g. steeply sloped land). Some residential development is included in the redevelopment plan on Tank Farm 2 in conjunction with the planned Weaver Cove Marina Village, which will be located on Weaver Cove along Burma Road (Town of Portsmouth 2009).

Aquidneck Island West Side Master Plan. The Aquidneck Island Planning Commission cites the need to plan for the reuse of surplus Navy properties as one of the reasons for preparing the *Aquidneck Island West Side Master Plan*. Tank Farms 1 and 2 are located in the central part of the planning area. Because of the large amount of surplus Navy property as well as other developable properties in this area, which are generally located along the shoreline from Coddington Cove to Mt. Hope Bridge, the master plan notes this area is likely to experience "substantial change" through development (The Cecil Group et al. 2005).

The primary land use goals laid out in the *Aquidneck Island West Side Master Plan* include minimizing sprawl, planning for reuse of surplus Navy property, and diversifying land use. Accordingly, the overall recommendation for future land uses in the west side planning area is for "targeted, mixed-use redevelopment that supports existing land uses and provides public economic benefit, within an attractive and accessible open space system" (The Cecil Group et al. 2005). Infill development or redevelopment with commercial and compatible industrial land uses is emphasized. The master plan recommends that Tank Farms 1 and 2 be reused to support marine- and marina-related businesses to promote additional economic development. In addition to the marina-related development, the master plan recommends mixed-use redevelopment of a portion of the tank farms with commercial uses, a mixture of resort and affordable housing, light-industrial uses, research and development, and parking. Wooded slopes and areas with unique or protected natural resources are recommended for preservation as open space (The Cecil Group et al. 2005) (see Section 8.5 for a discussion of allowable uses for redevelopment due to the previous industrial use of these sites).

8.1.4 Coastal Zone Management

Under the CZMA and the RI CRMP, the CRMC has review authority for all federal actions or activities regardless of their location within a Rhode Island coastal community or state territorial waters. However, only the disposal of the surplus property is a federal action; the subsequent redevelopment would be a non-federal action. Although the CRMC has direct state-permitting authority for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area, Tank Farms 1 and 2 are not located in any tidal waters, on a shoreline feature, or within the 200-foot contiguous area, so state review of coastal resources is not applicable. However, the Coastal Development Policies of the Aquidneck Island SAMP do apply to this property (see Table 8.1-1).

Table 8.1-1 Applicable Policies from the Aquidneck Island Special Area Management Plan for Tank Farms 1 and 2

Aquidneck Island SAMP Section	Policy
Section 130.8 Open Space and Public Access	The primary goal/standard for any development project along the shoreline must be a requirement to provide public access to and along the shoreline within the project property boundary.
Section 150.1 Standards Applicable to Entire Development	A) *25% Minimum Vegetation Requirement* – Applicants must include sustainably landscaped areas in their proposals to achieve vegetative coverage of at least 25% of the surface area over the entire development parcel. B) *Storm Water Management* – All new development and redevelopment proposals shall meet the storm water requirements of CRMP Section 300.6 and as specified in the most recent edition of the Rhode Island Stormwater Design and Installation Standards Manual to control peak flow rates and volumes and improve water quality. Communities should be implementing LID practices to meet the 2007 Cleaner Narragansett Bay Act (R.I.G.L. § 45-61.2), which requires LID as the primary means of managing and treating storm water. C) *Open Space* – There are three aspects to open space designations of importance. First is the choice of the land that should be set aside and what qualities that land possesses, and second is the links between the open space parcels that allow greenways throughout the area and improve the value of the land and mobility for residents. The third aspect is the design of the designated areas that will ensure their long-term value. D) *Public Access* – When applicants choose the Coastal Greenway option, the CRMC requires that shoreline and arterial public access pathways be provided by the applicant within the development site, as described in Aquidneck Island SAMP Coastal Development Section 150.5. E) *Construction Setback* – A construction setback of 25 feet is required for all new and existing residential, commercial, mixed-use, and other structures to provide for fire, safety, and maintenance purposes. The setback is measured from the inland edge of the Coastal Greenway or buffer.

Table 8.1-1 Applicable Policies from the Aquidneck Island Special Area Management Plan for Tank Farms 1 and 2

Aquidneck Island SAMP Section	Policy
Section 170 Redevelopment Zone	*Section 170.2 Policy*. It is the policy of the CRMC to establish and link public access along the entire west side shoreline within the Aquidneck Island SAMP boundary, including through the areas designated as Redevelopment Zones that will satisfy both the overall goals of the Aquidneck Island SAMP and the applicable Redevelopment standards described herein. [Tank Farms 1 and 2 are located within the Melville/Weaver Cove redevelopment area.]

8.2 Socioeconomics and Environmental Justice

The social, economic, and demographic characteristics of the City of Newport and the Towns of Middletown and Portsmouth are described in Section 4.2.

8.3 Community Facilities and Services

The tank farm properties (Tank Farms 1 and 2) are located in the Town of Portsmouth near the Melville boat basin. Community facilities and services in that area are provided by the Portsmouth School District, the Portsmouth Police Department, and the Portsmouth Fire Department. In addition, the town provides recreational facilities for all its residents (see Figure 8.3-1). Medical facilities are provided on a regional basis at Newport Hospital South County Hospital, and St. Anne's Hospital.

8.3.1 Educational Facilities

The Portsmouth School Department had a total of 2,563 students during the 2014-2015 school year (Rhode Island Department of Education 2015). The district comprises four schools: the Portsmouth High School (grades 9-12), the Portsmouth Middle School (grades 4-8), Melville Elementary School (grades K-3), and the Hathaway Elementary School (grades K-3) (Portsmouth School Department 2012a). The district employs 277 staff, including 210 teachers (Portsmouth School Department 2015). The district had an average teacher/student ratio of 1:11 and spent approximately $14,981 per pupil in the 2012-2013 schoolyear (InfoWorks 2014c).

8.3.2 Public Safety and Emergency Services

The Portsmouth Police Department, located at 2270 East Main Road, provides public safety services to the Town of Portsmouth, including areas near the tank farms. The department employs more than 30 employees, including five detectives, five lieutenants, five sergeants, and 19 patrolmen (Portsmouth Police Department 2015).

The Portsmouth Fire Department, which provides fire protection and emergency services to areas near the tank farms, is a volunteer department. The department has one station house located at 2300 East Main Road and has a total of 36 firefighters and staff. This station house is approximately 1.3 miles away from Tank Farms 1 and 2. The department is equipped with three pumper trucks, one tower ladder truck, three advanced life support rescue vehicles, and a dive team (Portsmouth Fire Department 2015). In FY ending June 30, 2011, the Town of Portsmouth spent a total of $8.8 million on public safety including police, fire, and emergency services (Braver PC 2011).

8.3.3 Parks and Recreation

The parks and public recreational facilities in the Town of Portsmouth include two beaches, three golf courses, four playgrounds, and nine other public parks. In addition, tennis and basketball courts and

baseball fields are available at the local schools, and Teddy's Beach, which is owned and operated by the State of Rhode Island, is located on the Island Park. Melville Ponds is a 130-acre park located just north of the tank farms that includes camp grounds as well as hiking and nature trails (Portsmouth Department of Parks and Recreation 2012).

8.3.4 Health Care/Medical Facilities

The regional hospital serving Aquidneck Island is the Newport Hospital located approximately 0.7 miles southeast of the former Naval Hospital property in the City of Newport. The Newport Hospital, which is part of the Lifespan nonprofit health care system, has 129 licensed beds and a staff of 785 and is Newport County's only acute care hospital (Lifespan 2014). The hospital is equipped with an emergency department, a birthing center, a behavioral health unit, inpatient and outpatient surgical facilities, a rehabilitation division, and outpatient services, including wound care, physical therapy, and digital diagnostic imaging (Lifespan 2014). Medical services are also provided to residents living on Aquidneck Island at the South County Hospital located in Wakesfield, Rhode Island, and at the Saint Anne's Hospital in Fall River, Massachusetts.

8.4 Transportation

This section describes the current local road network and traffic conditions surrounding Tank Farms 1 and 2. The information presented in this section is based on a traffic study conducted in 2012 (Pare Corporation 2013). Roadways and intersections close to Tank Farms 1 and 2 that were specifically analyzed are as follows:

- Stringham Road
- Defense Highway/Burma Road
- Bradford Avenue
- Alexander Road
- West Main Road (Route 114) and Bradford Road Intersection
- West Main Road (Route 114) and Stringham Road Intersection
- Defense Highway/Burma Road and Stringham Road Intersection.

Locations of these roadways and intersections are shown on Figure 8.4-1. Information on public transit was gathered from the RIPTA.

8.4.1 Road Network and Access

Tank Farm 1 is accessed by a secured gate at the southern portion of the property near the intersection of Defense Highway and Stringham Road. A number of unnamed roads service the property. Tank Farm 2 is accessed by a gated entrance off Bradford Avenue. A ring road circles the property. A description of the surrounding roads and intersections is provided below.

Stringham Road. Stringham Road is a two-lane, east/west roadway connecting West Main Road to the east, with Defense Highway/Burma Road to the west. Stringham Road is an urban collector, operating under the jurisdiction of the U.S. Navy. The posted speed limit along the roadway is 30 miles per hour.

M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Chapter 8\Tank_Farms_1_and_2_CFS_ver02.mxd

SCALE

0 0.25 0.5 Miles

Legend

- Streets
- River/Stream
- School/Institution
- Fire Department
- Police Department
- Parks
- Property Boundary
- Waterbody

Figure 8.3-1

Tank Farm 1 and 2 Properties

Community Facilities and Services

NAVSTA Newport, Rhode Island

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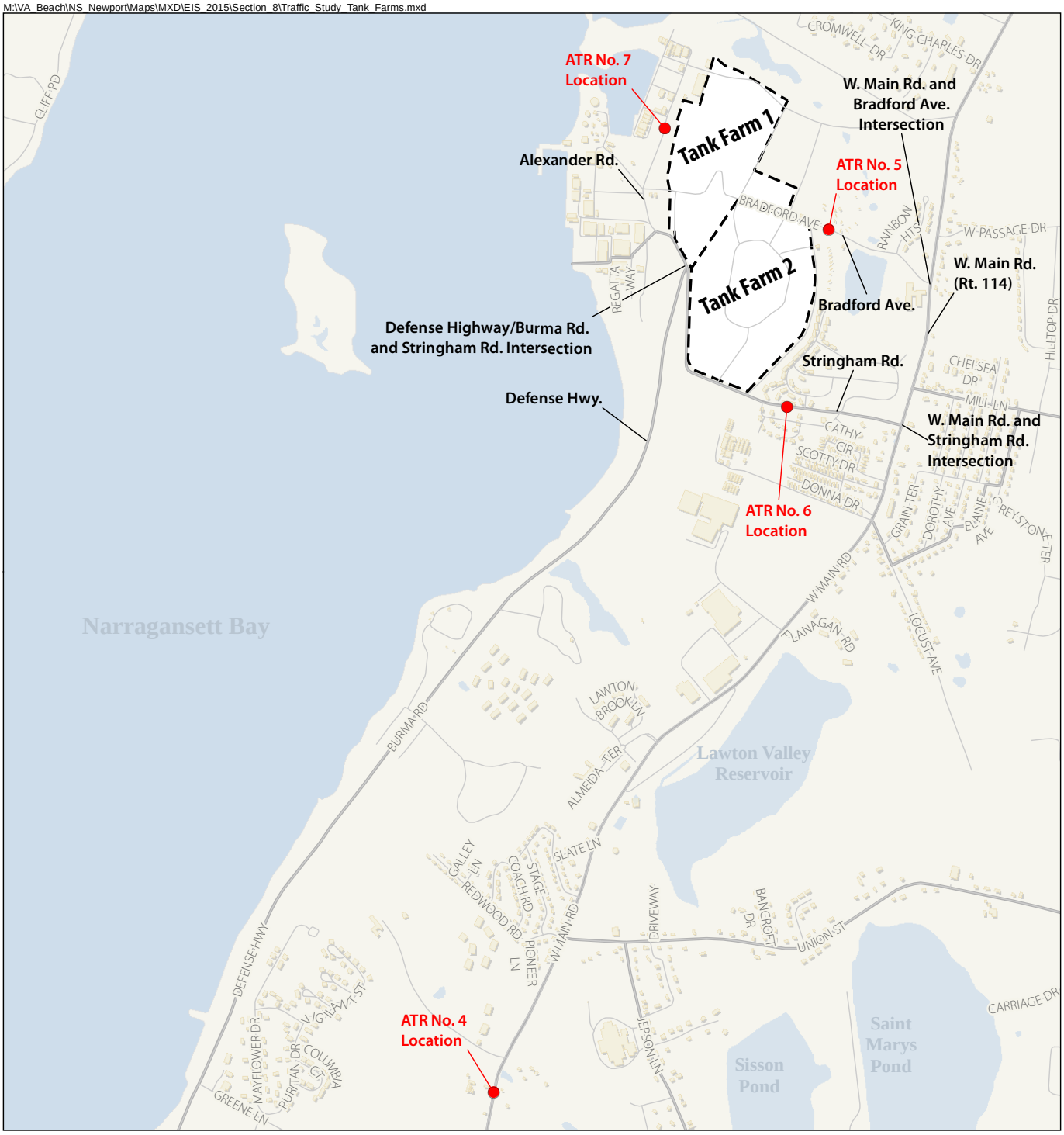

SCALE

0 1,000 2,000 Feet

Legend

- Automatic Traffic Recorders (ATR)
- Street
- Major Road
- Waterbody
- Property Boundary

Figure 8.4-1

Tank Farms 1 and 2 Properties Traffic Study Area

NAVSTA Newport, Rhode Island

SOURCE: Pare Corporation 2013

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Defense Highway/Burma Road. Defense Highway/Burma Road is a 4.4-mile north/south roadway, connecting Stringham Road in Middletown with the Gate 17 access road to NAVSTA Newport in Portsmouth. The roadway, which is classified as an urban collector, operates under the jurisdiction of the U.S. Navy and is a major access point between the Navy operations and West Main Road. Defense Highway/Burma Road is a two-lane roadway with a bicycle lane. The posted speed limit along the roadway varies between 25 and 35 miles per hour in both directions.

Bradford Avenue. Bradford Avenue is a two-lane east/west roadway that connects West Main Road with the waterfront area and marine uses in Portsmouth. It is a local side street, posted as a private way. Bradford Avenue transitions into Chelsea Drive approximately 600 feet west of West Main Road. The west portion of the roadway, accessing the tank farms and the waterfront, is gated and closed to vehicular traffic. The posted speed limit is 15 miles per hour.

Alexander Road. Alexander Road, also known as East Passage, is a two-lane north/south roadway. Alexander Road provides direct access from Stringham Road and Defense Highway to the East Passage Yachting Center/Melville Marina along the Portsmouth coast. The posted speed limit along the roadway is 15 miles per hour.

West Main Road (Route 114) and Bradford Avenue Intersection. The intersection of West Main Road with Bradford Avenue forms a three-way unsignalized intersection. West Main Road runs in a north/south direction and Bradford Avenue runs east/west. A stop sign on Bradford Avenue controls the intersection. A Town of Portsmouth-owned parcel of land, the Melville School, which fronts on West Main Road, is located on the south side of Bradford Avenue; this parcel encumbers a portion of Bradford Avenue. A Navy-owned parcel exists on the opposite (north) side of Bradford Avenue; this parcel is the Rainbow Heights housing development. The deed and recorded plan for the town-owned parcel indicates that there is a perpetual easement and right-of-way on Bradford Avenue in the vicinity of the Melville School for the Navy to use to access West Main Road from the Tank Farms (Crosby 2013). Due to the proximity of the school driveway, both the Navy's easement and the town's encumbrance apply to the same portion of Bradford Avenue.

West Main Road (Route 114) and Stringham Road Intersection. The intersection of West Main Road with Stringham Road forms a four-way signalized intersection. West Main Road runs in a north/south direction and Stringham Road runs in an east/west direction. The westbound approach to the intersection is formed by the driveway for Dunkin Donuts. Left-turn lanes are in all directions.

Defense Highway/Burma Road and Stringham Road Intersection. The intersection of Defense Highway/Burma Road with Stringham Road forms a skewed three-way unsignalized intersection. A stop sign exists at the Defense Highway/Burma Road intersection with Stringham Road. Stringham Road and Defense Highway/Burma Road intersect at a sharp angle (i.e., a hairpin turn) and require drivers on Stringham Road northbound to turn almost 180 degrees to travel southbound on Burma Road.

8.4.2 Existing Traffic Volume

Traffic volumes were collected in October 2012 at three intersections and four points near Tank Farms 1 and 2 (see Figure 8.4-1). Table 8.4-1 shows the morning and evening peak hour volume for the intersections of West Main Road and Stringham Road, West Main Road and Bradford Road, and Defense Highway/Burma Road and Stringham Road. Existing traffic volumes at the intersection of Defense Highway and Stringham Road were the lowest. Traffic volumes were similar where West Main Road intersects Stringham Road and where it intersects Bradford Avenue. The morning peak hour traffic occurred between 7:15 a.m. and 8:15 a.m., while evening peak hour traffic occurred between 3:15 p.m. and 5:45 p.m. Intersections were slightly busier during the evening peak hour. Average daily traffic

volumes for West Main Road, Stringham Road, Bradford Avenue, and Alexander Road are also shown in Table 8.4-1. West Main Road was significantly busier than the other roadways, with more than 22,000 daily vehicles. Bradford Avenue, which is gated at Tank Farm 2, carries fewer than 200 vehicles per day.

Table 8.4-1 Existing Roadway Traffic Conditions near Tank Farms 1 and 2

Peak Hour Traffic Volumes		
Intersection	**A.M. Peak Hour Volume**	**P.M. Peak Hour Volume**
West Main Road (Route 114) and Stringham Road	2,751	2,771
West Main Road (Route 114) and Bradford Avenue	2,515	2,604
Defense Highway/Burma Road and Stringham Road	773	870
Average Daily Traffic Volumes		
Roadway	**Location**	**Average Daily Traffic**
West Main Road	North of John Kesson Lane	22,136
Stringham Road	Between Cimarron Drive Loop	6,246
Bradford Avenue	East of Sullivan Drive	170
Alexander Road	South of Lagoon Road	996

Source: Pare Corporation 2013

8.4.3 Roadway Intersection Level of Service

A capacity analysis was conducted to characterize the LOS at intersections near the former Tank Farms 1 and 2. LOS is a qualitative measure that describes general operating conditions based on factors such as speed, travel times, and length of delays. LOS is reported on a scale of 'A' to 'F'. 'A' represents the best operating conditions with free-flowing traffic and 'F' represents the worst operating conditions with significant delays. The traffic study looked at three intersections near Tank Farms 1 and 2 (see Table 8.4-2).

Table 8.4-2 Roadway LOS near Tank Farms 1 and 2

Intersection	LOS A.M. Peak Hours		LOS P.M. Peak Hours
West Main Road (Route 114) and Stringham Road (signalized)	B		C
West Main Road (Route 114) and Bradford Avenue (unsignalized)	NB: C	EB: F*	NB: A EB: F*
Defense Highway/Burma Road and Stringham Road (unsignalized)	NB: A	NE: F*	NB: A NE: D*

Source: Pare Corporation 2013

Key:
* = Stop sign control
EB = Eastbound
NB = Northbound
NE = Northeast

The signalized intersection of West Main Road and Stringham Road currently operates at LOS B during the morning peak hours and a LOS C at the evening peak hours. The West Main Road and Bradford Avenue intersection is currently not signalized; Bradford Avenue operates under stop-sign control at this intersection. During the morning peak hours, the northbound movements at this intersection operate at LOS C or better, and the eastbound approach operates at LOS F. During the evening peak hours, the northbound movements at this intersection operate at LOS A, and the eastbound operates at LOS F. Similarly, the intersection of Defense Highway and Stringham Road is not signalized, with Defense Highway operating under stop-sign control. The northbound approach to the intersection of Defense Highway/Burma Road and Stringham Road operates at LOS A during the morning peak hours, and the northeast approach operates at LOS F. During the evening peak hour, the northbound approach to the intersection operates at LOS A, while the northeast approach operates at LOS D.

8.4.4 Safety Conditions

Accident data from January 2010 to October 2012 were reviewed for the following road segments near Tank Farms 1 and 2:

- West Main Road between Stringham Road and Bradford Avenue
- Bradford Avenue/ Chelsea Drive between West Main Road and East Passage
- Stringham Road between West Main Road and Defense Highway/ Burma Road
- Defense Highway/Burma Road between East Passage and the Middletown town line.

During this period, 122 accidents were recorded: 63 rear-end collisions, 23 angle crashes, 17 sideswipes, 10 vehicle collisions with an object, 4 involving a motorist loss of control, 4 collisions with an animal, and 1 head-on collision (Pare Corporation 2013). Of the intersections studied near Tank Farms 1 and 2, the majority of accidents were reported at the intersection of West Main Road and Stringham Road. Fifty-seven accidents were reported at this intersection, 38 of which were rear-end collisions. The intersection of West Main Road and Mill Lane had 23 reported accidents, the majority of which were also rear-end collisions (Pare Corporation 2013).

A speed study was conducted on Stringham Rd west of Sullivan Drive. Stringham Road has a posted speed of 30 miles per hour, and 78 percent of vehicles travel above the speed limit. The average speed of vehicles on this roadway was 33 mph (Pare Corporation January 2013).

8.4.5 Public Transportation

RIPTA's Route 60 bus service is the closest to Tank Farms 1 and 2. The route runs between Newport and Providence via Middletown and Portsmouth. It originates at the Gateway Center in Newport and travels along West and East Main Roads but does not provide direct access to the tank farms (RIPTA 2013b).

8.5 Environmental Management

This section summarizes the existing conditions regarding hazardous waste, hazardous materials, medical waste, and the Environmental Restoration Program for the former Tank Farms 1 and 2.

8.5.1 Hazardous Waste

Hazardous waste is not routinely generated at Tank Farms 1 and 2. Small quantities of hazardous waste could be generated in connection with ongoing IRP and RIDEM UST closure activities at the tank farms (see Section 8.5.4 below), such as waste oil, oil filters, or oily wastes from the use of heavy equipment. Suspected mercury-containing tank fluid-level indicators were observed during a 2010 infrastructure inspection of the ethyl blending plant at Tank Farm 1. Potential mercury-containing wastes and materials

are being addressed by the ongoing IRP activities at the tank farms (see Section 8.5.4) (Shaw Environmental 2010).

Hazardous waste generated at NAVSTA Newport is collected in one of two satellite accumulation areas (Building 23 at NHCNE or Building 1166, the HazMin Center) and then consolidated in a single 90-day accumulation area (Building 15, hazardous waste drum storage). Hazardous waste is transported off-site for disposal by a contractor in compliance with federal and state regulations (see Section 3.5.1.1). Used oil and oily wastes, which the RIDEM considers to be hazardous wastes, are accumulated in seven "non-regulated" waste storage areas at NAVSTA Newport (Michael Baker Jr. Inc. 2011).

8.5.2 Hazardous Materials

8.5.2.1 Hazardous Material Control

The Tier II Emergency and Hazardous Chemical Inventory report for 2011 does not list hazardous materials at Tank Farms 1 and 2 (NAVSTA Newport 2012d). The tanks at Tank Farms 1 and 2 have been cleaned and/or removed (see Section 8.5.4 below). Most of the underground fuel distribution piping also has been cleaned (see Figures 8.5-1 and 8.5-2). Tanks 9 and 10 at Tank Farm 1 are in use as gross OWSs (see Section 8.5.4); therefore, their contents contain some hazardous material.

Some residual fuel (product) might remain in lines and equipment at the tank farm, as evidenced by the NAVSTA Newport spill log. According to the installation spill log for 2002 through 2011, 20 gallons of fuel oil were spilled from a pipe leak at Tank Farm 1 in 2002. The spill was cleaned up and reported to the National Response Center and RIDEM (NAVSTA Newport 2012e).

8.5.2.2 Underground Storage Tanks

Six inactive USTS are located at Tank Farm 1, and 11 inactive USTs are located at Tank Farm 2 (see Figures 8.5-1 and 8.5-2). The tanks were formerly used to store fuel and are being addressed by the ongoing IRP and UST closure activities at the tank farms. Tanks 9 and 10 at Tank Farm 1 are partially buried USTs that formerly stored fuel and now are used as gross OWSs (see Section 8.5.4).

Under a separate project (unrelated to this EIS), the Navy plans to demolish the USTs/OWSs at Tank Farm 1 along with associated components. This project is scheduled to be completed in 2016 and before transfer of the property. It will include the demolition of six USTs and two USTs/OWSs at Tank Farm 1 and the demolition of the concrete utility trenches and the associated fuel distribution piping, bottom sediment water piping, and steam distribution piping in trenches within the tank farm (NAVSTA Newport 2015). (Note: This project is separate from the actions addressed in this EIS, and the impacts associated with the demolition and removal activities would be addressed in a separate NEPA document.)

The Navy similarly intends to demolish 11 USTs and associated facilities at Tank Farm 2, although the schedule for this demolition has not been established. Therefore, for the purposes of this analysis, the USTs and associated facilities at Tank Farm 2 are assumed to be transferred in place as part of the property transfer for this proposed action.

A 1,000-gallon fuel-oil UST previously located southeast of Building 48 at Tank Farm 2 was removed in 2009 (see Figure 8.5-2) (U.S. Department of the Navy 2009).

8.5.2.3 Aboveground Storage Tanks

Two ASTs (Tanks 11 and 12) previously located at Tank Farm 1 and used for fuel storage (see Figure 8.5-1) were removed in 2012 in connection with ongoing UST closure activities at the tank farms (see Section 8.5.4). There are no ASTs at Tank Farm 2.

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Chapter 8\Tank_Farm_1_Features_ver02.mxd

Legend

- Rail Road
- Fence
- Fuel Line
- Property Boundary
- Underground Storage Tank (UST)
- Partially Buried UST/OWS (oil/water separator)
- Former Aboveground Storage Tank
- Structure
- Former Structure
- Transformer Location
- Separation Pit
- Waterbody

SCALE

0 200 400 Feet

Figure 8.5-1

Tank Farm 1 Property Features

NAVSTA Newport, Rhode Island

SOURCE: U.S. Department of the Navy 2009

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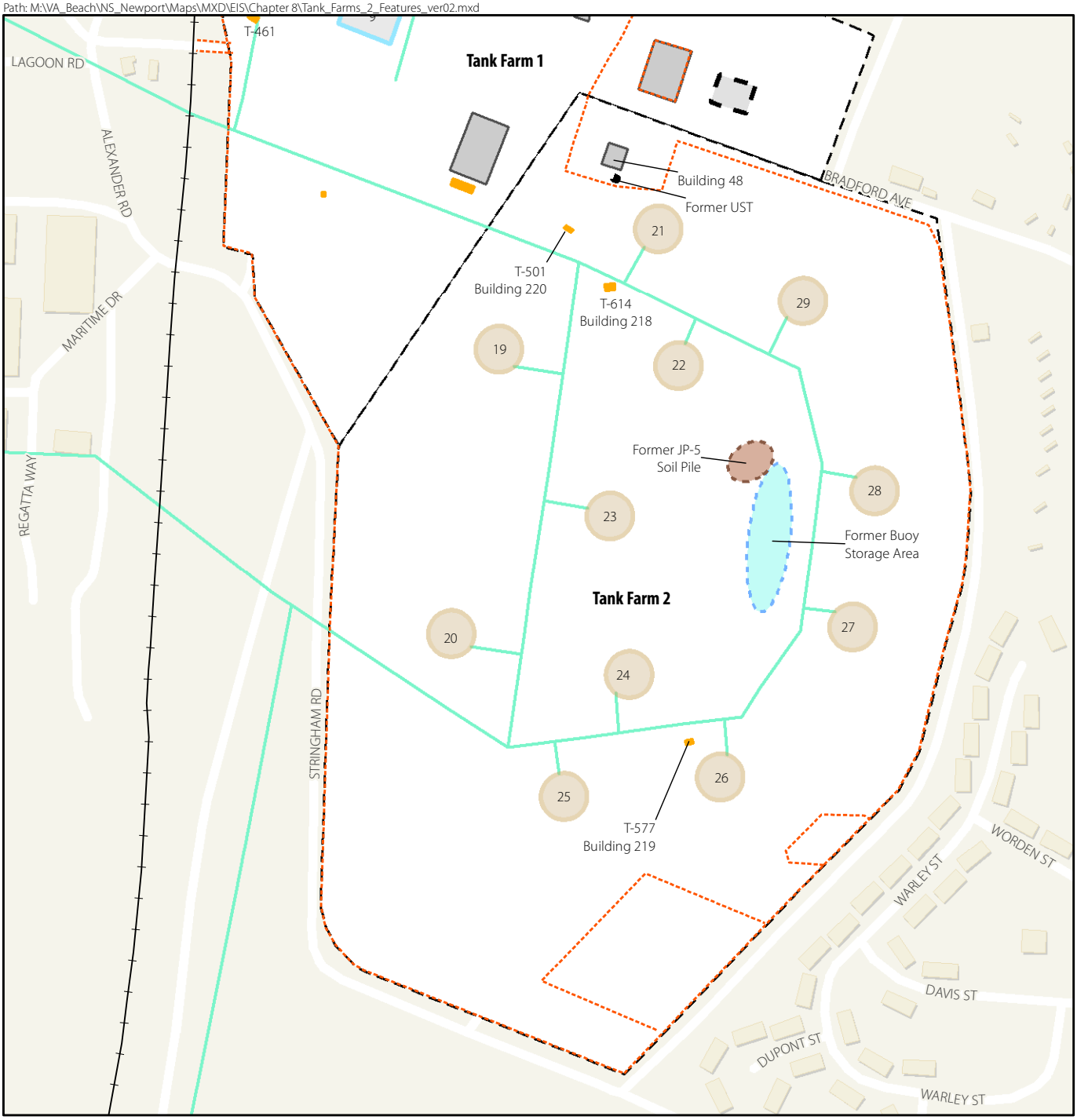
Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Chapter 8\Tank_Farms_2_Features_ver02.mxd



Legend

- Rail Road
- Fence
- Fuel Line
- Property Boundary
- Underground Storage Tank (UST)
- Structure
- Former Structure
- Former JP-5 Soil Pile
- Former Buoy Storage Area
- Transformer Location

SCALE

0 200 400 Feet

Figure 8.5-2
Tank Farm 2 Property Features
NAVSTA Newport, Rhode Island

SOURCE: U.S. Department of the Navy 2009

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Tanks 11 and 12, along with the valve houses located adjacent to Tanks 11 and 12 (Tank 11 valve house and Tank 12 valve house), Pump House 63, the junction valve house, and above-grade piping were demolished and removed in March 2012 (Shaw Environmental 2013). The valve houses associated with Tanks 11 and 12 and the junction valve house were demolished to the foundations. Hazardous material abatement for ACM, PCBs, and LBP was completed for these structures prior to demolition (Shaw Environmental 2013).

8.5.2.4 Oil/Water Separators

Tanks 9 and 10 at Tank Farm 1 are used as gross OWSs to store underground ring drainage and storm water from Tank Farms 1 and 2 (see Figure 8.5-1 and Section 8.5.4.1). There are two inactive, underground OWSs at Tank Farm 1, which are further discussed in Section 8.5.4. There are no OWSs at Tank Farm 2.

8.5.2.5 Asbestos-Containing Materials

The underground fuel lines, steam lines, and condensate lines that were constructed throughout Tank Farms 1 and 2 potentially contain asbestos-containing pipe insulation, especially the steam and condensate lines (U.S. Department of the Navy 2009; Greenhorne & O'Mara 2011). Asbestos abatement of the steam line associated with four concrete piping chambers (two at Tank Farm 1 and two at Tank Farm 2) was performed in 2000 in preparation for closeout and removal of the chambers (U.S. Department of the Navy 2009; Tetra Tech EC, Inc. 2008a). In conjunction with the cleaning of the underground fuel lines at Tank Farm 2 in 1996/1997, asbestos abatement was reportedly performed for encountered sections of piping with asbestos-containing insulation (Tetra Tech, Inc. 2012b). With the exception of those removals, asbestos-insulated piping remains at Tank Farms 1 and 2. A pre-demolition hazardous materials survey performed in 2010 of selected areas of Melville North, including Tank Farm 1, included a survey of pipes in various tank vaults, trenches, and tunnels. Extensive asbestos insulation, much of it in deteriorated condition, was reported for the steam and condensate piping that was surveyed (Greenhorne & O'Mara 2011).

Due to their age, the buildings at Tank Farms 1 and 2 are generally suspected to contain ACM (U.S. Department of the Navy 2009). Two surveys of the buildings at Tank Farms 1 and 2 have been conducted. The 2010 pre-demolition hazardous materials survey (Greenhorne & O'Mara 2011) included an asbestos survey of some of the buildings at Tank Farm 1. A focused asbestos survey was conducted in April 2013 to provide information for this EIS and to update and fill in gaps from the previous survey. The executive summary of the report documenting the April 2013 survey (YU & Associates 2013) is provided in Appendix E. Table 8.5-1 summarizes the results of both surveys, which show some limited quantities of asbestos in the buildings that were assessed.

Table 8.5-1 Asbestos Survey Results for Tank Farms 1 and 2

Building	2010 Pre-Demolition Hazardous Materials Survey Results	April 2013 Asbestos Survey Results[a]
Tank Farm 1		
Building 30	ACM identified in roofing material.	Not evaluated.
Building 49	ACM identified in a pipe gasket.	Not evaluated.
Building 199	Not evaluated.	1 sample, not positive for ACM. ACM identified (first floor and roof): • Electrical wire insulation – 100 linear feet • Cable insulation – 60 linear feet • Roof, tar paper layer – 1,200 ft^2.

Table 8.5-1 Asbestos Survey Results for Tank Farms 1 and 2

Building	2010 Pre-Demolition Hazardous Materials Survey Results	April 2013 Asbestos Survey Results[a]
Building 1158	ACM was not identified.	Not evaluated.
Building B60	ACM identified in pipe insulation and exterior caulk.	Not evaluated.
Building S63	ACM identified in pipe insulation and gaskets.	Not applicable; demolished
Tank Farm 2		
Building 48	Not evaluated.	17 samples, 6% of them were positive for ACM. ACM identified (basement, first floor, second floor): • Electrical wire insulation – 2,400 linear feet • Transite walls and ceiling – 830 ft^2.
Building 219	Not evaluated.	2 samples, none were positive for ACM. ACM identified (first floor): • Electrical wire insulation – 100 linear feet.

Source: Greenhorne & O'Mara 2011; U.S. Department of the Navy 2009; YU & Associates 2013.

[a] In the April 2013 survey, ACM was identified based on a combination of analytical results, visual survey and observations, and professional judgment.

8.5.2.6 Lead-Based Paint/Lead

Due to their age, the buildings at Tank Farms 1 and 2 that are painted are generally suspected to contain LBP (U.S. Department of the Navy 2009). The 2010 pre-demolition hazardous materials survey (Greenhorne & O'Mara 2011) included an LBP survey of some of the buildings. A focused LBP survey was conducted in April 2013 to provide information for this EIS and to update and fill in gaps from the previous survey. The executive summary of the report documenting the April 2013 survey (YU & Associates 2013) is provided in Appendix E. Table 8.5-2 summarizes the results of both surveys, which show some LBP at the buildings that were assessed.

Table 8.5-2 LBP Survey Results for Tank Farms 1 and 2

Building	2010 Pre-Demolition Hazardous Materials Survey Results	April 2013 LBP Survey Results[a, b, c]
Tank Farm 1		
Building 30	LBP identified on: • Interior: Door components. • Exterior: Pipe, roof access cover.	Not evaluated.
Building 49	LBP identified on: • Interior: Walls. • Exterior: Door.	Not evaluated.

Table 8.5-2 LBP Survey Results for Tank Farms 1 and 2

Building	2010 Pre-Demolition Hazardous Materials Survey Results	April 2013 LBP Survey Results[a, b, c]
Building 199	Not evaluated.	34 X-ray fluorescence (XRF) screening readings; 38% of the readings were positive for lead. LBP identified on: • Interior: Door components, floor. • Exterior: Door components. Soil around Building 199: No soil samples were collected because the building is surrounded by asphalt.
Building 1158	LBP identified on: • Interior: Pipes. • Exterior: Door components.	Not evaluated.
Building B60	LBP identified on: • Interior: Door components. • Exterior: None.	Not evaluated.
Building S63	LBP identified on: • Interior: Walls, pipes. • Exterior: Door.	Not evaluated.
Tank Farm 2		
Building 48	Not evaluated.	249 XRF screening readings; 16% of the readings were positive for lead. LBP identified on (basement, first floor): • Walls, door components, ceiling beam, window stop. Soil around Building 48: 1 composite soil sample collected. Result (2,200 mg/kg) exceeded the RIDEM residential direct exposure criterion (DEC) for lead of 150 mg/kg and the RIDEM industrial/commercial DEC for lead of 500 mg/kg.
Building 219	Not evaluated.	XRF screening readings; none of the readings were positive for lead. LBP identified on: None. Soil around Building 219: No soil samples could be collected.

Source: Greenhorne & O'Mara 2011; U.S. Department of the Navy 2009; YU & Associates 2013.

[a] In the April 2013 survey, LBP was identified based on a combination of screening and analytical results, visual survey and observations, and professional judgment. XRF measurements were used as a screening and measurement method, with follow-up chip or bulk sampling in cases where XRF readings were inconclusive.

[b] The report for the April 2013 survey identifies specific material types positive for LBP for each building, e.g., concrete floors vs. wood floors.

[c] Soil sampling was performed at facility drip lines where potential LBP was observed to be peeling or chipping.

The April 2013 survey also included an evaluation of lead in the soil outside of Building 48 at Tank Farm 2. One composite soil sample was collected at facility drip lines where potential LBP was observed to be peeling or chipping. The result (2,200 mg/kg) exceeded the RIDEM residential direct exposure criterion (DEC) for lead of 150 mg/kg and the RIDEM industrial/commercial DEC for lead of 500 mg/kg. LBP was not evaluated in the environment around other buildings at the tank farms either because there is no exterior paint on those buildings or because of a lack of accessible soil.

A former buoy storage area at Tank Farm 2 is being assessed as an AOC under the IRP because the buoys likely were painted with LBP. The investigation of that AOC is addressed in Section 8.5.4.

8.5.2.7 Polychlorinated Biphenyls (PCBs)

Transformers at Tank Farms 1 and 2 are mounted on poles and in transformer buildings and electrical substations. PCB-containing transformers were removed or replaced at NAVSTA Newport in the 1980s (U.S. Department of the Navy 2009), and the Navy is not otherwise aware of any PCB-containing transformers at the installation (CNIC n.d.[d]). In 2009, several used transformers were observed on wooden pallets at Building 199, electrical substation 15, at Tank Farm 1 (see Figure 8.5-1). "PCB-free" stickers were observed on some of the transformers (U.S. Department of the Navy 2009). One composite window caulking sample from Building 48 at Tank Farm 2 was evaluated for PCBs in April 2013 to provide information for this EIS. The executive summary of the report documenting the April 2013 evaluation (YU & Associates 2013) is provided in Appendix E. The composite window caulking sample from Building 48 did not contain PCBs.

PCBs have been assessed in groundwater at Tank Farm 1 and in soil at Tank Farms 1 and 2 as part of ongoing IRP and UST closure activities (see Section 8.5.4). PCBs have not been detected in groundwater at Tank Farm 1. PCBs have been reported in soil near transformer vault 2 at Tank Farm 1 and near Building 219 at Tank Farm 2 at levels exceeding RIDEM standards and are being addressed under the IRP.

8.5.2.8 Pesticides

Pesticides are not known to have been stored, nor are they currently stored, at Tank Farms 1 and 2 (U.S. Department of the Navy 2009). Pesticides likely have been and continue to be applied at the tank farms as necessary in accordance with the NAVSTA Newport *Integrated Pest Management Plan* (Geo-Marine 2009 [see Section 3.5.1.2]).

8.5.2.9 Radioactive Materials

There are no reports of the use of radioactive materials at Tank Farms 1 and 2 (U.S. Department of the Navy 2009).

8.5.2.10 Radon

Radon surveys have not been conducted at any of the current or former buildings located within Tank Farms 1 and 2 (U.S. Department of the Navy 2009). Radon levels in general are low throughout NAVSTA Newport (see Section 3.5.1.2).

8.5.3 Medical Waste

No medical wastes are or were generated at Tank Farms 1 and 2.

8.5.4 Environmental Restoration Program

Tank Farm 1 is IRP Study Area 7, and Tank Farm 2 is IRP Study Area 10. Both sites are currently being investigated under the IRP, as noted in Section 3.5.1.4. The current status of both sites is described in more detail below.

8.5.4.1 IRP Study Area 7, Tank Farm 1

Tank Farm 1, consisting of 62 acres, was used by the Navy from the 1940s to 1974 to store diesel oil, fuel oil, jet fuel (JP-4, JP-5, or JP-8), gasoline, and aviation fuel. Tank Farm 1 was leased to the DESC from 1974 to 1998 for petroleum fuel storage and distribution. (During this time, Tank Farms 1 and 2 were referred to as Defense Fuel Support Point [DFSP] Melville.)

The features of Tank Farm 1 are listed in Table 8.5-3 and shown on Figure 8.5-1. These features are the six steel USTs (Tanks 13 through 18), two former steel ASTs (Tanks 11 and 12), two partially buried concrete USTs (Tanks 9 and 10) that were originally used to store fuel and were later used to store storm water and water collected from the ring drains and other sources. Tanks 9 and 10 currently function as OWSs, which discharge to another OWS located near the fuel loading area west of Tank Farm 1 (U.S. Department of the Navy 2009; Tetra Tech, Inc. 2012a).

Underground petroleum distribution piping surrounds and connects the tanks and facilities and leads to the fuel-loading area west of Tank Farm 1. A storm water system composed of ring drains runs beneath Tank Farms 1 and 2 (AH/BH 2011). Each UST has a ring drain, and ring drain water and storm water are directed to Tanks 9 and 10 on Tank Farm 1 (Tetra Tech, Inc. 2012a). Tanks 9 and 10 are partially underground and can contain up to 2.56 million gallons of water collected from the ring drains around the tanks in Tank Farm 2 (U.S. Department of the Navy 2009; AH/BC 2011). At one time this ring drain system had pumps that pumped groundwater through a trench system to eventually reach Tanks 9 and 10. However, in 2002, power was disconnected to the pumps and no flow has been pumped through this drainage system since that time (AH/BC 2011).

Table 8.5-3 Features at Tank Farm 1[1]

Feature	Description
Tank 9	Each tank is a 2.56-million-gallon partially buried concrete UST/OWS. The tanks stored fuel and fuel oil and later stored storm water and groundwater from detention basins.
Tank 10	
Tank 11	Each tank is a former 2.35-million gallon steel AST that stored JP-5, JP-8, or fuel oil. The tanks and associated valve houses were demolished and removed in 2012.
Tank 12	
Tank 13	Each tank is a 1.12-million-gallon steel UST that stored JP-4, diesel, aviation gasoline, or motor gasoline. The tanks were cleaned in 1996/1997, repaired, and ballasted in 2001.
Tank 14	
Tank 15	
Tank 16	
Tank 17	
Tank 18	
Building 30	Pump house
Feature 30	1,000-gallon underground water reservoir
Building 49	Foam pump house
Former Building 77	Former community center. Demolished 2011/2012.
Building 199	Part of electrical substation 15
Building 1158	Valve house, demolished in 2012
Building B60	Ethyl blending plant, used to mix aviation gasoline with leaded ethyl fluid. Inactive since 1974. Currently being investigated under the IRP.

Table 8.5-3 Features at Tank Farm 1[1]

Feature	Description
Building S63	Former pump house, demolished in 2012
Fire suppression pump house	(same as feature name)
Underground OWS	Concrete OWS that received bottom sediment and water from Tanks 17 and 18
OWS/separation pit	Concrete separator
Former sludge pits	Received tank bottom sludges from periodic cleanings
Pole-mounted transformers	(same as feature name)
Transformer vaults 2 and 3	Transformer vaults; currently being investigated under the IRP.
Tank vaults	Access to tanks and equipment
Ring drain system	Groundwater drainage system
Underground petroleum distribution piping	Piping connecting tanks to each other and the fuel loading area
Piping chambers (two)	Concrete chambers that provide access to valves, expansion joints, and reducers
Former fuel unloading area	(same as feature name)

Sources: U.S. Department of the Navy 2009; Greenhorne & O'Mara 2011; Shaw Environmental 2010; Tetra Tech, Inc. 2012a.

Note:
[1] The USTs, associated piping, and buildings/facilities at Tank Farm 1 are scheduled for demolition in 2016 under a separate project. These include Tanks 9 and 10, 13 through 18, associated piping, Buildings 30, 49, 1158, B60, and Electric vaults 2 and 3 (NAVSTA Newport 2015).

Approximately 6,000 gallons of tank bottom sludges from periodic cleanings that took place from the 1940s to 1974 were disposed of in on-site pits (Tetra Tech, Inc. 2012b). The six USTs (Tanks 13 through 18) were cleaned between 1996 and 1997, at which time numerous leaks were observed. The tanks were repaired and then ballasted in 2001. The fuel distribution piping for the majority of the tanks was cleaned and pressure-tested in 1996/1997 and subsequently decommissioned (Tetra Tech, Inc. 2012a). Tanks 9 and 10 and their associated piping have not been cleaned or structurally assessed and contain stored water (Tetra Tech, Inc. 2012a). Tanks 11 and 12, which were steel ASTs, were cleaned, inspected, and ballasted with water in the late 1990s and demolished in 2012.

Various environmental investigations have been conducted at Tank Farm 1 starting in 1983, when the Navy performed an installation-wide Initial Assessment Study. Tank Farm 1 was identified as IRP Study Area 7 in the 1992 Federal Facility Agreement entered into by the Navy, EPA Region I, and the State of Rhode Island under CERCLA §120 (U.S. EPA 1992). Areas of Tank Farm 1 associated with the tanks and potential petroleum releases are being investigated by the DESC under RIDEM's UST program (see Section 3.5.1.2). This includes the tanks, fuel piping, underground ring drain system, underground OWSs, former sludge pits, fuel unloading area, and drainage features. RIDEM also has requested that transformer areas be investigated (Shaw Environmental 2010). Areas associated with potential CERCLA-regulated releases are being investigated by the Navy under the CERCLA IRP. The environmental studies conducted since 1983 have been completed by the DESC to address petroleum-related contamination (e.g., total petroleum hydrocarbons [TPHs], metals) prior to returning the property back to the Navy. The Navy is using applicable results to inform their IRP strategy for Tank Farm 1 (Tetra Tech, Inc. 2012a). DESC studies to date have included soil, groundwater, surface water, soil-gas, and test pit sampling, as well as aquifer pumping tests, passive free-product removal, and light non-aqueous phase liquid (LNAPL) gauging (U.S. Department of the Navy 2009; Tetra Tech, Inc. 2012a). The DESC installed more than 50 monitoring wells in the 1990s.

The areas at Tank Farm 1 that have been identified as CERCLA IRP-regulated consist of the ethyl blending plant and transformer vaults 2 and 3 and their immediate environs. The three areas are considered Category 1 areas under CERCLA because they are associated with the potential for historic releases—lead and gasoline blending constituents from activities at the ethyl blending plant and PCBs from transformers at vaults 2 and 3. Areas of potential fuel and petroleum releases are considered Category 2 areas that are being assessed under the RIDEM UST regulations. Category 3 areas are those for which the scope of the investigation or the regulatory pathway has not yet been defined. These areas, if identified, could include non-petroleum-based or CERCLA-defined hazardous contaminants such as asbestos, mercury switches, LBP, and PCB-containing caulking (Tetra Tech, Inc. 2012a).

Key results from the various environmental investigations conducted from 1983 to date are summarized in Table 8.5-4. In general, TPHs, volatile organic compounds (VOCs), lead, metals, and some other constituents have been found in groundwater in some of the monitoring wells, but few constituents have been found in groundwater at levels exceeding either RIDEM standards or CERCLA standards such as EPA screening criteria. Soil in various areas of the site contains varying levels of petroleum-related constituents such as TPHs, VOCs, and semi-volatile organic compounds (SVOCs), including polycyclic aromatic hydrocarbons (PAHs) and naphthalene. Some of the testing results show levels of these constituents that exceed RIDEM or EPA standards. Arsenic also has been found in soil in several areas. PCBs have been found in soil near transformer vault 2 at levels exceeding RIDEM standards and continue to be assessed across the site in areas near transformers.

Table 8.5-4 Summary of Key Results from Environmental Investigations at Tank Farm 1

Result or Comment
Groundwater
Free-phase product was detected downgradient of Tanks 16 and 17 in the early 1990s. The product was determined to be immobile and not recoverable. Passive product-recovery canisters were installed in five monitoring wells in 1996. Sampling from 1997 to 2010 did not detect any free-phase product.
Groundwater sampled from various monitoring wells has been analyzed for constituents such as TPHs, VOCs, SVOCs, lead, metals, PCBs, pesticides, gasoline, gasoline range organics (GRO), and diesel range organics (DRO). Not all wells have been sampled for the same constituents.
Benzene exceeded RIDEM standards near Tank 15, Tank 17, and the fuel unloading area in the early 1990s. Benzene results from more recent sampling did not exceed any standards.
TPHs, VOCs, lead, metals, and some other constituents have been found in groundwater at levels below RIDEM or EPA standards.
Soil
Soil has been tested at many locations throughout Tank Farm 1 for constituents such as VOCs; benzene, toluene, ethylbenzene, and xylenes (BTEX); SVOCs; PCBs; lead; metals; TPH; and oil and grease. Not all locations have been sampled for the same constituents.
Near Tank 9/10: Some arsenic values exceeded RIDEM standard.
Near Tank 10: – Some TPH values exceeded RIDEM standards. – Some PAH values exceeded EPA standards.
Near Tank 11: – Some arsenic values exceeded RIDEM standard. – Some TPH values exceeded RIDEM standards. – Some PAH values exceeded RIDEM and EPA standards. – Some naphthalene values exceeded EPA standard. – Some VOC values exceeded EPA standards.

Table 8.5-4 Summary of Key Results from Environmental Investigations at Tank Farm 1

Result or Comment
Near Tank 12: – Some arsenic values exceeded RIDEM standard. – Some TPH values exceeded RIDEM standards. – Some PAH values exceeded RIDEM and EPA standards. – 2010 test pits revealed an area containing free product near Tank 12.
Near Tank 13: – Some TPH values exceeded RIDEM standards. – Some PAH values exceeded RIDEM and EPA standards.
Near Tank 14: No notable results.
Near Tank 15: Some PAH values exceeded RIDEM and EPA standards.
Near Tank 16: – Some arsenic values exceeded RIDEM standard. – Some PAH values exceeded RIDEM and EPA standards. – Some naphthalene values exceeded EPA standard.
Near Tank 17: Some PAH values exceeded RIDEM and EPA standards.
Near Tank 18: Some PAH values exceeded EPA standards.
Northern boundary of Tank Farm 1: Some arsenic values exceeded RIDEM standards.
Near three pole-mounted transformers: Soil did not contain PCBs exceeding RIDEM standards.
Near ethyl blending plant: Some PAH values exceeded RIDEM and EPA standards.
Near transformer vault 2: PCB Aroclor 1260 was found in soil at 24,000 µg/kg, exceeding the RIDEM standard of 10,000 µg/kg.
Near transformer vault 3: Soil did not contain PCBs exceeding RIDEM standards.
Former sludge pits: Some arsenic values exceeded RIDEM standard.
Surface Water
Samples collected from limited locations have been analyzed for constituents such as TPHs, VOCs, and gasoline. Not all locations have been sampled for the same constituents.
Samples from Melville Pond, Melville Brook, and intermittent standing water did not contain constituents exceeding standards.

Source: U.S. Department of the Navy 2009; Tetra Tech, Inc. 2012a.

The Navy and DESC are actively working at Tank Farm 1. IRP and UST closure work is primarily in the remedial investigation phase, with discrete removal actions being performed concurrently as feasible (e.g., the 2012 removal of Tanks 11 and 12). Investigation of the ethyl blending plant and transformer vaults 2 and 3 is the focus of the next IRP phase of study and will include more sample locations, media, and constituents in support of the IRP, such as VOCs, SVOCs (PAHs), PCBs, and metals. In support of the RIDEM UST program, soil samples also will be analyzed for TPH (Tetra Tech, Inc. 2012a). The ROD is scheduled to be developed by May 2016 (Ward 2015). Various remedial alternatives will be evaluated, and the remedial action or actions eventually selected may include land use controls.

As discussed above in Section 8.5.2.2, a project to demolish eight USTs along with associated fuel distribution piping, ring drain piping, and other components at Tank Farm 1 is in place and scheduled for 2016 and would be completed prior to transfer. In addition, a proposed project to demolish 11 USTs at Tank Farm 2 along with associated fuel distribution piping, ring drain piping, and other components is in the preliminary planning stage. If implemented, this removal action would be conducted in compliance with the RIDEM UST closure process.

The IRP site closest to Tank Farm 1 is Tank Farm 2, which is contiguous to Tank Farm 1 and is addressed in Section 8.5.4.2. Three non-Navy CERCLA sites are located in the vicinity of Tank Farm 1 (see Section 3, Figure 3.5-1). Melville North Landfill (identifier RID981064421), located approximately 0.5 miles southwest of Tank Farm 1, was remediated in 2000 under Rhode Island authority, and the property was acquired by a private business for redevelopment (Restoration Advisory Board [RAB] for Naval Station Newport 2002). The STP Sludge Drying Bed site (identifier RID981064306) and Structure 214 site (identifier RID981064249), both located near the Melville North Landfill, are listed as active sites in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, although no recent activities are reported. None of these three sites is on the NPL.

8.5.4.2 IRP Study Area 10, Tank Farm 2

The Tank Farm 2 site, consisting of 74 acres, has a history similar to that of Tank Farm 1. Tank Farm 2 was operated by the Navy from the 1940s to 1974 to store fuel oil, distillate fuel, and marine diesel fuel. Tank Farm 2 was leased to the DESC from 1974 to 1998 for petroleum fuel storage and distribution (DFSP Melville).

The features of Tank Farm 2 are 11 concrete USTs (Tanks 19 through 29) and associated support areas and buildings (see Table 8.5-5 and Figure 8.5-2). Underground petroleum distribution piping surrounds and connects the tanks and facilities and leads to the fuel-loading area west of the tank farm. Underground ring drains surround each of the USTs and function as a groundwater drainage system to prevent excessive hydrostatic uplift on the bottoms of the tanks. The ring drains are connected to drainage pipes that discharge to Tanks 9 and 10 at Tank Farm 1 (U.S. Department of the Navy 2009; AH/BC 2011).

Table 8.5-5 Features at Tank Farm 2

Feature	Description
Tank 19	Each tank is a 2.5-million-gallon concrete UST that stored fuel oil, distillate fuel, or marine diesel fuel. They were cleaned in 1996/1997, repaired, and ballasted in 2001. Tank 25 is reportedly partially collapsed.
Tank 20	
Tank 21	
Tank 22	
Tank 23	
Tank 24	
Tank 25	
Tank 26	
Tank 27	
Tank 28	
Tank 29	
Building 48	Former Navy fire station
Building 218	Electrical substation 19
Building 219	Electrical distribution (transformer building)
Building 220	Electrical distribution (transformer building), vault 4
Former sludge disposal areas	Received tank bottom sludges from periodic cleanings
Former sludge burning areas	Received tank bottom sludges from periodic cleanings; the sludges are suspected to have been burned in these areas
Former JP-5 soil pile and buoy storage area	Area formerly contained JP-5-saturated piles of soil and stored buoys
Former UST near Building 48	1,000-gallon former UST used for fuel oil for Building 48. Removed in 2009.
Tank vaults	Access to tanks and equipment

Table 8.5-5 Features at Tank Farm 2

Feature	Description
Ring drain system	Groundwater drainage system
Underground petroleum distribution piping	Piping connecting tanks to each other and the fuel loading area
Piping chambers	Concrete chambers that provide access to valves, expansion joints, and reducers

Source: U.S. Department of the Navy 2009; Tetra Tech, Inc. 2012b.

Approximately 100,000 to 175,000 gallons of tank bottom sludges were disposed of on the ground surface and in pits from periodic cleanings that took place from the 1940s to 1974 (Tetra Tech NUS 2009). In areas near Tanks 19 and 21, it appears that the sludge also might have been burned (Tetra Tech, Inc. 2012b). The USTs were cleaned between 1996 and 1997, at which time numerous leaks were observed. The tanks were repaired and then ballasted in 2001. The fuel distribution piping was cleaned and pressure-tested in 1996/1997 and subsequently decommissioned (Tetra Tech, Inc. 2012b). A 1,000-gallon UST located southeast of Building 48 was used to contain fuel oil to heat the building. The UST was removed in 2009 (U.S. Department of the Navy 2009).

Various environmental investigations have been conducted at Tank Farm 2 starting in 1983, when the Navy performed an installation-wide Initial Assessment Study. Tank Farm 2 was identified as IRP Study Area 10 in the 1992 Federal Facility Agreement entered into by the Navy, EPA Region I, and the State of Rhode Island under CERCLA §120 (U.S. EPA 1992). Areas of Tank Farm 2 associated with the tanks and potential petroleum releases are being investigated by the DESC under RIDEM's UST program (see Section 3.5.1.2). This includes the tanks, fuel piping, ring drain system, former sludge pits, and drainage features. RIDEM also has requested that transformer areas be investigated (Tetra Tech, Inc. 2012b). Areas associated with potential CERCLA-regulated releases are being investigated by the Navy under the CERCLA IRP. The environmental studies conducted since 1983 have been completed by the DESC to address petroleum-related contamination (e.g., TPHs, metals) before returning the property back to the Navy. The Navy is using applicable results to inform their IRP strategy for Tank Farm 2 (Tetra Tech 2012b). DESC studies to date have included soil, groundwater, soil-gas, and test pit sampling, as well as aquifer pumping tests, passive free-product removal, and LNAPL gauging (U.S. Department of the Navy 2009; Tetra Tech, Inc. 2012b). The DESC installed 28 monitoring wells in the 1990s.

The areas at Tank Farm 2 that have been identified as CERCLA IRP-regulated consist of four AOCs near Tanks 19 and 21, where it is suspected that sludge was deposited on the ground and burned; Building 219, a transformer building; and a former JP-5 soil pile and buoy storage area. The areas are considered Category 1 areas under CERCLA because they are associated with the potential for historic releases—toxic constituents from burning petroleum sludge (e.g., dioxins and furans), PCBs from transformers, and lead from LBP on buoys stored on-site. Areas of potential fuel and petroleum releases are considered Category 2 areas that are being assessed under the RIDEM UST regulations. Category 3 areas are those for which the scope of the investigation or the regulatory pathway has not yet been defined. These areas, if identified, could include non-petroleum-based or CERCLA-defined hazardous contaminants such as asbestos, mercury switches, LBP, and PCB-containing caulking (Tetra Tech, Inc. 2012b).

Key results from the various environmental investigations conducted from 1983 to date are summarized in Table 8.5-6. In general, TPHs, VOCs, SVOCs, lead, DRO, and some other constituents have been found in groundwater in some of the monitoring wells at levels below RIDEM standards. LNAPL has been observed in monitoring wells near Tanks 20 and 26, and petroleum product has been observed in groundwater near Tank 29. Soil in various areas of the site contains varying levels of petroleum-related constituents such as TPHs, SVOCs, and DRO, typically at levels below RIDEM standards. PCBs have been found in soil near Building 219 at levels exceeding RIDEM standards and continue to be assessed

across the site in areas near transformers. Remedial excavations were performed in 2005 for three areas of the site based on TPH results obtained from test pit excavation and sampling: more than 2,000 cubic yards of soil were removed from an area near Tank 25 when a release was discovered, and soil also was removed from two AOCs known as AOCs 28 and 37. The soil in the area of the former UST near Building 48 was shown to contain TPH at levels below RIDEM standards.

Table 8.5-6 Summary of Key Results from Environmental Investigations at Tank Farm 2

Result or Comment
Groundwater
Groundwater sampled from various monitoring wells has been analyzed for constituents such as TPHs, VOCs, SVOCs, lead, oil fingerprint, GRO, and DRO. Not all wells have been sampled for the same constituents.
More than 1 foot of LNAPL was detected in monitoring wells near Tank 20 and Tank 26 multiple times during gauging performed in 2009.
Product was observed when sampling a monitoring well near Tank 29 in 2009.
TPHs, VOCs, SVOCs (e.g., naphthalene), lead, DRO, and some other constituents have been found in groundwater at levels below RIDEM standards.
Soil
Soil has been tested at many locations throughout Tank Farm 2 for constituents such as VOCs, SVOCs, PCBs, TPH, GRO, and DRO. Not all locations have been sampled for the same constituents.
Near Tank 25: More than 2,000 cubic yards of soil were removed near Tank 25 in 2005 when a release of product was discovered during test pit excavation and sampling.
Near Tank 27: TPH was found in soil at 5,600 mg/kg, exceeding the RIDEM GB leachability standard.
Remaining tank areas: TPHs, SVOCs, and DRO have been found in site soils at levels below RIDEM standards.
Near Building 219: PCB Aroclor 1260 was found in soil at levels up to 18,000 µg/kg, exceeding the RIDEM standard.
Former JP-5 soil and buoy storage area: Soil contained TPH and petroleum-related constituents below RIDEM standards.
Location of former UST near Building 48: Soil in area of UST excavation contained TPH below RIDEM standard.
Soil was removed near two AOCs (AOCs 28 and 37) in 2005 based on TPH concentrations.

Source: U.S. Department of the Navy 2009; Tetra Tech, Inc. 2012b.

The Navy is actively working at Tank Farm 2. IRP and UST closure work are primarily in the remedial investigation phase, with discrete removal actions being performed concurrently as feasible, such as the soil removals conducted in 2005. Investigation of the IRP-regulated areas in the next IRP phase of study will include more sample locations, media, and constituents such as VOCs, SVOCs (PAHs), PCBs, lead, metals, dioxins, and furans (Tetra Tech, Inc. 2012b). The ROD is scheduled to be developed by November 2017 (Ward 2015). The remedial design is scheduled to include land use controls.

As discussed above in Section 8.5.2.2, a project to demolish eight USTs along with associated fuel distribution piping, ring drain piping, and other components at Tank Farm 1 is in place and scheduled for 2016 and would be completed prior to transfer. In addition, a project proposed to demolish 11 USTs at Tank Farm 2 along with associated fuel distribution piping, ring drain piping, and other components is in the preliminary planning stage. If implemented, this removal action would be conducted in compliance with the RIDEM UST closure process.

The closest IRP site to Tank Farm 2 is Tank Farm 1, which is contiguous with Tank Farm 2 and is addressed in Section 8.5.4.1. IRP Site 21, the former Melville water tower, is about 0.5 miles east of

Tank Farm 2 (see Section 3, Figure 3.5-1). The water tower was installed in the late 1930s to service fueling piers and fuel storage facilities at a training station. LBP was applied and removed from the water tower from the 1940s to the 1990s. The water tower was dismantled and removed in 2006. Following site investigations that showed LBP chips, lead, and paint constituents in site soils, the Navy conducted a soil removal action in 2007, which met the cleanup goals for the site. No further action has been determined to be necessary for IRP Site 21 (NAVFAC 2013b).

The three non-Navy CERCLA sites addressed in Section 8.5.4.1 are located about 0.25 miles southwest of Tank Farm 2 (see Section 3, Figure 3.5-1).

8.6 Air Quality

8.6.1 Existing Air Quality

Section 3.6 discusses the regional air quality and applicable regulations and requirements. The CAA is the primary federal statute governing the control of air quality. Tank Farms 1 and 2 are located in the Town of Portsmouth, Newport County, RI. This location is in the Providence, RI air quality region, which encompasses all of Rhode Island and is currently in attainment for all NAAQS. The state is under the jurisdiction of RIDEM for air quality.

8.6.2 Existing Emissions

Operations at Tank Farms 1 and 2 ceased in 1998. While operating petroleum fuel tanks (USTs and ASTs) can be significant sources of emissions and are therefore subject to permitting requirements, the tanks at Tank Farms 1 and 2 are no longer in use and are therefore not an existing source of emissions. Emissions from maintenance of the properties would be minimal. Therefore, there are no quantified existing stationary or mobile sources of criteria, HAPs, or GHG emissions from the current use of the properties.

8.7 Noise

Ambient sound levels are a function of a variety of sources: local traffic, barking dogs, birds, insects, lawnmowers, children playing, the interaction of the wind with groundcover, buildings, trees, shrubs, power lines, etc. Sound levels vary with time of day, wind speed and direction, and the level of human activity. The acoustic environment around Tank Farms 1 and 2 is mainly characterized by traffic noise during daytime hours.

Table 8.7-1 presents the minimum and maximum hourly average L_{eq} sound levels measured in 2010 at the monitoring station nearest to the tank farms (LT-1) (Tech Environmental 2011) (see Figure 3.7-1 in Section 3.7).

Table 8.7-1 Baseline Hourly Average L_{eq} Sound Levels near Tank Farms 1 and 2

Measurement ID	Location	Daytime Min. L_{eq} (dBA)	Daytime Max. L_{eq} (dBA)	Nighttime Min. L_{eq} (dBA)	Nighttime Max. L_{eq} (dBA)
LT-1	Tank Farms 1 and 2	40.6	53.5	37.8	48.7

Source: Tech Environmental 2011

To characterize the existing traffic noise near Tank Farms 1 and 2, the peak afternoon traffic volume, vehicle speed, and vehicle mix data for the roadways analyzed in the traffic study conducted in October 2012 (Pare Corporation 2013) were modeled, using TNM version 2.5. Noise levels ranged from 63.7 to 70.9 dBA.

8.8 Infrastructure and Utilities

This section summarizes the existing infrastructure, utilities, and solid waste management at Tank Farms 1 and 2.

8.8.1 Water Supply

Water is supplied to Tank Farms 1 and 2 by NAVSTA Newport via two water mains along Defense Highway. Lines from these mains to Tank Farms 1 and 2 have been cut and capped with the closure of these properties (Carlson 2012).

NAVSTA Newport and the Town of Portsmouth purchase water wholesale from the City of Newport, and distribute the water through water distribution networks owned and maintained by the station and the city, within their respective jurisdictions. Generally, the Navy owns the water distribution system west of West Main Road, and the Portsmouth Water and Fire District owns the water distribution east of West Main Road. However, the portion of the Town of Portsmouth where Tank Farms 1 and 2 are located (i.e., the Melville Area) is serviced by the Navy's system, with water provided by the City of Newport. The City of Newport is the main supplier; however, emergency water is available through the Portsmouth Water and Fire District.

The City of Newport has two water treatment plants with a current combined capacity of 16 mgd. The Town of Portsmouth receives its water from the City of Newport's Lawton Valley WTP, which is located in the Town of Portsmouth. The Town of Portsmouth has a current demand of 1.3 mgd (see more discussion of the City of Newport water supply in Section 6.8.1).

8.8.2 Wastewater

Tank Farms 1 and 2 were not connected to a wastewater collection system, and no wastewater collection lines are located on either of the properties. A force main associated with NAVSTA Newport's wastewater collection system is located along Defense Highway and passes near the sites but does not connect to any lines on either site.

Currently, the Town of Portsmouth has no centralized wastewater collection or treatment infrastructure. Portions of the town manage wastewater through individual septic systems. The Melville area of Portsmouth is serviced by the City of Newport's wastewater collection and treatment system (Woodard & Curran 2009).

The City of Newport's wastewater treatment plant is located on J.T. Connell Highway, and its licensed capacity is 10.7 mgd. The City of Newport's wastewater treatment plant treats wastewater from the City of Newport, the Town of Middletown, the Melville area of Portsmouth, and NAVSTA Newport. In 2012, the plant treated 9.46 mgd of wastewater (City of Newport Department of Finance 2012a). However, there is no additional capacity with the existing allocations; if all existing allotments were fully utilized, Pump Station 988 in Melville would be above capacity.

8.8.3 Storm Water

Storm water is managed through a combination of surface flow through culverts, in trench systems located in the old steam pipe trenches, and secondary containment. Most of the roadways in the tank

farms have culverts to remove surface water from the roadway with discharge overland (AH/BC 2011). Secondary containment structures in the form of berms exist near former Tanks 11 and 12 in Tank Farm 1. Storm water collected in these containment berms is managed through open manual valves, which convey flows directly to the OWS via gravity feed (AH/BC 2011). Prior to heading to the oil/water separator, these flows combine with flows from Tanks 9 and 10, which are currently being used as storm water/groundwater detention basins (Tetra Tech, Inc. 2012a). A storm water system composed of ring drains runs beneath Tank Farms 1 and 2 (AH/BH 2011). Each UST has a ring drain, and ring drain water along with storm water is directed to Tanks 9 and 10 (Tetra Tech, Inc. 2012a on Tank Farm 1. Tanks 9 and 10 are partially underground and can contain up to 2.56 million gallons of water collected from the ring drains around the tanks in Tank Farm 2 (U.S. Department of the Navy 2009; AH/BC 2011). At one time this ring drain system had pumps that pumped groundwater through a trench system to eventually reach Tanks 9 and 10. However, in 2002, power was disconnected to the pumps and no flow has been pumped through this drainage system since that time (AH/BC 2011).

The Tank Farm 2 storm water system discharges to the system located in Tank Farm 1 and eventually discharges to Narragansett Bay through Outfall 008, located at the marina (U.S Department of the Navy November 2009; AH/BC 2011). The flow to the outfall is primarily via a gravity connection from Tank Farm 1 downslope and under Defense Highway and the railroad tracks and through two abandoned oil/water separators (AH/BC 2011).

The properties operate under the Navy's general storm water permit (RIR800126). The Tank Farms 1 and 2 ring drains operate under an additional RIPDES storm water permit (RI0020150) (U.S. Department of the Navy 2009).

8.8.4 Other Utility Systems

Electricity

National Grid is the primary electrical utility providing connection and distribution services on Aquidneck Island. This is a user-supported utility service, and the customers pay for the service and electricity supplied.

Table 4.8-1 in Section 4.8 shows the electrical usage for the City of Newport, Town of Middletown, and Town of Portsmouth between 2009 through 2011. As shown in Table 4.8-1, the Town of Portsmouth consumed more than 111 million kWh in 2011 (Rhode Island Energy 2012). The 2011 electric consumption represented a decrease from 2010 but was still an increase over the levels used in 2009. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade.

Natural Gas

Aquidneck Island and the surrounding region are serviced by National Grid. This is a user-supported utility service, and the customers pay for service and natural gas supplied.

Table 4.8-2 in Section 4.8 shows the natural gas usage for the City of Newport, Town of Middletown, and Town of Portsmouth in 2010 and 2011. As shown in Table 4.8-2, the Town of Portsmouth consumed more than 210 billion cf in 2011 (Rhode Island Energy 2012).

8.8.5 Solid Waste

Solid wastes are generated at Tank Farms 1 and 2 in connection with ongoing IRP and UST closure activities. Such wastes consist of paper, plastic sheeting, and general trash. Specific activities such as the

recent demolition of Tanks 11 and 12 also generated C&D wastes consisting of concrete, metal, building materials, and mechanical components.

Since 1995, solid waste generated at NAVSTA Newport has been collected, disposed, and recycled off-site by a contractor (U.S. Department of the Navy 2009). C&D waste also is collected, disposed, and recycled off-site by a contractor.

8.9 Cultural Resources

This section describes the existing cultural resources and historic properties that are located within the APE for the proposed action at Tank Farms 1 and 2. The boundary of the APE is the same as the boundary of the property that will be disposed. Cultural resources within the APE would consist of archaeological sites, archaeologically sensitive areas, and architectural resources. Archaeological and architectural resources are discussed in greater detail in Sections 8.9.1 and 8.9.2, respectively. Native American resources are discussed in detail in Section 8.9.3. Cultural resources that were determined historic properties are discussed in greater detail in Section 8.9.4.

In general, the APE was considered sensitive for cultural resources that were associated with a variety of cultural periods of human occupation. Previously recorded archaeological sites or archaeologically sensitive areas were identified in the vicinity of the APE and indicate prehistoric and historic settlement and/or use of the general project area. Extant buildings and structures within the APE document more recent occupation and use of the area from the mid-nineteenth century to the present, including the construction of Tank Farms 1 and 2 during the World War II period.

8.9.1 Archaeological Resources

The 2013 Phase I archaeological investigation conducted within the APE at Tank Farms 1 and 2 consisted of the excavation of a total of 122 shovel tests. Shovel tests were primarily placed along the margins of the tank farms in an attempt to avoid the extensive disturbance associated with construction of the underground tanks, although some of the shovel tests were oriented towards sources of fresh water that lay outside the project area to the north of Tank Farm 1 and to the east of Tank Farm 2. One of the 122 shovel tests contained a single historic artifact (a glass bottle stopper), which is considered an isolated find; none of the other 121 shovel tests contained any artifacts. Generally, shovel test profiles at both tank farms revealed significant subsurface disturbance from previous cutting and filling during the construction of the tank farms. Although some of the shovel tests revealed intact or partially truncated plowzone horizons, these areas were small (typically less than 100 feet [30 meters] in extent) and no artifacts were recovered from these areas. Based on these results, no archaeological sites were identified within the APE at Tank Farms 1 and 2 and no further archaeological investigations of the APE at Tank Farms 1 and 2 were recommended (Gould and LeeDecker 2014). The Navy consulted with the Rhode Island SHPO on the lack of archaeological sensitivity of the APE at Tank Farms 1 and 2, and the Rhode Island SHPO concurred that no further archaeological investigations of this area were required (Lin 2013; Sanderson 2013b).

8.9.2 Architectural Resources

The 2013 architectural survey and evaluation update conducted for the proposed action reassessed the NRHP-eligible Melville Naval Historic District, as depicted in Figure 8.9-1. The historic district was previously determined NRHP-eligible in 1998 under Criteria A and C as a relatively intact representation of the Navy's continuous presence in Newport, associated with themes of naval operations, and architecture and engineering of twentieth-century buildings and structures with a period of significance of 1900 to 1945 (Louis Berger & Associates, Inc. 1998).

As a result of the 2013 update, the boundaries of the NRHP-eligible Melville Naval Historic District have been expanded to include all property currently owned by the Navy in the Melville North area, including the remaining portion of Tank Farm 1 and all of Tank Farm 2, as contributing elements to the historic district. With this expansion, the period of significance for the historic district has been revised to extend from 1910, when Tank 1 was constructed, through to 1973, when the Navy's Shore Base Realignment Program relocated the Atlantic Fleet from Newport and the fuel depot no longer made a significant contribution to the mission of the installation or the Atlantic Fleet (Groesbeck and Bedford 2014).

In their entirety, Tank Farms 1 and 2 are representative of the build-up of Navy support facilities just prior to and during the early years of World War II. The majority of tanks and support structures on these tank farms have retained sufficient integrity to convey a sense of the tank farms as they were during World War II and the Cold War. The importance of the buildings and structures of Tank Farms 1 and 2 is their connection to the fuel depot as a whole, rather than individually. Tank Farms 1 and 2 were essential elements of the fuel depot, and were a critical component of the fueling function. As such, they are NRHP-eligible under Criterion A for their association with the conduct of World War II (1941-1945) and their continuing role in providing fuel to the Atlantic Fleet through 1973. The construction and design of the tank farms incorporated the use of pre-stressed concrete, which is illustrative of what was then a novel means of construction and, later, an accepted method. As such, the tank farms are NRHP-eligible under Criterion C as early examples of what became a standard technique of postwar building construction (Groesbeck and Bedford 2014).

With the results of the 2013 architectural survey and evaluation update, a total of 55 structures or buildings would comprise the Melville Naval Historic District: 47 contributing elements and eight non-contributing elements (Groesbeck and Bedford 2014). Of these 55 structures or buildings, 26 are extant structures or buildings within the APE at Tank Farms 1 and 2—13 at Tank Farm 1 and 13 at Tank Farm 2. All of these 26 extant structures or buildings have been identified as contributing elements of the expanded NRHP-eligible Melville Naval Historic District (see Table 8.9-1 and Figure 8.9-1). The Navy consulted with the Rhode Island SHPO on the evaluation of the buildings and structures within the APE at the Tank Farms 1 and 2 property for NRHP-eligibility, and the Rhode Island SHPO concurred that these buildings and structures were NRHP-eligible (Lin 2013; Sanderson 2013b).

In July 2015, the Navy determined that it must demolish abandoned facilities at Tank Farm 1 to comply with Rule 13 of the Rhode Island Rules and Regulations for Underground Storage Tank (UST) Facilities used for Petroleum Products and Hazardous Materials. As part of the proposed demolition of abandoned facilities at Tank Farm 1 to comply with Rule 13, the following buildings or structures at Tank Farm 1 are scheduled to be demolished: Tanks 9 and 10 and 13 through 18; Buildings 49, B60, and P30; underground direct piping (including steam lines, berm drain lines, fuel lines, bottom sludge and waste lines, and foam lines) and concrete utility tunnels and pipe chambers (Structures S133, S140, S267, S268, U238; all remaining separators tanks, chambers, and valve chamber pits; and two transformers vaults [S359, S360]). Additionally, Building 30 (an underground reservoir that is located outside the currently drawn boundaries of Tank Farms 1 and 2 but is associated with the fueling operation of the Tank Farm) is part of the same demolition action at Tank Farm 1 (Dorocz 2015a; NAVSTA Newport 2015). Collectively, these buildings and structures would represent all of the architectural resources within Tank Farm 1, such that following demolition, there would be no remaining architectural resources within Tank Farm 1.

8.9.3 Native American Resources

The Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at Tank Farms 1 and 2: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

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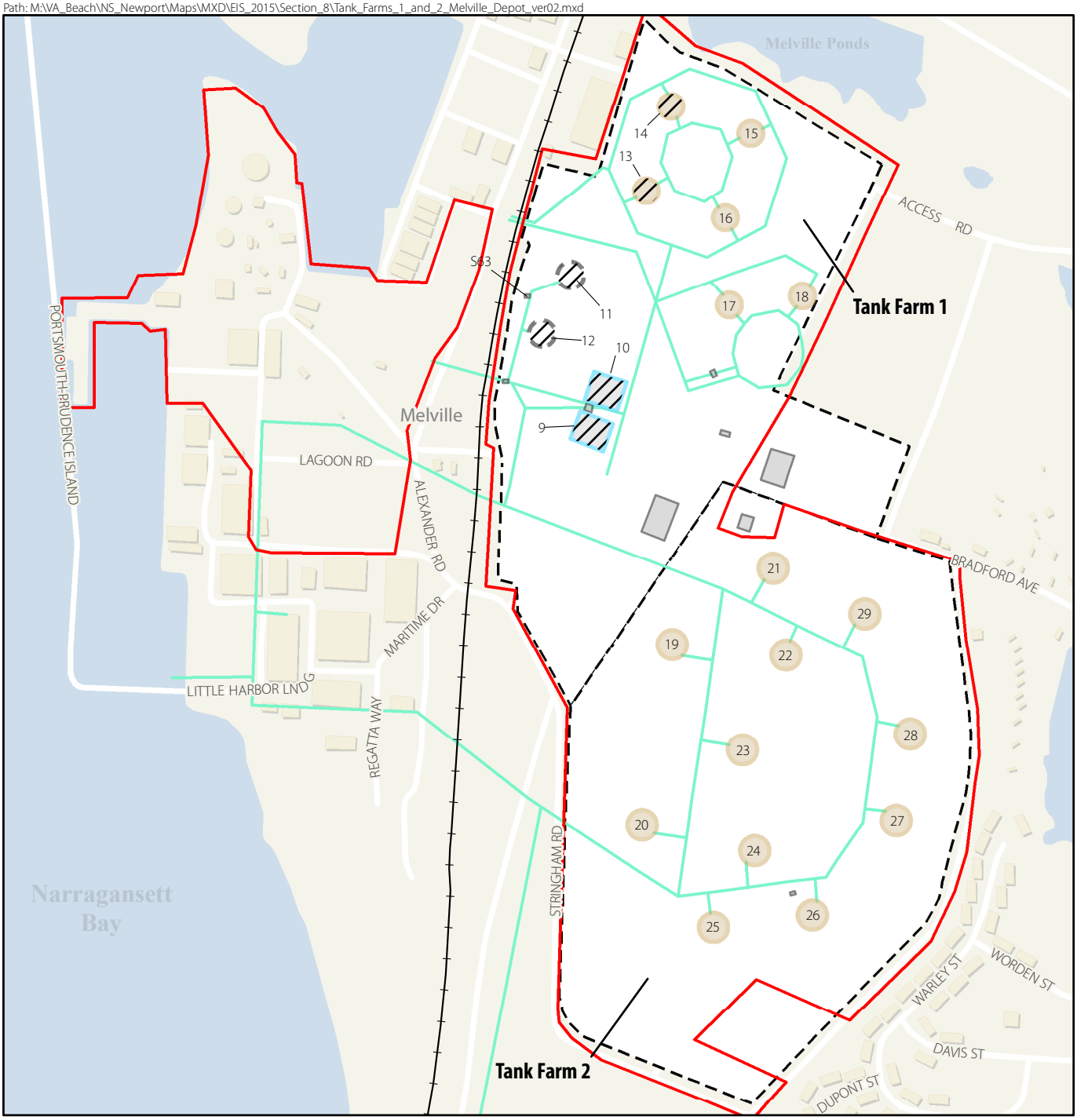

Legend

- Rail Road
- Fuel Line
- Property Boundary
- Melville Fuel Depot Historic District
- Structure
- Structure Within Melville Fuel Depot
- Partially Buried UST/OWS
- Former Aboveground Storage Tank
- Underground Storage Tank (UST)
- Waterbody

SCALE

0 300 600 Feet

SOURCE: U.S. Department of the Navy 2009, 2015

Figure 8.9-1

Tank Farm 1 and 2 Properties

Melville Fuel Depot Historic District

NAVSTA Newport, Rhode Island

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Table 8.9-1 Extant Structures and Buildings within the APE at Tank Farms 1 and 2 that are Contributing Elements of the NRHP-Eligible Melville Naval Historic District

Structure/Building Number	Name	Construction Date	Historic Use	Current Use	NRHP-Eligibility Status
Tank Farm 1					
9 and 10	Tank Nos. 9 and 10	1918	Fuel tanks	Used as an oil/water separator	NRHP-eligible as a contributing element of the Melville Naval Historic District
13 through 18	Tank Nos. 13 through 18	1942	Fuel Tank	Unused	NRHP-eligible as a contributing element of the Melville Naval Historic District
49	Foam Station	1942	Unknown	Unknown	NRHP-eligible as a contributing element of the Melville Naval Historic District
199	Transformer Building	1943	Electrical substation	Unknown	NRHP-eligible as a contributing element of the Melville Naval Historic District
B60	Ethyl Blending Plant	1942	Fuel blending plant	Unknown	NRHP-eligible as a contributing element of the Melville Naval Historic District
P30	Pump House associated with Tank Nos. 9 and 10	ca. 1918	Pump	Unknown	Considered NRHP-eligible as a contributing element of the Melville Naval Historic District due to association with Tanks 9 and 10
T-588	Valve House	1942	Valve House	Unknown	NRHP-eligible as a contributing element of the Melville Naval Historic District
Tank Farm 2					
19 through 24	Tank Nos. 19 through 24	1943	Fuel Tank	Unused	NRHP-eligible as a contributing element of the Melville Naval Historic District
26 through 29	Tank Nos. 26 through 29	1943	Fuel Tank	Unused	NRHP-eligible as a contributing element of the Melville Naval Historic District
218	Substation 19	1943	Substation	Unused	NRHP-eligible as a contributing element of the Melville Naval Historic District

Table 8.9-1 Extant Structures and Buildings within the APE at Tank Farms 1 and 2 that are Contributing Elements of the NRHP-Eligible Melville Naval Historic District

Structure/Building Number	Name	Construction Date	Historic Use	Current Use	NRHP-Eligibility Status
219	Substation Vault	1943	Substation vault	Unused	NRHP-eligible as a contributing element of the Melville Naval Historic District
220	Substation Vault	1943	Substation vault	Unused	NRHP-eligible as a contributing element of the Melville Naval Historic District
A-105	Foamite Equipment and Powder House	1943	Hazardous Material Storage	Unknown	NRHP-eligible as a contributing element of the Melville Naval Historic District

Sources: Groesbeck and Bedford 2014; U.S. Department of the Navy 2010a

8.9.4 NRHP-Listed or -Eligible Historic Properties

The 2013 Phase I archaeological investigation and the 2013 architectural survey and evaluation update conducted for the proposed action confirmed that the APE at Tank Farms 1 and 2 overlaps a portion of the previously identified NRHP-eligible Melville Naval Historic District and resulted in the identification of additional architectural resources (structures and buildings) that have been included as contributing elements of the historic district. Based on these results, Navy determined that the previously identified Melville Naval Historic District remains NRHP-eligible under Criteria A and C, expanded the boundaries of the district to include all Navy-owned property in the Melville North area, including the remaining portion of Tank Farm 1 and all of Tank Farm 2, and revised the period of significance to between 1910 and 1973. As discussed in Section 8.9.2 and summarized in Table 8.9-1, 26 extant structures or buildings that are contributing elements of the historic district (Tanks 9 and 10 and 13 through 18, and Buildings 49, 199, B60, P-30, and T-588 at Tank Farm 1; Tanks 19 through 24 and 26 through 29 and Buildings 218, 219, 220, and A-105 at Tank Farm 2) are located within the APE for the proposed action at Tank Farms 1 and 2. With these changes, the historic district would comprise 47 contributing elements and 8 non-contributing elements.

The Navy consulted with the Rhode Island SHPO on the identification of historic properties within the APE for the proposed action at the Tank Farms 1 and 2 property (Lin 2013). The Rhode Island SHPO concurred with the identification of historic properties within the APE for the proposed action at the Tank Farms 1 and 2 property (Sanderson 2013b).

Separately, as part of the proposed demolition of abandoned facilities at Tank Farm 1 to comply with Rule 13, the Navy evaluated the effects of the demolition of the abandoned facilities at Tank Farm 1 and determined that the demolition project would have an adverse effect on Tank Farm 1, which is eligible for listing in the NRHP (Dorocz 2015a). Tank Farm 1 is considered NRHP-eligible because its facilities are contributing resources to the Melville Naval Historic District (originally called "Melville Fuel Depot and Naval Net Depot Historic District") (Groesbeck and Bedford 2014; Sanderson 2013b). The Rhode Island SHPO concurred with the Navy's determination that the proposed demolition of the abandoned facilities at Tank Farm 1 would have an adverse effect on historic properties because Tank Farm 1 is located within the Melville Naval Historic District (Sanderson 2015).

8.10 Topography, Geology, and Soils

This section summarizes the existing topography, geology, and soil conditions at the Tank Farms 1 and 2 properties.

8.10.1 Topography

The topography of Tank Farms 1 and 2 generally shows increases in elevation from west to east as the property extends farther inland from Narragansett Bay. Tank Farm 1 elevations range from approximately 30 feet amsl at the western boundary approximately 1,000 feet inland of the shoreline to approximately 150 feet amsl at the eastern boundary. Tank Farm 2 elevations range from approximately 90 feet amsl at the western land boundary to approximately 150 amsl at the eastern land boundary. The nearest body of water is the Melville Ponds, which is located less than 100 feet north of Tank Farm 1 and approximately 1,600 feet northwest of Tank Farm 2.

8.10.2 Geology

Tank Farms 1 and 2 lie within the New England Physiographic Province (USGS 2002). The site is located on the Rhode Island Formation of the stratified Narragansett Bay Group of the Pennsylvanian period (323 to 290 million years ago). The Narragansett Bay Group rocks are part of the Esmond-Dedham subterrane of the Southeastern New England Avalon zone. The Esmond-Dedham Subterrane Narragansett Bay Group is deposited upon older rocks of both West Bay and East Bay parts of the Esmond-Dedham subterrane. The Narragansett Bay Group – Rhode Island Formation consists of meta-sandstone, meta-conglomerate, schist, carbonaceous schist, and graphite. Plant fossils are common (USGS 2013).

According to the USGS, only one earthquake has ever been recorded as possibly being centered in the State of Rhode Island. This earthquake was recorded on February 27, 1883 (USGS 2009). No other earthquakes have been recorded in the state. Tank Farms 1 and 2 are located in an earthquake zone (although not near any known fault locations [USGS 2005]) where, in a 50-year period, there is only a 2 percent chance of an earthquake occurring with a peak acceleration (ground movement) of 8 percent to 10 percent acceleration due to gravity (%g). It takes a peak acceleration of 10%g to cause damage to buildings; therefore, there is minimal risk of an earthquake that would cause damage to a building on Tank Farms 1 and 2 (USGS 2009).

8.10.3 Soils

8.10.3.1 Soil Types

The soil types present on Tank Farms 1 and 2 are the Udorthents-Urban land complex, the Newport silt loam 8 percent to 15 percent slopes, and the Newport-Urban land complex. The majority of the soils on both Tank Farms 1 and 2 are the Udorthents-Urban land complex. Soil types are listed in Table 8.10-1 and illustrated on Figure 8.10-1.

Udorthents-Urban Land Complex (UD)

The Udorthents-Urban land complex consists of moderately well-drained to excessively drained soils that have been disturbed by cutting or filling and includes areas that are covered by buildings and pavement. The Udorthents-Urban land complex has 0 to 1 percent of surface area covered by bedrock and/or shallow to bedrock soil. The parent material in which the soil was formed is commonly referred to as fill—human-altered/transported material that includes a variety of soil and geologic material deposited by human activity (USDA 2012).

Newport Silt Loam, 8% to 15% slopes (NeC)

The permeability of this soil is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. The soil is suitable for community development but is limited by the slow or

very slow permeability in the substratum and by the steep slopes. Roads need careful design to prevent frost heaving (USDA 1981).

Table 8.10-1 Soil Types, Tank Farms 1 and 2

Soil Name	% Slope Range	Acres
Tank Farm 1		
Udorthents-Urban land complex (UD)	0 – 35%	55.12
Newport silt loam, 8 to 15% slopes (NeC)	8 – 15%	6.78
Total		**61.90**
Tank Farm 2		
Udorthents-Urban land complex (UD)	0 – 35%	60.83
Newport silt loam, 8 to 15% slopes (NeC)	8 – 15%	13.43
Newport-Urban land complex (NP)	0 – 15%	0.03
Total		**74.29**

Source: USDA 2012.

Newport-Urban Land Complex (NP)

Newport-Urban land complex consists of well-drained Newport soils and areas of urban land. The main limitation of Newport soils for development is the slow or very slow permeability in the substratum. Roads and streets require special design to prevent frost heaving (USDA 1981).

8.10.3.2 Soil Characteristics and Limitations

As indicated in Section 3.10, the USDA rates soils according to characteristics that could limit development. These characteristics include:

- **Erosion Potential.** The soil erosion potential for the Newport silt loam, 8 to 15% slopes and Newport-Urban land complex is moderate. The soil erodibility factor is 0.24 at a depth of 24" to 30", which means the soils are moderately susceptible to detachment and they produce moderate runoff (USDA 2012; IWR 2002). No erosion potential was listed for Udorthents-Urban land complex (USDA 2012).
  - **Hydric Soils**. The Udorthents-Urban land complex, Newport silt loam, 8 to 15% slopes, and the Newport-Urban land complex soils are listed as dominantly non-hydric, although non-hydric soil can contain hydric inclusions (USDA 2012).
  - **Constructability.** There are moderate constraints to development with Newport-Urban land complex soil. The more common sources of constructability limitations for the soils include shallow excavations (slight limitations due to dense to very dense soils), moderate frost action, and a moderate slope. Although these soils are dense, they have a low shrink-swell potential (USDA 2012; USDA 1981).
  - Udorthents-Urban land complex soils have a few restrictions on development if on-site septic tanks are to be used. These soils have been used as fill material to build up recreational areas and highways (USDA 1981; USDA 2012).
  - Newport silt loam, 8% to 15% slopes, has a low shrink-swell potential (USDA 1981; USDA 2012). The severe slope could lead to a major increase in construction effort, special design, or intensive maintenance. The soils have a seasonal high water table (from 3.5 to 1.5 feet), which also restricts or constrains residential or commercial development (USDA 2012).
  - **Organic Soils.** Soils of the Tank Farm 1 and 2 were not listed as organic soils (USDA 1981; 2012).

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Legend

- Rail Road
- Property Boundary

Soil Type

- NP - Newport-Urban land complex
- NeC - Newport silt loam, 8 to 15 % slopes
- UD - Udorthents-Urban land complex
- Be - Beaches, Undifferentiated
- Ma - Mansfield mucky silt loam
- NeB - Newport silt loam, 3 to 8 % slopes
- PmA - Pittstown silt loam, 0 to 3 % slopes
- Rp - Rock outcrop-Canton complex
- Se - Stissing silt loam
- Ur - Urban Land
- W - Water

SCALE

0 300 600 Feet

SOURCE: U.S. Department of Agriculture, Natural Resources Conservation Service, Rhode Island State Office 2012

Figure 8.10-1

Tank Farm 1 and 2 Properties

Soils

NAVSTA Newport, Rhode Island

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8.10.3.3 Farmland Soils

The Udorthents-Urban land complex and Newport-Urban land complex soils located at Tank Farms 1 and 2 are not rated for farmland. The Newport silt loam with 8% to 15% slope is designated as farmland of statewide importance (USDA 2012) (see Section 3.10 for a description of farmland of statewide importance).

8.11 Water Resources

The following sections summarize the existing conditions and physical characteristics of water resources found in the vicinity of Tank Farms 1 and 2.

8.11.1 Surface Water

The tank farms are located in the Upper East Passage sub-watershed (HUC 010900040907) of the Narragansett Bay watershed. The Upper East Passage sub-watershed includes a small portion of Middletown and a larger portion of Portsmouth and drains 14.58 square miles. It comprises primarily forested and residential areas (University of Rhode Island Environmental Data Center 2013c).

There are no surface water resources at Tank Farms 1 and 2 (see Figure 8.11-1). The closest off-site surface waters are the Melville Ponds and an unnamed stream less than 100 feet to the north of Tank Farm 1. The regulated riverbank wetland associated with the unnamed stream is discussed below in Section 8.11.5. Because of the topography of the area, Tank Farms 1 and 2 drain to the southwest toward Narragansett Bay. Narragansett Bay is located approximately 1,000 feet to the west of Tank Farm 1.

8.11.2 Water Quality

Both the Melville Ponds and the unnamed stream are considered Class A waters by RIDEM (see Table 3.11-1 in Section 3.11). Melville Ponds is classified by RIDEM in the *State of Rhode Island 2012 303(d) List – List of Impaired Waters* as impaired for non-attainment of the following designated uses: fish and wildlife habitat (RIDEM 2012a). Fish and wildlife habitat is indicated as impaired because phosphorus (total) exceeds the state standard (RIDEM 2012a).

The most recent water quality monitoring for Tank Farms 1 and 2 is summarized here; for additional details regarding historical sampling and monitoring results, refer to Section 8.5.

Tank Farm 1

As discussed in Section 8.5.4.1, surface water and groundwater samples have been collected as part of the IRP/CERCLA investigations. Groundwater samples were analyzed for GRO, DRO, VOCs, SVOCs, total/dissolved lead, and TPH. Laboratory analysis of groundwater samples indicates concentrations below the applicable GB Groundwater Objectives, but a few constituents have been found at levels exceeding either RIDEM or CERCLA standards (Shaw Environmental 2010; Tetra Tech, Inc. 2012a). The 2010 sampling did not have any exceedances of applicable standards in groundwater (Tetra Tech, Inc. 2012a).

Additional groundwater monitoring wells have been installed and sampling is ongoing for analysis for VOCs, SVOCs, and metals (Tetra Tech, Inc. 2012a). These samples will be used to establish the extent of contamination, specifically near the ethyl blending plant.

All surface water sampling was conducted off-site at the adjacent Melville Ponds and Melville Brook. No samples were collected from the on-site manmade pond. Historical sampling completed in 1995 of the Melville Ponds and Melville Brook did not show any exceedances of standards for surface water quality. Surface water samples were analyzed in 2010 for TPH and gasoline and were below detection limits

(Shaw Environmental 2010). Therefore, no further testing of surface water has been or will be done (Tetra Tech, Inc. 2012a).

Tank Farm 2

No surface water sampling has been conducted at Tank Farm 2. Previous groundwater investigations have led to the installation of 28 monitoring wells (see Section 8.5.4.2 and Table 8.5-6 for summary information regarding these previous investigations). The most recent groundwater investigations were conducted in 2009; 15 site wells were sampled and the samples collected were analyzed for VOCs, SVOCs, and total dissolved lead. Additionally, five selected wells were sampled for TPH (Tetra Tech, Inc. 2012b). No further action was indicated as a result of the previously conducted sampling, with the exception of periodic gauging and bailing of LNAPL (Tetra Tech, Inc. 2012b). No specific groundwater quality standards exist for GB groundwater, such as that classified at Tank Farms 1 and 2. However, most of the parameters sampled were non-detect in the samples that were tested. The only four parameters that were detected were lead – both total and dissolved, DRO, and GRO. Dissolved lead was detected in only two samples, one at 2.5 ppm and one at 3.2 ppm. Total lead was detected in four samples and ranged from 1.5 to 1.9 ppm. DRO was detected in only two samples at levels of 0.12 and 0.16 mg/L. GRO was detected in only one sample with a level of 0.01 mg/L (Tetra Tech, Inc. 2012b).

8.11.3 Groundwater

Groundwater at Tank Farm 1 is generally encountered approximately 2 to 20 feet below ground surface (Tetra Tech, Inc. 2012a). Groundwater at Tank Farm 2 is approximately 5 to 30 feet below ground surface and the water table is usually within the bedrock (Tetra Tech, Inc. 2012b).

Groundwater in the vicinity of the tank farms is classified by the RIDEM as GB (RIDEM 2010d). As described in Section 3.11, GB groundwater resources may not be suitable for public or private drinking water use without treatment due to known or presumed degradation. No wellhead protection areas are near Tank Farms 1 and 2; the closest wellhead protection area is located approximately 1.25 miles to the northwest on Prudence Island (RIDEM 2010d).

8.11.4 Floodplains

No FEMA-delineated floodplains are on Tank Farms 1 and 2. The closest floodplains are located approximately 250 feet to the west and are associated with the coastline of Narragansett Bay (see Figure 8.11-1).

8.11.5 Wetlands

Three small potential wetlands were identified on Tank Farm 1 during wetland ground-truthing surveys conducted in 2013; these wetlands total approximately 0.26 acres (see Figure 8.11-2). Two of these wetlands are in the area of the former tank beds and have been most likely caused by impounding water above the impermeable layer that underlies the tank beds (Tetra Tech, Inc. 2014a). Vegetation in these two potential wetland areas is characterized by sedges (*Carex* spp.), rushes (*Juncus* spp.), goldenrods (*Solidago* spp.), cattail (*Typha latifolia*), and willow (*Salix* spp.) (Tetra Tech, Inc. 2014a). The third potential wetland is approximately 16-feet by 20-feet, adjacent to a 12-inch diameter pipe where it transitions from aboveground to below ground. (This wetland is represented by point data on Figure 8.11-2). Wetland vegetation includes sedges, rushes, and flatsedge (*Cyperus* spp.) (Tetra Tech, Inc. 2014a). Each of these potential wetland areas is associated with a perimeter wetland (defined as the upland area 50 feet from the wetland edge); however, a perimeter wetland has not been identified for the third wetland due to only point data associated with this feature and the lack of approximate wetland boundaries in the form of a wetland polygon (see Figure 8.11-2).

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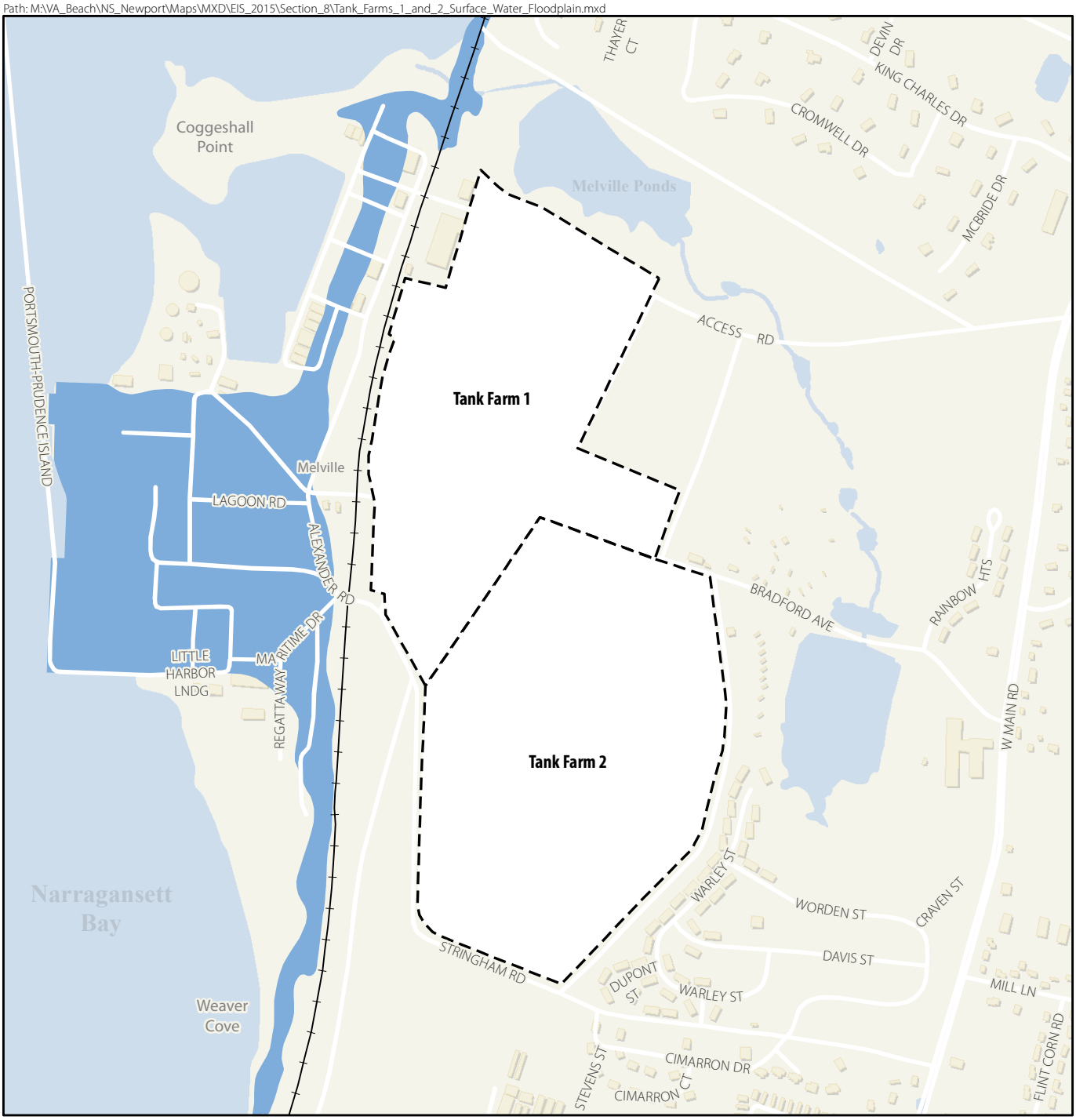

SCALE

0 300 600 Feet

Legend

- Rail Road
- River/Stream
- Waterbody
- Property Boundary
- FEMA Floodplain
- AE

Figure 8.11-1

Tank Farm 1 and 2 Properties Surface Waters and Floodplains

NAVSTA Newport, Rhode Island

SOURCE: FEMA 2010; RIDEM, Office of Water Resources 2010

Zone AE: 100 year floodplains in which base flood elevation exists

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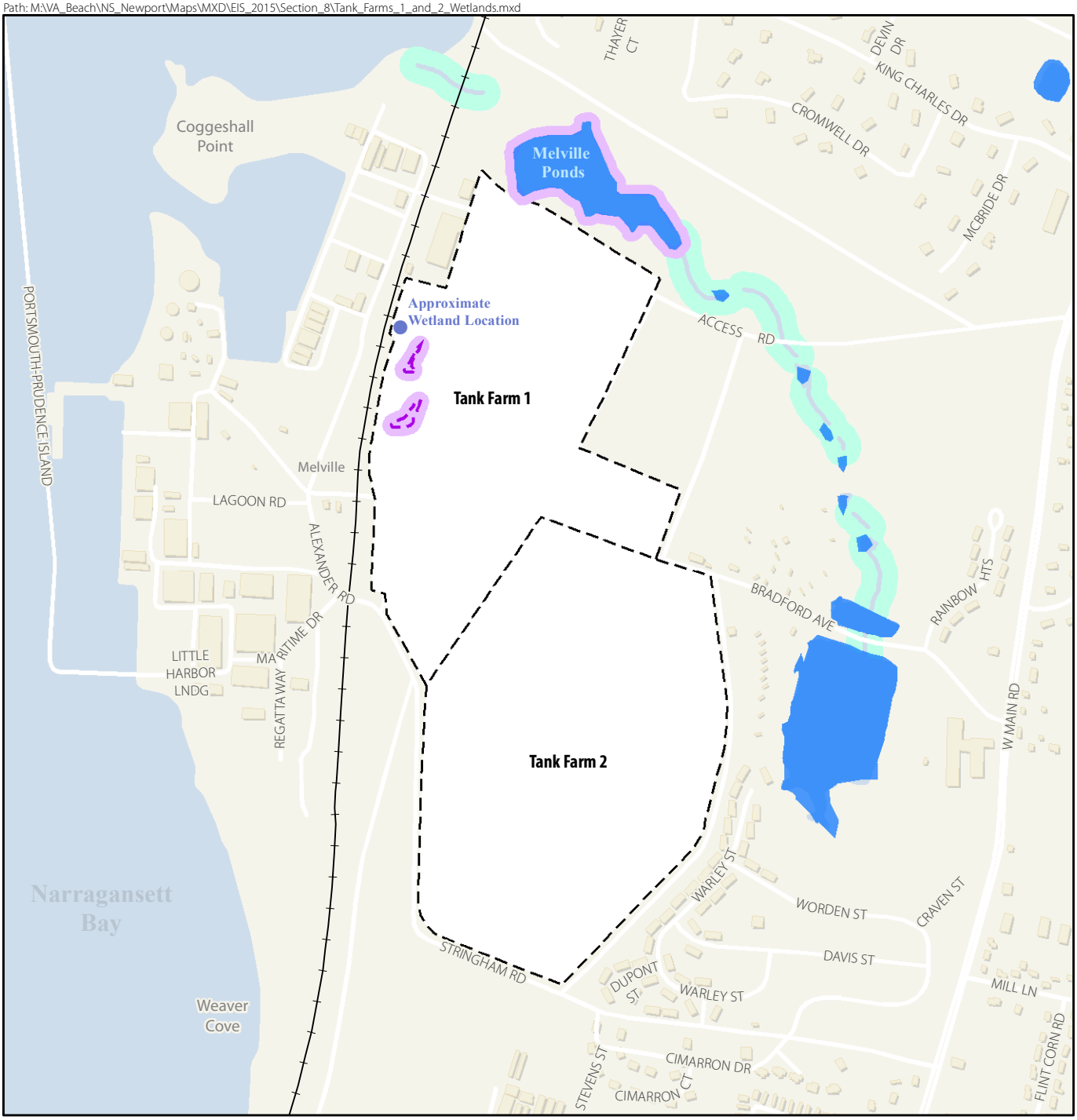

SCALE

0 300 600 Feet

Legend

- Approximate Wetland Location/Field Observation Point
- Rail Road
- River/Stream
- Approximate Wetland Boundary
- Property Boundary
- 100-foot Riverbank Wetland
- 50-foot Perimeter Wetland

NWI Wetlands

- Freshwater Pond

SOURCE: U.S. Fish and Wildlife Service 2011; Tetra Tech 2014a

Figure 8.11-2

Tank Farm 1 and 2 Properties Wetlands

NAVSTA Newport, Rhode Island

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The perimeter wetland for the adjacent Melville Ponds also extends onto Tank Farm 1. The Melville Ponds wetland complex is located north–northeast of Tank Farm 1 and northeast and east of Tank Farm 2. This complex is a mix of palustrine emergent and palustrine forested scrub/shrub wetlands, and ultimately discharges to Narragansett Bay north of Tank Farm 1. The unnamed tributary associated with the Melville Ponds has a regulated riverbank wetland, defined in Section 3.11.1 as the land area within 100 feet of the edge of any flowing water body with a width of less than 10 feet during normal flow. This regulated riverbank wetland does not extend within the boundary of Tank Farm 1 (see Figure 8.11-2).

No wetlands exist on Tank Farm 2, as verified by the 2013 surveys.

8.12 Biological Resources

This section summarizes the existing vegetation and wildlife, including threatened and endangered species and significant wildlife habitat, at Tank Farms 1 and 2.

8.12.1 Vegetation

Vegetation communities at Tank Farms 1 and 2 are based on a combination of the 2006 RINHS survey, coupled with a more recent field survey completed in 2013 (see Section 3.12.1.1 for additional information regarding these surveys) and include mixed oak/white pine forest, old field, and ruderal forest. These communities cover approximately 121.7 acres, or 89 percent of Tank Farms 1 and 2. The remainder of the tank farms, approximately 14.5 acres, is developed land. Habitat cover types and their respective acreages at Tank Farms 1 and 2 are shown in Figure 8.12-1 and summarized in Table 8.12-1.

Table 8.12-1 Habitat Cover at Tank Farms 1 and 2

Habitat Cover	Approximate Acreage	Percent
Tank Farms 1 and 2[1]		
Developed	14.5	11
Mixed Oak/White Pine Forest	5.5	4
Old Field	74.7	55
Ruderal Forest	41.5	30

Source: Tetra Tech, Inc. 2014a

Notes:
[1] The vegetation community data obtained from the 2014 INRMP do not include the approximate wetland locations discussed in Section 8.11.5.

Mixed Oak/White Pine Forest

This vegetation community comprises approximately 5.5 acres (4 percent) in the southeastern corner of Tank Farm 2. This community comprises approximately 40 percent to 50 percent white pine (*Pinus strobus*) in the overstory, along with a variety of deciduous trees, including several oak species (*Quercus* spp.), American beech (*Fagus grandifolia*), black cherry (*Prunus serotina*), and others (Tetra Tech, Inc. 2014a). The understory in this community is sparse because of the closed canopy, and the herbaceous layer is absent.

Old Field

The old field community is the most prevalent community within Tank Farms 1 and 2, comprising approximately 74.7 acres (55 percent) of the site. Dominant species in this community include sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*), pathrush (*Juncus tenuis*), goldenrods, clover (*Trifolium* spp.), butter 'n' eggs (*Linaria vulgaris*), knapweed (*Centaurea biebersteinii*), and pokeweed (*Phytolacca Americana*) (Tetra Tech, Inc. 2014a). Wines and woody vegetation within the old field community can includes species like Japanese honeysuckle (*Lonicera*

japonica), Allegheny blackberry (*Rubus allegheniensis*), eastern red cedar (*Juniperus virginiana*), apple (*Malus* spp.), and hawthorn (*Crataegus* spp.).

Ruderal Forest

Ruderal forest accounts for approximately 41.5 acres or 30 percent of the property at Tank Farms 1 and 2. These forests are characterized by a combination of early-successional trees that cannot be considered a natural ecosystem. At NAVSTA Newport, these forests are composed of red maple (*Acer rubrum*), white pine, red cedar (*Juniperus virginiana*), European larch (*Larix decidua*), and gray birch (*Betula populifolia*), with black locust (*Robinia pseudoacacia*), apple, black cherry, and walnut (*Juglans nigra*) at lesser numbers (Tetra Tech, Inc. 2014a).

8.12.2 Wildlife

Wildlife present at Tank Farms 1 and 2 is more diversified than at the other surplus properties due to the variation in land cover combined with the proximity to the coast. The data presented below are based on surveys conducted in 2013, as reported in the 2014 INRMP (Tetra Tech, Inc. 2014a).

Terrestrial Mammals

Mammals at Tank Farms 1 and 2 are typical of suburban environments in the northeast and include such species as the eastern gray squirrel (*Sciurus carolinensis*), common raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and coyote (*Canis latrans*). The woodland cover of the forested areas at the property also provide habitat for white-tailed deer (*Odocoileus virginianaus*) (Tetra Tech, Inc. 2014a).

Herpetofauna

Section 3.12.1.2 provides a discussion of herpetofauna likely to occur at the surplus properties, including Tank Farms 1 and 2.

Avian Species

Many species of birds likely use the ecological resources at Tank Farms 1 and 2 because of its proximity to the water of Narragansett Bay. The tree stands within the coniferous and deciduous upland forest types provide harbor to many species of birds, especially with the open land of the mapped agriculture to the south of the property fragmenting the habitat. Woodpeckers (*Picidae*), ruffed grouse (*Bonasa umbellus*), and woodcock (*Scolopax* sp.) are all bird species attracted to the woodland habitat at Tank Farms 1 and 2.

Two documented osprey nests have been mapped within 1,000 feet of Tank Farms 1 and 2 (see Figure 8.12-2) (NOAA 2011). A more comprehensive discussion of avian species common to the areas around the surplus properties, including Tank Farms 1 and 2, and respective nearby IBAs is provided in Section 3.12.1.2.

8.12.3 Threatened and Endangered Species

Agency-review letters were sent to the USFWS, NMFS, and the RIDEM in order to obtain updated information regarding listed species for all surplus properties. A response from the USFWS was received on February 13, 2013, which confirmed that no federally listed or proposed threatened or endangered species or critical habitat are known to occur at Tank Farms 1 and 2 (Chapman 2013). A response from the RIDEM was received on February 12, 2013, indicating that no state-listed or candidate rare, threatened, or endangered species are located at Tank Farms 1 and 2 (Jordan 2013). Because the property is inland, the response from the NMFS is not relevant for inclusion here.

Following Navy's initial informal consultation with the USFWS in 2013, the northern long-eared bat was listed as a threatened species, as discussed in Section 3.12.1.3.

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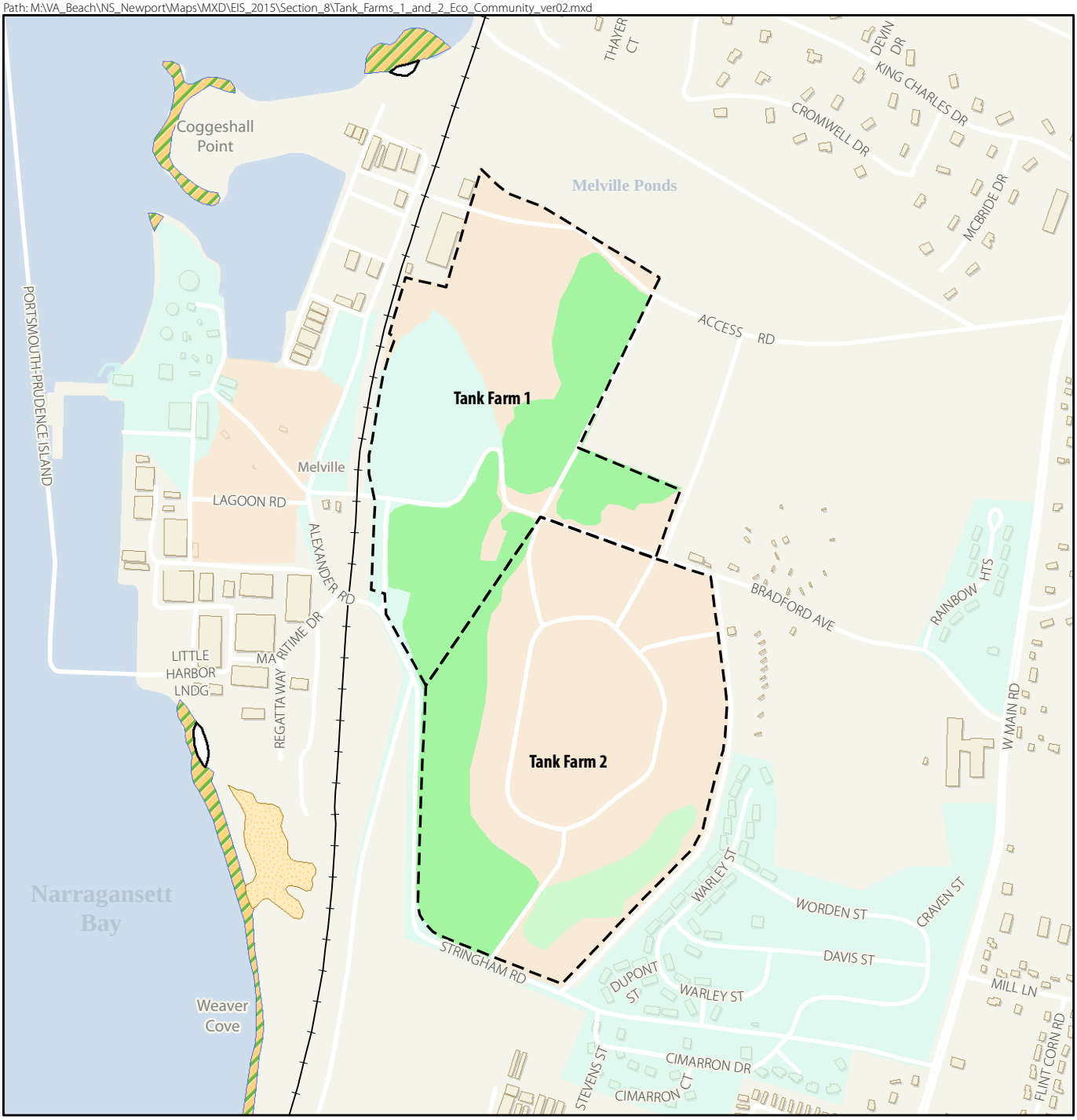

Legend

Rail Road
Property Boundary

Narragansett Bay Estuarine Habitat
Salt Marsh
Phragmites Marsh
Beach

Ecological Community
Developed Land
Mixed Oak/White Pine Forest
Old Field
Ruderal Forest

SCALE

0 300 600 Feet

SOURCE: University of Rhode Island RIGIS 2003; Univeristy of Rhode Island Department of Natural Resources 2012; RKG Associates et al. 2011.

Figure 8.12-1
Tank Farm 1 and 2 Properties Ecological Communities
NAVSTA Newport, Rhode Island

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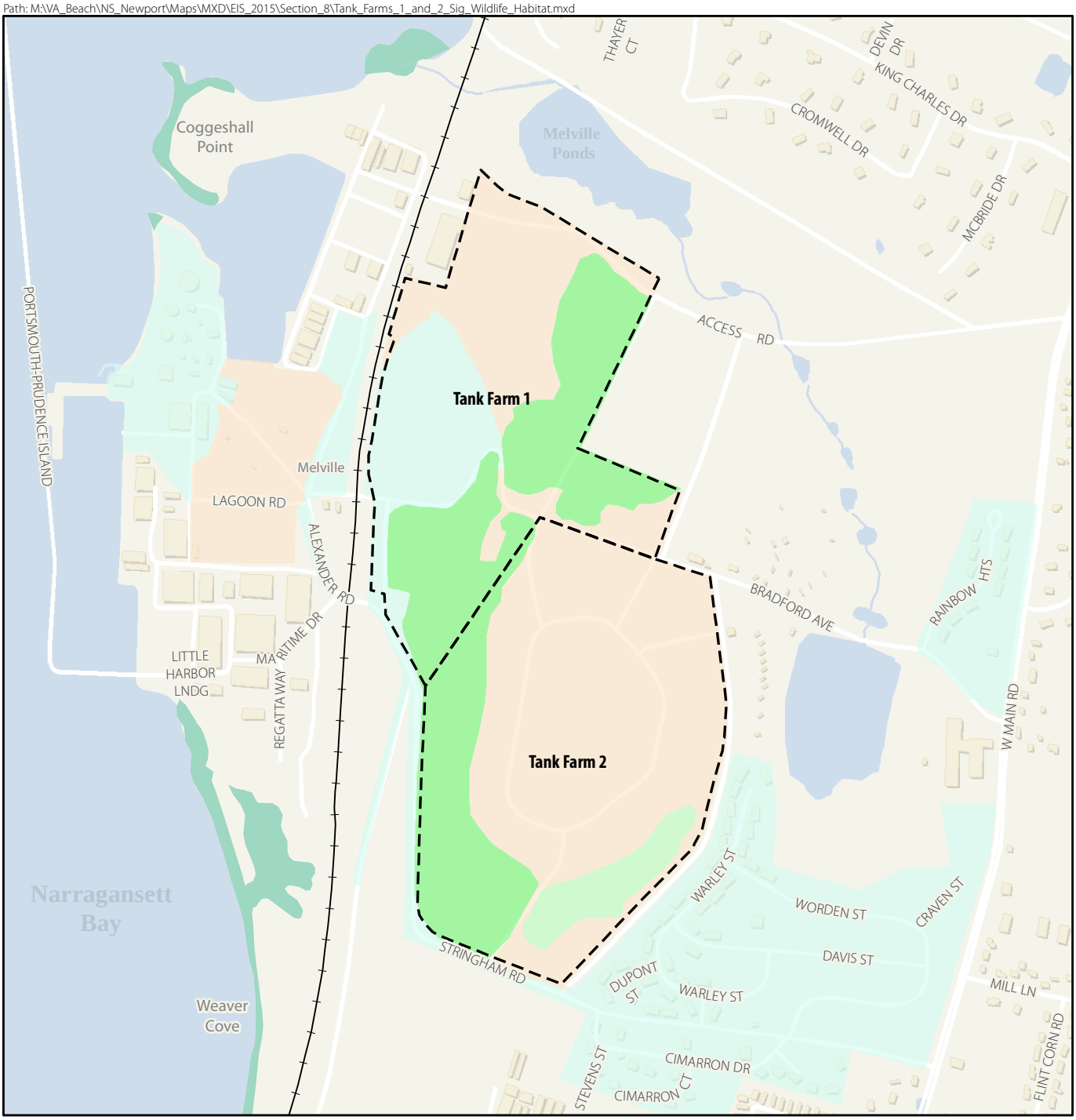

Legend

- Rail Road
- River/Stream
- Property Boundary
- Waterbody

Ecological Community

- Developed Land
- Mixed Oak/White Pine Forest
- Old Field
- Ruderal Forest
- Eelgrass Habitat

SCALE

0 300 600 Feet

SOURCE: NOAA Office of Response and Restoration 2011; Applied Science Associates 2011

Figure 8.12-2

Tank Farm 1 and 2 Properties Significant Wildlife Habitat

NAVSTA Newport, Rhode Island

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The northern long-eared bat has been observed at NAVSTA Newport. During the spring, summer, and fall months, the northern long-eared bat is likely to use forested edge habitat; spaces under tree bark, in cavities, or in crevices of both live and dead trees; coastlines; and/or abandoned buildings within NAVSTA Newport for roost sites, foraging, and/or travel. Suitable roost trees are defined as those that have a DBH greater than 3 inches. They are also known to roost in structures such as barns and sheds when suitable roost trees are not available. Summer foraging habitat consists of a variety of forested habitats, including both dense forests and loose aggregates of trees. In addition, bats may forage in adjoining lands such as wetlands, old fields, and agricultural lands (USFWS 2013a).

The Navy conducted various passive acoustic monitoring surveys for bats between 2009 and 2013 at NAVSTA Newport in support of a proposed 20 MW wind energy facility within the NAVSTA Newport installation, as discussed in Section 6.12.3.2. The 2009 and 2010 surveys did not report results for northern long-eared bats, which was not a named species for those surveys. During a survey conducted in the spring and late summer of 2011, northern long-eared bats were detected at two of the three locations monitored: the coastal met tower and a 1.5-meter-high stake at Tank Farm 4. The third survey location used in 2011 consisted of a met tower at Tank Farm 4, at which the northern long-eared bat was not detected (Tetra Tech, Inc. 2011c). Fifteen northern long-eared bat calls were reported for the 2013 survey: three calls at Bishop Rock peninsula, two calls at a stake location at Tank Farm 4, five calls at a stream location at Tank Farm 4, and five calls at a wetland location at Tank Farm 5 (Tetra Tech, Inc. 2014b, 2014c). Tank Farm 4 is the closest monitoring location to the Tank Farms 1 and 2 property, located approximately 1 mile to the southwest. No monitoring was conducted in 2012 (Tetra Tech, Inc. 2014b).

Active acoustic monitoring for bats was conducted in summer 2013 along transects in the same general areas of the station—coastal areas at the southern end of the station and Tank Farms 4 and 5. Northern long-eared bat calls were not specifically reported as a result of the active acoustic monitoring. The Navy conducted mist netting for bats over seven nights in July 2013 at various locations; however, the closest location to the Tank Farms 1 and 2 was more than 1.3 miles to the southwest, within Tank Farm 4.

Because few bats were caught, and none were northern long-eared bats, radiotelemetry for northern long-eared bats has not been performed. Echolocation bat passes that were documented in conjunction with the mist-netting survey did not attribute any of the passes to the genus *Myotis* (Tetra Tech, Inc. 2014b).

Based on the results of passive acoustic monitoring, the Navy documented one call sequence for the northern long-eared bat at Tank Farm 4, the closest monitoring site to Tank Farms 1 and 2, in 2011 and seven call sequences in 2013. Of the 8,826 total call sequences reported at NAVSTA Newport from the passive acoustic monitoring conducted for bats from 2009 to 2013, 73 calls were documented as non-specific *Myotis* species calls, and 1,397 were documented as "unknown high-frequency" calls, which can be attributable to *Myotis* (Tetra Tech, Inc. 2014c). Northern long-eared bats were neither detected during active acoustic monitoring conducted in 2013 at Tank Farm 4 nor captured during mist netting conducted at Tank Farm 4 in 2013.

A field survey in December 2014 to determine the suitability of summer roosting habitat for the northern long-eared bat, identified approximately 30 acres of suitable or potentially suitable summer roosting habitat at Tank Farm 4. Suitable summer roosting habitat was considered to be trees with one or more of the following characteristics:

- DBH greater than 3 inches,
- Thick peeling, flaking, and loose bark,
- Knot holes,

- Hollows,
- Natural decaying areas,
- Woodpecker holes,
- Cracks, splits, or gaps,
- Thick ivy, and/or
- Root cavities.

The Navy contacted the USFWS regarding the potential presence of the northern long-eared bat at the surplus properties on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). To date, USFWS has not provided a response, and informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing.

8.12.4 Significant Habitats

Based on a review of the Rhode Island Natural Heritage Program database, RIDEM's Division of Planning and Development has indicated that no unique natural communities or other significant wildlife communities exist at or near the surplus property (Jordan 2013). However, the following aquatic communities have been documented.

Eelgrass

Although there is no eelgrass habitat at Tank Farms 1 and 2, an area of eelgrass habitat consisting of about 9.5 acres is approximately 1,000 feet from the property.

Wetlands

As indicated in Section 8.12.1, three potential wetlands are located within the property boundaries of Tank Farm 1. These wetlands are discussed in detail in Section 8.11.5. Additionally, there are wetlands just outside of the property boundary. These palustrine emergent and forested/shrub wetlands comprise four wetland systems located just outside the property boundaries (U.S. Department of the Navy 2009). One of the NWI wetlands mapped outside of the property is part of the Melville Ponds chain, which discharges to Narragansett Bay to the north of the property and provides habitat for a more diverse array of fauna than found on Tank Farms 1 and 2.

Vernal Pools

There are no vernal pools at Tank Farms 1 and 2.

9 Tank Farms 1 and 2 Environmental Consequences

9.1 Land Use, Zoning, and Coastal Resources

This section describes the potential land use impacts resulting from disposal and reuse of Tank Farms 1 and 2 under Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of site-specific land use impacts, direct and indirect[16] impacts on surrounding existing land uses, consistency with local zoning and land use plans, and consistency with the enforceable policies of the RI CRMP. The study area includes Tank Farms 1 and 2 and the surrounding land within 0.25 miles in the Town of Portsmouth.

Upon completion of the BRAC disposal process under both Alternatives 1 and 2, Tank Farms 1 and 2 would be under the jurisdiction of the Town of Portsmouth. The use of the land and the development of new buildings or structures on the site would be regulated by the Town of Portsmouth's zoning code and other applicable plans and regulations.

9.1.1 Alternative 1 (Preferred Alternative)

9.1.1.1 On-Site Land Use

Implementation of Alternative 1 would change the use of Tank Farms 1 and 2 from vacant, industrial, and open space uses to mixed use development, including office, light industrial, marina-related (boat storage), multi-modal parking, and possibly a solar array. Figure 9.1-1 shows the proposed redevelopment footprint. Redevelopment would occur primarily in the southern and eastern portions of Tank Farm 1 and the southern portion of Tank Farm 2.

The total land area of Tank Farms 1 and 2 is 136 acres. Approximately 2.5 acres of combined property would be redeveloped with office uses, 4.4 acres with light industrial or marina-related uses, 4 acres adjacent to the railroad with multi-mode parking, and 3.6 acres with the proposed solar array. An additional 14.4 acres of the combined property would be redeveloped with other parking facilities, and 2.2 acres would be redeveloped as access roads, for a total of 20.6 acres of parking and access roads. A total of 31.1 acres (23 percent) of the site would be redeveloped; 104.9 acres (77 percent) would remain as open space. Under existing conditions, approximately 5.1 acres are characterized as developed land, or approximately 3.7 percent of the total acreage. Portions of the site above and within 300 feet of the USTs are assumed to be not suitable for redevelopment or reuse because of the potential structural instability of the USTs and surrounding soils (RKG Associates, Inc. et al. 2011).[17]

Remediation of documented ER Program sites on Tank Farms 1 and 2 is ongoing. The tank farms will likely be cleaned up to industrial standards. Upon completion of remediation, it is anticipated that land use controls, which may include restrictions on the type of development or permitted uses or activities, or site access will be developed based on state standards for former industrial sites (see Section 9.5 for additional discussion).

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[16] Indirect impacts on surrounding land uses are based on the potential for the proposed action to generate changes in the land use type, pattern, or density.

[17] As previously discussed in the EIS, a project to demolish and remove the USTs and associated piping is in the preliminary planning stage. However, the Redevelopment Plan, which is part of the proposed action evaluated in this EIS, is based on the assumption that the USTs would remain in place.

Therefore, Alternative 1 would impact the existing land use conditions at the site. These impacts would result from demolishing some of the existing structures and replacing the existing institutional land use with the mixture of the new land uses identified above; these impacts would be considered moderate. Implementation of Alternative 1 also would result in the public having access to the formerly restricted military property, except in any areas where access is restricted as indicated in the deed transfer documents.

9.1.1.2 Surrounding Land Use

Implementation of Alternative 1 would introduce a new mixed-use area to the study area; at full build-out, this area would be developed to a greater intensity than the residential and recreational areas to the north, east, and south of the tank farms. The density of development would be similar to the marina-related and commercial land uses located east of the tank farms on the Melville shoreline and business uses located south of the tank farms just outside of the study area. The types of development proposed under Alternative 1 generally would be consistent with surrounding land uses, provided that they comply with the regulations for nuisances and hazards, such as emissions of noise, light, dust, or smoke, in the town's zoning ordinance. The proposed redevelopment under Alternative 1 would be contained entirely within the site boundaries and would have no direct impacts on surrounding land uses. Access to the site would be from Defense Highway, Stringham Road, and Bradford Avenue. Any consideration of other access points has not been included in the analysis. Redevelopment of the site would require creating new access points and thus would be associated with a moderate and long-term impact on surrounding roadways. Indirect impacts on the surrounding transportation network are discussed in Section 9.4.

Mixed-use redevelopment of 31.1 acres of Tank Farms 1 and 2 could result in growth-induced changes in land use on other properties in the vicinity of the properties, but these growth-induced impacts are likely to be limited, based on current economic conditions. The Redevelopment Plan includes an analysis of local market conditions and concludes that only a limited potential for expansion of office and industrial development exists in Portsmouth. Although there has been a trend toward conversion of industrial properties to accommodate other service, office, and non-industrial uses, Portsmouth competes with office markets in Middletown and Newport, and most growth in demand for office space on Aquidneck Island has been from smaller companies that need smaller spaces (RKG Associates, Inc. et al. 2011). While marine and marina-related businesses, representing a relatively small but locally important industry, are expected to grow, this growth is expected to be limited because of economic conditions and a shortage of skilled employees. Development of approximately 15 acres of formerly Navy-owned land in the Melville Backyard with marina-related industrial and office uses and boat storage is ongoing (RKG Associates, Inc. et al. 2011). This development will accommodate expansion of existing businesses in the Melville area and is expected to be sufficient to meet the space needs of these businesses for the foreseeable future (RKG Associates, Inc. et al. 2011).

Development under Alternative 1 could result in growth-induced changes in land use if additional land is made available for development or redevelopment in the Melville area and economic conditions support additional development. Alternative 1 and any subsequent development in the Melville area could draw businesses from other areas on Aquidneck Island, leading to local conversion or vacancy of existing industrial and office properties. Any indirect impacts on land use would be expected to occur over multiple years, which would mitigate any negative impacts. Thus, Alternative 1 would have a moderate indirect impact on surrounding land use.

9.1.1.3 Consistency with Land Use Plans and Zoning

Tank Farms 1 and 2 are located in a zoned redevelopment district that allows three types of PUDs: Planned Corporate Development, Planned Marine Trade Development, and Planned Retail/Service

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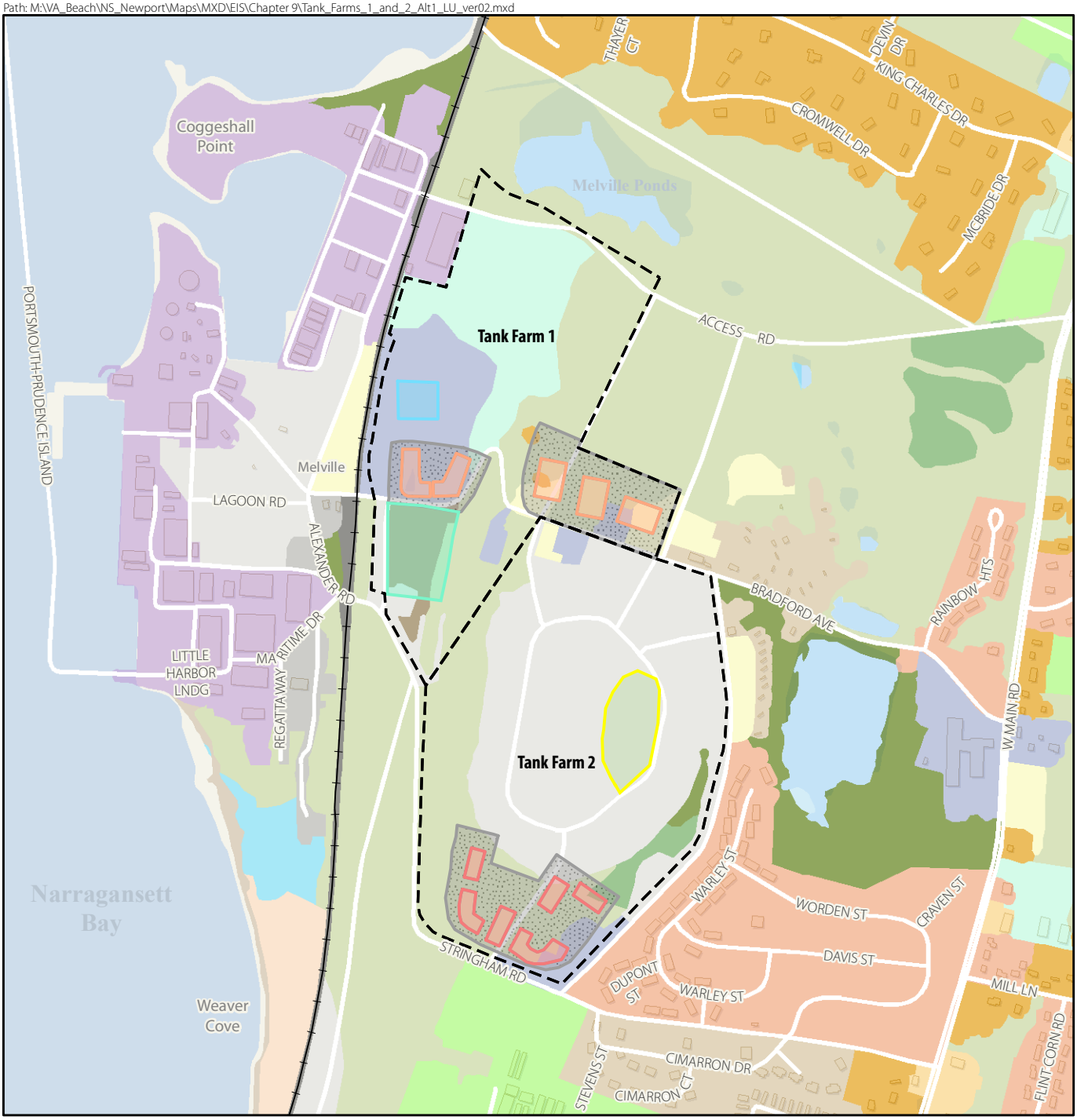

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SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013; RKG Associates 2011

Legend

- Rail Road
- Property Boundary

Proposed Land Use
- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Parking/Access
- Potential Solar Array

Land Use
- Beaches
- Sandy Areas (not beaches)
- Pasture (agricultural not suitable for tillage)
- Brushland (shrub and brush areas, reforestation)
- Cropland (tillable)
- Deciduous Forest (>80% hardwood)
- Mixed Forest
- Softwood Forest (>80% softwood)
- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)
- Medium Density Residential (1 to 1/4 acre lots)
- Industrial (manufacturing, design, assembly, etc.)
- Institutional (schools, hospitals, churches, etc.)
- Railroads (and associated facilities)
- Other Transportation (terminals, docks, etc.)
- Vacant Land
- Waste Disposal (landfills, junkyards, etc.)
- Wetland
- Water

Figure 9.1-1
Tank Farm 1 and 2 Properties Alternative 1 Proposed Site-specific Land Use and Surrounding Land Use
NAVSTA Newport, Rhode Island

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Development. The proposed land uses under Alternative 1 generally are consistent with the uses permitted in the redevelopment district. Solar arrays or, more generally, utilities, are not included as a permitted use in the redevelopment district, and any developer proposing to construct a solar array on the site would be required to apply for a use variance from the requirements of the zoning ordinance. Adherence to the town's requirements for applying for a variance and with the terms of the variance would ensure consistency with the zoning ordinance.

The *Town of Portsmouth Comprehensive Community Plan* (Town of Portsmouth 1992 [as revised 2002]) designates Tank Farms 1 and 2 as a future waterfront district, intended to include industrial and business land uses related to marine and marina-related industries. The land uses proposed under Alternative 1 would be consistent with the town's goals for future land use in this area. Redevelopment of the site would provide the town with the opportunity to create jobs and increase its tax base while conserving undeveloped land and dedicated open space through reuse of the tank farms. Redevelopment of Tank Farms 1 and 2 under Alternative 1 would locate a mixture of compatible land uses near the existing marina-related and commercial land uses along the Melville shoreline, which would not contribute significantly to urban sprawl. The planned redevelopment would take advantage of multi-modal transportation opportunities presented by the railroad adjacent to Tank Farm 1. Development of residential land uses near the tank farms, as indicated in the town's future land use plans for the area and the draft *Portsmouth Tank Farm Redevelopment Plan* (Town of Portsmouth 2008b), could provide people the opportunity to live near their workplaces and may contribute to a reduction in automobile use. Alternative 1 would require expanding utilities, public improvements (primarily transportation-related), and public services. The cost of these would be balanced by the increase in tax revenue resulting from the proposed redevelopment (see Section 9.2 for additional discussion).

Alternative 1 would be consistent with the goals for redevelopment of Tank Farms 1 and 2 presented in the draft *Portsmouth Tank Farm Redevelopment Plan*. Redevelopment of the site with the proposed mixture of land uses would be compatible with existing businesses in the Melville shoreline and provide opportunities for job creation and expansion of the town's tax base. As noted, land above the remaining USTs is assumed to be undevelopable and would be left as open space. Open space on the property would be publicly accessible, unless land use controls put in place upon completion of remediation prohibit public access. The draft *Portsmouth Tank Farm Redevelopment Plan* includes residential development in conjunction with the planned Weaver Cove Marina Village. No residential development is included as part of the proposed redevelopment under Alternative 1; however, Alternative 1 would support the town's overall goal for redevelopment of the site with non-residential land uses that would generate economic activity.

Redevelopment of Tank Farms 1 and 2 under Alternative 1 would be consistent with the *Aquidneck Island West Side Master Plan*'s recommendation for mixed-use redevelopment of a portion of the tank farms with land uses such as commercial, a mixture of resort and affordable housing, light-industrial, research and development, and parking. Alternative 1 would follow this recommendation while taking into account which land uses are allowable, based on the previous use of these sites (see Section 8.5). As noted, the land uses proposed under Alternative 1 would be consistent with and support existing land uses in the Melville area and would provide the town an opportunity for economic development. Thus, Alternative 1 would be consistent with the master plan.

In summary, Alternative 1 would be primarily consistent with local planning; however, the solar array would not be consistent with existing zoning. The developer would be required to obtain a use variance for development of a solar array in the zoned development district. The variance would not result in a significant impact on surrounding land uses.

9.1.1.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 1 is not reasonably likely to affect the use or natural resources of Rhode Island's coastal zone.

Disposal of the surplus property under Alternative 1 would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP and the Aquidneck Island SAMP. However, redevelopment of Tank Farms 1 and 2 would not be a direct federal action and would, therefore, fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects.

As noted in Section 8.1.4, the Tank Farms 1 and 2 property is not located in any tidal waters, on a shoreline feature, or within the 200-foot contiguous area, so state review of coastal resources under the CRMP is not applicable at this site. Redevelopment would be required to comply with the applicable policies of the Aquidneck Island SAMP, as outlined in Section 8.1.4. For purposes of this analysis, a summary of consistency is provided below.

- Section 130.8, Open Space and Public Access – Although Tank Farms 1 and 2 are not located along the shoreline, redevelopment of this property would include the creation of open space within the property boundaries. Therefore, the proposed action would be fully consistent with this policy.
- Section 150.1, Standards Applicable to Entire Development - The developer/owner of Tank Farms 1 and 2 will be responsible for providing separate and appropriate environmental documentation and obtaining all the necessary permits from state and federal agencies that meet the applicable standards, addressing areas such as storm water management (i.e., Rhode Island Stormwater Design and Installation Standards Manual and CRMP 300.6), groundwater protection, infrastructure, vegetative cover (i.e., Section 150.1, Standards Applicable to Entire Development), SAV, open space, and construction setback and water quality associated with the proposed activity (i.e., Water Quality Certificate from RIDEM and USACE permit, concurrent with their application to CRMC). Therefore, the proposed action would be consistent with these standards to the maximum extent practicable.
- Section 170, Redevelopment Zone – Although Tank Farms 1 and 2 are located within the Melville/Weaver Cove redevelopment area they do not include shoreline property and would not therefore provide access to the shoreline. Therefore, the proposed action would be fully consistent with this policy.

Official consultation with the Rhode Island CRMC was initiated on February 11, 2014, with a letter outlining the Navy's CCD. The CRMC concurred with the Navy's determination that disposal of the surplus properties under the preferred alternative would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP and that the developer of the Tank Farms 1 and 2 properties would be required to comply with the applicable policies of the Aquidneck Island SAMP (Willis 2014). A copy of the letter is included in Appendix B.

9.1.2 Alternative 2

9.1.2.1 On-Site Land Use

Under Alternative 2, Tank Farms 1 and 2 would be redeveloped with the same mix of uses as under Alternative 1. Figure 9.1-2 shows the proposed redevelopment layout under Alternative 2. Redevelopment would occur in the same areas that would be redeveloped under Alternative 1. Under Alternative 2, a total of approximately 3.2 acres would be redeveloped with office uses, 4.7 acres with light industrial or marina-related uses, 4 acres with multi-modal parking, and 3.6 acres—the same as under Alternative 1—with the proposed solar array. An additional 16 acres would be redeveloped with other parking facilities, and 2.5 acres would be redeveloped as access roads, for a total of 22.5 acres of parking and access roads. A total of 34 acres (25 percent) of the site would be redeveloped; 102 acres (75 percent) would remain as open space. Underground and aboveground storage tanks on Tank Farm 2 would be demolished. Land use controls that may be developed depending on the results of on-going remediation at the tank farms are expected to be the same under Alternative 2 as under Alternative 1 (see Section 9.5). The redeveloped area under Alternative 2 would be 9 percent greater than the redeveloped area under Alternative 1. Land above the USTs would not be redeveloped or reused for the same reason described under Alternative 1. Impacts on on-site land use under Alternative 2 would be the same as those identified under Alternative 1 but would be slightly greater, given the larger area that would be redeveloped.

9.1.2.2 Surrounding Land Use

Under Alternative 2, a slightly larger area of the site would be redeveloped. The types of land uses under Alternative 2 would be the same as the land uses proposed under Alternative 1, and the proposed redevelopment would be contained entirely within the site boundaries. Similar to Alternative 1, redevelopment of the site would require creating new access points, which would be associated with a moderate and long-term impact on surrounding roadways. Indirect impacts on the surrounding transportation network are discussed in Section 9.4.

The intensity of redevelopment would be similar under Alternative 2 to proposed redevelopment under Alternative 1; therefore, growth-induced indirect impacts on land use would be expected to be essentially the same as those described under Alternative 1. The potential for more people to be present on the site at full build-out would not be expected to have a notable effect on surrounding land use, based on the lack of available land and existing economic conditions.

9.1.2.3 Consistency with Land Use Plans and Zoning

Redevelopment of Tank Farms 1 and 2 under Alternative 2 would be consistent with the Town of Portsmouth's zoning ordinance and the other local land use controls discussed in Sections 8.1.3 and 9.1.1. Redevelopment would occur in the same locations as proposed under Alternative 1. The greater acreage that would be redeveloped and amount of floor space that would be created under Alternative 2 would not affect this alternative's consistency with local land use controls. The types of land uses proposed under Alternative 2 would be consistent with or support the goals of local land use plans for the same reasons described under Alternative 1.

In summary, similar to Alternative 1, Alternative 2 would be primarily consistent with local planning; however, the solar array would not be consistent with existing zoning. The developer would be required to obtain a use variance for development of a solar array in the zoned development district. The variance would not result in a significant impact on surrounding land uses.

9.1.2.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 2 is not reasonably likely to affect the use or natural resources of Rhode Island's coastal zone. Disposal of the surplus property under Alternative 2 would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP. However, redevelopment of Tank Farms 1 and 2 under Alternative 2 would not be a direct federal action and would, therefore, fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects.

If Alternative 2 is selected, the Navy would be required to prepare a coastal zone consistency determination for the proposed disposal and reuse of the property under Alternative 2 and submit it to the Rhode Island CRMC for concurrence. Because Tank Farms 1 and 2 are not located in any tidal waters, on a shoreline feature, or within the 200-foot contiguous area, state review of coastal resources under the CRMP is not applicable at this site. Redevelopment would be required to comply with the applicable policies of the Aquidneck Island SAMP, as outlined in Section 8.1.4.

Due to the similarities in land use types proposed, and the same geographic area of the proposed action under Alternative 2 compared to Alternative 1, impacts of the proposed action on the use and natural resources of the coastal zone under Alternative 2 would be similar to those under Alternative 1.

9.1.3 No Action Alternative

Under the No Action alternative, the surplus property at Tank Farms 1 and 2 would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur, and the 136 acres included in the site would remain vacant and closed to public access. Implementation of the No Action alternative would have no direct or indirect impacts on surrounding land uses. Town zoning regulations would not be enforceable since the tank farms would continue to be owned by the federal government and would be outside of the jurisdiction of the Town of Portsmouth. This alternative would not be consistent with the Town of Portsmouth's comprehensive plan, the draft *Portsmouth Tank Farm Redevelopment Plan*, or the *Aquidneck Island West Side Master Plan*. These plans recommend redevelopment of the site with land uses that would support the marina-related and commercial land uses in the Melville area and that would generate additional economic activity in the Town of Portsmouth. Under the No Action alternative, none of the potential economic benefits associated with redevelopment of the site would be realized.

9.2 Socioeconomics and Environmental Justice

9.2.1 Alternative 1 (Preferred Alternative)

A detailed discussion of the socioeconomic and environmental justice consequences associated with the redevelopment of all four surplus properties, including Tank Farms 1 and 2 under Alternative 1 (Preferred Alternative) can be found in Section 5.2.1.

In summary, implementation of Alternative 1 is anticipated to have a beneficial economic impact on the regional economy, no noticeable impact on local population and demographic characteristics, no noticeable impact on the local housing market, a minor impact on the local commercial property market, and a minor positive fiscal impact on the Town of Portsmouth. In addition no disproportionate impacts on minority, Hispanic/Latino, low-income, or children are anticipated to occur under this alternative.

9.2.2 Alternative 2

A detailed discussion of the socioeconomic and environmental justice consequences associated with the redevelopment of all four surplus properties, including Tank Farms 1 and 2 properties under Alternative 2, can be found in Section 5.2.2. The summary of impacts described above for Alternative 1 would also apply to Alternative 2.

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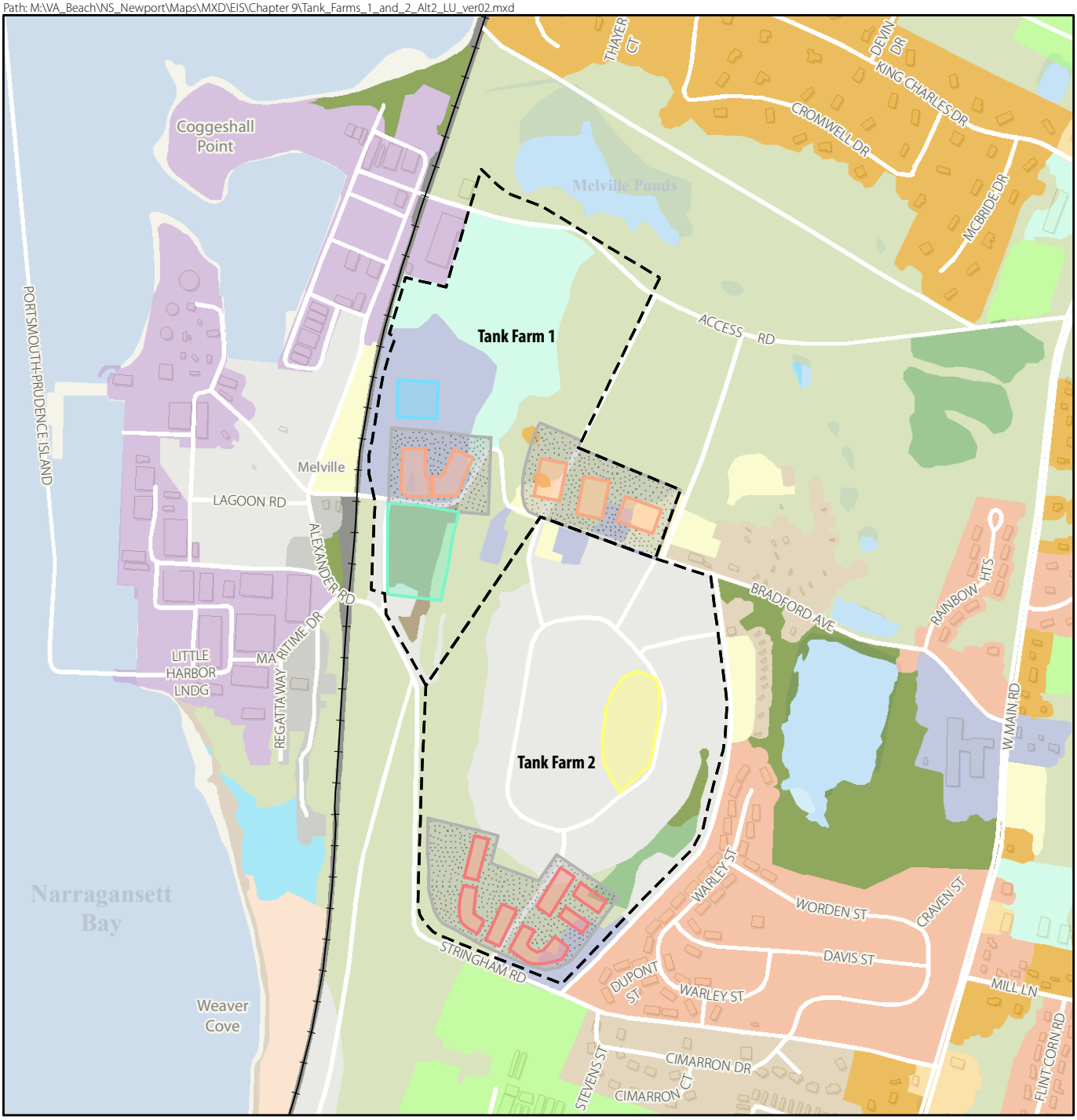

SCALE

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SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013; RKG Associates 2011

Legend

- Rail Road
- Property Boundary

Proposed Land Use
- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Parking/Access
- Potential Solar Array

Land Use
- Beaches
- Sandy Areas (not beaches)
- Pasture (agricultural not suitable for tillage)
- Brushland (shrub and brush areas, reforestation)
- Cropland (tillable)
- Deciduous Forest (>80% hardwood)
- Mixed Forest
- Softwood Forest (>80% softwood)
- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)
- Medium Density Residential (1 to 1/4 acre lots)
- Industrial (manufacturing, design, assembly, etc.)
- Institutional (schools, hospitals, churches, etc.)
- Railroads (and associated facilities)
- Other Transportation (terminals, docks, etc.)
- Vacant Land
- Waste Disposal (landfills, junkyards, etc.)
- Wetland
- Water

Figure 9.1-2
Tank Farm 1 and 2 Properties Alternative 2 Proposed Site-specific Land Use and Surrounding Land Use
NAVSTA Newport, Rhode Island

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9.2.3 No Action Alternative

Under the No Action alternative, no redevelopment plan would be implemented and ownership of the properties would be retained by the Navy. The properties would not be developed and would remain in a caretaker status. No new economic activity would be generated and no increased employment opportunities would occur. Regional population and the regional housing market would not be impacted, nor would there be any impact on the regional commercial property market. Local government tax receipts would not increase as the properties would retain their current tax-exempt status.

9.3 Community Facilities and Services

9.3.1 Alternative 1 (Preferred Alternative)

A discussion of the expected impacts on community facilities and services in the City of Newport and the towns of Middletown and Portsmouth associated with the redevelopment of all four surplus properties, including Tank Farms 1 and 2 under Alternative 1 (Preferred Alternative), can be found in Section 5.3.1.

9.3.2 Alternative 2

A discussion of the expected impacts on community facilities and services in the City of Newport and the towns of Middletown and Portsmouth associated with the redevelopment of all four surplus properties, including Tank Farms 1 and 2 under Alternative 2, can be found in Section 5.3.2.

9.3.3 No Action Alternative

There would be no impact on community facilities and services resulting from the No Action alternative. The properties would be held in caretaker status by the Navy. There would be no change in population or employment resulting from this alternative. In addition, no new recreational facilities would be built under the No Action alternative.

9.4 Transportation

This section summarizes the potential transportation impacts resulting from construction and implementation of the Redevelopment Plan at Tank Farms 1 and 2 under Alternative 1, Alternative 2, and the No Action alternative. The evaluation of transportation impacts upon full build-out is based on the analysis completed for the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013). Roadways and intersections in the vicinity of Tank Farms 1 and 2 include the following:

- Stringham Road
- Defense Highway/Burma Road
- Bradford Avenue
- Alexander Road
- West Main Road (Route 114) and Bradford Road Intersection
- West Main Road (Route 114) and Stringham Road Intersection
- Defense Highway/Burma Road and Stringham Road Intersection.

The locations of these roadways and intersections are shown on Figure 9.4-1.

Traffic generated from construction was not captured in the traffic impact analysis. Therefore, the evaluation of the impacts on existing traffic conditions from the construction traffic discussed herein is

based on the number of buildings to be demolished, the volume of construction vehicles, and duration of demolition/construction at Tank Farms 1 and 2.

9.4.1 Alternative 1 (Preferred Alternative)

Tank Farms 1 and 2 would be accessed through two points on Stringham Road and one point on Bradford Avenue (see Figure 9.4-1). Any consideration of other access points has not been included in the analysis. As indicated in Section 8.4.1, an easement along Bradford Avenue allows access to/from the Tank Farms from West Main Road. This intersection was modeled as a potential access point; however, if Bradford Avenue is ultimately to be used as an access point, recommendations to reduce risk to the school children in the area would need to be developed. For example, the easement would need to be limited to only emergency vehicles, or a traffic light could be installed. The Stringham Road access point between Sullivan Drive and Defense Highway is expected to provide access to office space and some of the light industrial uses. The second Stringham Road access point is located west of Defense Highway and also would provide access to some of the light industrial uses. The Bradford Avenue access point would provide access to the majority of the light industrial uses, the boat storage yard, and the solar array. The final layout may allow access to all uses from each access point. A total of 2,900 parking spaces would be located near the various businesses and recreational areas.

Construction-related traffic would consist of delivery trucks, dump trucks, heavy equipment, and vehicles driven by construction crews. Based on the square footage of the proposed demolition/new construction, workers would make an estimated 60 daily trips for commutes, two daily trips would occur for demolition removal, and five delivery trucks would occur per day (see Appendix D for the methodology). This could result in short-term impacts on traffic from additional truck trips and slower-moving vehicles. However, the impacts would not be significant because they would occur only for the duration of the new construction period. In addition, redevelopment of the tank farms is not anticipated to occur simultaneously over the course of the 20-year build-out. Impacts are therefore expected to be minor.

The evaluation of impacts during the full build-out of Tank Farms 1 and 2 under Alternative 1 includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS), and recommended mitigation measures.

9.4.1.1 Projected Traffic Volumes

Full build-out of Alternative 1 is projected to add 2,762 daily trips to the road network surrounding the tank farms (Pare Corporation 2013). The full build-out period takes into account a 1 percent annual background growth that is expected to occur through the year 2032. Background growth is the growth expected within the study area based on development projects not specifically identified as well as annual population and traffic increases. Office space is expected to generate 1,425 daily trips and would be the largest trip generator. The light industrial uses would generate 1,033 trips, and light industrial/boat storage would generate the fewest with 304 daily trips. The solar array is not expected to generate daily traffic. During morning and evening peak hours, a total of 377 and 387 vehicles are expected to enter and exit the property, respectively. Table 9.4-1 shows the morning and evening peak hour trips for each proposed use.

Over the full build-out period, traffic volume in the area is projected to increase, such that the total morning and evening peak hour volume at the intersections analyzed is similarly projected to increase. Table 9.4-2 compares existing peak hour traffic volumes with those projected under Alternative 1 for intersections and access points near Tank Farms 1 and 2.

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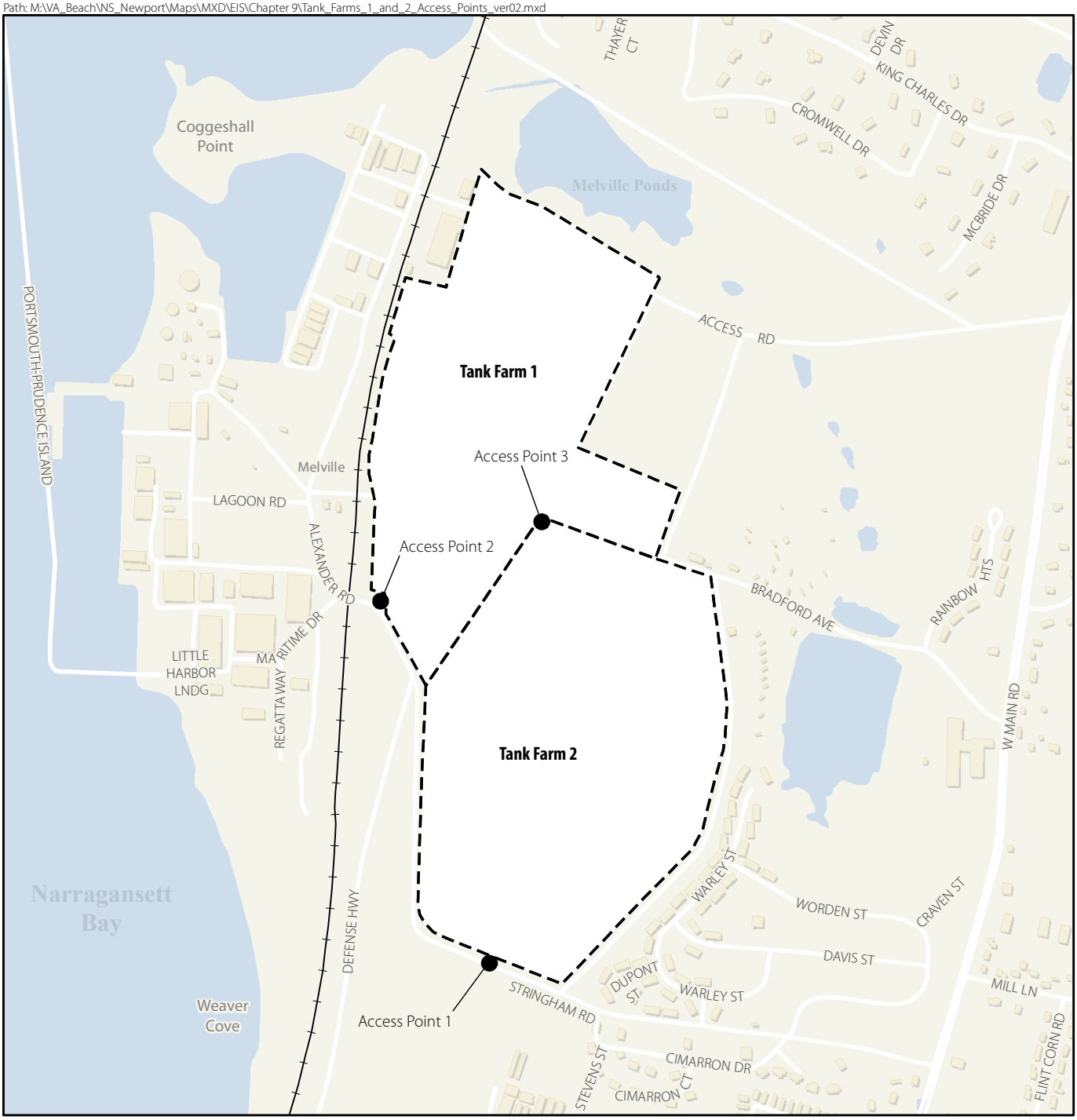

Legend

- Rail Road
- Access Points
- Property Boundary

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Figure 9.4-1

Tank Farm 1 and 2 Properties Proposed Access Points, Alternatives 1 and 2

NAVSTA Newport, Rhode Island

SOURCE: Pare Corporation 2013

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Table 9.4-1 Tank Farms 1 and 2 Trip Distribution (Alternative 1)

Land Use	Projected Weekday Daily Total	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Office	1,425	177	24	201	34	167	201
Light Industrial	1,033	120	16	136	18	126	144
Light Industrial/Boat Storage	3,04	35	5	40	5	37	42
Total	**2,762**	**332**	**45**	**377**	**57**	**330**	**387**

Source: Pare Corporation 2013

The intersection of West Main Road and Stringham Road is currently signalized and increases in traffic are not expected to result in a significant impact on safety (Pare Corporation 2013). The intersections of West Main Road and Bradford Avenue and Defense Highway and Stringham Road are currently not signalized. Any increase in traffic could pose safety concerns at these intersections. As noted in Section 8.4, crash data for roadways in the vicinity of the tank farms shows that the greatest number of crashes in the study area occurred at the intersection of West Main Road and Stringham Road, where 57 crashes were reported over almost four years of data (Pare Corporation 2013).

9.4.1.2 Projected Level of Service

LOS under Alternative 1 was determined for the three intersections analyzed as well as the three proposed driveways into the property.

The signalized intersection of West Main Road with Stringham Road currently operates at LOS B with approximately 18 seconds of delay per vehicle during the morning peak hour. Under Alternative 1 the LOS at this intersection is expected to decrease to LOS C with approximately 28 seconds of delay. During the evening peak hour, the intersection currently operates at LOS C with approximately 26 seconds of delay and is expected to drop to LOS D with 40 seconds of delay.

During morning and evening peak hours, the northbound approach to West Main Road and Bradford Avenue operates at LOS C in the morning and LOS A in the evening, with less than one second of delay per vehicle. Under Alternative 1, this approach would drop to LOS D in the morning and drop to LOS B in the evening peak hour. The eastbound approach currently operates at LOS F with 62.8 seconds of delay in the morning peak hours and 156 seconds of delay in the evening peak hours and is expected to remain at LOS F under Alternative 1 during morning and evening peak hours. As indicated in Section 9.4.1, an easement along Bradford Avenue allows access to and from the Tank Farms from West Main Road. This intersection was modeled as a potential access point; however, if Bradford Avenue is ultimately to be used as an access point, recommendations to reduce risk to the school children in the area would need to be developed. For example, the easement would need to be limited to only emergency vehicles, or a traffic light could be installed.

The intersection of Defense Highway/Burma Road and Stringham Road currently operates at LOS A with 7.1 seconds of delay for the northbound approach and LOS F with 123.2 seconds of delay for the northeast approach during morning peak hours. The northbound approach operates at LOS A with 6.7 seconds of delay and the northeast bound approach operates at LOS D with 29.7 seconds of delay during evening peak hours. Under Alternative 1, northbound and northeast bound approaches would continue to operate at LOS A and F respectively during morning peak hours. The northbound approach would continue to operate at LOS A during evening peak hours and the northeast approach would drop to LOS F during evening peak hours. Table 9.4-2 shows the level of service for the surrounding intersections under Alternative 1.

Table 9.4-2 Peak Hour Trips and LOS at Intersections and Points of Access Near Tank Farms 1 and 2 (Alternative 1)

Intersection/Point of Access	Existing Conditions Peak Hour Volume		Existing Conditions Peak Hour LOS		Alternative 1 Peak Hour Volume		Alternative 1 Peak Hour LOS	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
West Main Road (Route 114) and Stringham Road	2,751	2,771	B	C	3,602	3,599	C	D
West Main Road (Route 114) and Bradford Avenue[1]	2,515	2,604	NB:C EB:F	NB:A EB:F	3,372	3,461	NB:D EB:F	NB:B EB:F
Defense Highway/Burma Road and Stringham Road	773	870	NB:A NE:F	NB:A NE:D	1,036	1,185	NB:A NE:F	NB:A NE:F
Stringham Road and Tank Farm 2 Office Driveway	N/A	N/A	N/A	N/A	1,104	1,158	SB: C EB: A	SB: C EB: A
Stringham Road and Tank Farm 1 Light Industrial Parking Driveway[2]	N/A	N/A	N/A	N/A	292	409	WB: B	WB: B

Source: Pare Corporation 2013

Notes:
[1] The northbound approach is the through approach for the Defense Highway/Burma Road and Stringham Road intersection.
[2] Only two driveways were assessed because sight distance measurements could not be taken on Bradford Avenue; the roadway currently deadends at a gated entrance to the Tank Farms. The roadway is assumed to become the access to the industrial and boat storage uses in the vicinity of Bradford Ave.

Key:
EB = Eastbound
N/A = Not applicable
NB = Northbound
NE = Northeast-bound
SB = Southbound
WB = Westbound

The southbound approach of the Defense Highway and Greene Lane intersection operates at a current LOS of A during both morning and evening peak hours. Under Alternative 1, LOS A would remain, with 0.2 seconds of delay per vehicle during morning peak hours and 2.3 seconds of delay during evening peak hours. The westbound approach, operating with a stop sign control, currently operates at LOS C with 24 seconds of delay during morning peak hours and 18.6 seconds of delay during evening peak hours. Under Alternative 1, LOS would drop to LOS F with 63.1 seconds of delay during morning peak hours and LOS D with 30.4 seconds of delay during evening peak hours.

9.4.1.3 Summary

The projected increase in the number of traffic trips on the roadway network surrounding Tank Farms 1 and 2 and the resulting increases in peak hour volume at the intersections of West Main Road with Stringham Road, West Main Road and Bradford Avenue, Defense Highway/Burma Road and Stringham Road, and Defense Highway/Burma Road and Greene Lane and the corresponding decrease in LOS would result in a significant and unavoidable impact under Alternative 1.

The need for new traffic signals or signs at West Main Road and Bradford, Defense Highway and Stringham Road, and West Main Road and Stringham Road intersections should be reviewed to ensure that safety is not impacted. For example, if Bradford Avenue is used to provide access to the tank farms, improvements to the roadway and upgrades to the intersection will be necessary (Pare Corporation 2013). Additionally, if Bradford Avenue is to be used as an access point, recommendations to reduce risk to the

school children in the area would need to be developed. For example, the easement would need to be limited to only emergency vehicles or a traffic light could be installed. Similarly, a signal may need to be installed at the intersection of Defense Highway and Stringham Road.

Sight distances for the potential driveway locations were reviewed and generally found to meet the AASHTO requirements for the 85th percentile travel speeds along Stringham Road and Bradford Avenue. These distances should be reconfirmed once the final locations of the driveways are determined. The driveways should also be designed to maximize the visibility for motorists turning into and out of the property while providing clear identification of the site.

Other potential mitigation measures would depend on the final design of the site driveways and internal site roadway network. Improvements along the roadway could include revising signs, striping the pavement, or redesigning the flow of traffic. The implementation of these mitigation measures would be the responsibility of the future developer and/or the Town of Portsmouth.

9.4.2 Alternative 2

Access to Tank Farms 1 and 2 would be through the same two access points on Stringham Road and one access point on Bradford Avenue as described for Alternative 1. Similar to Alternative 1, any consideration of other access points has not been included in the analysis. As discussed in Alternative 1, the final layout may allow access to all uses from each access point. Under Alternative 2, a total of 3,196 parking spaces would be located near the various redevelopment sites.

The proposed level of traffic associated with the construction of the office and light industrial uses under Alternative 2 would be similar to that discussed under Alternative 1 and would result in minor impacts on local traffic during the construction period only; no significant impacts would result.

The evaluation of impacts during the full build-out of Tank Farms 1 and 2 under Alternative 2 includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS), and recommended mitigation measures.

9.4.2.1 Projected Traffic Volumes

Full build-out of Alternative 2 is projected to add 3,151 daily trips to the road network surrounding the tank farms. The full build-out period takes into account a 1 percent annual background growth that is expected to occur through the year 2032. Office space would generate 1,723 daily trips and would be the largest trip generator. The light industrial uses would generate 1,124 trips; light industrial/boat storage uses would generate the fewest, with 304 daily trips. The solar array is not expected to generate daily traffic. During morning and evening peak hours a total of 433 and 434 vehicles, respectively, are expected to enter and exit the property (see Table 9.4-3).

Table 9.4-3 Tank Farms 1 and 2 Trip Distribution (Alternative 2)

Land Use	Projected Weekday Daily Total	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Office	1,723	216	29	245	40	195	235
Light Industrial	1,124	130	18	148	19	138	157
Light Industrial/Boat Storage	304	35	5	40	5	37	42
Total	**3,151**	**381**	**52**	**433**	**64**	**370**	**434**

Source: Pare Corporation 2013

Table 9.4-4 compares existing peak hour traffic volumes at intersections and access points near Tank Farms 1 and 2 with those projected under Alternative 2.

Table 9.4-4 Peak Hour Trips and LOS at Intersections and Points of Access Near Tank Farms 1 and 2 (Alternative 2)

Intersection/Point of Access	Existing Conditions Peak Hour Volume		Existing Conditions Peak Hour LOS		Alternative 2 Peak Hour Volume		Alternative 2 Peak Hour LOS	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
West Main Road (Route 114) and Stringham Road	2,751	2,771	B	C	3,640	3,631	C	D
West Main Road (Route 114) and Bradford Avenue[1]	2,515	2,604	NB:C EB:F	NB:A EB:F	3,379	3,496	NB:D EB:F	NB:B EB:F
Defense Highway/Burma Road and Stringham Road	773	870	NB:A NE:F	NB:A NE:D	1,056	1,209	NB:A NE:F	NB:A NE:F
Stringham Road and Tank Farm 2 Office Driveway	N/A	N/A	N/A	N/A	1,150	1,201	SB:C EB:A	SB:C EB:A
Stringham Road and Tank Farm 1 Light Industrial Parking	N/A	N/A	N/A	N/A	305	423	WB:B	WB:B

Source: Pare Corporation 2013

Notes:
[1] The northbound approach is the through approach for the Defense Highway/Burma Road and Stringham Road intersection.

Key:
EB = Eastbound
N/A = Not applicable
NB = Northbound
NE = Northeast-bound
SB = Southbound
WB = Westbound

9.4.2.2 Projected Level of Service

Under Alternative 2, the intersection of West Main Road with Stringham Road is expected to decrease from LOS B, with approximately 18 seconds of delay per vehicle, to LOS C with 29.1 seconds of delay per vehicle during morning peak hours. During the evening peak hour, the intersection currently operates at LOS C with approximately 32 seconds of delay; this is expected to drop to LOS D with of 78.4 seconds of delay under Alternative 2.

Under Alternative 2, the northbound (through) approach to West Main Road and Bradford Avenue is expected to operate at LOS D during morning peak hours and LOS B during evening peak hours, a drop in LOS in both instances. The eastbound approach would continue to operate at LOS F during morning and evening peak hours under Alternative 2.

The northbound approach of the intersection of Defense Highway/Burma Road and Stringham Road would continue to operate at LOS A, with 7.2 to 7.4 seconds of delay per vehicle during morning and evening peak hours. The northeast approach would operate at LOS F under Alternative 2 (see Table 9.4-4 above).

The proposed driveway for Tank Farm 2 would operate at an LOS of C during morning and evening peak hours for southbound traffic and would operate at an LOS of A during morning and evening peak hours for eastbound traffic. The proposed driveway for Tank Farm 1 would operate at an LOS of B during both morning and evening peak hours for westbound traffic.

9.4.2.3 Summary

The projected increase in the number of traffic trips on the roadway network surrounding Tank Farms 1 and 2 and the resulting increases in peak hour volume at the intersections of West Main Road with Stringham Road, West Main Road and Bradford Avenue, Defense Highway/Burma Road and Stringham Road, and Defense Highway/Burma Road and Greene Lane and the corresponding decrease in LOS would result in a significant and unavoidable impact under Alternative 2.

The mitigation of impacts from the implementation of Alternative 2 would be the same as those discussed for Alternative 1.

9.4.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Access to the property would continue to be through existing driveways off of Stringham Road and Bradford Avenue. No reuse or redevelopment would occur at the property and therefore no significant impacts on transportation would occur under this alternative.

The evaluation of impacts under the No Action alternative includes a discussion of projected traffic volumes and LOS, the projected impacts on the road network, and recommended mitigation measures.

9.4.3.1 Projected Traffic Volumes

Under the No Action alternative, traffic volumes are projected to increase 1 percent annually through the year 2032. Traffic volume increases are associated with development projects not specifically identified as well as annual population and traffic increases. Table 9.4-5 compares existing peak hour traffic volumes with those projected under the No Action alternative for intersections near Tank Farms 1 and 2.

Table 9.4-5 Peak Hour Trips and LOS at Intersections Near Tank Farms 1 and 2 (No Action Alternative)

Intersection	Existing Conditions Peak Hour Volume		Existing Conditions Peak Hour LOS		No Action Alternative Peak Hour Volume		No Action Alternative Peak Hour LOS	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
West Main Road (Route 114) and Stringham Road	2,751	2,771	B	C	3,357	3,382	C	D
West Main Road (Route 114) and Bradford Avenue[1]	2,515	2,604	NB:C EB:F	NB:A EB:F	3,069	3,177	NB:C EB:F	NB:B EB:F
Defense Highway/Burma Road and Stringham Road	773	870	NB:A NE:F	NB:A NE:D	944	1,062	NB:A NE:F	NB:A NE:F
Defense Highway/Burma Road and Greene Lane	867	913	SB:A WB:C	SB:A WB:C	1,057	1,115	SB:A WB:F	SB:A WB:D

Source: Pare Corporation 2013

Notes:
[1] The northbound approach is the through approach for the Defense Highway/Burma Road and Stringham Road intersection.

Key:
EB = Eastbound
N/A = Not applicable
NB = Northbound
NE = Northeast-bound
SB = Southbound
WB = Westbound

9.4.3.2 Projected Level of Service

Under the No Action alternative, the LOS will drop at several intersections compared with existing conditions. As shown in Table 9.4-5, LOS will decrease for the morning and evening peak hours at the intersection of West Main Road and Stringham Road; for northbound traffic during the evening peak hours at the intersection of West Main Road and Bradford Avenue; for northeast-bound traffic during the evening peak hours at the intersection of Defense Highway and Stringham Road; and for westbound traffic during morning and evening peak hours at the intersection of Defense Highway and Greene Lane.

9.5 Environmental Management

This section describes the potential impacts on environmental management from the implementation of Alternative 1, Alternative 2, or the No Action alternative. It includes an examination of the potential impacts on the management of hazardous waste, hazardous materials, and ER Program sites associated with disposal and reuse of Tank Farms 1 and 2.

As discussed in Section 3.5.1.5, real property transactions under BRAC require the preparation of a FOST. The FOST summarizes how the applicable requirements and notifications for hazardous materials, petroleum products, and other regulated materials (such as ACM, LBP, PCBs, and pesticides) have been satisfied and whether the property is environmentally suitable for transfer. The FOST for the Tank Farm 1 and 2 properties will address any restrictions, notifications, or covenants-in-deed related to hazardous materials at the surplus properties.

9.5.1 Alternative 1 (Preferred Alternative)

9.5.1.1 Hazardous Waste

The tank farms will have received closure under RIDEM's UST regulations before the properties are redeveloped, so the tanks and associated equipment, buildings, and features such as vaults, chambers, pump houses, and underground fuel piping would be removed and nearby soils would no longer contain petroleum-related constituents above RIDEM standards or would have land use controls to restrict unacceptable exposure to any such constituents remaining on-site. As indicated in Section 8.5, a separate project is being evaluated for the demolition of USTs and removal of associated underground piping and other components at Tank Farm 1 to be conducted in 2016 before transfer. However, the proposed schedule for Tank Farm 2 demolition has not been established and, for the purposes of this analysis, USTs have been assumed to remain in place when the property is disposed, as presented in the Redevelopment Plan. Before transfer, the tank farms will also have been remediated under CERCLA before redevelopment and would not contain constituents requiring management as a hazardous waste, e.g., PCBs and mercury-containing equipment, although land use controls may exist for any such constituents left in place at levels not appropriate for unrestricted use and unlimited exposure (also see Section 9.5.1.4).

Some RCRA hazardous wastes would be generated during the demolition of existing tanks and structures and construction of the new industrial and commercial facilities proposed for Alternative 1. The operation of heavy equipment and machinery and demolition and construction tasks would result in wastes such as waste oils and oily wastes, chemicals, acids, paints, solvents, and degreasers as well as universal wastes such as batteries and fluorescent light bulbs. Demolition and construction contractors would be required under contract to manage hazardous waste in accordance with Town of Portsmouth and state and federal requirements. The new businesses—light industry, offices, and boat storage—also would routinely generate hazardous wastes generally similar to those generated by demolition and construction activities. The new businesses would be required to manage hazardous wastes in accordance with Town of Portsmouth and state and federal requirements.

Active UST and CERCLA IRP investigations are ongoing at Tank Farms 1 and 2, and only small quantities of hazardous wastes are generated from those activities (see Section 8.5.1). It is anticipated that more hazardous waste would be generated by near-term and long-term activities under Alternative 1 than is currently generated at Tank Farms 1 and 2. There would therefore be a minor short-term and long-term impact on the management of hazardous waste under Alternative 1. However, these impacts would not be significant because hazardous wastes would be managed in accordance with Town of Portsmouth and state and federal requirements.

9.5.1.2 Hazardous Materials

Storage Tanks, Fuel Piping, and Oil/Water Separators

As indicated in Section 8.5, a separate project is being evaluated for the demolition of six USTs (Tanks 13 through 18), two USTs/OWSs (Tanks 9 and 10), and removal of associated underground piping and other components at Tank Farm 1 to be conducted in 2016, before transfer. However, the proposed schedule for demolition of 11 USTs (Tanks 19 through 29) at Tank Farm 2 has not been established and, for the purposes of this analysis, USTs have been assumed to remain in place when the property is disposed, as presented in the Redevelopment Plan.

Therefore, under Alternative 1, the tanks at Tank Farm 1 will be demolished by the Navy before transfer. Components directly associated with Tanks 9 and 10, such as tank access chambers, underground piping in the immediate vicinity, and the OWS/separation pit, also would be removed under the separate project. Despite the planned demolition of features at Tank Farm 1, the features at Tank Farm 2 are assumed to be transferred in-place. However, redevelopment is not planned for areas directly on top of the tanks or OWS, with the exception of the planned solar array (see Figure 9.5-1). As indicated in Section 2.2.1, the proposed redevelopment at the tank farms has been based on a 300-foot setback from the existing tank locations that would remain in place when the property is transferred, which is specified in the Redevelopment Plan (RKG Associates, Inc. et al. 2011). There are no ASTs at either tank farm and there are no OWSs at Tank Farm 2. Any new fuel/oil tanks or OWSs that are installed as part of property redevelopment would have to comply with applicable RIDEM regulations.

Because the tanks, underground piping, and OWSs will have been cleaned under the RIDEM UST program and remediated under CERCLA before redevelopment (or demolished), there would be no known hazard from petroleum, oil, and lubricants or CERCLA-regulated constituents in those components. There might be unknown residual constituents in underground components that were not able to be fully accessed when the tanks and piping were cleaned. There would be no significant impacts on the management of storage tanks, fuel piping, and OWSs under Alternative 1. Impacts would be further mitigated through appropriate notifications and restrictions in property transfer documents.

ACM, LBP, and Lead

The underground fuel lines, steam lines, and condensate lines that are located throughout Tank Farms 1 and 2 could contain asbestos-containing pipe insulation, especially the steam and condensate lines (see Section 8.5.2.5). Under Alternative 1, Tanks 9 and 10 and underground piping in the southern portion of Tank Farm 1 will have been removed before transfer under a separate project (see Figure 9.5-1). Under this separate NEPA action, it is assumed that approximately 10 cubic yards of asbestos-containing pipe wrap would require removal when the underground steam lines near Tanks 9 and 10 are removed (see Appendix D). The other USTs at Tank Farm 1 and their associated underground piping would also be removed; however, the tanks and associated underground piping at Tank Farm 2 are assumed to remain in place at transfer. Approximately 130 cubic yards of asbestos-containing pipe wrap would be removed from underground steam lines at Tank Farm 1, while approximately 75 cubic yards would remain on the steam lines at Tank Farm 2 (see Appendix D-2). Those amounts would be commensurately greater if the remaining condensate lines and fuel lines also are similarly asbestos-wrapped.

The ACM and LBP reported to be present in Buildings 30, 49, B60 and other structures proposed for demolition at Tank Farm 1 would require careful removal when those buildings are demolished to accommodate property redevelopment (see Figure 9.5-1). The remaining buildings at Tank Farm 2 do not overlap with the site plan for Alternative 1, and it is not known whether they would be demolished. If they were, there is ACM and LBP in most of the other tank farm buildings (see Section 8.5.2) that would require careful removal. Other buildings and structures at Tank Farm 1 (e.g., vaults and chambers) and Tank Farm 2 (e.g., Building 218, Building 220, and vaults and chambers) have not been evaluated for ACM or LBP; therefore, demolition of those structures would need to proceed with caution due to the age of the tank farms.

Specialized ACM and LBP removal contractors will need to be used to ensure that any ACM and LBP removal is performed safely and in a manner protective of human health and the environment. ACM and LBP removal would need to be conducted in accordance with federal and state requirements, which are described in Section 3.5.1.2. Collectively, those regulations address ACM and LBP removal, ACM and LBP disposal, worker safety, and air quality. For example, the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61) require that each owner or operator of a demolition activity subject to NESHAPs remove regulated ACM from the facility being demolished prior to any activity that would break up, dislodge, or disturb the materials. Regulated ACM need not be removed before demolition if the ACM is considered non-friable (e.g., vinyl asbestos floor tiles), is not in poor condition, and would not be rendered friable during the demolition process. Contractual specifications for demolition involving ACM would be developed by an accredited Asbestos Hazard Emergency Response Act (AHERA) professional to ensure the proper removal of regulated ACM.

Lead from LBP has been measured in soil near Building 48 at Tank Farm 2 at a level (2,200 mg/kg) that is above both the RIDEM residential DEC for lead of 150 mg/kg and the industrial/commercial DEC for lead of 500 mg/kg. Lead has not been evaluated in soil around other buildings at Tank Farms 1 and 2 because most of the building exteriors have not been painted or there is a lack of accessible soil near the buildings. Under Alternative 1, soils in the affected areas near those buildings would require investigation and potential remediation in accordance with the federal and state requirements discussed in Section 3.5.1.2.

In accordance with RCRA, demolition waste streams that might contain lead would be evaluated, either by using knowledge of the waste or by testing using the toxicity characteristic leaching procedure (TCLP) to determine whether hazardous waste disposal regulations are applicable. LBP- or lead-containing wastes generated from demolition would be temporarily stored on-site in compliance with RCRA requirements before being transported and disposed of off-site by an authorized contractor.

Any LBP or lead identified in the former buoy storage area at Tank Farm 2 (see Section 8.5.2.6) will have been cleaned up under CERCLA prior to property redevelopment (see Section 9.5.1.4).

Therefore, under Alternative 1, removal of some ACM, LBP, and lead-containing soil from the built environment would be a minor beneficial long-term impact. The human and environmental hazards of removing and disposing of the ACM, LBP, and lead-containing soil would be a minor short-term impact. There would be a minor long-term impact from the ACM and LBP that remain on the properties on underground surfaces or in buildings that would be unoccupied. These impacts would not be significant and management of intact ACM and LBP on buildings and structures will be the responsibility of the future property owner. There would be no impacts associated with construction activities and future use of the buildings on the tank farm properties under the Redevelopment Plan because asbestos and LBP are no longer used in new building materials. There could be a minor impact if older boats containing LBP are stored in the new boat storage area. However, that impact would not be significant.

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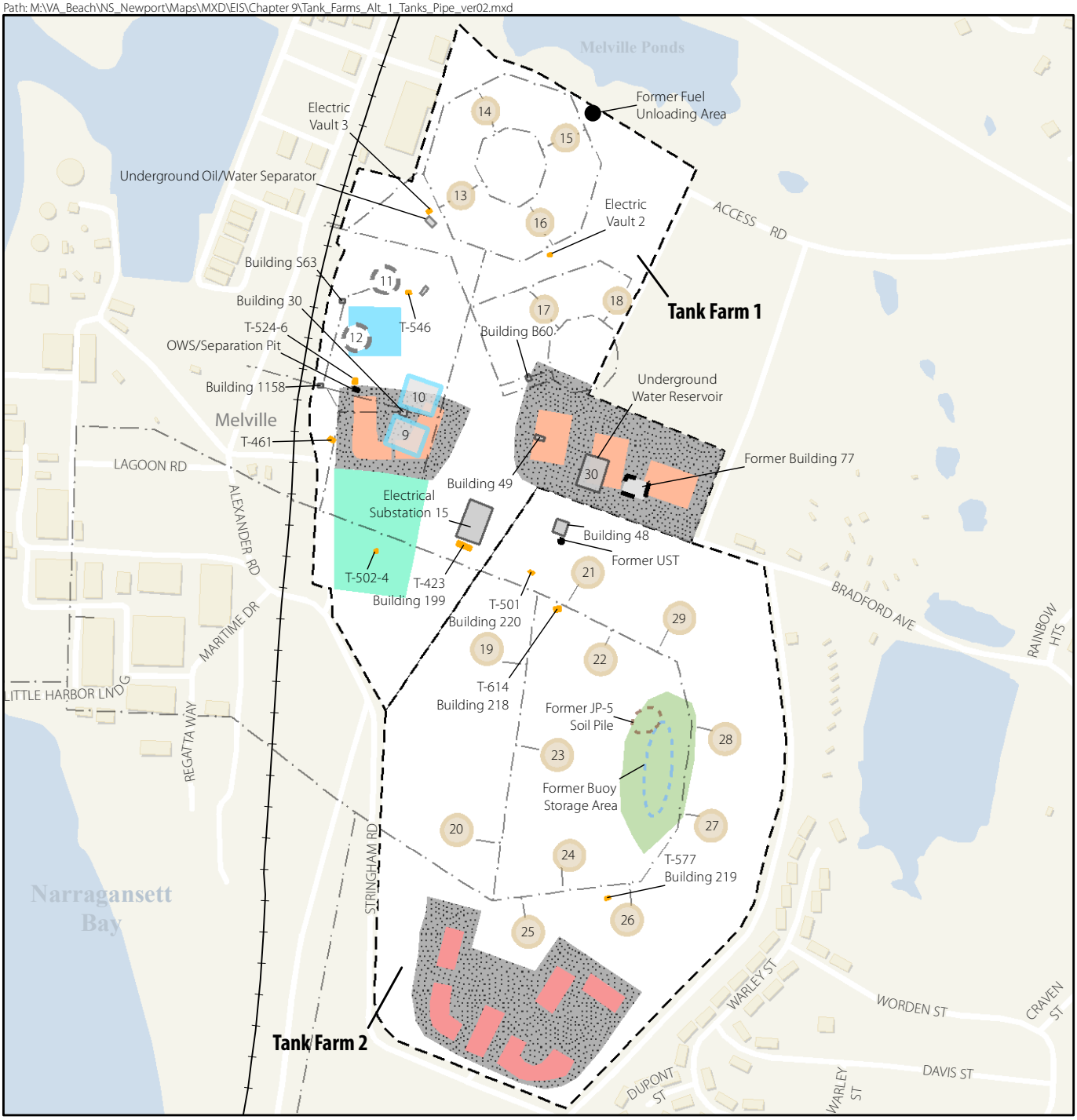

Legend

- Rail Road
- Fuel Line
- Property Boundary
- Underground Storage Tank (UST)
- Partially Buried UST/OWS (oil/water separator)
- Former Aboveground Storage Tank
- Structure
- Former Structure
- Former Buoy Storage Area
- Former JP-5 Soil Pile
- Transformer Location
- Separation Pit
- Waterbody

Proposed Land Use

- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Parking/Access
- Potential Solar Array

SCALE

0 300 600 Feet

SOURCE: U.S. Department of the Navy 2009; RKG Associates et al. 2011.

Figure 9.5-1

Alternative 1 – Preferred Redevelopment Overlaid on Tank Farm 1 and 2 Features

NAVSTA Newport, Rhode Island

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PCBs and Pesticides

NAVSTA Newport removed any PCB-containing transformers in the 1980s (see Section 8.5.2.7). Any transformers that are handled or removed during demolition and redevelopment activities under Alternative 1 should be inspected for "PCB-free" labels. If such labels are not found, the transformers should be evaluated for PCBs. Residual PCBs that have been identified at Tank Farms 1 and 2 near transformer vaults and transformer buildings (see Section 8.5.2.7) will have been cleaned up under CERCLA before the properties are redeveloped (see Section 9.5.1.4). PCBs were not found in window caulking during a recent evaluation conducted in April 2013 (YU & Associates 2013).

Pesticides are currently used at NAVSTA Newport properties as needed and in accordance with the *Integrated Pest Management Plan*. It is expected that pesticides would similarly be used responsibly and in accordance with any applicable local or state regulations in the future by the businesses or their management/service contractors that would occupy the new developments proposed under Alternative 1. There would be no impacts associated with PCB and pesticide management under Alternative 1.

Radioactive Materials and Radon

Radioactive materials would not be expected to be used during demolition and construction activities at Tank Farms 1 and 2 nor during the industrial and office uses planned under Alternative 1.

Although radon surveys have not been conducted at the buildings located within Tank Farms 1 and 2, base-wide radon surveys indicate that radon is not generally a concern in the NAVSTA Newport area (see Section 3.5.1.2). Similarly low levels would be expected to be seen in any new construction. RIDOH regulates radon levels in public buildings, schools, and child care centers (RIDOH 2007b), none of which are included in Alternative 1.

There would be no significant impacts from radioactive materials and radon under Alternative 1.

9.5.1.3 Medical Waste

Medical wastes are not currently and have not been generated in the past at Tank Farms 1 and 2. There would be no medical waste associated with the industrial and office uses planned under Alternative 1 and, therefore, no impact.

9.5.1.4 Environmental Restoration Program

Tank Farm 1 is IRP Study Area 7 and Tank Farm 2 is IRP Study Area 10. Both sites are currently being investigated under the IRP, which is the primary program category of the ER Program (see Section 3.5.1.4). The history and current status of investigations and conditions at Tank Farms 1 and 2 under the IRP are discussed in Section 8.5.4. Table 9.5-1 presents the IRP status and milestones for both tank farms.

At the time of transfer, the tanks, underground piping, and aboveground support buildings (such as pump houses, vaults, and access chambers) at Tank Farm 1 will have been demolished under a separate project; however, tanks, underground piping, and aboveground support buildings (such as pump houses, vaults, and access chambers) would be present on Tank Farm 2. For Alternative 1, the *Redevelopment Plan for Surplus Properties at NAVSTA Newport* assumes that Tank Farms 1 and 2 will have been "environmentally remediated to enable the proposed uses" (RKG Associates et al. 2011). The Navy will complete the CERCLA and RIDEM UST remediation prior to property redevelopment. As discussed in Section 3.5.1.4, the Navy will follow the provisions of CERCLA Section 120(h) such that the deed transferring the property will contain a covenant requiring that "all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer" or, alternatively, the Navy will follow the CERCLA early transfer

process. The other provisions of CERCLA Section 120(h) as discussed in Section 3.5.1.4 also will apply. The remedial designs for Tank Farms 1 and 2 are expected to contain land use controls that would accommodate conditions at the tank farms following the final CERCLA remedies.

Table 9.5-1 IRP Status of Tank Farms 1 and 2

IRP Task	IRP Study Area 7 Tank Farm 1 — Estimated Completion Date	IRP Study Area 10 Tank Farm 2 — Estimated Completion Date
Data Gaps Investigation and Risk Assessment, including Remedial Investigation report	Completed in December 2014	Scheduled by end of 2015
Final Feasibility Study	May 2015	May 2016
Proposed Remedial Action Plan	October 2015	January 2017
Record of Decision	May 2016	December 2017
Land Use Control Remedial Design	January 2017	July 2018
Remedy in Place	2018 timeframe	2020 timeframe

Source: Ward 2015.

The redevelopment plan specifies 300-foot setbacks from the USTs that remain in place at the time of transfer. Under Alternative 1, redevelopment is not planned for areas directly on top of the USTs, with the exception of the planned solar array (see Figure 9.5-1). The types of businesses and land uses that are planned for Alternative 1 (light industrial, office space, boat storage, and solar array) would likely be consistent with any land use controls that accompany the final remedies. Alternative 1 would be compatible with the ER Program.

The other IRP or MRP site closest to the tank farms is IRP Site 21, the former Melville water tower, approximately 0.5 miles east of Tank Farm 2 (see Section 8.5.4). No further action has been determined to be necessary for the site (see Table 3.5-1). The three non-Navy CERCLA sites located just southwest of Tank Farms 1 and 2 are non-NPL sites that reportedly have either been cleaned up (Melville North Landfill) or are sites of little CERCLA activity (see Section 8.5.4).

9.5.2 Alternative 2

9.5.2.1 Hazardous Waste

Similar to Alternative 1, hazardous wastes would be generated during demolition and construction activities and by operation of the businesses planned for the tank farm properties. It is anticipated that more hazardous waste would be generated by near-term and long-term activities under Alternative 2 than is currently generated at Tank Farms 1 and 2. There would therefore be a minor short-term and long-term impact on the management of hazardous waste under Alternative 2. These impacts would not be significant because hazardous wastes would be managed in accordance with Town of Portsmouth and state and federal requirements.

9.5.2.2 Hazardous Materials

Storage Tanks, Fuel Piping, and Oil/Water Separators

The same storage tanks, OWSs, and underground piping would be affected under Alternative 2 as under Alternative 1. The additional light industrial uses and office space planned for Alternative 2 also would affect the same general areas of the tank farms as Alternative 1 (see Figure 9.5-2).

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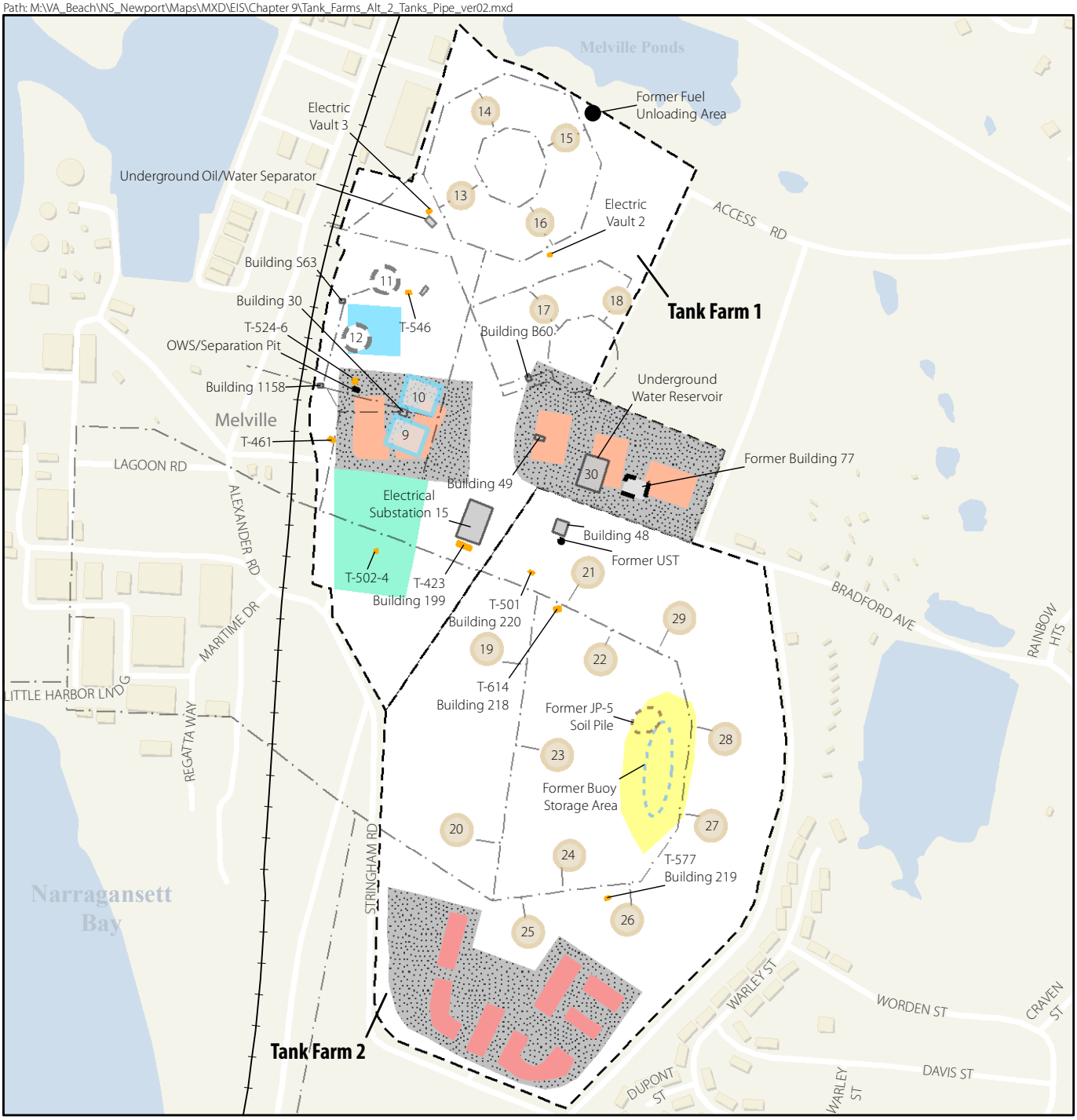

Legend

- Rail Road
- Fuel Line
- Property Boundary
- Underground Storage Tank (UST)
- Partially Buried UST/OWS (oil/water separator)
- Former Aboveground Storage Tank
- Structure
- Former Structure
- Former Buoy Storage Area
- Former JP-5 Soil Pile
- Transformer Location
- Separation Pit
- Waterbody

Proposed Land Use

- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Driveway/Parking Area
- Potential Solar Array

SCALE

0 300 600 Feet

SOURCE: U.S. Department of the Navy 2009; RKG Associates et al. 2011.

Figure 9.5-2

Alternative - 2 High-Density Redevelopment Overlaid on Tank Farm 1 and 2 Features

NAVSTA Newport, Rhode Island

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The tanks, underground piping, and OWSs will have been cleaned under the RIDEM UST program and remediated as necessary under CERCLA prior to property redevelopment. Features/structures at Tank Farm 1 will have been demolished under a separate project, while structures at Tank Farm 2 are assumed to remain in place. There would be no known hazard from petroleum, oil, and lubricants or CERCLA-regulated constituents in those components. There might be unknown residual constituents in underground components that were not able to be fully accessed when the tanks and piping were cleaned. There would be no significant impacts on the management of storage tanks, fuel piping, and OWSs under Alternative 2, the same as for Alternative 1. Impacts will be further mitigated through appropriate notifications and restrictions in property transfer documents.

ACM, LBP, and Lead

As part of demolition, ACM would have to be removed from the same underground piping and ACM and LBP would have to be removed from the same buildings described for Alternative 1 (see Figure 9.5-2), and lead-containing soil would require investigation and potential remediation. Therefore, under Alternative 2, there would be a minor beneficial long-term impact from the removal of some ACM, LBP, and lead-containing soil from the built environment. There would be a minor short-term impact from the human and environmental hazards of removing and disposing of the ACM, LBP, and lead-containing soil. There would be a minor long-term impact from the ACM and LBP that remain on the properties, on underground surfaces, or in buildings that would be unoccupied. These impacts would not be significant. There would be no impacts associated with construction activities and future use of the buildings on the tank farm properties under the redevelopment plan because asbestos and LBP are no longer used in new building materials. There could be a minor impact if older boats containing LBP are stored in the new boat storage area. That impact would not be significant.

PCBs and Pesticides

There would be no impacts associated with PCB and pesticide management under Alternative 2, the same as described for Alternative 1.

Radioactive Materials and Radon

There would be no impacts from radioactive materials and radon under Alternative 2, the same as described for Alternative 1.

9.5.2.3 Medical Waste

There would be no medical waste associated with the future industrial and office uses planned under Alternative 2 and therefore no impact.

9.5.2.4 Environmental Restoration Program

The status of Tank Farm 1 and Tank Farm 2 and other sites under the Navy ER Program would be the same for Alternative 2 as for Alternative 1, and the Navy would follow the same CERCLA transfer process.

The Redevelopment Plan incorporates 300-foot setbacks from the USTs that remain in place. Under Alternative 2, redevelopment is not planned for areas directly on top of the USTs, with the exception of the planned solar array (see Figure 9.5-2). The types of businesses and land uses that are planned for Alternative 2 (light industrial, office space, boat storage, and solar array) would likely be consistent with any land use controls that accompany the final remedies. Alternative 2 would be compatible with the ER Program.

The nearby non-Navy CERCLA sites are the same for Alternative 2 as described for Alternative 1.

9.5.3 No Action Alternative

Under the No Action alternative, Tank Farms 1 and 2 would continue to be remediated under the CERCLA IRP and RIDEM UST closure programs, after which the property would be maintained in a caretaker status with no redevelopment.

9.5.3.1 Hazardous Waste

Small quantities of hazardous waste would continue to be generated from ongoing CERCLA IRP and RIDEM UST closure activities and would cease once Tank Farms 1 and 2 are closed, demolished, and/or remediated. There would be a minor short-term impact on the management of hazardous waste under the No Action alternative. This impact would not be significant.

9.5.3.2 Hazardous Materials

Storage Tanks, Fuel Piping, and Oil/Water Separators

Tanks 13 through 18 at Tank Farm 1 and Tanks 19 through 29 at Tank Farm 2, as well as their associated underground fuel piping, have already been cleaned. They contain no hazardous material except for possible residual material that remains from areas that could not be accessed during cleaning. Structures at Tank Farm 1 will be demolished under a separate project. Under the No Action alternative, there would be a minor short-term impact on the management of those components that are being cleaned up under the RIDEM UST program. This impact would not be significant.

ACM, LBP, and Lead

ACM has been identified on underground pipes, and ACM and LBP have been identified in many of the buildings and structures at Tank Farms 1 and 2. Some of the ACM is in poor condition. Lead from LBP has been measured in the soil around Building 48 at a level above the industrial/commercial DEC for lead. Under the No Action alternative, ACM, LBP, and lead in soil would remain and would not be remediated unless they posed an immediate risk to human or environmental health and safety. There would be a minor long-term impact from ACM, LBP, and lead in soil that remain on the properties underground or in buildings that would be unoccupied. These impacts would not be significant. There would be no impacts from any LBP or lead identified for the former buoy storage area at Tank Farm 2 because the area will be addressed under the CERCLA IRP investigation.

PCBs and Pesticides

There are no longer any PCB-containing transformers at NAVSTA Newport (see Section 3.5.1.2). Residual PCBs that have been identified at Tank Farms 1 and 2 near transformer vaults and transformer buildings (see Section 8.5.2.7) will be cleaned up under the ongoing CERCLA investigation (see Section 8.5.4). Under the No Action alternative, pesticides would continue to be applied at the tank farms as necessary in accordance with the installation's *Integrated Pest Management Plan*. There would be no impacts associated with PCB and pesticide management under the No Action alternative.

Radioactive Materials and Radon

Radioactive materials are not used at the tank farms. There would be no known radon hazard because radon levels are low for NAVSTA Newport as a whole and the buildings at the tank farms are unoccupied. Therefore, there would be no impacts from radioactive materials or radon under the No Action alternative.

9.5.3.3 Medical Waste

Medical waste is not generated at the tank farms; therefore, there would be no impact on medical waste management.

9.5.3.4 Environmental Restoration Program

Under the No Action alternative, investigative and cleanup activities will continue at Tank Farms 1 and 2 and other nearby Navy (and non-Navy) CERCLA sites. The No Action alternative would be compatible with the ER Program.

9.6 Air Quality

This section provides a summary of the projected emissions associated with the disposal and reuse of Tank Farms 1 and 2, including emissions from the construction and operation of all new buildings and additional vehicle uses on roadways after full build-out.

An analysis of the impact of the proposed action on regional air quality in Chapter 12 includes an evaluation of criteria pollutants, GHG, and HAPs from continuing actions at all surplus properties upon final build-out (see Chapter 12, Summary of Impacts for all Surplus Property, for a discussion of the total impacts from this action in the Providence, Rhode Island air quality region). Construction and operation emissions from each of the other individual surplus properties are described in Sections 5.6, 7.6, and 11.6).

Construction emissions have been evaluated individually for each surplus property, based on the assumption that construction emissions are temporary and are not likely to occur within the same year at all locations or at the same time as ongoing operational emissions, especially considering a 20-year build-out period for the Redevelopment Plan.

Detailed calculations conducted to support the estimated construction and operation emissions are provided in Appendix D-1. (Section 3.6 discusses regional air quality, applicable regulations and requirements, and methods used to assess the environmental consequences.)

9.6.1 Alternative 1 (Preferred Alternative)

Under Alternative 1, demolition of existing structures at Tank Farm 1 would occur before implementing this action. The site would be redeveloped for mixed uses, including office space, light industrial, boat storage, and multi-modal parking uses and, possibly, a solar array (see Chapter 2, Figure 2-3). A total of approximately 2.5 acres of Tank Farms 1 and 2 would be redeveloped with office uses, 4.4 acres with light industrial or marina-related uses, and 3.6 acres with the proposed solar array. An additional 20.6 acres of the site would be redeveloped with other parking facilities and access roads4. A total of 31.1 acres (23 percent) of the site would be redeveloped; 104.9 acres (77 percent) would remain as open space.

Construction-related emissions would be primarily exhaust emissions from construction vehicles and equipment, construction materials delivery, construction employee commutes, and dust resulting from ground disturbance and road traffic. Construction emissions resulting from redevelopment of Tank Farms 1 and 2 under Alternative 1 would be similar yet slightly less than emissions estimated under Alternative 2 (see Section 9.6.2). These emissions would be short-term and localized and would result in minor impacts on air quality.

Mitigation of construction emissions would be implemented with best management practices such as proper maintenance of equipment, idling-reduction measures, and the use of newer, more efficient equipment with diesel retrofits to control fine particulate matter (PM_{10}). Particle emissions can also be controlled by regularly watering graded areas and cleaning streets after grading activities.

Operational emissions include emissions from building energy use and increased vehicle traffic. Emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as from the indirect use of electricity. Emissions from increased vehicle use were

calculated based on the new vehicle trips modeled for the proposed redevelopment at Tank Farms 1 and 2 in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013) Total operational emissions after full build-out of Tank Farms 1 and 2 under Alternative 1 are provided in Table 9.6-1. Operational emissions would result in minor impacts on air quality, and the mitigation discussed below would reduce adverse impacts. To mitigate operational emissions, buildings can be designed to meet stringent energy-efficiency standards. Implementing traffic-easing roadway designs to lower vehicle speed and reduce congestion, in addition to expanding public transportation and carpooling programs, would reduce vehicle emissions.

Table 9.6-1 Building Energy and Vehicle Emissions, Tank Farms 1 and 2 (Alternative 1)

Energy Type	Emissions per year (tons)					
	CO	NO_X	VOCs	SO_2	PM_{10}	$PM_{2.5}$
Fuel Oil	0.03	0.12	0.00	0.27	0.01	0.01
Natural Gas	0.16	0.37	0.02	0.00	0.01	0.01
Electricity	N/A	0.86	N/A	0.14	N/A	N/A
New Vehicle Emissions	26.87	2.45	3.17	0.06	0.58	0.38
Total Annual Operational Emissions	**27.06**	**3.80**	**3.20**	**0.48**	**0.59**	**0.39**

Key:
CO = Carbon monoxide.
VOC = Volatile organic compounds
N/A = Not applicable
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.

9.6.2 Alternative 2

Redevelopment would occur in the same areas that would be redeveloped under Alternative 1. Under Alternative 2, a total of approximately 3.2 acres would be redeveloped with office uses, 4.7 acres with light industrial or marina-related uses, 4 acres with multi-mode parking, and 3.6 acres—the same as under Alternative 1—with the proposed solar array. A total of 24 acres would be redeveloped with parking facilities and access roads under Alternative 2.

Construction emissions resulting from the proposed redevelopment at Tank Farms 1 and 2 under Alternative 2 are provided in Table 9.6-2. These emissions would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. Construction emissions would therefore result in minor impacts on air quality. Measures to mitigate construction emissions are the same as those discussed above under Alternative 1.

Operational emissions include emissions from building energy use and increased vehicle traffic. Emissions from building energy use result from the direct use of fuel oil and/or natural gas, primarily for heating, as well as the indirect use of electricity. As determined in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013), vehicle traffic would increase due to the proposed redevelopment of Tank Farms 1 and 2, resulting in additional vehicle emissions. Total operational emissions after full build-out of Tank Farms 1 and 2 under Alternative 2 are provided in Table 9.6-3. Operational emissions would result in minor impacts on air quality (see Chapter 12 for the discussion of regional air quality impacts).

Table 9.6-2 Construction Emissions, Tank Farms 1 and 2 (Alternative 2)

Source	Emissions per year (tons)					
	VOCs	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Construction Equipment	3.93	20.42	37.64	0.068	3.47	3.47
Worker Commute	0.61	5.80	0.45	0.005	1.29	0.14
Demolition Removal/ Delivery Truck Traffic	0.010	0.038	0.277	0.005	0.113	0.018
VOCs and PM from Paving and Grading	0.413				1.81	1.81
Total Emissions (TPY)	**4.96**	**26.25**	**38.37**	**0.08**	**6.68**	**5.44**

Key:
CO = Carbon monoxide.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
TPY = Tons per year
VOCs = Volatile organic compounds

Table 9.6-3 Building Energy and Vehicle Emissions, Tank Farms 1 and 2 (Alternative 2)

Energy Type	Emissions per year (tons)					
	CO	NO_X	VOCs	SO_2	PM_{10}	$PM_{2.5}$
Fuel Oil	0.04	0.13	0.01	0.31	0.01	0.01
Natural Gas	0.18	0.43	0.03	0.00	0.01	0.01
Electricity	N/A	1.11	N/A	0.18	N/A	N/A
New Vehicle Emissions	30.65	2.79	3.62	0.07	0.66	0.43
Total Annual Operational Emissions	**30.87**	**4.46**	**3.65**	**0.57**	**0.68**	**0.45**

Key:
CO = Carbon monoxide.
N/A = Not applicable
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOCs = Volatile organic compounds

9.6.3 No Action Alternative

Under the No Action alternative, there would be no new stationary or mobile sources of criteria, HAP, or GHG emissions from the use of the Tank Farm 1 and 2 properties. Therefore, the No Action alternative would not impact air quality at Tank Farms 1 and 2.

9.6.4 General Conformity Rule Applicability

Since Rhode Island is in attainment for all NAAQS, the General Conformity Rule does not apply to this action While not applicable to the action, the *de minimis* thresholds under the General Conformity Rule have been used to consider the potential level of significance of the air quality impacts under NEPA.

Emissions from construction at Tank Farms 1 and 2 under either alternative would be below General Conformity Rule *de minimis* thresholds. Thus, changes in air quality would not be significant as a result of this construction and mitigation would reduce adverse impacts. The evaluation of all other surplus properties and the total impacts of this action are discussed in Chapter 12.

9.7 Noise

This section includes an analysis of the potential noise impacts resulting from the proposed redevelopment of Tank Farms 1 and 2 under Alternative 1 and Alternative 2, and the No Action alternative. It includes an analysis of the potential impacts resulting from construction and operation of the proposed redevelopment plan for Tank Farms 1 and 2.

9.7.1 Alternative 1 (Preferred Alternative)

9.7.1.1 Construction

The proposed redevelopment at Tank Farms 1 and 2 involves the construction of light industrial facilities, boat storage, multi-modal parking uses, and possibly a solar array. Table 9.7-1 provides an estimate of the number and type of construction equipment that would be required and the associated SPL for each type of equipment at a distance of 50 feet from the source and at the nearest residence. The nearest residence has been determined to be a location on Warley Street at a distance of 900 feet from the center of the combined property. Figure 9.7-1 illustrates the locations of the noise receptors used for analysis. The SPL at this location is estimated to range from 48 to 61 dBA. As indicated in Section 3.7.1.1, normal speech has a sound level of 60 dB and a garbage disposal has a sound level of 80 dB. The composite sound level due to construction at this residence would be close to the sound level of normal speech.

Construction noise impacts would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. Although the Town of Portsmouth does not currently have a noise ordinance, most construction activities would be expected to take place between the hours of 7:00 a.m. and 7:00 p.m., when the noise would be less disturbing to area residents.

Temporary increases in construction-related vehicle noise would, however, be expected. Truck and construction vehicle (e.g., dump trucks, material deliveries, debris removal, etc.) traffic within and near the tank farm properties would produce localized noise for brief periods, but this would not be expected to create any long-term, adverse noise impacts on the neighboring community.

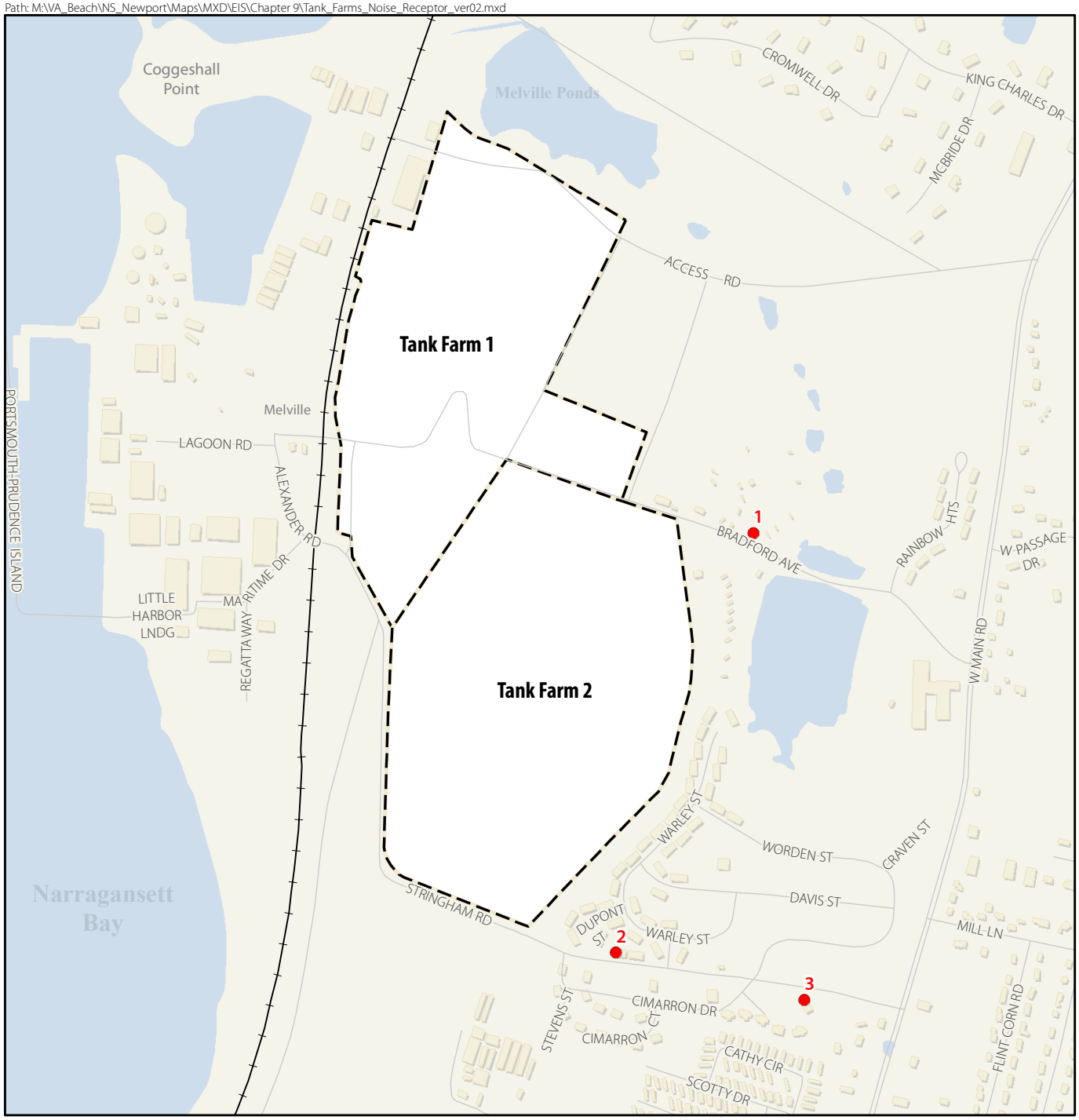
Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

9.7.1.2 Operation

Uses proposed at Tanks Farms 1 and 2 under the Redevelopment Plan, such as light industrial uses, could potentially result in noise emissions above ambient sound levels. However, these light industrial uses would be located on the Tank Farm 1 property, not close to residential areas. In addition, as discussed in Section 9.1, land uses proposed for Tank Farms 1 and 2 are generally consistent with the current zoning for the site and with surrounding land uses. Solar arrays or, more generally, utilities, are not included as a permitted use in the redevelopment district, and any developer proposing to construct a solar array on the site would be required to apply for a use variance from the requirements of the zoning ordinance. Typically, before a solar array is constructed, a noise assessment would be conducted. The project design would need to include any necessary noise controls identified in the assessment to reduce noise impacts on the community.

Implementation of Alternative 2 would not be expected to generate significant traffic-related noise impacts within the study area. Traffic-related noise would occur in areas already experiencing such noise and would not be expected to cause additional impacts. To characterize the projected traffic noise near Tank Farms 1 and 2, the evening peak hour traffic volume, vehicle speed, and vehicle mix data for the

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS\Chapter 9\Tank_Farms_Noise_Receptor_ver02.mxd



Legend

- Noise Receptor Location
- Street
- Rail Road
- Property Boundary

SCALE

0 300 600 Feet

Figure 9.7-1

Tank Farm 1 and 2 Properties Noise Receptor Locations

NAVSTA Newport, Rhode Island

SOURCE: U.S. Department of the Navy 2009

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roadways in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013) were modeled, using TNM version 2.5, for the receptor locations shown in Table 9.7-2.

Table 9.7-1 Redevelopment Estimated Construction Equipment Noise Levels, Tank Farms 1 and 2 (Alternatives 1 and 2)

Construction Equipment	Quantity	Usage Factor %	SPL @ 50 Feet (dBA)	SPL[1] (dBA) at Specified Distance	
				50 feet (adjusted)[2]	Nearest Residence 900 feet
Building Demolition					
Loader	2	40	79	78	53
Crane (Crawler)	2	16	81	76	51
Hydraulic Breaker	2	10	90	83	58
Concrete Saw	2	20	90	86	61
Grader	2	40	85	84	59
Haul Truck	2	40	76	75	50
Building Construction					
Loader	2	40	79	78	53
Crane (Crawler)	2	16	81	76	51
Crane (Hydraulic Truck)	2	16	81	76	51
Generators	2	50	82	82	57
Welder	2	40	74	73	48
Backhoe	1	40	80	76	51
Compressor	2	40	78	77	52
Grading					
Grader	2	40	85	84	59
Bull Dozer	2	40	85	84	59
Water Truck	2	40	76	75	50
Haul Truck	2	40	76	75	50
Paving/Road Construction					
Cement Mixer	1	40	85	81	56
Asphalt Paving Machine	1	50	85	82	57
Vibratory Compactor	1	20	80	73	48
Generators	1	50	82	79	54

Source: Federal Highway Administration 2006

[1] SPL = Sound pressure level
[2] SPL at 50 feet adjusted to equipment quantity and usage factor

The predicted traffic noise levels at receptor locations near Tank Farms 1 and 2 are summarized below in Table 9.7-2. Noise levels ranged from 49.5 to 70.3 dBA, which differs from existing conditions by 0.7 to 6.4 dBA. An increase in noise of 6.4 dBA is considered to be noticeable. As shown in Table 9.7-2, projected traffic noise levels would slightly exceed FHWA guidance noise abatement criteria thresholds at some receptors for land uses proposed under Alternative 1 but would not substantially exceed (defined as greater than 15 dBA) existing conditions. Land uses proposed under Alternative 1 would include FHWA activity categories 'B' and 'C.' Traffic noise abatement criteria threshold for activity Category B is 67 dBA and 72 dBA for Category C. (For more information on FHWA traffic noise abatement criteria see Section 3.7.2.)

Table 9.7-2 Peak PM Hour Traffic Noise Levels, Tank Farms 1 and 2 (Alternative 1)

Receptor	Location	Hourly L_{eq} Sound Level (dBA)		Sound Level Change
		Modeled Existing	Alternative 1 (2032)	
1	Bradford Avenue	43.1	49.5	6.4
2	Stringham Road West	65.5	66.3	0.8
3	Stringham Road East	69.6	70.3	0.7

Changes in the traffic-related noise levels would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

9.7.2 Alternative 2

9.7.2.1 Construction

Although the redevelopment of Tank Farms 1 and 2 under Alternative 2 would have increased office space, increased light industrial uses along the rail line, and additional parking space, the estimated construction noise levels would be similar to Alternative 1; however, the duration of construction may be slightly longer.

Temporary increases in construction-related vehicle noise would be expected. Truck and construction vehicle (e.g., dump trucks, material deliveries, debris removal, etc.) traffic in and near the Tank Farm 1 and 2 properties would produce localized noise for brief periods, but this would not be expected to create any long-term, adverse noise impacts on the neighboring community. Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

9.7.2.2 Operation

Although redevelopment under Alternative 2 would have increased office space, increased light industrial uses along the rail line, and additional parking space, the impacts on the ambient noise environment would be similar to those described under Alternative 1. However, under Alternative 2, more traffic is projected to be associated with the proposed redevelopment.

The predicted traffic noise levels for the Tank Farm 1 and 2 properties redevelopment under Alternative 2 are summarized below in Table 9.7-3. The largest estimated increase in traffic noise would be 5.1 dBA. An increase in noise of 5.1 dBA is considered to be noticeable. As shown in Table 9.7-3, projected traffic noise levels would exceed the FHWA guidance noise abatement criteria thresholds at some nearby receptors for land uses proposed under Alternative 2 but would not substantially exceed (greater than 15 dBA) existing conditions. Adjacent land uses proposed under Alternative 2 would include FHWA activity categories ‘B’ and ‘C.’ Traffic noise abatement criteria threshold for activity category B is 67 dBA and 72 dBA for category C. (For more information on FHWA traffic noise abatement criteria see Section 3.7.2.) Operational noise stemming from traffic would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

Table 9.7-3 Peak Evening Hour Traffic Noise Levels, Tank Farms 1 and 2 Properties Redevelopment (Alternative 2)

Receptor	Location	Hourly L_{eq} Sound Level (dBA)		Sound Level Change
		Modeled Existing	Alternative 2 (2032)	
1	Bradford Avenue	43.1	48.2	5.1
2	Stringham Road West	65.5	66.9	1.4
3	Stringham Road East	69.6	71.2	1.6

9.7.3 No Action Alternative

Under this alternative, all excess property would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur at Tank Farms 1 and 2 and as a result there would be no additional noise generated.

9.8 Infrastructure and Utilities

This section summarizes the potential impacts on infrastructure and utilities from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of impacts on water supply, wastewater, storm water, other utilities, and solid waste management from disposal and reuse of Tank Farms 1 and 2.

9.8.1 Alternative 1 (Preferred Alternative)

9.8.1.1 Water Supply

The City of Newport would be expected to have sufficient capacity to meet future water demands resulting from implementation of Alternative 1.

Water Demand

Water demand was projected using planning multipliers for the proposed land uses based on square footage and number of employees. Full build-out of Tank Farms 1 and 2 under Alternative 1 is projected to result in a demand of approximately 18,000 gpd from the mix of light industrial and office uses (see Table 9.8.1). Due to the estimated number of employees, the proposed office use would have a higher rate of water consumption than the proposed industrial uses. No water demand is associated with the solar array. (For more information on the methodology and assumptions used to project water demand, see Appendix D-3.)

Operation and Management

Implementation of Alternative 1 would be expected to have a minor impact on the future capacity of the Portsmouth Water and Fire District, which receives its water supply from the City of Newport; thus minor impacts are anticipated on the City of Newport's water treatment and distribution system. The current average daily demand on the City of Newport water supply is approximately 5.59 mgd including the City of Newport and the Town of Middletown through the City of Newport's distribution system and also wholesale water supply to NAVSTA Newport and the Portsmouth Water and Fire District. Total average daily demand is projected to increase to between 7.50 and 7.96 mgd by 2033 (Pare Corporation 2014).

Replacement of one of the existing plants and upgrades to the other increased capacity to 16 mgd (Water World 2012; City of Newport Department of Utilities 2014). The expected 18,000 gpd under Alternative 1 represents less than 1 percent of the average daily demand projected in 2033 (see Table 9.8-1). Therefore, the increase in projected water demand would represent a minor impact on operation and maintenance of the City of Newport's water treatment plants and would be met with current capacity.

Table 9.8-1 Projected Water Demand (gpd) at Build-Out, Tank Farms 1 and 2 (Alternatives 1 and 2)

Land Use	Alternative 1	Alternative 2
Light Industrial	4,250	4,950
Office Space	13,750	17,200
Total	**18,000**	**22,150**

Distribution System

Water lines owned by NAVSTA Newport at the tank farms have been cut and capped. Redevelopment of the property would require installing a new distribution system for water supply, which would be the responsibility of the developer/future property owner and would be considered a moderate impact. Ground would be disturbed when laying new distribution lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new distribution system(s) would be constructed to ensure that they are adequately sized. Tank Farms 1 and 2 are located within the Navy's current utility jurisdiction; however, at the time of development, another utility provider will be identified. The current boundaries of the Portsmouth Water and Fire District do not include the tank farm properties and may require negotiations at the state assembly level to revise the boundaries, if the District were to be identified as the future utility provider (Carlson 2012). Easements may be necessary in the future, in order to provide water to the Tank Farm 1 and 2 properties.

In addition, the design and installation of any new water supply infrastructure would require, if applicable, municipal review and approval and would need to comply with applicable local codes, ordinances, and regulations.

In summary, Alternative 1 would result in an increase in water demand and a need for infrastructure. New water distribution infrastructure would be constructed to accommodate redevelopment.

9.8.1.2 Wastewater

Implementation of Alternative 1 would have an adverse impact on any existing wastewater system because of the need to integrate a currently unserviced area in the Town of Portsmouth. Portsmouth currently has no infrastructure to treat additional wastewater generated by redevelopment under Alternative 1.

Wastewater Volume

Full build-out of Alternative 1 would result in 17,170 gpd of wastewater flow from the proposed light industrial and office uses, with office uses expected to generate most of the increased wastewater. Projections were based on standard multipliers for the proposed land uses and are shown in Table 9.8-2. (For more information on the methodology and assumptions used to project wastewater demand, see Appendix D-3.)

Table 9.8-2 Projected Wastewater Generation (gpd) at Build-Out, Tank Farms 1 and 2 (Alternatives 1 and 2)

Land Use	Alternative 1	Alternative 2
Light Industrial	4,080	4,752
Office Space	13,090	16,374
Total	**17,170**	**21,126**

Operation and Management

The Town of Portsmouth currently has no centralized wastewater collection or treatment infrastructure. Portions of the town manage wastewater through individual septic systems. The Melville area of

Portsmouth is serviced by the City of Newport's wastewater collection and treatment system. The developer would have to design and permit an on-site wastewater treatment system, or possibly connect to the City of Newport's wastewater collection and treatment system. The City of Newport treatment plant has a current capacity of 10.7 mgd and processes 9.46 mgd; therefore, the city may have some capacity to accommodate the proposed redevelopment at Tank Farms 1 and 2. However, there have been no discussions at the town level regarding the use of the City of Newport's system for future development. The Town of Portsmouth currently has no plans to construct a new treatment plant because of the costs for local taxpayers. The town council has rejected several plans for future wastewater infrastructure prepared in recent years (Clark 2013; Faerber 2013).

Collection System

New wastewater infrastructure for Tank Farms 1 and 2 would be needed under Alternative 1. Current soil conditions on the properties would make on-site sewage disposal systems an unlikely solution. Installing sewers to carry wastewater to either the City of Newport treatment plant or a future treatment plant in Portsmouth would likely be the responsibility of the Town of Portsmouth in concert with the future developer. Construction of a new collection system to service the Tank Farms would be the responsibility of the developer/future property owner and would be considered a moderate impact. Ground would be disturbed when laying new collection lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new collection systems would be constructed to ensure that they are adequately sized.

In summary, Alternative 1 would result in a potentially significant impact on wastewater collection and treatment capacity.

9.8.1.3 Storm Water

Implementation of Alternative 1 would increase the amount of impervious surface area on the property, resulting in a greater volume of storm water runoff. Much of the existing impervious surface area from aboveground tanks would be replaced with new structures for light industrial and office uses, the solar array, and parking and access roadways. Full build-out under Alternative 1 is estimated to result in a total of approximately 1,352,300 square feet of impervious surface area, an increase of 130 percent over the current impervious surface area. Total impervious surface area is provided for both alternatives in Table 9.8-3. (For more information on the methodology and assumptions used to calculate existing and future impervious surface, see Appendix D-4.)

Table 9.8-3 Impervious Surface Area (sq ft) at Build-Out, Tank Farms 1 and 2 (Alternatives 1 and 2)

Structure	Alternative 1 (sq ft)	Alternative 2 (sq ft)
Light Industrial	190,000	205,000
Potential Solar Array	155,000	155,000
Office Space	110,000	137,600
Parking	801,500	871,200
Access	95,800	110,000
Total	**1,352,300**	**1,478,800**

Under the Town of Portsmouth's Storm Water Discharge Control Ordinance, the town regulates any storm water discharge associated with construction activities covered under the RIPDES general permit and also requires that BMPs be implemented to prevent, control, and reduce storm water pollution. A General Permit Rhode Island Pollutant Discharge Elimination System for Storm Water Discharges Associated with Construction Activity would be necessary because redevelopment of the Tank Farm 1 and 2 properties would disturb more than 1 acre. Before approving a Construction General Permit,

RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. Through compliance with applicable state and local regulations, the addition of impervious surface would not be considered a significant impact.

Additionally, as indicated in Section 3.8, Infrastructure and Utilities, Section 438 of the EISA of 2007 requires that any development or redevelopment project involving a federal facility with a footprint exceeding 5,000 square feet shall use site planning, design, construction, and maintenance strategies in order to maintain or restore the pre-development hydrology of the property with regard to temperature, rate, volume, and duration of flow. Compliance with this requirement can be met through the implementation of LID technologies. Section 438 applies to the "sponsor of any development or redevelopment project involving a federal facility." The act of transferring the tank farms will result in the property being no longer federally owned; consequently, Section 438 would not apply to the redevelopment of the installation. However, as outlined in *Rhode Island Stormwater Design and Installation Standards Manual*, using LID techniques is required as a primary method of storm water control (RIDEM and CRMC 2010). Thus, although not required through federal ownership of the property, it is expected that the redevelopment of the tank farms would be consistent with the terms contained in Section 438 of the EISA.

Storm Water System

The existing storm water collection system would require modifications, and new storm water infrastructure would be necessary to offset new impervious surfaces associated with redevelopment under this alternative. Ground would be disturbed during construction of new infrastructure, and the developer would be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future developer would be required to identify any infrastructure requirements that may be necessary.

Operation and Management

Under Alternative 1, the property would likely be transferred to a non-federal agency and infrastructure would no longer be managed by the Navy. Upon completion of the BRAC disposal process, the future property owner or developer would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 1 would result in a significant increase in impervious surface area and new storm water infrastructure would be required; however, mitigation will render the impact not significant. Mitigation will include required compliance with state and local regulations and permit conditions regarding storm water management.

9.8.1.4 Other Utility Systems

Electricity

Electricity would be supplied by National Grid. Upon full build-out of Alternative 1, it is expected that total electricity demand—including accounting for electricity generated by the proposed solar array—would be approximately 2,012,362 kWh, using U.S. averages for energy use per square foot, obtained from the EIA for specific types of building use (U.S. Department of Energy 2003, 2009). These averages were used to estimate total energy use by the proposed new building spaces. Office space is expected to have the largest demand for electricity and consume 1.9 million kWh annually. Light industrial uses would require approximately 1 million kWh, and the light industrial/boat storage uses would require an additional 321,492 kWh. It is expected that 1.2 million kWh would be generated by the solar array. Table 9.8-4 shows the projected electricity demand for the proposed uses under each alternative.

Table 9.8-4 Projected Electricity Use at Build-Out, Tank Farms 1 and 2 (Alternatives 1 and 2)

Structure	Alternative 1 (kWh)	Alternative 2 (kWh)
Light Industrial/ Boat Storage	321,492	321,492
Light Industrial	1,035,920	1,136,725
Office space	1,901,212	2,378,244
Solar Array (1MW)	(1,246,263)	(1,246,263)
Total	**2,012,362**	**2,590,198**

As shown in Table 5.8-4 in Section 5.8, Infrastructure and Utilities, the Town of Portsmouth consumed more than 111 million kWh of electricity in 2011. The 2011 electric consumption represented a decrease from 2010 but was still an increase over the levels used in 2009. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade.

The annual electricity demand under Alternative 1 would represent less than 1.8 percent of 2011 energy usage in Portsmouth and less than a half percent of total annual energy usage for Newport, Middletown and Portsmouth combined (Rhode Island Energy 2012). Considering the 0.8 percent future annual growth rate in electricity demand at the state level, and the fact that Aquidneck Island is home to approximately 5.5 percent of the state's overall population, the annual growth rate for electricity demand would be expected to be far less than 0.8 percent. Therefore, the electricity demand of the redevelopment of Tank Farms 1 and 2 under Alternative 1 would be expected to be supported by current electrical capacity and would represent a negligible impact on regional demand. However, the future developer would need to coordinate with the three local municipalities and National Grid to identify an alternative for electricity provision if, at the time of redevelopment, regional capacities are exceeded.

All electric connections would be constructed to ensure an adequately sized and properly built electric transmission and conveyance system; ground would be disturbed during construction of new systems. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

Natural Gas

Natural gas would continue to be supplied by National Grid. It is expected that a total of 7,944,000 cf of natural gas would be needed annually under full build-out of Alternative 1. Similar to electricity usage, estimates of future natural gas usage were calculated for full build-out as proposed under Alternative 1 using U.S. averages for natural gas use per square foot, which were obtained from the U.S. Department of Energy (2003, 2009) for specific types of building use. These averages were used to estimate total natural gas use by the proposed new building spaces. Light industrial uses and office space would consume similar amounts of natural gas at 3,393,000 cf and 3,498,000 cf, respectively. Light industrial/boat storage uses would use approximately 1 million cf of natural gas annually. Table 9.8-5 compares natural gas usage for the two alternatives. Upon completion of the BRAC disposal process, the future developer would work with National Grid to identify any infrastructure requirements that may be necessary.

The natural gas usage for the Town of Portsmouth in 2011 was more than 210 billion cf (see Table 5.8-5 in Section 5.8, Infrastructure and Utilities). The quantity of natural gas needed under Alternative 1 represents less than one one-hundredth of a percent of the amount consumed in Portsmouth in 2011 (Rhode Island Energy 2012a) and therefore is assumed to be accommodated within existing capacities servicing existing demand. It would represent a negligible impact on regional demand. Redevelopment under Alternative 1 is not anticipated to create a strain on natural gas resources.

Table 9.8-5 Projected Natural Gas Use at Build-Out, Tank Farms 1 and 2 (Alternatives 1 and 2)

Structure	Alternative 1 (kWh)	Alternative 2 (kWh)
Light Industrial/ Boat Storage	1,053,000	1,053,000
Light Industrial	3,393,000	3,723,173
Office space	3,498,000	4,375,680
Total	**7,944,000**	**9,151,853**

All natural gas connections would be constructed to ensure an adequately sized and properly built gas transmission and conveyance system; ground would be disturbed during construction of new systems. Further, implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

9.8.1.5 Solid Waste

C&D wastes would be generated primarily from construction activities that are planned for redevelopment of the tank farm properties. The structures at Tank Farm 1 would be demolished under a separate project and are not considered in this analysis; no structures would be demolished at Tank Farm 2.

Appendix D-2 contains C&D waste estimates for structures/features at Tank Farm 2 if they are removed in the future as part of redevelopment (see Figure 9.5-1). About 2,600 cubic yards of C&D waste would be generated from constructing the industrial and commercial facilities planned for Alternative 1. Much of the C&D waste would be recyclable and it is anticipated that the demolition and construction contracts would contain traditional terms and conditions requiring recycling of C&D waste to the extent practicable, which reduces disposal costs and is also protective of the environment. Solid wastes also would be routinely generated during the future operation of the industrial and commercial enterprises that are planned for the tank farm properties. Such solid wastes would consist of mixed trash, food waste, and traditional recyclables such as paper, cardboard, and containers. It is expected that non-C&D solid wastes would be accommodated by existing local solid waste management services.

Solid waste is currently occasionally generated at Tank Farms 1 and 2 in connection with investigative activities. Implementation of Alternative 1 would have minor short-term and long-term impacts on the generation and management of solid waste. The impacts would not be significant because of the relatively small scale of the proposed reuse and redevelopment and the availability and capacity of existing solid waste management programs in the Town of Portsmouth and Newport County.

9.8.2 Alternative 2

9.8.2.1 Water Supply

Water Demand

Water demand was projected using planning multipliers for the proposed land uses based on square footage and number of employees. Full build-out of Tank Farms 1 and 2 under Alternative 2 would result in a demand of approximately 22,150 gpd from a mix of light industrial and office uses. Because of the estimated number of employees, the proposed office use would have a higher rate of water consumption than the proposed industrial uses. No water demand is associated with the solar array. (For more information on the methodology and assumptions used to project water demand, see Appendix D-3.)

Operation and Management

Implementation of Alternative 2 would be expected to have a minor impact on the future capacity of the Portsmouth Water and Fire District, which receives its water supply from the City of Newport; thus minor impacts are anticipated on the City of Newport's water treatment and distribution system. The current average daily demand on the City of Newport water supply is approximately 5.59 mgd, including the City of Newport and the Town of Middletown, through the City of Newport's distribution system and also wholesale water supply to NAVSTA Newport and the Portsmouth Water and Fire District. Total average daily demand is projected to increase to 7.50 to 7.96 mgd by 2033 (Pare Corporation 2014).

Replacement of one of the existing plants and upgrades to the other increased capacity to 16 mgd (Water World 2012; City of Newport Department of Utilities 2014). The expected 22,150 gpd under Alternative 2 represents less than 1 percent of the average daily demand projected for 2033. Therefore, the increase in projected water demand would represent a minor impact on operation and maintenance of the City of Newport's water treatment plants and would be met with current capacity.

Distribution System

As noted earlier, water lines owned by NAVSTA Newport at the tank farms have been cut and capped. Redevelopment of the property would require installing a new distribution system for water supply, which would be the responsibility of the developer/future property owner and would be considered a moderate impact. Similar to Alternative 1, ground would be disturbed when laying new distribution lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new distribution systems would be constructed to ensure that they are adequately sized. Tank Farms 1 and 2 are located within the Navy's current utility jurisdiction; however, at the time of development, another utility provider will be identified. The current boundaries of the Portsmouth Water and Fire District do not include the tank farm properties and may require negotiations at the state assembly level to revise the boundaries, if the District were to be identified as the future utility provider (Carlson 2012). Easements may be necessary in the future in order to provide water to the surplus property.

In addition, the design and installation of any new water supply infrastructure would require, if applicable, municipal review and approval and would need to comply with applicable local codes, ordinances, and regulations.

In summary, similar to Alternative 1, Alternative 2 would result in an increase in water demand and a need for infrastructure. New water distribution infrastructure would be constructed to accommodate redevelopment, and this would be the responsibility of the new property owner/developer.

9.8.2.2 Wastewater

Implementation of Alternative 2 would have an adverse impact on any existing wastewater system because of the need to integrate a currently unserviced area in the Town of Portsmouth. As discussed in Alternative 1, Portsmouth has no infrastructure to treat additional wastewater.

Wastewater Volume

Full build-out of Alternative 2 would generate an estimated 21,126 gpd from the proposed light industrial and office space uses. Office uses are expected to generate the most of the wastewater under this alternative. Projections were based on standard multipliers for the proposed land uses and are shown in Table 9.8-2. (For more information on the methodology, assumptions, and assumptions used to project wastewater demand, see Appendix D-3.)

Operation and Management

The Town of Portsmouth currently has no centralized wastewater collection or treatment infrastructure.

Similar to Alternative 1, the developer would have to design and permit an on-site wastewater treatment system or possibly connect to the City of Newport's wastewater collection and treatment system. The City of Newport treatment plant has a current capacity of 10.7 mgd and processes 9.46 mgd; therefore, the city may have some capacity to accommodate the proposed redevelopment at Tank Farms 1 and 2. However, there have been no discussions at the town level regarding the use of the City of Newport's system for future development. The Town of Portsmouth currently has no plans to construct a new treatment plant due to the implications on local taxes. The town council has rejected several plans prepared in recent years for future wastewater infrastructure (Clark 2013; Faerber 2013).

Collection System

New wastewater infrastructure for Tank farms 1 and 2 would be needed under Alternative 2. Current soil conditions on the properties would make on-site sewage disposal systems an unlikely solution. Installing sewers to carry wastewater to either the Newport treatment plant or a future treatment plant in Portsmouth would likely be the responsibility of the Town of Portsmouth. A new collection system to service the Tank Farms would be the responsibility of the developer/future property owner and would be considered a moderate impact. Ground would be disturbed when laying new collection lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new collection system(s) would be constructed to ensure that they are adequately sized.

In summary, Alternative 2 would result in a potentially significant impact on wastewater collection and treatment capacity.

9.8.2.3 Storm Water

Implementation of Alternative 2 would increase the amount of impervious surface area on the property, producing a greater volume of storm water runoff. Full build-out under Alternative 2 is expected to result in a total of approximately 1,478,800 square feet of impervious surface area, an increase of 151 percent in impervious surface area. Total impervious surface area is provided for both alternatives in Table 9.8-3.

Similar to Alternative 1, compliance with local and state regulations regarding storm water management would be necessary. A General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity, would also be necessary because redevelopment of Tank Farms 1 and 2 would disturb more than 1 acre. Prior to approval of a Construction General Permit, the RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. Through compliance with applicable state and local regulations, the addition of impervious surface would not be considered a significant impact.

Storm Water System

Similar to Alternative 1, the existing storm water collection system would require modifications, and new storm water infrastructure would be necessary to offset new impervious surfaces associated with redevelopment.

Operation and Management

Under Alternative 2, the property would be transferred to a non-federal agency and infrastructure would no longer be managed by the Navy. Ground would be disturbed during construction of new infrastructure, and the developer would be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future property owner would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 2 would result in a significant increase in impervious surface area and new storm water infrastructure would be required; however, mitigation will render the impact not significant. Mitigation will include required compliance with state and local regulations and permit conditions regarding storm water management.

9.8.2.4 Other Utility Systems

Electricity

Electricity to the property would be supplied by National Grid. Under full build-out of Alternative 2, it is expected that total electricity demand—including accounting for the 1.2 kWh generated by the proposed solar array—would be approximately 2,590,198 kWh. Office use is expected to have the largest demand for electricity and is projected to use approximately 2.4 million kWh annually. Light industrial uses would need 1,136,725 kWh and light industrial/boat storage an additional 321,492 kWh. Table 9.8-4 shows the projected electricity demand for the proposed uses under each alternative. Upon completion of the BRAC disposal process, the developer would work with National Grid to identify any infrastructure requirements that may be necessary.

As discussed under Alternative 1, the Town of Portsmouth consumed more than 111 million kWh of electricity in 2011. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecast to grow at a rate of 0.8 percent annually over the next decade. The annual electricity demand under Alternative 2 would represent 2.3 percent of 2011 energy usage in the Town of Portsmouth and approximately one-half percent of total annual energy usage for Newport, Middletown and Portsmouth combined (Rhode Island Energy 2012). Considering the 0.8 percent future annual growth rate in electricity demand at the state level, and the fact that Aquidneck Island contains approximately 5.5 percent of the state's overall population, the annual growth rate for electricity demand would be expected to be far less than 0.8 percent. Therefore, the electricity demand of the redevelopment of Tank Farms 1 and 2 under Alternative 2 would be expected to be supported by current electrical capacity and would represent a negligible impact on regional demand. However, the future developer would need to coordinate with the three local municipalities and with National Grid to identify an alternative for electricity provision if, at the time of redevelopment, regional capacities are exceeded.

Similar to Alternative 1, all electric connections would be constructed to ensure an adequately sized and properly built electric transmission and conveyance system. Construction of new systems would disturb the ground. Implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

Natural Gas

Natural gas would continue to be supplied by National Grid. It is expected that a total of 9,151,853 cf of natural gas would be needed annually under full build-out of Alternative 2. Light industrial uses would require approximately 3,723,173 cf, and office uses would require 4,375,680 cf. The light industrial/ boat storage would use approximately 1 million cf of natural gas annually. Table 9.8-5 above shows natural gas usage for both alternatives. Upon completion of the BRAC disposal process, the developer would work with National Grid to identify any infrastructure requirements that may be necessary.

The natural gas usage for the Town of Portsmouth in 2011 was more than 210 billion cf (see Table 5.8-5 in Section 5.8, Infrastructure and Utilities). The quantity of natural gas needed under Alternative 2 represents less than one one-hundredth of a percent of the amount consumed in Portsmouth in 2011

(Rhode Island Energy 2012), and therefore it is assumed that existing capacity would be sufficient for Alternative 2. Redevelopment under Alternative 2 is not anticipated to create a strain on natural gas resources. It would represent a negligible impact on regional demand.

Similar to Alternative 1, all natural gas connections would be constructed to ensure an adequately sized and properly built gas transmission and conveyance system; ground would be disturbed when constructing new systems. Implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property, and plans regarding such would be part of the development review process at the local level.

9.8.2.5 Solid Waste

C&D wastes would be generated primarily from construction activities that are planned for redevelopment of the tank farm properties. The structures at Tank Farm 1 would be demolished under a separate project and are not considered in this analysis; no structures would be demolished at Tank Farm 2.

Appendix D-2 contains C&D waste estimates for structures/features at Tank Farm 2 if they are removed in the future as part of redevelopment (see Figure 9.5-2). Approximately 3,000 cubic yards of C&D waste would be generated from constructing the industrial and commercial facilities planned for Alternative 2. Much of the C&D waste would be recyclable, as described for Alternative 1. Solid wastes would be routinely generated during the future operation of the industrial and commercial enterprises that are planned for the tank farm properties, as described for Alternative 1.

Solid waste is currently occasionally generated at Tank Farms 1 and 2 in connection with investigative activities. Implementation of Alternative 2 would have minor short-term and long-term impacts on the generation and management of solid waste, the same as described for Alternative 1. The impacts would not be significant because of the relatively small scale of the proposed reuse and redevelopment and the availability and capacity of existing solid waste management programs in the Town of Portsmouth and Newport County.

9.8.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property there would be no demand for water, electricity, or natural gas, nor would wastewater be generated. Some storm water runoff from the existing 588,000 square feet of impervious surface area would continue.

Solid waste would continue to be generated from ongoing CERCLA IRP and RIDEM UST closure activities and would cease once Tank Farms 1 and 2 are closed and remediated. The Navy would continue with their demolition of structures at Tank Farm 1 under a separate project, and no demolition of structures at Tank Farm 2 would be planned, so no large quantities of C&D waste are expected to be generated in the future. Therefore, there would be a minor impact on solid waste management under the No Action alternative.

9.9 Cultural Resources

As discussed in Section 3.9, NEPA guidance requires the evaluation of impacts of a proposed action on cultural resources, including archaeological resources and architectural or built resources (see Sections 9.9.1.1 and 9.9.1.2, respectively) and Native American resources (see Section 9.9.1.3). The Navy has also evaluated the potential impacts of the proposed action in terms of their effects on cultural resources that are historic properties, pursuant to Section 106 of the NHPA (see Section 9.9.1.4).

9.9.1 Alternative 1 (Preferred Alternative)

9.9.1.1 Archaeological Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and has determined that Alternative 1 would have no impacts on archaeological resources because none are present within the APE at Tank Farms 1 and 2.

9.9.1.2 Architectural Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and determined that Alternative 1 would have no direct physical impacts on architectural resources. Under Alternative 1, the Navy has assumed that all of the structures and buildings at Tank Farm 1 would be removed as part of a separate action to demolish abandoned facilities at Tank Farm 1 (see Sections 8.9.2 and 13.3.6) and all of the extant structures and buildings at Tank Farm 2 would remain in place (i.e., will not be demolished) and would not be directly physically impacted by redevelopment under Alternative 1.

9.9.1.3 Native American Resources

As indicated in Section 8.9.1.3, the Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at Tank Farms 1 and 2: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

9.9.1.4 NRHP-Listed or -Eligible Historic Properties

Under Alternative 1, the transfer of historic properties out of federal ownership or control could be considered an indirect adverse effect on historic properties without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (ACHP 2004; 36 CFR 800.5(a)(2)(vii)). Under Alternative 1, it is assumed that all the buildings and structures at Tank Farm 1, which are contributing resources to the NRHP-eligible Melville Naval Historic District and considered historic properties, would be removed as part of a separate action to demolish abandoned facilities at Tank Farm 1 (see Sections 8.9.4 and 13.3.6) but that all of the extant buildings and structures at Tank Farm 2, which are also contributing resources to the NRHP-eligible Melville Naval Historic District and are considered historic properties, would remain in place (i.e., will not be demolished) and would not be directly or indirectly affected by redevelopment under Alternative 1. Additionally under Alternative 1, the transfer of the Tank Farm 1 and 2 property out of federal ownership or control, considered in conjunction with the separate action for the removal of all buildings and structures at Tank Farm, has the potential to result in an adverse cumulative effect on historic properties, by affecting the resources that contribute to the overall significance of the NRHP-eligible Melville Naval Historic District, as discussed in Section 13.3.6.

The Navy is in the process of consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA, including consulting on the effects of the proposed action on historic properties within the APE

(Preston 2013; Lin 2013; Sanderson 2013b).[18] As part of this ongoing consultation, the Rhode Island SHPO has acknowledged that once the Navy has disposed of the property, subsequent redevelopment is outside of the Navy's control and has indicated that a standard treatment to mitigate any indirect adverse effects of subsequent redevelopment on historic properties would be to include historic preservation provisions, such as a historic preservation easement, in a deed of transfer (Sanderson 2013a). The evaluation of impacts and effects on historic properties will be updated upon completion of consultation with the Rhode Island SHPO.

9.9.2 Alternative 2

9.9.2.1 Archaeological Resources

The NEPA impacts of Alternative 2 on archaeological resources are the same as those identified for Alternative 1.

9.9.2.2 Architectural Resources

The NEPA impacts on architectural resources are the same under Alternative 2 as those identified for Alternative 1.

9.9.2.3 Native American Resources

The NEPA impacts of Alternative 2 on Native American resources are the same as those identified for Alternative 1.

9.9.2.4 NRHP-Listed or -Eligible Historic Properties

The Section 106 effects of Alternative 2 on historic properties are the same as those identified for Alternative 1.

9.9.3 No Action Alternative

The Navy has evaluated the potential impacts of the No Action alternative under NEPA and determined that the No Action alternative would have no impacts on archaeological resources because none are present and no impacts on architectural resources because there would be no redevelopment of the property. The Navy has evaluated the Section 106 effects of the No Action alternative and determined that the No Action alternative could have an adverse effect on NRHP-eligible properties within the APE at Tank Farms 1 and 2. The No Action alternative could contribute to the historic district being neglected in a manner that causes its deterioration (ACHP 2004; 36 CFR 800.5(a)(2)(vi)) or otherwise treated in a manner not consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Weeks and Grimmer 1995). However, the Navy is consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA regarding the potential adverse effects on historic properties and

[18] Separately, as part of the proposed demolition of abandoned facilities at Tank Farm 1 to comply with Rule 13, the Navy evaluated the effects of the demolition of the abandoned facilities at Tank Farm 1 and determined that the demolition project would have an adverse effect on Tank Farm 1, which is eligible for listing on the NRHP (Dorocz 2015a). Tank Farm 1 is considered NRHP-eligible because its facilities are contributing resources to the Melville Naval Historic District (Groesbeck and Bedford 2014; Sanderson 2013b). The Rhode Island SHPO concurred with the Navy's determination that the proposed demolition of the abandoned facilities at Tank Farm 1 would have an adverse effect on historic properties because Tank Farm 1 is located within the Melville Naval Historic District and indicated that a memorandum of agreement (MOA) for the mitigation of the adverse effect should be prepared by the Navy (Sanderson 2015). The analysis of the impacts and effects of the proposed demolition of abandoned facilities at Tank Farm 1 is presented in the discussion of cumulative impacts on cultural resources and historic properties in Section 13.3.6.

anticipates development of measures to mitigate any adverse effects on historic properties within the APE.

9.10 Topography, Geology, and Soils

This section summarizes the potential impacts on topography, geology, and soil resources resulting from the implementation of Alternative 1, Alternative 2, and the No Action alternative at Tank Farms 1 and 2.

9.10.1 Alternative 1 (Preferred Alternative)

As the majority of proposed development would be located in areas that have been previously disturbed or developed by the Navy, implementation of Alternative 1 would be expected to result in minor temporary impacts on topography and soils due to redevelopment of the property (e.g., construction of new buildings, parking lots, utilities, development on wooded areas).

9.10.1.1 Topography

Under Alternative 1, development would largely occur in areas that have been previously disturbed or developed by the Navy for either above- or belowground structures (i.e., tanks). These areas would have been previously graded for development. However, some of the proposed development would be located in undeveloped wooded areas on the property. Some alteration of existing topography would be expected as a result of grading and associated cut-and-fill activities necessary to accommodate new building sites. The extent of grading and cut-and-fill activities would be localized and would depend on the building design and location. As a result of previous development associated with Tank Farms 1 and 2, and preservation of open space areas, impacts on topography would be minor; no significant impact would result.

9.10.1.2 Geology

Alternative 1 would not impact geologic resources at the Tank Farms 1 and 2.

9.10.1.3 Soils

The redevelopment proposed under Alternative 1 would be concentrated on approximately 31.1 acres in areas that predominantly have been previously developed by the Navy. Since a variety of buildings and structures previously existed (or currently exist) on this property, it is assumed that urban/manmade soils located in these areas have been modified from their original condition. Therefore, implementation of Alternative 1 would be expected to result in temporary and permanent minor impacts over time as full build-out continues.

Erosion Potential

All soil types located at Tank Farms 1 and 2 have the potential to be impacted by development, including erosion from wind and water and construction activities. Two soil types would be impacted by the redevelopment footprint: Udorthents-Urban land complex and Newport silt loam, 8% to 15% slope. The soil erosion potential for the Newport silt loam, 8% to 15% slopes and Newport-Urban land complex is moderate. The soil erodibility factor for the Newport silt loam, 8% to 15%, is 0.24 at a depth of 24 inches to 30 inches, which means the soils are moderately susceptible to detachment and they produce moderate runoff (USDA 2012; IWR 2002). No erosion potential was listed for Udorthents-Urban land complex (USDA 2012). To varying degrees, all such soils may require specific measures to control soil erosion and limit runoff of sediment during clearing and construction activities. In addition, construction activities (clearing, grading, landscaping, and movement of equipment, material, and vehicles) would expose soils to wind and storm water erosion, compaction, and rutting. Soils that are heavily modified may suffer losses in fertility and productivity.

Soils would be impacted during implementation of Alternative 1, but the impact would be mitigated by implementing temporary erosion and sediment control measures during construction, permanent storm water management measures, and appropriate building site location and design. Project construction would result in the removal of existing vegetation in some areas, requiring slopes created by cutting and filling to be stabilized and possible reestablishment of vegetation.

If slope stabilization and vegetation are not properly implemented and maintained, soil erosion and sedimentation could result. Soils can be affected by sedimentation when soils from exposed areas are deposited over undisturbed areas by runoff.

To mitigate these impacts, it is expected that the developer would implement appropriate erosion and sediment control measures at construction and demolition sites in accordance with *Rhode Island's Soil Erosion and Sediment Control Handbook* (RIDEM et al. 1989) and other applicable state laws. The handbook provides descriptions of structural measures (e.g., grassed waterway, sediment basin, riprap, etc.) and non-structural measures (e.g., mulching, topsoiling, silt curtains, etc.). The RIDEM requires a General Permit, the Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity, for projects that disturb more than 1 acre (RIDEM 2013c). Prior to approval of a Construction General Permit, the RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. This permit is discussed further in Section 9.11.

Farmland

The Udorthents-Urban land complex soils located at Tank Farms 1 and 2 are not rated for farmland. The Newport silt loam, 8% to 15% slopes, is designated as farmland of statewide importance (USDA 2012). As indicated in Section 8.10.3.1, approximately 20.21 acres of Newport silt loam, slopes 8% to 15%, exist on Tank Farms 1 and 2 (see also Figure 8.10-1). Under Alternative 1, approximately 4.1 acres of this soil designated as farmland of statewide importance would be impacted. However, no significant impact would be expected because the majority of this area has been impacted by the Navy's previous operation of the tank farms.

The Farmland Protection Policy Act (FPPA) requires that federal agencies identify and consider the adverse effects of the proposed actions on protected farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. Assistance from a federal agency includes the following:

- Acquiring or disposing of land
- Providing financing or loans
- Managing property
- Providing technical assistance.

None of the installation, including Tank Farms 1 and 2, is currently used or has been recently used for farming. For the purposes of farmland protection, the farmland of statewide importance has essentially been converted to urban uses as part of the former use of Tank Farms 1 and 2. The NRCS Farmland Protection Policy Act Manual (USDA n.d.) provides a list of lands not covered by the act. One such category of lands are "lands identified as 'urbanized areas' on U.S. Census Bureau maps." According to the U.S. Census Bureau maps, the majority of Aquidneck Island has been classified as an urban area (U.S. Census Bureau 2011). Therefore, Alternative 1 would have no impact on farmland of statewide importance.

Hydric Soils

Two soil types on the tank farm properties that would be impacted by redevelopment are non-hydric soils; however, non-hydric soils can contain hydric inclusions and vice-versa. New construction under Alternative 1 could impact hydric soils (if the non-hydric soils contained hydric inclusions). Hydric soils may require special measures during construction or for other uses to overcome limitations caused by wetness. Limitations may include a high water table or low strength for supporting construction equipment and structures. Hydric soils may also limit other development activities such as excavation and movement of heavy equipment) because of wet conditions.

Constructability

There are some restrictions for commercial development on Udorthents-Urban land complex soil if on-site septic tanks are used; however, on-site septic is not anticipated to be used for redevelopment. The more common sources of constructability limitations for the soils include shallow excavations (slight limitations due to dense to very dense soils), moderate frost action, and a moderate slope. Newport silt loam, 8% to 15% slopes have a severe slope and a low shrink-swell potential (USDA 1981, 2012). However, because much of the area where those soils are located may be modified, it is not possible to determine the magnitude or severity of the limitations, based on available information. Prior to construction, engineering evaluations will be completed and appropriate engineering techniques identified to mitigate any soil limitations.

Organic Soils

None of the soils located at Tank Farms 1 and 2 were listed as organic soils.

In summary, there would be minor impacts on soils under Alternative 1, and mitigation would reduce temporary impacts. Mitigation would include implementation of appropriate erosion and sediment control measures in accordance with local and state laws and the Construction General Permit, as discussed in detail above.

9.10.2 Alternative 2

Similar to Alternative 1, the majority of the proposed development would be located in areas that have already been developed by the Navy. Redevelopment would cover a total of approximately 34 acres of the overall site under Alternative 2 (31.1 acres in Alternative 1). Therefore, implementation of Alternative 2 would be expected to result in minor temporary impacts on topography and soils due to redevelopment of the property (e.g., construction of new buildings, parking lots, utilities).

9.10.2.1 Topography

Impacts on topography under Alternative 2 would be similar to those discussed above for Alternative 1.

9.10.2.2 Geology

Alternative 2 would not impact the geologic resources at Tank Farms 1 and 2.

9.10.2.3 Soils

Implementation of Alternative 2 would be expected to have similar impacts on soils as described for Alternative 1, including impacts associated with erosion potential, farmland, hydric soils, and constructability. As with Alternative 1, the proposed redevelopment would be concentrated in areas that have already been developed by the Navy or would be located in undeveloped wooded areas on the property. The same mitigation measures discussed for Alternative 1 will be implemented to minimize soil impacts under Alternative 2.

Under Alternative 2, approximately 5.8 acres of soils designated as farmland of statewide importance would be impacted. However, no impact would occur for the reasons discussed above under Alternative 1. There would be minor impacts on soils, and mitigation would reduce any temporary impacts.

9.10.3 No Action Alternative

The No Action alternative is retention of the surplus property at Tank Farms 1 and 2 by the U.S. government in caretaker status. No reuse or redevelopment would occur on either property. As a result, the No Action alternative would be expected to have no direct or indirect impacts on topography, geology, or soils.

9.11 Water Resources

This section summarizes the potential environmental impacts on water resources resulting from implementation of Alternative 1, Alternative 2, or the No Action alternative at Tank Farms 1 and 2. It includes a discussion of surface water, water quality, groundwater, floodplains, wetlands, and proposed mitigation measures.

9.11.1 Alternative 1 (Preferred Alternative)

9.11.1.1 Surface Water

Redevelopment of Tank Farms 1 and 2 would have no significant adverse direct impacts on surface water because no surface waters are present on the site. The proposed redevelopment includes approximately 0.48 acres of wetland impacts located on site (Figure 9.11-1). Based on the requirement to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA, no significant impacts on surface waters would be expected under Alternative 1.

Indirect impacts on surface waters near the Tank Farm 1 and 2 properties (i.e., Melville Ponds) in the form of erosion and sedimentation could temporarily result from construction activities. The Melville Ponds and an unnamed stream less than 100 feet to the north of the property are the nearest waterbodies. Because the site drains from east to west and the closest redevelopment proposed (light industrial uses and boat storage) is approximately 250 feet from one of the Melville Ponds and because redevelopment would require compliance with applicable federal and state laws and regulations pertaining to storm water management and implementation of BMPs, indirect impacts on adjacent waterbodies would be anticipated to be negligible. Indirect impacts on water quality are discussed below in Section 9.11.1.2.

9.11.1.2 Water Quality

As indicated in Section 8.11.2, the Melville Ponds are classified by RIDEM in the *State of Rhode Island 2012 303(d) List – List of Impaired Waters* (RIDEM 2012a) as impaired. However, as discussed above, this complex is north of Tank Farm 1 and the property drains to the west, towards Narragansett Bay. Therefore, redevelopment of Tank Farms 1 and 2 under Alternative 1 is not expected to impact Melville Ponds or contribute to any further degradation of water quality. Any impacts on water quality in association with wetland fill activities on other portions of the site are expected to be minimized and mitigated under the developer's future state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.

Full build-out of Alternative 1 is projected to result in a total of 31.0 acres of impervious surface area, which would predominantly comprise building roofs and parking areas. This would be a net increase of approximately 17.5 acres above existing conditions (13.5 acres). The additional impervious surface area would generate a long-term increase in precipitation runoff into the watershed and ultimately to waterbodies in the area, including Narragansett Bay. Full build-out could have a long-term impact as

storm water is currently managed through a combination of surface flow through culverts in trench systems located within the old steam pipe trenches and secondary containment. All storm water from Tank Farms 1 and 2 eventually discharges to Narragansett Bay through Outfall 008, located at the marina (U.S. Department of the Navy 2009; AH/BC 2011). Redevelopment would be associated with a new on-site system for storm water management (see Section 9.8.1.3 for further discussion).

The Town of Portsmouth has a Storm Water Discharge Control Ordinance and a Storm Water and Sediment Control Ordinance (Town of Portsmouth 2008c and 2010, respectively). In accordance with these ordinances, prior to construction, the developer would be required to receive a permit from the Town of Portsmouth. The developer would also be required to develop an Erosion and Sediment Control Plan and a Storm Water Pollution and Prevention Plan to submit to the town for review. Under the Town of Portsmouth's Storm Water Discharge Control Ordinance, the town regulates any storm water discharge from construction activity covered under the RIPDES general permit and also requires that BMPs be implemented to prevent, control, and reduce storm water pollution. Other guidelines would be storm water management controls that are consistent with the *Rhode Island Stormwater Design and Installation Standards Manual* (as amended) (RIDEM and CRMC 2010) and *the Rhode Island Soil Erosion and Sediment Control Handbook* (as amended) (RIDEM et al. 1989).

A General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity, would also be necessary because redevelopment of the Tank Farm 1 and 2 properties would disturb more than 1 acre. Before approval of a Construction General Permit, RIDEM requires submittal of an NOI and a SWPPP that must include a discussion of erosion and sediment controls. Compliance with these laws and regulations and implementation of BMPs would decrease the magnitude of impacts on water quality from storm water runoff (see also Section 9.8.1.3, Storm Water). Therefore, Alternative 1 would result in minor impacts on water quality.

9.11.1.3 Groundwater

As discussed in Section 8.11.3, groundwater at Tank Farm 1 is generally encountered approximately 2 to 20 feet below ground surface (Tetra Tech, Inc. 2012a). Groundwater at Tank Farm 2 is found at approximately 5 to 30 feet below ground surface and the water table is usually within the bedrock (Tetra Tech, Inc. 2012b). Construction activities could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion and sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMPs as set forth in the *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010). Minor impacts on groundwater would result, and mitigation would reduce any adverse impacts of construction.

9.11.1.4 Floodplains

No FEMA-delineated floodplains are located on Tank Farm 1 or 2 and implementation of Alternative 1 would have no impact on floodplains.

9.11.1.5 Wetlands

Three potential wetlands are present within the boundaries of the Tank Farm 1 property. A portion of one of the potential wetlands would be permanently impacted as a result of the construction of the light industrial use proposed for the property (see Figure 9.11-1). A total of approximately 0.08 acre of permanent wetland fill would result from the building footprint. No direct impacts on the other two

potential wetlands would result. Additionally, the perimeter wetlands associated with two of the potential wetlands would be directly impacted by the project footprint (see Figure 9.11-1). Approximately 0.4 acres of perimeter wetland would be impacted due to the light industrial boat storage footprint. As discussed in Section 8.11.1.5, the perimeter wetland associated with the adjacent Melville Ponds extends onto Tank Farm 1.

Filling a freshwater wetland requires a permit from RIDEM and a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer will be required to coordinate wetland mitigation plans with the USACE and RIDEM. Under Rule 10 of the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act*, a permit to alter a wetland must be obtained from RIDEM. The permit must also address impacts on the perimeter wetlands, as those areas are included in the definition of a "freshwater wetland" as per Rule 4 of the *Rules and Regulation Governing the Administration and Enforcement of the Freshwater Wetlands Act*.

Section 404 of the CWA authorizes the USACE to issue permits regulating the discharge of dredged or fill materials into waters of the U.S., including wetlands. In 2008, the USACE and the EPA issued regulations governing compensatory mitigation for authorized impacts on wetlands; these are codified in 40 CFR Part 230 as the Final Rule for Compensatory Mitigation for Losses of Aquatic Resources. Compensation requirements typically vary based on the impacted wetland communities. Specific mitigation requirements for future development projects would be determined in coordination with the USACE and RIDEM.

Based on the requirement to avoid, minimize, and mitigate impacts on wetlands as required under federal and state permit programs, no significant impacts on wetlands would be expected under Alternative 1. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.

No wetlands are found on Tank Farm 2. As indicated above in Section 8.11.5, the Melville Ponds wetland complex is located north-northeast of Tank Farm 1 and northeast and east of Tank Farm 2. These wetlands are a mix of palustrine emergent and palustrine forested scrub/shrub wetlands. This complex ultimately discharges to Narragansett Bay. As discussed above in Section 9.11.1.1, because the site drains from east to west, there is no redevelopment proposed near the boundary of Tank Farms 1 and 2, and redevelopment would require compliance with applicable federal and state laws and regulations pertaining to storm water management and implementation of BMPs, indirect impacts on these adjacent wetlands would be anticipated to be negligible. Therefore, Alternative 1 would not result in a significant impact on wetlands.

9.11.2 Alternative 2

9.11.2.1 Surface Water

As discussed under Alternative 1, redevelopment of Tank Farms 1 and 2 would have no significant adverse direct impacts on surface water because no surface waters are present. Any disturbance to surface waters in association with wetland fill would be done in accordance with existing regulatory BMPs in place by the future developers.

Indirect impacts on surface waters near the Tank Farms 1 and 2 property (i.e., Melville Ponds), in the form of erosion and sedimentation, would be the same as Alternative 1.

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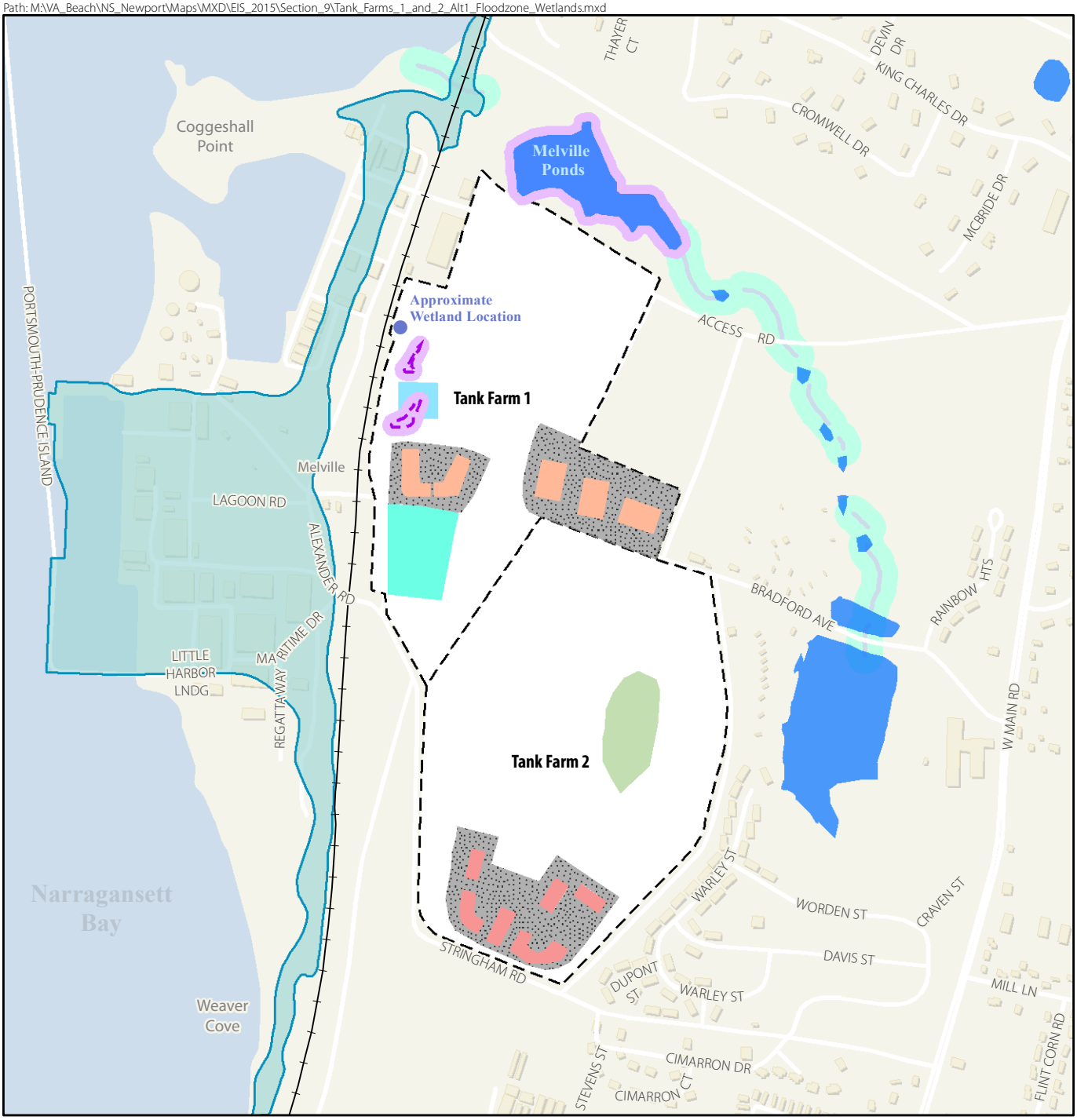

Legend

- Approximate Wetland Location/Field Observation Point
- Rail Road
- River/Stream
- Approximate Wetland Boundary
- Property Boundary
- 100-foot Riverbank Wetland
- 50-foot Perimeter Wetland

NWI Wetlands

- Freshwater Pond

FEMA Floodplain

- AE

Proposed Land Use

- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Parking/Access
- Potential Solar Array

SCALE

0 300 600 Feet

SOURCE: FEMA 2010; RIDEM, Office of Water Resources 2010; U.S. Fish and Wildlife Service 2011; RKG Associates et al. 2011; Tetra Tech 2014a.

Figure 9.11-1

Tank Farm 1 and 2 Properties, Alternative 1 - FEMA Flood Zones, Surface Waters, and Wetlands

NAVSTA Newport, Rhode Island

Zone AE: 100 year floodplains in which base flood elevation exists

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9.11.2.2 Water Quality

Like Alternative 1, redevelopment of Tank Farms 1 and 2 under Alternative 2 is not expected to impact Melville Ponds or contribute to any further degradation of water quality. Any disturbance to water quality in association with wetland fill would be done in accordance with existing regulatory BMPs in place by the future developers.

Full build-out of Alternative 2 is projected to result in a total of 33.9 acres of impervious surface area, which would comprise mostly building roofs and parking areas. This would be a net increase of approximately 20.4 acres above existing conditions (13.5 acres). The additional impervious surface area would generate a long-term increase in precipitation runoff into the watershed and ultimately to waterbodies in the area, including Narragansett Bay. As discussed under Alternative 1, redevelopment would be associated with a new on-site system for storm water management. Additionally, the developer would be required to follow all applicable state and local laws in order to decrease impacts on water quality from storm water runoff; these laws would include the Town of Portsmouth Storm Water Discharge Control Ordinance, the Portsmouth Storm Water and Sediment Control Ordinance, and state requirements under the RIPDES permitting program. Compliance with these laws and regulations and implementation of BMPs would decrease the magnitude of impacts on water quality from storm water runoff.

Alternative 2 would result in minor impacts on water quality, and mitigation, as outlined above, would reduce adverse impacts.

9.11.2.3 Groundwater

Similar to Alternative 1, implementation of Alternative 2 would result in construction activities that could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMPs as set forth in the *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010). Minor impacts on groundwater would result; mitigation would reduce adverse construction impacts.

9.11.2.4 Floodplains

No FEMA-delineated floodplains are found on Tank Farm 1 or 2; implementation of Alternative 2 would have no impact on floodplains.

9.11.2.5 Wetlands

Implementation of Alternative 2 would result in permanent fill of approximately 0.09 acres of the same potential wetland discussed under Alternative 1 (see Figure 9.11-2). That wetland would be permanently impacted by construction of the light industrial uses proposed for the property (see Figure 9.11-2). The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.

Additionally, the perimeter wetlands associated with two of the potential wetlands would be directly impacted by the project footprint (see Figure 9.11-2). Approximately 0.5 acres of perimeter wetland would be impacted by the light industrial/boat storage and driveway/parking area proposed uses. Filling a freshwater wetland requires a permit from RIDEM and a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer will be required to coordinate wetland

mitigation plans with RIDEM and the USACE. Therefore, Alternative 2 would result in minor impacts as measures to reduce impacts on wetlands would be implemented by the developer through state and federal permitting processes of the CRMC/SAMP and Section 404 of CWA.

9.11.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property there would be no impacts on water resources from redevelopment. Some storm water runoff from the existing approximately 13.5 acre of impervious surface area would occur.

9.12 Biological Resources

This section summarizes the potential impacts on biological resources from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of impacts on vegetation, wildlife, threatened and endangered species, and significant wildlife habitat from disposal and future reuse of the Tank Farms 1 and 2 properties.

GIS analysis was used to determine the extent of potential impacts on vegetation communities and wildlife habitat from implementation of the redevelopment alternatives (see also Section 2.2, Identification of Alternatives).

Upon completion of the BRAC disposal process under both Alternatives 1 and 2, any future developer of Tank Farms 1 and 2 would be required to comply with local, state, and federal laws and regulations pertaining to biological resources. Specifically, consultation with RIDEM under the Rhode Island endangered species act (Title 20 of the General Laws of the State of Rhode Island) would be required for any activities proposed within habitat known to support state-listed threatened or endangered species. However, the USFWS and RIDEM have indicated that no federally or state-listed or candidate species are located on Tank Farms 1 and 2 (Chapman 2013; Jordan 2013). Because of the length of time between informal consultation for this EIS and the actual redevelopment of the Tank Farms 1 and 2 properties, future consultation will be necessary.

9.12.1 Alternative 1 (Preferred Alternative)

9.12.1.1 Vegetation

Implementation of Alternative 1 would necessitate permanent removal of vegetation to accommodate new facilities and supporting infrastructure. Redevelopment under Alternative 1 would result in the redevelopment of approximately 31.1 acres, of which 26.4 acres is vegetated, of the 136-acre site. Table 9.12-1 identifies the types of habitat cover impacted by proposed redevelopment of Alternative 1; these are illustrated in Figure 9.12-1. These habitat impact acreages are areas where the development footprint overlaps these habitat types.

Table 9.12-1 Habitat Impacts at Tank Farms 1 and 2 (Alternative 1)

Habitat Cover	Acreage of Impact
Mixed Oak/White Pine Forest	2.7
Old Field	9.2
Ruderal Forest	14.5
Total	**26.4**

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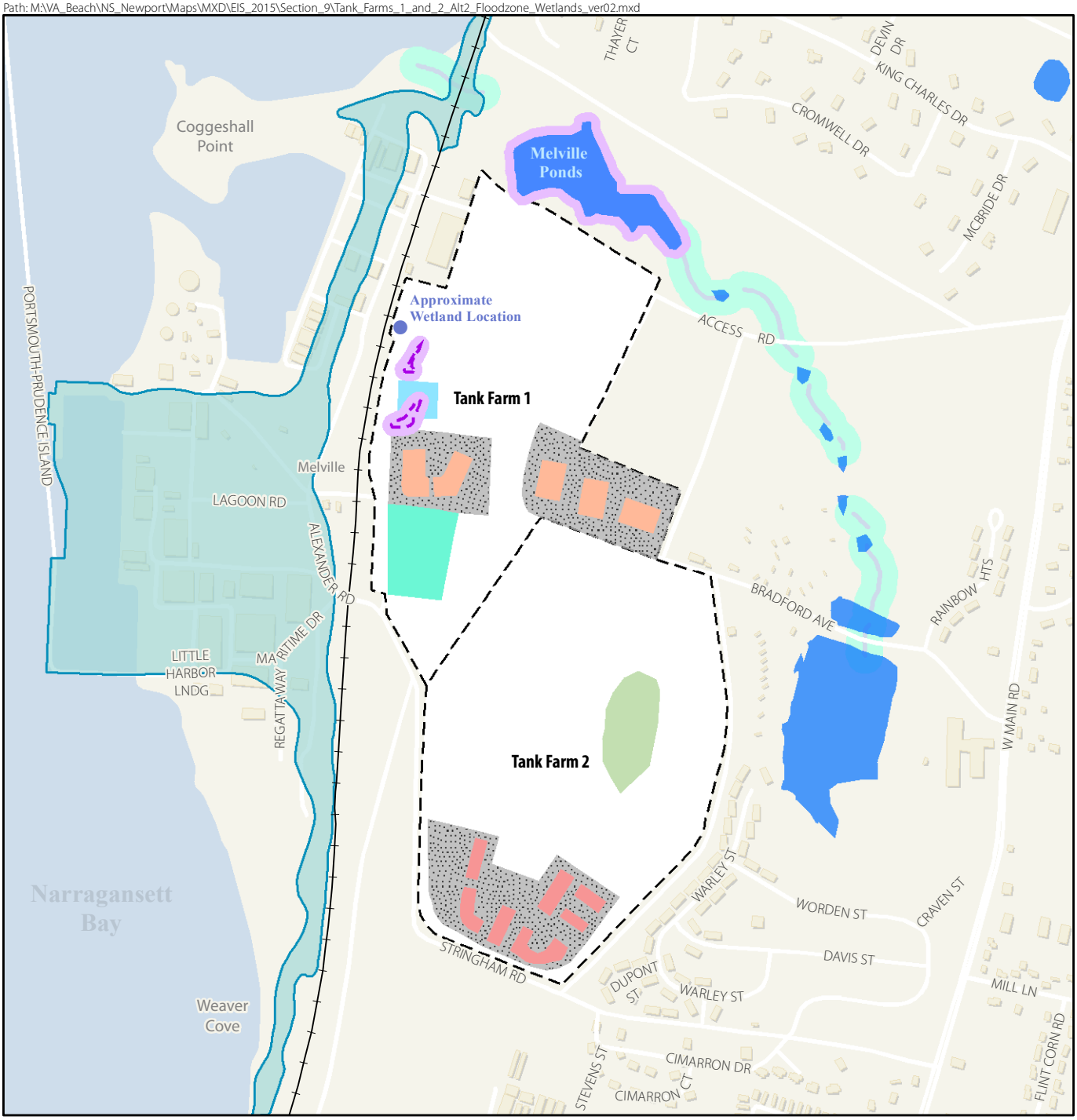

Legend

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SCALE

0 300 600 Feet

- Approximate Wetland Location/Field Observation Point
- Rail Road
- River/Stream
- Approximate Wetland Boundary
- Property Boundary
- 100-foot Riverbank Wetland
- 50-foot Perimeter Wetland

NWI Wetlands

- Freshwater Pond

FEMA Floodplain

- AE

Proposed Land Use

- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Driveway/Parking Area
- Potential Solar Array

SOURCE: FEMA 2010; RIDEM, Office of Water Resources 2010; U.S. Fish and Wildlife Service 2011; RKG Associates et al. 2011; Tetra Tech 2014a.

Figure 9.11-2

Tank Farm 1 and 2 Properties, Alternative 2 - FEMA Flood Zones, Surface Waters, and Wetlands

NAVSTA Newport, Rhode Island

Zone AE: 100 year floodplains in which base flood elevation exists

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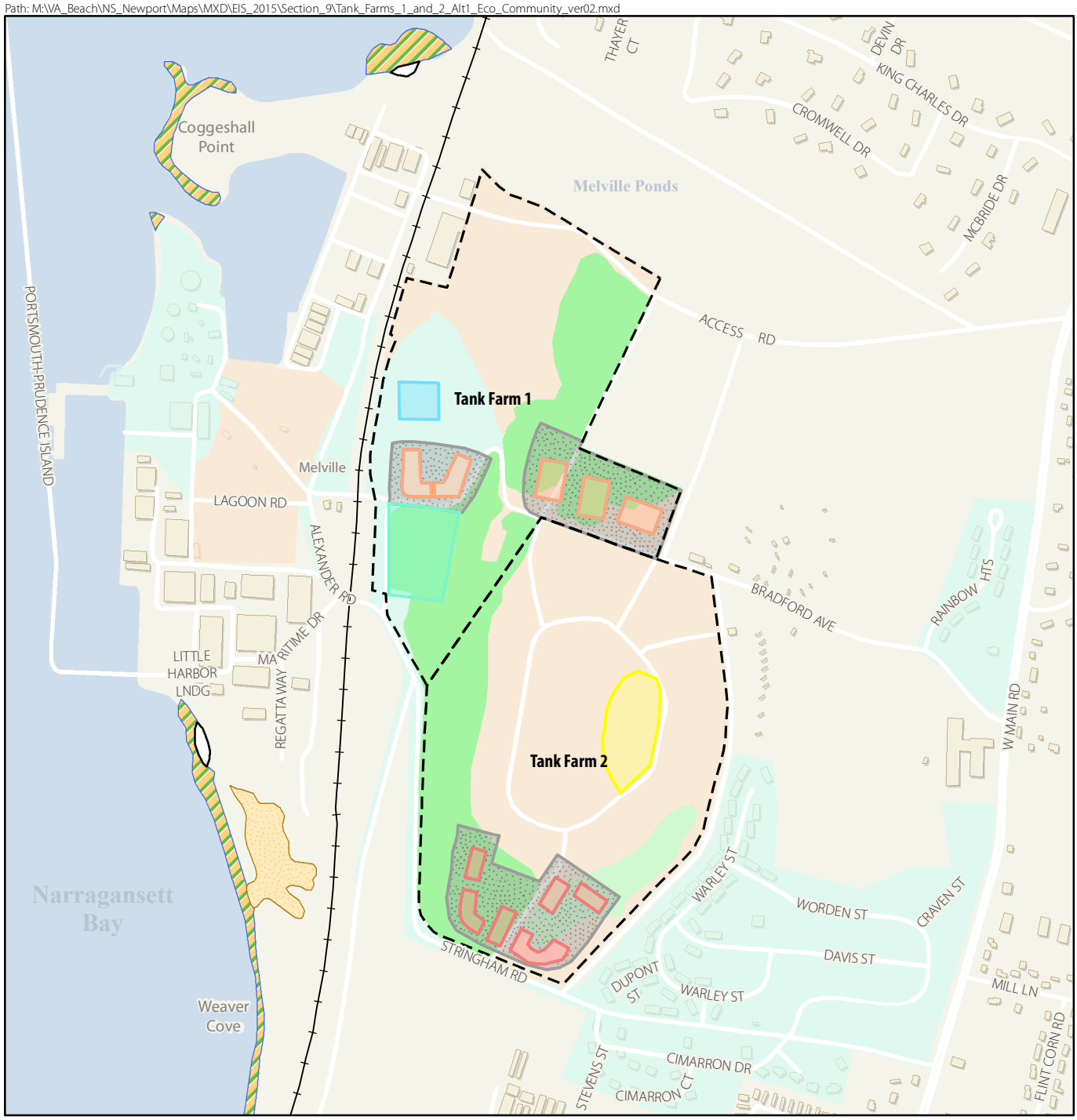

Legend

- Rail Road
- Property Boundary

Proposed Land Use

- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Parking/Access
- Potential Solar Array

Narragansett Bay Estuarine Habitat

- Salt Marsh
- Phragmites Marsh
- Beach

Ecological Community

- Developed Land
- Mixed Oak/White Pine Forest
- Old Field
- Ruderal Forest

SCALE

0 300 600 Feet

SOURCE: University of Rhode Island RIGIS 2003; Univeristy of Rhode Island Department of Natural Resources 2012; RKG Associates et al. 2011.

Figure 9.12-1

Tank Farm 1 and 2 Properties Alternative 1 and Ecological Communities

NAVSTA Newport, Rhode Island

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Approximately 104.9 acres of land at this site would be maintained as open space. Temporary indirect impacts in the form of temporary disturbance could occur during construction because it is located next to areas that would be disturbed during construction. However, any temporarily disturbed areas designated as open space following redevelopment will be restored to the current existing conditions.

Approximately 4.8 acres of currently developed land would also be overlain by the redevelopment footprint; therefore, that area is not considered an impact.

Mixed Oak/White Pine Forest

Under Alternative 1, approximately 2.7 acres of mixed oak/white pine forest would be removed during the proposed redevelopment (see Table 9.12-1 and Figure 9.12-1). The proposed redevelopment on forestland under Alternative 1 includes parking/access and office space. This land cover would no longer be available to terrestrial wildlife and could potentially lead to habitat fragmentation. Species potentially occurring in this habitat cover would be impacted by a reduction in potential habitat. However, approximately 2.8 acres of mixed oak/white pine forest habitat would remain on-site and there are additional undeveloped areas to the north, south, and east of the property. Additionally, the forest habitat has not been designated as significant or unique habitat. Therefore, the loss of 2.8 acres of mixed oak/white pine forest would not be considered a significant impact on Aquidneck Island.

Old Field

The development of Alternative 1 would result in the permanent loss of approximately 9.2 acres of old field habitat at Tank Farms 1 and 2 (see Table 9.12-1 and Figure 9.12-1). The majority of this conversion would be for the potential solar array and for parking/access. This land cover conversion would result in the removal of herbaceous vegetation, potentially leading to habitat fragmentation. However, none of the old field habitat that would be impacted under Alternative 1 is designated as significant or unique wildlife habitat. Additionally, approximately 65.5 acres of old field habitat would remain on-site, and there are additional undeveloped areas to the north, south, and east of the property. Therefore, the loss of 9.2 acres of old field habitat would not be considered a significant impact on Aquidneck Island.

Ruderal Forest

Under Alternative 1, approximately 14.5 acres of ruderal forest would be permanently impacted through development. Ruderal forest can provide foraging and resting sites for such species as deer and birds, as well as rabbits, mice, and other small terrestrial mammals. Conversion of this habitat cover type from natural to developed land would result in a permanent loss of these areas; however, it is not considered a permanent impact for reasons similar to those cited above for mixed oak/white pine forest and old field habitats.

9.12.1.2 Wildlife

Implementation of Alternative 1 would cause both short- and long-term impacts on resident wildlife. Long-term impacts could be species mortality, habitat loss, and habitat fragmentation. Mortality of less-mobile species such as small mammals and reptiles would be possible during construction; however, overall impacts on species diversity and abundance on the property from construction activities would be minor since the majority of wildlife would avoid the construction areas. No significant impacts on wildlife would result.

Terrestrial Mammals

Terrestrial wildlife species are closely associated with vegetative communities. For this reason, the loss of vegetation and modifications of land uses, as discussed in Section 9.12.1.1, would also affect the wildlife communities at Tank Farms 1 and 2. Potential impacts on wildlife would be primarily from loss of habitat due to clearing and grading during construction as well as the development footprint itself. While permanent removal of habitat would directly affect wildlife communities on the site, these species

would likely re-colonize the undisturbed or undeveloped portions of the site following redevelopment. Overall impacts on terrestrial mammals would be minor.

As noted above, approximately 26.4 acres of vegetation or 28 percent of the overall vegetated area at Tank Farms 1 and 2 would be removed by implementing Alternative 1. Wildlife that use these habitats would be forced to migrate to other areas with suitable habitat. Small mammals and reptiles would be most affected and some individuals of these species may be impacted if unoccupied habitat of equal quality is not available in the immediate vicinity. Upon completion of construction, recolonization by species of small mammals, reptiles, and birds adapted to urban conditions would be expected in these areas.

In addition to habitat loss, wildlife species may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Species that would be most affected include those with relatively small home ranges. During construction, short-term impacts may include displacement of mobile species such as eastern gray squirrel, common raccoon, and Virginia opossum. Long-term impacts may be related to species mortality, habitat loss, and habitat fragmentation. Overall impacts on species diversity and abundance on the property from construction activities would be minor since the majority of these species would avoid areas of construction where equipment and human activities create disturbance.

Herpetofauna

Loss of the forested cover (approximately 17.2 acres) at the surplus property would reduce the amount of habitat likely to harbor herpetofauna such as the black rat snake and common garter snake. During construction, these species would likely avoid areas impacted by noise and human activity.

Avian Species

As discussed in Section 3.12.1.2, a number of migratory bird species occur at NAVSTA Newport. These include various species of passerines, waterfowl, and waterbirds. Short-term impacts on avifauna, e.g., displacement, may result during implementation of Alternative 1. Breeding birds would avoid areas of construction where equipment and human activities create disturbance. The potential exists for a limited number of species to be directly impacted through loss or mortality of young if construction activities take place in the breeding season. The loss of habitat on the property under Alternative 1, primarily upland forest and old field, would result in the loss of potential nesting areas for breeding birds and stopover areas for migrating bird species.

In May of 2015, the USFWS initiated a NEPA review of alternatives to authorize take under the MBTA. At the time of the publication of this Draft EIS, it is uncertain if the future implementation of the Redevelopment Plan under Alternative 1 may require a take permit under the MBTA. The future developer would be required to minimize impacts on migratory birds as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. Pursuant to the MBTA and BGEPA, the Navy has determined that implementation of Alternative 1 would have minor impacts on avian species and the disposal and reuse of the former Tank Farms 1 and 2 property would not result in significant impacts on, or harm of, migratory birds and bald and golden eagles.

Marine Mammals and Other Marine Wildlife

Because Tank Farms 1 and 2 are inland, Alternative 1 would not have any impacts on marine mammals, finfish, shellfish, crustacea, or benthic organisms.

9.12.1.3 Threatened and Endangered Species

The Navy has documented the presence of the northern long-eared bat within approximately one mile of Tank Farms 1 and 2, as discussed below.

During 2013 acoustic surveys, two calls at a stake location at Tank Farm 4, five calls at a stream location at Tank Farm 4, and five calls at a wetland location at Tank Farm 5 were recorded (Tetra Tech, Inc. 2014b, 2014c). Tank Farm 4 is the closest monitoring location to the Tank Farms 1 and 2 property, located approximately 1 mile to the southwest. Based on a field survey conducted in December 2014 to determine the suitability of summer roosting habitat for the northern long-eared bat, approximately 30 acres of suitable or potentially suitable summer roosting habitat has been designated within portions of the ruderal forest and old field habitats on Tank Farm 4.

Although the acoustic detections were made at Tank Farm 4, located approximately 1 mile southwest of Tank Farms 1 and 2, no mist-net capture or roost tree data are available for Tank Farms 1 and 2. As discussed in Section 9.12.1.1, approximately 14.5 of the total 41.5 acres of ruderal forest on Tank Farms 1 and 2 would be removed. It is unknown if any potential maternal roost trees exist on Tank Farms 1 and 2 and no known hibernacula are located within 0.25-mile of Tank Farms 1 and 2.

Therefore, the potential effects of the proposed action include permanent loss of potential roosting habitat and potential impacts on foraging habitats According to the USFWS Final 4(d) rule, tree clearing within 150-feet of a known maternal roost is limited to those months outside the pup period (June 1 – July 31) and no tree clearing is allowed within a 0.25-mile of a hibernacula (USFWS 2016).

During the initial informal consultation process, prior to the issuance of the final 4(d) rule, the Navy has proposed measures to protect the northern long-eared bat's most vulnerable life stages and ensure that reuse of the property does not result in the direct take of northern long-eared bats. These include certain conservation measures or BMPs as recommended deed restrictions for the future developer(s)/property owners of Tank Farm 2 These recommended measures would be the responsibility of the developer(s)/property owners to implement as part of development and construction:

- Project activities must occur more than 0.25 miles from known, occupied hibernacula.
- All clearing of trees and vegetation on-site shall take place between October 1st and April 15th (Chapman 2015).

The removal of 14.5 total acres of assumed potential roosting habitat for this analysis at Tank Farms 1 and 2 would represent far less than 0.10 percent of the total forest cover in the state, and there are additional forested areas adjacent to Tank Farms 1 and 2 to the north and northeast. Based on the small area of roosting habitat proposed for removal, and the implementation of the BMPs identified above, the Navy has determined that the implementation of the proposed action may affect, but is not likely to adversely affect, the northern long-eared bat. The Navy contacted the USFWS regarding its concurrence on the potential effects of the proposed action on the northern long-eared bat at Tank Farms 1 and 2 (Preston 2015b). To date, USFWS has not provided a response, and informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing. The Navy contacted the USFWS regarding the potential presence of the northern long-eared bat at the surplus properties on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). To date, USFWS has not provided a response, and further informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing. ESA consultation for northern long-eared bat is ongoing. As part of any future state and federal CRMC/SAMP and Section 404 CWA permitting processes, the developer will implement measures to protect northern long-eared bat as needed to ensure the development is conducted in compliance with the ESA. Pursuant to ESA, the Navy has

determined that the proposed action may affect, but is not likely to adversely affect the northern long-eared bat under Alternative 1 at the Tank Farms 1 and 2 property. The evaluation of impacts and potential for adverse effects to the northern long-eared bat will be updated upon completion of consultation with the USFWS; the ESA consultation is ongoing.

9.12.1.4 Significant Wildlife Habitat

Submerged Aquatic Vegetation
There is no SAV habitat at Tank Farms 1 and 2. Alternative 1 would not result in any impacts on SAV at the former Tank Farms 1 and 2 property.

Wetlands
Alternative 1 would result in approximately 0.48 acres of impacts on wetlands as a result of the construction of the light industrial use proposed for the property. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.

Vernal Pools
Alternative 1 would not have any impact on vernal pools. The site does not contain any vernal pools.

Essential Fish Habitat
Alternative 1 would not have any impact on EFH. The site does not contain any EFH.

9.12.2 Alternative 2

9.12.2.1 Vegetation

Implementation of Alternative 2 at Tank Farms 1 and 2 would redevelop approximately 34 acres of the 136-acre site. Table 9.12-2 identifies the types of habitat cover that would be impacted by the proposed redevelopment of Tank Farms 1 and 2 under Alternative 2. Under Alternative 2, approximately 28.3 acres of vegetation would be permanently impacted to accommodate new facilities and supporting infrastructure (see Figure 9.12-2).

Table 9.12-2 Habitat Impacts at Tank Farms 1 and 2 (Alternative 2)

Habitat Cover	Acreage of Impact
Mixed Oak/White Pine Forest	2.7
Old Field	9.2
Ruderal Forest	16.4
Total	**28.3**

Mixed Oak/White Pine Forest
Alternative 2 would result in approximately 2.7 acres of disturbance of mixed oak/white pine forest, identical to Alternative 1. Similar to Alternative 1, the permanent habitat conversion does not represent a significant impact because of the remaining mixed oak/white pine forest habitat on-site and the undeveloped areas around the tank farms.

Old Field
The development of Alternative 2 would result in the permanent loss of approximately 9.2 acres of old field habitat, the same amount as under Alternative 1 (see Table 9.12-2). Conversion of old field would result in the same degree of impact for Alternatives 1 and 2.

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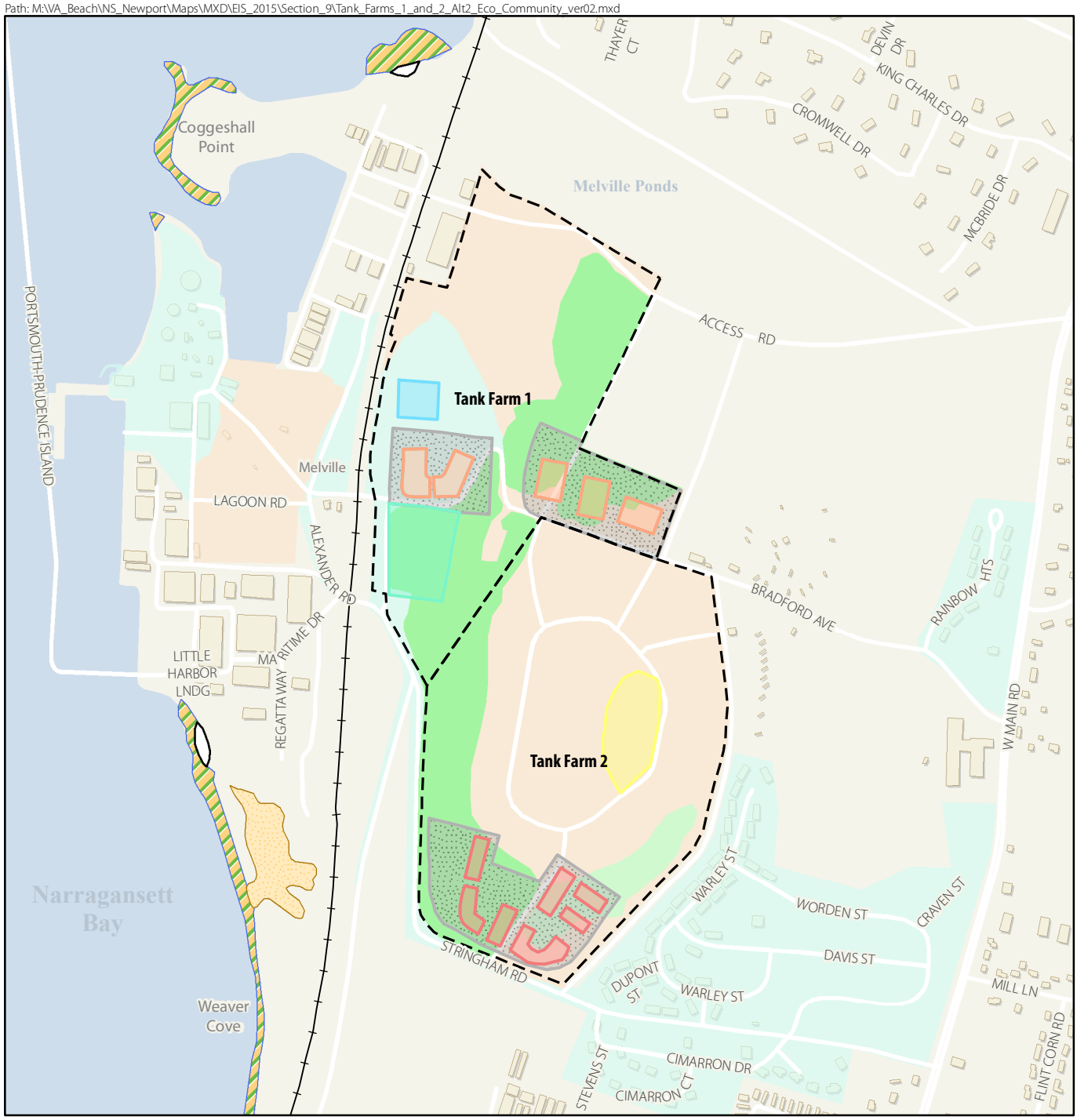

Legend

- Rail Road
- Property Boundary

Proposed Land Use

- Light Industrial
- Light Industrial/Boat Storage
- Multi Modal Parking
- Office Space
- Driveway/Parking Area
- Potential Solar Array

Narragansett Bay Estuarine Habitat

- Salt Marsh
- Phragmites Marsh
- Beach

Ecological Community

- Developed Land
- Mixed Oak/White Pine Forest
- Old Field
- Ruderal Forest

SCALE

0 300 600 Feet

SOURCE: University of Rhode Island RIGIS 2003; Univeristy of Rhode Island Department of Natural Resources 2012; RKG Associates et al. 2011.

Figure 9.12-2

Tank Farm 1 and 2 Properties Alternative 2 and Ecological Communities

NAVSTA Newport, Rhode Island

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Ruderal Forest

Under Alternative 2, approximately 16.4 acres of ruderal forest would be permanently impacted through development. Impacts from permanent vegetation conversion resulting from Alternative 2 are similar to those discussed for Alternative 1.

9.12.2.2 Wildlife

Impacts on wildlife under Alternative 2 would be similar to those discussed above for Alternative 1.

Terrestrial Mammals

Potential impacts on terrestrial mammals would be similar to those discussed for Alternative 1; however, none of these impacts are expected to be significant or adverse over either the short- or long-term (see Alternative 1 above); impacts would be minor.

Herpetofauna

As discussed under Alternative 1, loss of the forested habitat cover at Tank Farms 1 and 2 would reduce the amount of habitat likely providing harbor to herpetofauna such as the black rat snake and common garter snake. The loss of ruderal forested habitat is the same under both alternatives. Overall, however, impacts on herpetofauna would be minor.

Marine Mammals and Other Marine Wildlife

As noted under Alternative 1, no marine mammals and other marine wildlife such as finfish, shellfish, crustacea, or benthos would be impacted by Alternative 2 because there is no open water habitat at this surplus property.

Avian Species

Like the impacts discussed for Alternative 1, construction of Alternative 2 would result in short-term impacts, e.g., displacement, on avian species. Breeding birds would avoid areas of construction where equipment and human activities create disturbance. The future developer would be required to minimize impacts on migratory birds as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. Pursuant to the MBTA and BGEPA, the Navy has determined that implementation of Alternative 1 would have minor impacts on avian species and the disposal and reuse of the former Tank Farms 1 and 2 property would not result in significant impacts on, or harm of, migratory birds and bald and golden eagles.

9.12.2.3 Threatened and Endangered Species

Impacts on threatened and endangered species under Alternative 2 are similar to those discussed under Alternative 1.

9.12.2.4 Significant Wildlife Habitat

Impacts on significant wildlife habitat are the same as those discussed for Alternative 1.

9.12.3 No Action Alternative

9.12.3.1 Vegetation

Under the No Action alternative, Tank Farms 1 and 2 would be retained by the U.S. government in caretaker status; no redevelopment would occur. The vegetation at the tank farms would be left in a natural state, with minimal management, and the various habitat types would not be anticipated to change in habitat quality.

9.12.3.2 Wildlife

Under the No Action alternative, the property would be retained by the U.S. government in caretaker status. Overall wildlife abundance would likely increase as a result of continued lack of human activity. Diversity would likely remain constant, as the variety of habitats at the property would be maintained.

9.12.3.3 Threatened and Endangered Species

Under the No Action alternative, the property would be retained by the U.S. government in caretaker status. The potential for the federally listed endangered northern long-eared bat to be present on the site along with other federal or state-listed species would continue to exist at Tank Farms 1 and 2.

9.12.3.4 Significant Wildlife Habitat

No significant wildlife habitat currently exists at the Tank Farms 1 and 2 and it is not likely that over time, with continued lack of use of the property, significant wildlife habitat would occur in the future.

10 Midway Pier/Greene Lane Property: Existing Conditions

10.1 Land Use, Zoning, and Coastal Resources

This section summarizes existing land uses in the Midway Pier/Greene Lane property. A discussion of the land use and zoning districts surrounding the property and the plans and regulations that guide or direct the development of this land also is provided.

10.1.1 On-Site Land Use

The approximately 10.7-acre Midway Pier/Greene Lane property is located along the northwestern portion of NAVSTA Newport on the western shoreline of Aquidneck Island. The property parallels the Defense Highway, which is one of three major north-south roadways on Aquidneck Island (RKG Associates, Inc. et al. 2011).

The Midway Pier/Greene Lane property primarily consists of open space. The former Midway Fueling Pier, an unused stone and concrete pier is located on the bay shoreline near the Defense Highway's intersection with Greene Lane. The stone and concrete are the remains of the apron to an earlier existing much larger wooden "t" pier. The area around Midway Fueling Pier is developed with a small utility structure and a gravel parking lot. Several Navy buildings were located at this site but have been demolished (RKG Associates, Inc. et al. 2011). These demolished buildings include Building 70, the Midway Booster Pump House; Building 71, Boiler House No. 3; and Building 111 whose purpose was not known. Building 71 was demolished in 1995 and Buildings 70 and 111 in 1999. Navy-owned utility lines, including a fuel line and steam line, run along the Defense Highway and cross several of the adjoining parcels of land (RKG Associates, Inc. et al. 2011).

10.1.2 Surrounding Land Use

The study area for surrounding land uses includes the area within 0.25 miles of the boundaries of the Midway Pier/Greene Lane property. The property is bordered to the north, south, and east by Navy-owned property, including the Greene Lane housing area and undeveloped property along the Defense Highway, and to the west by Narragansett Bay (see Figure 10.1-1). An operational rail line used for tourist-oriented train service nearly bisects the entire Midway Pier/Greene Lane property, north to south.

Land uses within the study area beyond the adjacent land uses consist primarily of Navy-owned property, including Tank Farm 5 and the Navy Fire Fighting Training Area. Low-density residential development in the Town of Portsmouth and a property developed with an institutional land use in the Town of Middletown also are located within 0.25 miles of the site.

10.1.3 Land Use Plans and Zoning

While, land surrounding the Midway Pier/Greene Lane property is under the jurisdiction of the Towns of Middletown and Portsmouth, the proposed action would not be expected to have notable impacts on surrounding land uses; therefore, only the Town of Middletown's land use plans and zoning, which would apply directly to the property, are discussed in this section. Land use and development in the town is regulated by its zoning regulations and comprehensive plan. Additionally, part of the corridor is included in the study areas for the Town of Middletown's *Shoreline Park Master Plan* (Matrix Design Group 2014), the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005), and the *Aquidneck Island Transportation Study* (Vanasse Hangen Brustlin 2011).

Town of Middletown Zoning Code. The portion of the Midway Pier/Greene Lane property is in the public zoning district, which is designated for land owned by the federal or state government or the Town

of Middletown. Government land uses are the only uses permitted in the public zoning district. If a property in a public zoning district is transferred to a private owner, the town requires the property to be rezoned before it is used for a non-governmental purpose (Middletown Code of Ordinances Chapter 152 §2600 – 2601).

Town of Middletown, RI, Comprehensive Community Plan. The Midway Pier/Greene Lane property in Middletown is located in an area designated for conservation, recreation, and open space uses in the *Town of Middletown, RI, Comprehensive Community Plan Update* (Town of Middletown Planning Department 2015). This future land use designation is intended to conserve existing recreation land and open space through conservation or development easements. The comprehensive plan recommends that land included in this use designation be protected from any development. Other plan recommendations specific to the Midway Pier/Greene Lane property include the following:

- Protecting and enhancing scenic vistas along Defense Highway in accordance with the Aquidneck Island West Side Master Plan.
- Providing new public spaces and facilities on Narragansett Bay, including the proposed Greene Lane Park (Town of Middletown Planning Department 2008).

The 2014 comprehensive plan update also carries forward the town's plans for the Greene Lane Park, which would provide the town's only direct public access to Narragansett Bay (Town of Middletown Planning Department 2015).

Shoreline Park Master Plan. This plan develops a conceptual plan for reuse of the surplus Navy property in the Town of Middletown and updates previous land use plans that address this property, including the *Aquidneck Island West Side Master Plan* discussed below. The planning area includes the entire extent of the previously designated Defense Highway/Stringham Road Corridor. The town reassessed the reuse plan for the property through a process that included reviewing existing plans and the property's zoning and future land use designations, evaluating the existing condition of the property, and obtaining public input during two workshops held in February and March 2013. The preferred conceptual plan for the Midway Pier/Greene Lane property that developed from this process is similar to the reuse plan presented in this Draft EIS as Alternative 1 but includes additional development. The primary differences include development of a train depot and visitor's center with restrooms (approximately 2,000 square feet) and an outdoor concessions plaza (approximately 6,000 square feet). In addition, the preferred conceptual plan differs from the original reuse plan in that Midway Pier would be replaced on its existing foundations and extended farther into the bay (Matrix Design Group 2014).

Aquidneck Island West Side Master Plan. The Aquidneck Island Planning Commission cites the need to plan for the reuse of surplus Navy properties as one of the reasons for preparing the *Aquidneck Island West Side Master Plan*. The Midway Pier/Greene Lane property is located in the central part of the planning area. The master plan notes that Defense Highway currently is under-used, and increasing use of this roadway would address local transportation needs without requiring new road construction. The master plan recommends renaming the road "Shoreline Drive" and completing various improvements, including realigning and improving the intersection with Stringham Road, to facilitate diverting commuter and tourist traffic to the road from West Main Road. This would alleviate traffic congestion on West Main Road (The Cecil Group et al. 2005). The master plan recommends considering expansion of Shoreline Drive to a four-lane parkway as a potential future project, depending on the long-term needs of the community. Since the completion of the Aquidneck Island Transportation Study, the Navy has decided to retain the Defense Highway and Stringham Road due to lack of interest from the Town of

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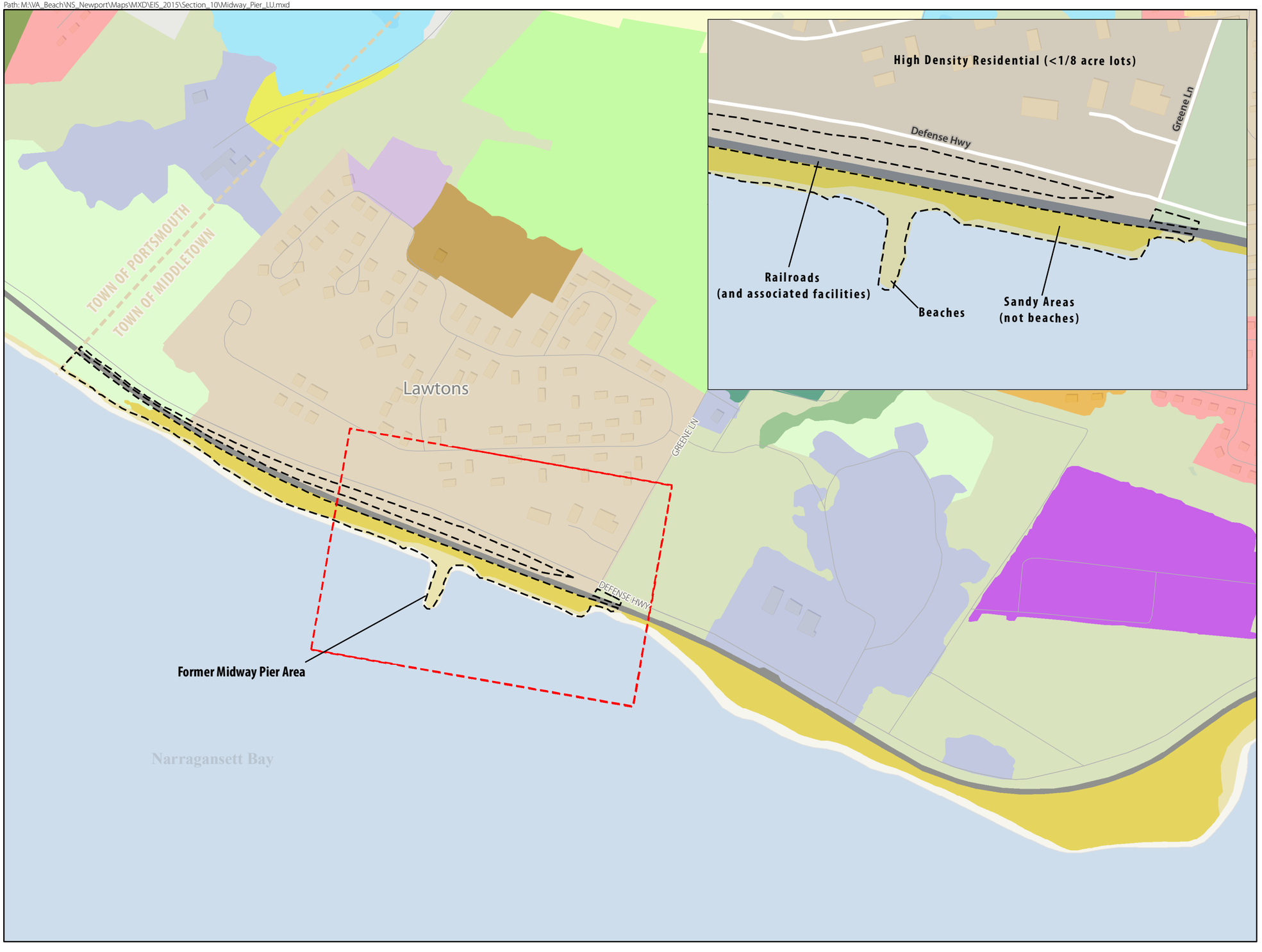

Figure 10.1-1
Midway Pier/Greene Lane Property Existing Land Use and Surrounding Land Use
NAVSTA Newport, Rhode Island

Legend

- Street
- Town Boundary
- Property Boundary

Land Use

- Beaches
- Sandy Areas (not beaches)
- Pasture (agricultural not suitable for tillage)
- Idle Agriculture (abandoned fields and orchards)
- Brushland (shrub and brush areas, reforestation)
- Cropland (tillable)
- Orchards, Groves, Nurseries
- Deciduous Forest (>80% hardwood)
- Mixed Forest
- Softwood Forest (>80% softwood)
- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)
- Medium Density Residential (1 to 1/4 acre lots)
- Medium Low Density Residential (1 to 2 acre lots)
- Low Density Residential (>2 acre lots)
- Cemeteries
- Industrial (manufacturing, design, assembly, etc.)
- Water and Sewage Treatment
- Transitional Areas (urban open)
- Institutional (schools, hospitals, churches, etc.)
- Railroads (and associated facilities)
- Roads (divided highways >200' plus related facilities)
- Other Transportation (terminals, docks, etc.)
- Power Lines (100' or more width)
- Vacant Land
- Waste Disposal (landfills, junkyards, etc.)
- Wetland
- Water

N

SCALE

0 0.1 0.2 Miles

SOURCE: Sanborn Map Company 2007; Aquidneck Island Planning Commission 2013

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Portsmouth in taking these roadways. Recommendations specific to the Midway Pier/Greene Lane property include developing a scenic overlook, park, and fishing pier at the Midway Pier area; and creating a bike path parallel to but separated from Shoreline Drive (The Cecil Group et al. 2005).

Aquidneck Island Transportation Study. Two scenarios were developed as part of the ongoing Aquidneck Island Transportation Study. Scenario 1 is the preferred reuse plan including the use of Defense Highway —a two-lane roadway with the addition of a multi-use pathway and open space ribbons. Scenario 2 was a four-lane roadway with the same multi-purpose path. Because of roadway width constraints, the road portion of the previously designated Defense Highway/Stringham Road Corridor cannot be widened to allow additional lanes. Therefore, Scenario 1 was selected as the preferred reuse plan for this site and was ultimately incorporated into the Redevelopment Plan. Since the completion of the Aquidneck Island Transportation Study, the Navy has decided to retain the Defense Highway and Stringham Road due to lack of interest from the Town of Portsmouth in taking these roadways. Thus, a modified version of Scenario 1 is included in this Draft EIS.

10.1.4 Coastal Zone Management

Under the CZMA and the RI CRMP, CRMC has review authority for all federal actions or activities regardless of their location within a Rhode Island coastal community or state territorial waters. However, only the disposal of the surplus property is a federal action; the subsequent redevelopment would be a non-federal action and would fall under CRMC's direct state permitting authority for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area.

The Midway Pier/Greene Lane property is located in the 200-foot contiguous area of Narragansett Bay, which the RI CRMP categorizes as a Type 4 Water: Multipurpose Waters. As discussed in Section 3.1.1, under the RI CRMP tidal waters, shoreline features, and contiguous areas are regulated by the state. As indicated in Figure 10.1-2, in addition to the presence of the offshore water portion of the site as a Type 4 Water, there are also three shoreline features within or directly adjacent to the site boundary: a beach, coastal wetlands, and eelgrass beds. The presence of these shoreline features is associated with additional policies; the policies applicable to the Midway Pier/Greene Lane property are outlined in Table 10.1-1 below.

Table 10.1-1 Applicable Policies—Rhode Island Coastal Resources Management Program

Shoreline Feature	RICRMP Section	Policy
Type 4 Waters	200.4(C)	1. The [CRMC's] goal is to maintain a balance among the diverse activities that must coexist in Type 4 waters. The changing characteristics of traditional activities and the development of new water-dependent uses shall, where possible, be accommodated in keeping with the principle that the [CRMC] shall work to preserve and restore ecological systems. 2. The [CRMC] recognizes that large portions of Type 4 waters include important fishing grounds and fishery habitats, and shall protect such areas from alterations and activities that threaten the vitality of Rhode Island fisheries.

Table 10.1-1 Applicable Policies—Rhode Island Coastal Resources Management Program

Shoreline Feature	RICRMP Section	Policy
Coastal Wetlands	210.3	Policy 4 - Coastal wetlands designated for preservation adjacent to Type 3, 4, 5, and 6 waters are identified on maps available for inspection at the Council's offices and at the town halls of coastal cities and towns. Dredging and filling in these designated coastal wetlands are prohibited. The maps of designated coastal wetlands serve to identify individual wetlands; in all cases precise boundaries shall be determined through a field inspection when proposals that could impact these features are being considered. In support of this goal, the Council supports a policy of "no net loss" of coastal wetland acreage and functions as a result of coastal development.
		Policy 7 - All alterations to coastal wetlands shall be carried out in accordance with Section 300.12 Coastal Wetland Mitigation.
Activities in Tidal and Coastal Pond Wetlands, on Shoreline Features, and Their Contiguous Areas	300	Under the Rhode Island CRMP, any alteration or activity proposed within tidal waters, shoreline features, and contiguous areas is regulated and an assent is required from the Council. The requirements for a Category B Assent from CRMC are provided in Section 300.1 of the Rhode Island CRMP and include demonstrating the need for the proposed activity, demonstrating that the activity would not result in significant impacts on erosion and/or deposition processes along the shore and in tidal waters, and demonstrating that there would be no significant deterioration in water quality, as well as other requirements.
Dredging and Dredged Materials Disposal	300.9	Maintenance dredging within tidal waters of Type 4 Waters will require a Category A Assent. By definition, "maintenance dredging includes projects whose purpose is to restore channels and basins to dimensions that support and maintain existing levels of use." In addition, according to CRMP Section 300.9, the following prerequisites are required: 1. All materials to be dredged for either open water disposal or upland disposal must be classified by the Department of Environmental Management (DEM) based upon an approved analysis process prior to the Council acting on an application of either dredging or dredged materials disposal. 2. Any application for open water disposal of dredged materials shall obtain a suitability determination from the Army Corps of Engineers. 3. All applicable requirements of the Freshwater Wetlands Act have or will have been met. 4. Upland disposal of dredged materials must comply with all applicable local zoning ordinances. 5. When disposal is proposed for approved upland facilities, the applicant shall provide a letter of acceptance from that facility, unless the disposal is approved for the central landfill. 6. For dredge volumes greater than 10,000 cubic yards, a pre-application meeting is required.

Table 10.1-1 Applicable Policies—Rhode Island Coastal Resources Management Program

Shoreline Feature	RICRMP Section	Policy
Eelgrass Beds	300.18	Policy 1 - The Council's goal is to preserve, protect and where possible, restore SAV habitat. In cases where the Council determines that SAV may be altered or grants a special exception to a prohibition listed in Section 300.18D, the Council shall require the mitigation of all impacts [on] SAV. Such activities requiring mitigation include, but are not limited to, marina expansions, dredging, filling in tidal waters, construction of commercial docks and/or structures and any other activity determined by CRMC that has not significantly or appropriately avoided impacts on SAV. Permanently lost or significantly altered SAV shall be replaced through the restoration of an historical SAV habitat or the creation of a new SAV habitat at a site approved by the Council. The ratio of restoration to loss shall be 2:1.
		Policy 2 - Activities under CRMC jurisdiction, including Residential, Commercial, Industrial, and Public Recreational Structures (Section 300.3), Recreational Boating Facilities (Section 300.4), Sewage Treatment and Stormwater (Section 300.6), Dredging and Dredged Materials Disposal (Section 300.9), Filling in Tidal Waters (Section 300.10), Aquaculture (Section 300.11), and activities undertaken in accordance with municipal harbor regulations (Section 300.15), shall avoid and minimize impacts on SAV habitat.
		Policy 3 - The Council supports cooperative efforts to determine the current status and identify trends in the health and abundance of SAV species in Rhode Island using the best information as it becomes available.
		Policy 4 - The Council shall assess the potential impacts [on] SAV and its habitat from proposed activities on a case-by-case basis. Such impacts may include, but shall not be limited to the introduction of excess nutrients, sedimentation, shading, and/or disruption of SAV and SAV habitats.
		Policy 5 - All impacts [on] SAV and SAV habitat shall be avoided where possible and minimized to the extent practicable. Where the impacts are substantial or cannot be avoided or minimized, the Council may deny the application. The Council may exercise greater discretion if the proposed site is adjacent to or includes a restoration site and/or the site includes the sole source of SAV habitat.

Table 10.1-1 Applicable Policies—Rhode Island Coastal Resources Management Program

Shoreline Feature	RICRMP Section	Policy
		Policy 6 - SAV habitats designated for preservation within the boundaries of the Narragansett Bay National Estuarine Research Reserve (NBNERR) are identified on the SAV Habitats Designated for Preservation in Narragansett Bay maps (January 13, 2000), available for inspection at the Council's offices. The Narragansett Bay National Estuarine Research Reserve includes waters extending to the 18-foot depth contour around Patience Island, the northern half of Prudence Island, portions of the southern half of Prudence Island, and Hope Island. In areas within the NBNERR which are designated for preservation on the above maps, alterations and activities which impact the health and abundance of the SAV habitat are prohibited. These maps serve to identify individual SAV habitats, and are for general reference only; in all cases precise boundaries shall be determined through a proper survey conducted in accordance with these guidelines when proposals that could impact these features are being considered.
		Policy 7 - In tidal waters where applicants propose activities under Sections 300.3, 300.4, 300.6, 300.9, 300.10, 300.11, and 300.15, and the Council's staff determines that SAV habitat is not present, an SAV survey will not be required. When such activities are proposed in areas of current or historic SAV habitat, an SAV survey shall be required.
		Policy 8 - It is the policy of the Council that SAV surveys shall be completed during peak biomass. SAV surveys shall be completed in Narragansett Bay between July 1 and September 15. SAV surveys shall be completed in the south shore coastal ponds and other shallow water embayments between July 1 and August 15. SAV must be avoided where possible by utilizing any available location and orientation which does not require crossing the bed with the dock. In evaluating applications for dock construction, and/or modifications to existing docks, in areas of known SAV habitat, the Council will consider dock design features including, but not limited to, the height and width of the dock structure, the orientation of the dock structure, the availability of sunlight to the eelgrass habitat, the cumulative impacts of multiple docks in the area, the disruption caused by construction and the disruption caused by normal use and maintenance of the dock structure. In determining the permissible design of a facility in an SAV habitat, the Council will rely on the latest available research such as the research findings developed by Burdick and Short (1995) and designs appropriate for the area.

The site also is located in the Aquidneck Island SAMP area encompassing the western side of Aquidneck Island and adjacent water. The Coastal Development Policies of the Aquidneck Island SAMP apply to the Midway Pier/Greene Lane property. Table 10.1-2 provides a summary of the applicable policies of the Aquidneck Island SAMP.

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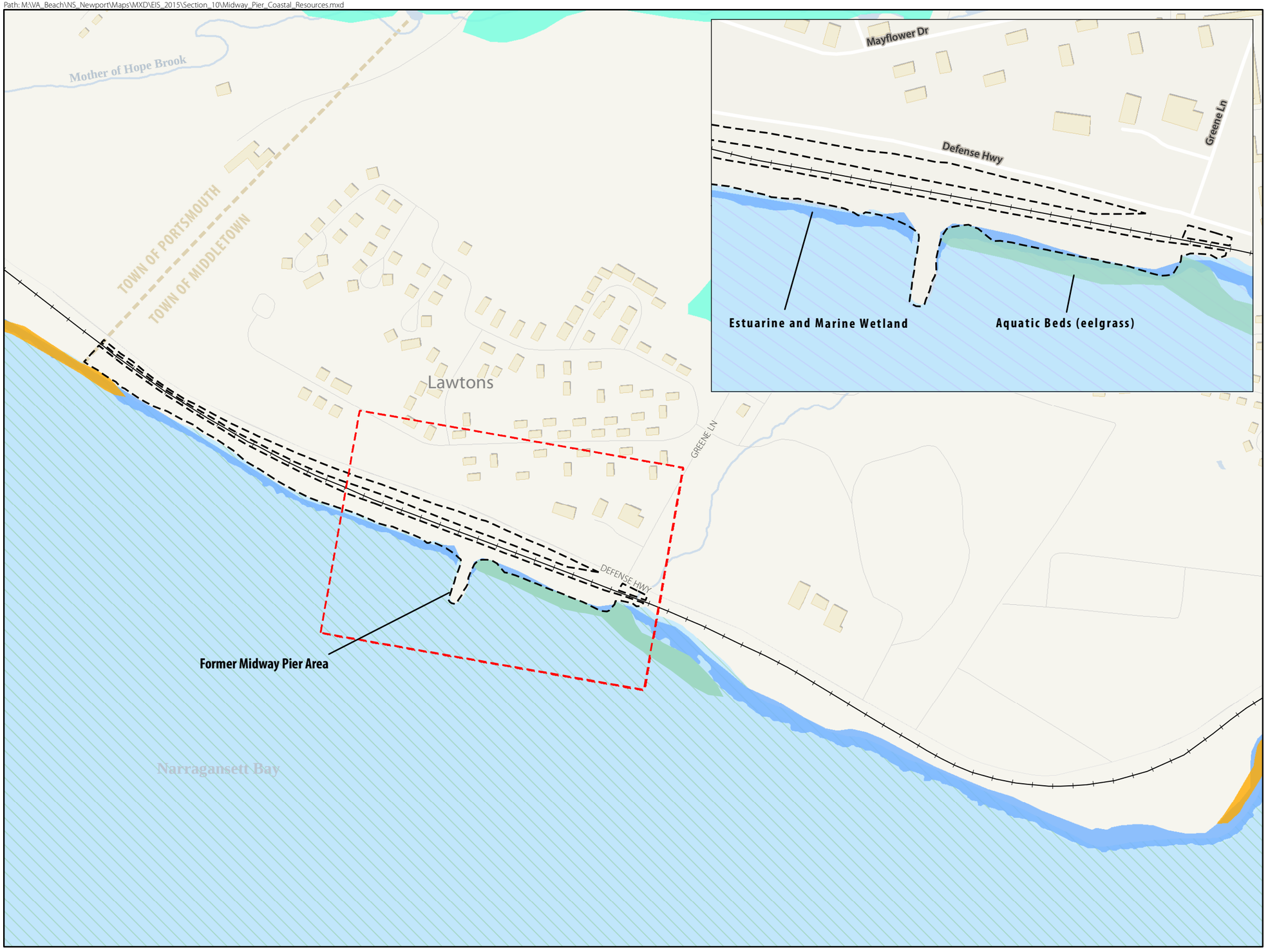

Figure 10.1-2
Midway Pier/Greene Lane Property
Coastal Resources
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Waterbody
- Property Boundary

Submerged Aquatic Vegetation
- Aquatic Beds (eelgrass)

Shoreline Feature
- Salt Marsh
- Phragmites Marsh
- Beach
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland

Coastal Water Use Type
- Industrial Waterfront and Commercial Navigation Channel
- Conservation Area
- Multi-Purpose Water
- High Intensity Boating

SCALE

0 0.1 0.2 Miles

SOURCE: RIDEM 2003; USFWS 2011; University of Rhode Island RIGIS 1990; RI CRMC 2008

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Table 10.1-2 Applicable Policies from the Aquidneck Island Special Area Management Plan

Aquidneck Island SAMP Section	Policy
Section 130.2 Coastal Greenway	Coastal greenways are intended to be vegetated with native plant communities and provide an undeveloped transition zone between the shoreline and adjacent upland development within the 200-foot contiguous area of a coastal feature. Coastal greenway requirements do not apply to municipal projects undertaken to provide public access to the shoreline and other public amenities such as ball fields, parks, playgrounds, public boat ramps, public fishing piers, or boating facilities.
Section 130.8 Open Space and Public Access	The primary goal/standard for any development project along the shoreline must be a requirement to provide public access to and along the shoreline within the project property boundary.
Section 130.9 Visual Elements	The scenic and visual qualities of the West Side of Aquidneck Island coastal area shall be considered and protected as a resource of public priority. Development should be sited and designed to protect views to and along coastal areas, minimize the alteration of natural land forms, be visually compatible with the character of surrounding areas, and, where feasible, restore and enhance visual quality in visually degraded areas in accordance with Rhode Island CRMP Section 330.
Section 150.1 Standards Applicable to Entire Development	A) *25% Minimum Vegetation Requirement* – Applicants must include sustainably landscaped areas in their proposals to achieve vegetative coverage of at least 25% of the surface area over the entire development parcel. B) *Storm Water Management* – All new development and redevelopment proposals shall meet the storm water requirements of CRMP Section 300.6 and as specified in the most recent edition of the Rhode Island Stormwater Manual to control peak flow rates and volumes and improve water quality. Communities should be implementing LID practices to meet the 2007 Cleaner Narragansett Bay Act (R.I.G.L. § 45-61.2), which requires LID as the primary means of managing and treating storm water. C) *Open Space* – There are three aspects to open space designations of importance. First is the choice of the land that should be set aside and what qualities that land possesses, and second is the links between the open space parcels that allow greenways throughout the area and improve the value of the land and mobility for residents. The third aspect is the design of the designated areas that will ensure their long-term value. D) *Public Access* – When applicants choose the Coastal Greenway option, the CRMC requires that shoreline and arterial public access pathways be provided by the applicant within the development site, as described in Aquidneck Island SAMP Coastal Development Section 150.5. E) *Construction Setback* – A construction setback of 25 feet is required for all new and existing residential, commercial, mixed-use, and other structures to provide for fire, safety, and maintenance purposes. The setback is measured from the inland edge of the Coastal Greenway or buffer.

10.2 Socioeconomics and Environmental Justice

The social, economic, and demographic characteristics of the City of Newport and the Town of Middletown are described in Section 4.2.

10.3 Community Facilities and Services

The Midway Pier/Greene Lane property is along the western shoreline of Aquidneck Island, within the Town of Middletown (see Section 4.3 for a description of the community facilities and services that are provided in the Town of Middletown). Figure 10.3-1 illustrates the location of the community facilities and services discussed in Section 4.3 that are in the vicinity of the Midway Pier/Greene Lane property.

10.4 Transportation

This section describes the current local road network and traffic conditions surrounding the Midway Pier/Greene Lane property. The information presented in this section is based on a traffic study conducted in October 2012 (Pare Corporation 2013). Roadways and intersections specifically analyzed for this area include the following:

- Defense Highway/Burma Road
- Stringham Road
- Defense Highway/Burma Road and Stringham Road Intersection
- Defense Highway/Burma Road and Greene Lane Intersection.

Locations of these roadways and intersection are shown on Figure 10.4-1. Information on public transit was gathered from the RIPTA.

10.4.1 Road Network and Access

A description of the surrounding roads and intersections is provided below.

Defense Highway/Burma Road. Defense Highway/Burma Road is a 4.4-mile north-south roadway, connecting Stringham Road in Middletown with the Gate 17 access road to NAVSTA Newport in Portsmouth. The roadway, which is classified as an urban collector, operates under the jurisdiction of the U.S. Navy and is a major access point between the Navy operations and West Main Road. The road is two lanes and "Share the Road" signs are posted, notifying motorists of the presence of bicyclists. The speed limit along the highway varies from 25 to 35 mph.

Stringham Road. Stringham Road is a two-lane, east/west roadway connecting West Main Road to the east, with Defense Highway/Burma Road to the west. Stringham Road is an urban collector, operating under the jurisdiction of the U.S. Navy. The posted speed limit along the roadway is 30 miles per hour.

Defense Highway/Burma Road and Stringham Road Intersection. The intersection of Defense Highway/Burma Road with Stringham Road forms a skewed three-way unsignalized intersection. A stop sign is at the Defense Highway/Burma Road intersection with Stringham Road. Stringham Road and Defense Highway/Burma Road intersect at a sharp angle (i.e., a hairpin turn), that requires drivers on Stringham Road northbound to turn almost 180 degrees to travel southbound on Burma Road.

Defense Highway/Burma Road and Greene Lane Intersection. The intersection of Defense Highway with Greene Lane forms a three-way unsignalized intersection. Defense Highway runs in a north/south direction, while Greene Lane runs in an east/west direction. Greene Lane operates under stop sign control at the intersection, while Defense Highway operates uncontrolled.

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SCALE

0 0.25 0.5 Miles

Legend

- Street
- River/Stream
- School/Institution
- Fire Department
- Police Department
- Parks
- Property Boundary
- Waterbody

Figure 10.3-1

Midway Pier/Greene Lane Property Community Facilities and Services

NAVSTA Newport, Rhode Island

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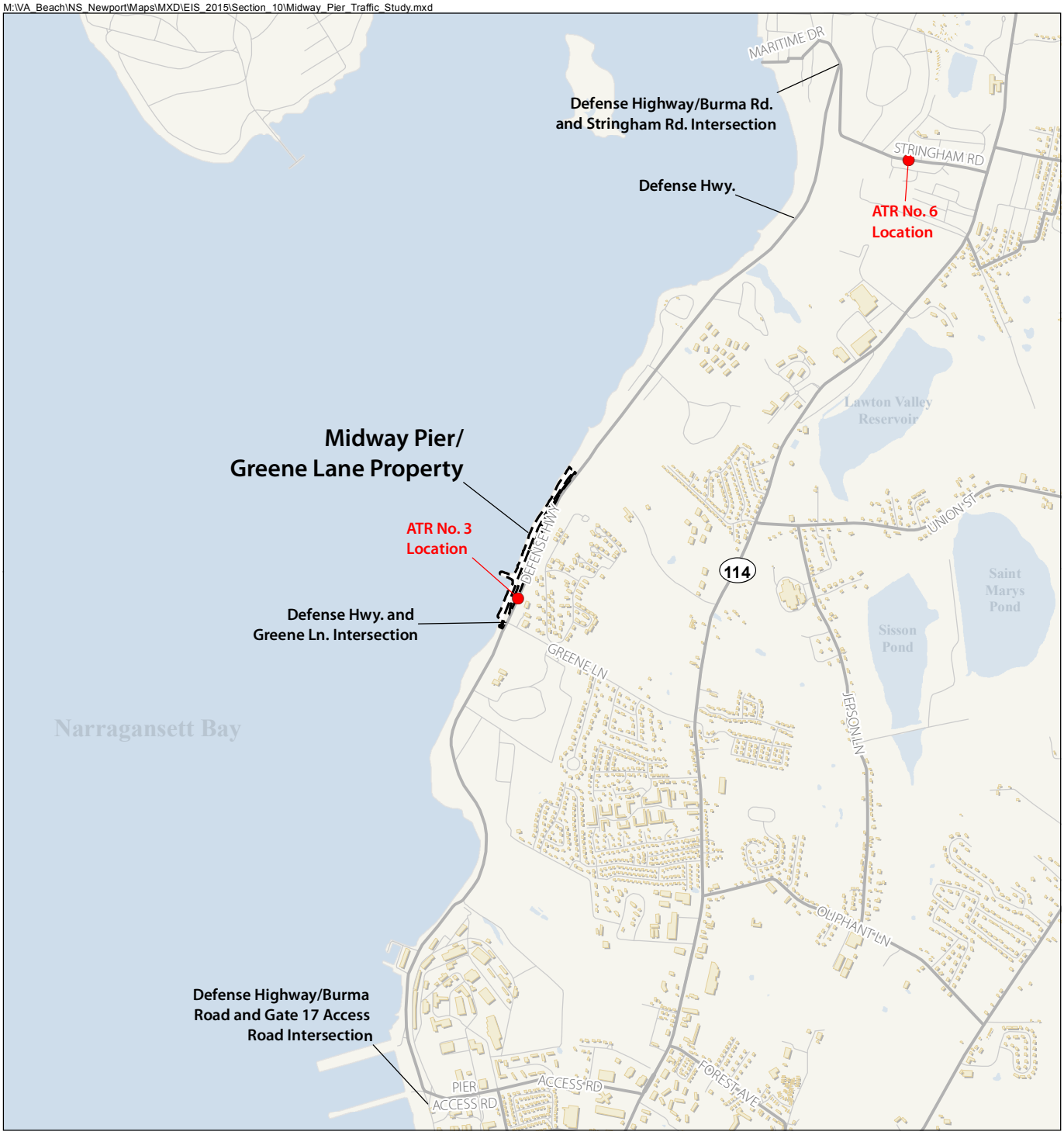

N

SCALE

0 0.5 1 Miles

Legend

- Automatic Traffic Recorders (ATR)
- Street
- Major Road
- Waterbody
- Property Boundary

Figure 10.4-1

Midway Pier/Greene Lane Property Traffic Impact Study Area

NAVSTA Newport, Rhode Island

SOURCE: Pare Corporation 2013

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10.4.2 Existing Traffic Volume

Traffic volumes were collected in October 2012 during peak hours at the intersections of Defense Highway/Burma Road and Stringham Road and Defense Highway/Burma Road and Greene Lane. In addition, total average daily traffic counts were conducted on Defense Highway near its intersection with Greene Lane and with Stringham Road (see Figure 10.4-1). Peak hour traffic volumes for the morning and evening are shown in Table 10.4-1, in addition to the total average daily traffic counts on Defense Highway and Stringham Road. The morning peak traffic occurred between 7:15 a.m. and 8:15 a.m., while evening peak traffic occurred between 3:30 p.m. and 5:00 p.m. Intersections were slightly busier during the evening peak hour than the morning peak hour. As indicated in Table 10.4-1, Defense Highway carries a an average daily traffic count of 5,406 vehicles north of Greene Lane, and Stringham Road carries an average daily traffic count of 6,246 vehicles west of West Main Street.

Table 10.4-1 Existing Roadway Traffic Conditions along the Midway Pier/Greene Lane Property

Peak Hour Traffic Volumes		
Intersection	**A.M. Peak Hour Volume**	**P.M. Peak Hour Volume**
Defense Highway/Burma Road and Greene Lane (Middletown, RI)	867	913
Defense Highway/Burma Road and Stringham Road (Portsmouth, RI)	773	870
Average Daily Traffic Volumes		
Roadway	**Location**	**Average Daily Traffic**
Defense Highway	North of Greene Lane	5,406
Stringham Road	West of West Main Road	6,246

Source: Pare Corporation 2013

10.4.3 Roadway Intersection Level of Service

A capacity analysis was conducted to characterize the LOS at intersections evaluated along the Midway Pier/Greene Lane property, and an additional length of Defense Highway north of the surplus property. LOS is a qualitative measure that describes general operating conditions based on factors such as speed, travel times, and delays. LOS is reported on a scale of 'A' to 'F.' 'A' represents the best operating conditions with free-flowing traffic and 'F' represents the worst operating conditions with significant delays.

The traffic study looked at two intersections along Defense Highway (see Table 10.4-2). The Defense Highway/Burma Road and Greene Lane intersection is currently not signalized. Greene Lane operates under stop-sign control at this intersection. During both morning and evening peak hours, this intersection operates at LOS C. Similarly, the intersection of Defense Highway and Stringham Road is not signalized, with Defense Highway operating under stop-sign control. The northbound approach to the intersection currently operates at LOS A during both morning and evening peak hours. The northeast approach (the right turn from Defense Highway/Burma Road to Stringham Road), currently operates at LOS F during morning peak hours, and LOS D during evening peak hours.

Table 10.4-2 Roadway Level of Service at Intersections along Defense Highway

Intersection	LOS A.M. Peak Hours	LOS P.M. Peak Hours
Defense Highway/Burma Road and Greene Lane*	C	C
Defense Highway/Burma Road and Stringham Road	A (northbound) F (northeast)	A (northbound) D (northeast)

Source: Pare Corporation 2013

*Stop sign control

10.4.4 Safety Conditions

Accident data from January 2010 to October 2012 were reviewed for the Defense Highway/Burma Road segment between East Passage and the Middletown town line. During this period, a total of 16 accidents were recorded at the intersection of Defense Highway/Burma Road and Stringham Road. Five of the accidents were collisions with objects, four were rear-end collisions, three involved collisions with an animal, 2 involved the loss of control of the vehicle, one was an angle crash, and one involved sideswiping (Pare Corporation 2013).

A speed study was conducted on Defense Highway north of Greene Lane. Defense Highway has a posted speed of 35 mph at this location and 90 percent of vehicles traveled above the posted speed limit. The average speed of vehicles on this roadway was 41 mph (Pare Corporation 2013).

10.4.5 Public Transportation

The RIPTA provides fixed-route bus service throughout Rhode Island, including Aquidneck Island. Bus routes near the Midway Pier/Greene Lane property are described below (RIPTA 2013a).

- Route 60 - This route provides service between Newport and Providence via Middletown and Portsmouth. The route originates at the Gateway Center in Newport and travels along West and East Main Roads parallel to Defense Highway but does not provide direct access to the corridor (RIPTA 2013b).
- Route 64 – This route connects Newport with the University of Rhode Island in Kingston. The route begins at Gateway Center and travels north to Third Street, where it passes in front of the former Naval Hospital property and provides service to the Naval Undersea Warfare Center via Gate 17 near Defense Highway but does not provide direct access to the corridor (RIPTA 2013d).

10.5 Environmental Management

This section summarizes the existing conditions regarding hazardous waste, hazardous materials, and the ER Program for the Midway Pier/Greene Lane property.

10.5.1 Hazardous Waste

No hazardous waste is known to be generated at the Midway Pier/Greene Lane property (U.S. Department of the Navy 2009).

10.5.2 Hazardous Materials

10.5.2.1 Hazardous Material Control

Hazardous materials are not known to be used at the Midway Pier/Greene Lane property, and the Tier II Emergency and Hazardous Chemical Inventory report for 2011 does not list hazardous materials for the property. Diesel fuel is listed as being used for an emergency generator at Building 694, which is close to the property but outside of the surplus property boundary, in the general Midway Pier area (see Figure 10.5-1) (NAVSTA Newport 2012d). The fuel pipeline that runs along Defense Highway was cleaned in 2000 (see Section 10.5.2.2) and contains no material.

The installation spill log for 2002 through 2011 lists occasional small spills of vehicle-related substances such as motor oil, hydraulic fluid, and antifreeze along Defense Highway The exact locations of those spills were not listed and the spills did not meet the criteria for reporting to the National Response Center and RIDEM. A spill of aviation fuel in excess of 5 gallons occurred along Defense Highway in 2008 from a Defense Fuel Support Point fuel line. The spill was cleaned up and reported to the National Response Center and RIDEM (NAVSTA Newport 2012e).

10.5.2.2 Underground Storage Tanks

There are no active USTs directly associated with the Midway Pier/Greene Lane property (U.S. Department of the Navy 2009). An active 1,000-gallon UST used for diesel fuel is associated with Building 694 (Aerostar 2012) in the general Midway Pier area (see Figure 10.5-1) and just outside of the boundary of the property to be disposed.

Two former USTs were associated with former Building 71, which is one of three fuel-operations buildings located in an area near Midway Pier that was investigated and remediated between 1995 and 2008. Building 70 was the Midway Booster Pump House, Building 71 was Boiler House No. 3, and Building 111's purpose is not known (Tetra Tech EC, Inc. 2008b; see Figure 10.5-1). The USTs associated with Building 71 consisted of a 75,000-gallon UST used for fuel oil and a 5,000-gallon UST used for diesel fuel. Building 71 and the two USTs were removed in 1995. At the time of removal, the 75,000-gallon UST was determined to have leaked, and subsequent soil investigations and removals were conducted between 2005 and 2008 to remove the contaminated soil. Additional areas of contaminated soil associated with former Building 70 (demolished in 1999 along with Building 111) and Building 71 also were investigated and removed between 2005 and 2008. Confirmatory sampling gauged the progress of the removals. Subsequent additional remedial work addressed elevated levels of TPH that remained in the area of the 75,000-gallon UST following the initial removal of contaminated soil. The additional work consisted of in situ chemical oxidation to treat and reduce TPHs in soil and the installing and sampling of monitoring wells to assess groundwater for TPH and monitor remedial progress (Tetra Tech EC, Inc. 2008c). During removal of contaminated soil in the area of former Building 70 in 2011, the Navy and RIDEM discovered a pipe containing petroleum product. The removal and disposal of contaminated soils was completed and the pipe was capped; however, additional groundwater monitoring was suspended until further investigations of the pipe and nearby fuel pipeline, discussed below, can be completed (Dorocz 2013).

A 6-mile length of underground fuel pipeline runs along Defense Highway, from the intersection of Defense Highway and Stringham Road to Pier 1, south of the Midway Pier/Greene Lane property (see Figure 10.5-1). The pipeline transferred various fuels from tanks at Tank Farms 1, 2, 3, 4, and 5 to ship-fueling stations at the naval piers along the shoreline. The pipeline was cleaned, pressure-tested, and abandoned in place in 2000. In conjunction with that effort, the 50 concrete piping chambers located along the 6-mile span of pipeline also were cleaned and demolished. The chambers provided access to valves, expansion joints, and reducers associated with the fuel pipeline. After the chambers were

demolished, soil near the pipeline penetrations in the areas of the demolished chambers was sampled and tested for petroleum-related constituents. Soil exceeding RIDEM standards was excavated and removed in 2008 (Tetra Tech EC, Inc. 2008a). Subsequent investigation of the fuel pipeline chambers identified other petroleum contamination along various portions of Defense Highway, including oil that was found across Defense Highway from the former Midway Pier. The oil will require cleanup before groundwater monitoring and remediation in the general area can be completed (Dorocz 2013).

Also in 2000, the Midway Fuel Pier approach pipe (which linked earlier fueling operations at Midway Pier with the main fuel pipeline along Defense Highway) was cleaned and removed. As part of removal activities at Midway Pier, petroleum-contaminated soil at the west end of the pier was removed (Tetra Tech EC, Inc. 2008b).

10.5.2.3 Aboveground Storage Tanks

There are no current or former ASTs associated with the Midway Pier/Greene Lane property (U.S. Department of the Navy 2009).

10.5.2.4 Oil/Water Separators

A former OWS associated with Building 70 was removed when the building was demolished in 1999 (see Figure 10.5-1). At the time of removal, soils were tested near the OWS discharge line and petroleum-contaminated soils were identified. The discharge line and contaminated soils were removed in 2006 (U.S. Department of the Navy 2009). There are no other OWSs associated with the Midway Pier/Greene Lane property.

10.5.2.5 Asbestos-Containing Materials

A steam line runs parallel to the underground fuel pipeline along Defense Highway (see Figure 10.5-1). When the fuel pipeline was cleaned in 2000 and the 50 concrete piping chambers were evaluated for demolition, asbestos pipe insulation was observed on the steam lines in the piping chambers. Before demolishing the piping chambers, the asbestos was removed from the steam lines in the chambers. It can be assumed that the inaccessible lengths of underground steam line that run along Defense Highway similarly contain asbestos pipe wrap (U.S. Department of the Navy 2009). There is no known ACM associated with the former Midway Pier.

10.5.2.6 Lead-Based Paint/Lead

There is no known LBP or lead at the Midway Pier/Greene Lane property, although the pier has not been assessed for it.

10.5.2.7 Polychlorinated Biphenyls (PCBs)

There are no known sources of PCBs at the Midway Pier/Greene Lane property. There are no transformers associated with the portion of the Navy electrical line that extends along Defense Highway near the property (U.S. Department of the Navy 2009).

10.5.2.8 Pesticides

Pesticides likely have been applied in the past at selected portions of the Midway Pier/Greene Lane property as necessary for nuisance pest and vegetation control. Pesticides are applied at NAVSTA Newport in accordance with the *Integrated Pest Management Plan* (Geo-Marine 2009 [see Section 3.5.1.2]).

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS_2015\Section_10\Midway_Pier_Features.mxd

Figure 10.5-1
Midway Pier/Greene Lane Property Hazardous Materials
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Rivers/Streams
- Town Boundary
- Property Boundary
- Former Building
- Former Underground Storage Tank (UST)
- Former Oil/Water Separator (OWS)
- Installation Restoration Program (IRP) Site/Study Area Boundary
- Fuel Pipeline Along Defense Highway
- Presumed Path of Fuel Pipeline along Defense Highway
- Waterbody

SCALE

0 0.1 0.2 Miles

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10.5.2.9 Radioactive Materials

There are no radioactive materials associated with the Midway Pier/Greene Lane property (U.S. Department of the Navy 2009).

10.5.2.10 Radon

Radon surveys have not been conducted in the area of the Midway Pier/Greene Lane property (U.S. Department of the Navy 2009). Radon levels in general are low throughout NAVSTA Newport (see Section 3.5.1.2).

10.5.3 Medical Waste

Medical wastes are not generated anywhere at the Midway Pier/Greene Lane property.

10.5.4 Environmental Restoration Program

There is one ER Program site located near the Midway Pier/Greene Lane property, IRP Site 13. Tank Farm 5 is located along the eastern side of Defense Highway and just south of Greene Lane. It is not immediately adjacent to the Midway Pier/Greene Lane property but is separated from the Midway Pier/Greene Lane property by Defense Highway (see Figure 10.5-1). Tank Farm 5, consisting of 85 acres, was operated by the Navy from the 1940s to 1974 to store fuel. It consisted of eleven 2.5-million-gallon USTs and other structures and areas. Tank Farm 5 was leased to the DESC from 1974 to 1998 for petroleum fuel storage and distribution. The tanks were cleaned and ballasted between 1994 and 1997 and subsequently demolished in place between 1998 and 1999. Large quantities of tank bottom sludges were disposed of on-site and some were burned on-site. Various environmental investigations have been conducted since 1983 and the tank farm is currently being addressed under both the CERCLA IRP and RIDEM UST programs. TPHs and lead have been found in certain soils at the site. A former OWS has been demolished and some AOCs of contaminated soil have been excavated (Tetra Tech NUS 2009). The ROD was finalized in 2013 and the remaining remedial activities are scheduled to be completed by 2016. Long-term groundwater monitoring will continue into the foreseeable future after the remaining contaminated soil is remediated.

10.6 Air Quality

10.6.1 Existing Air Quality

Section 3.6 discusses regional air quality and applicable regulations and requirements. The CAA is the primary federal statute governing the control of air quality. The Midway Pier/Greene Lane property is in the Town of Middletown, Newport County, RI. This location is within the Providence, RI air quality region, which encompasses all of Rhode Island and is currently in attainment for all NAAQS. The state is under the jurisdiction of RIDEM for air quality.

10.6.2 Existing Emissions

As discussed in Section 10.4, a traffic count of 5,406 vehicles was recorded on the segment of Defense Highway/Burma Road north of Greene Lane, and a traffic count of 6,246 vehicles was recorded on Stringham Road west of West Main Road in 2012. Annual criteria pollutant emissions from traffic along the Midway Pier/Greene Lane property were estimated based on the average daily traffic counts on these two roadway segments and the vehicle miles traveled along the Midway Pier/Greene Lane property over a year (see Table 10.6-1). Emissions of HAPs and GHG would be minimal. These emissions represent non-stationary sources; no stationary sources are located along the corridor.

According to data collected for the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013), Defense Highway receives much less traffic than

West Main Road, which runs parallel to Defense Highway to the east—average daily traffic counts at two locations on West Main Road were 26,366 vehicles and 22,136 vehicles, respectively. It is therefore assumed that Defense Highway and Stringham Road are not frequently travelled compared with other roadways and is not a significant source of emissions in the region.

Table 10.6-1 2012 Midway Pier/Greene Lane Property Vehicle Miles Traveled and Emissions Data

					Emissions per year (tons)					
	ADT	Miles	Daily VMT	Annual VMT	CO	NOx	VOC	SO_2	PM_{10}	$PM_{2.5}$
Defense Highway	5,406	3.6	19,462	7,103,484	15.78	1.44	1.86	0.04	0.34	0.22
Stringham Road	6,246	1	6,246	2,279,790	5.06	0.46	0.60	0.01	0.11	0.07
Total	**11,652**	**4.6**	**25,708**	**9,383,274**	**20.84**	**1.90**	**2.46**	**0.05**	**0.45**	**0.29**

Key:
ADT = Average daily traffic
CO = Carbon monoxide.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VMT = Vehicle miles traveled
VOC = Volatile organic compounds

10.7 Noise

Ambient sound levels are a function of a variety of sources: local traffic, barking dogs, birds, insects, lawnmowers, children playing, and the interaction of the wind with groundcover, buildings, trees, shrubs, power lines, etc. Sound levels vary with time of day, wind speed and direction, and the level of human activity. The acoustic environment around the Midway Pier/Greene Lane property is mainly characterized by traffic noise during daytime hours.

Table 10.7-1 presents the minimum and maximum hourly average L_{eq} sound levels measured in 2010 at the nearest monitoring stations. Monitoring station LT-1 is the measurement location closest to the northern portion of the Midway Pier/Greene Lane property, and LT-2 is the monitoring location closest to the southern portion of the Midway Pier/Greene Lane property. See Figure 3.7-1 in Section 3.7 for measurement locations.

Table 10.7-1 Baseline Hourly Average L_{eq} Sound Levels near the Midway Pier/Greene Lane Property

		Daytime		Nighttime	
Measurement ID	Location	Min. L_{eq} (dBA)	Max. L_{eq} (dBA)	Min. L_{eq} (dBA)	Max. L_{eq} (dBA)
LT-1	Tank Farms 1 and 2	40.6	53.5	37.8	48.7
LT-2	Burma Road	46.4	57.4	43.4	53.6

Source: Tech Environmental 2011

To characterize the existing traffic noise along the Midway Pier/Greene Lane property, the peak afternoon traffic volume, vehicle speed, and vehicle mix data for the segment of Defense Highway analyzed in the traffic study conducted in October 2012 were modeled using TNM version 2.5. The modeling results for the existing traffic noise for the Midway Pier/Greene Lane property ranged from 63.7 to 70.9 dBA.

10.8 Infrastructure and Utilities

This section summarizes the existing infrastructure, utilities, and solid waste management for the Midway Pier/Greene Lane property.

10.8.1 Water Supply

NAVSTA Newport owns and maintains a 10-inch and a 12-inch water main along the length of Defense Highway (RKG Associates, Inc. et al. 2011).

The City of Newport owns and maintains the water distribution system in Middletown and the Melville area of Portsmouth that does not service NAVSTA Newport. (See further discussion of the City of Newport water supply in Section 6.8.1.)

10.8.2 Wastewater

Wastewater is collected from the Melville area of Portsmouth, the Town of Middletown and NAVSTA Newport for treatment in the City of Newport wastewater treatment plant through a force main and series of pump stations located along Defense Highway. This force main and an abandoned force main are owned and maintained by NAVSTA Newport (Carlson 2012).

NAVSTA Newport and the Town of Middletown own and maintain sanitary sewer lines within their respective jurisdictions. Currently, the Town of Portsmouth has no centralized wastewater collection or treatment infrastructure. Portions of the town manage wastewater through individual septic systems. The Melville area of Portsmouth is serviced by the City of Newport's wastewater collection and treatment system.

The City of Newport's wastewater treatment plant is located on J.T. Connell Highway and its licensed capacity is 10.7 mgd. The City of Newport's wastewater treatment plant treats wastewater from the City of Newport, the Town of Middletown, the Melville area of Portsmouth, and NAVSTA Newport. In 2012, the plant treated 9.46 mgd of wastewater (City of Newport Department of Finance 2012e).

10.8.3 Storm Water

The Midway Pier/Greene Lane property varies in elevation from 30 feet amsl at its northern land and eastern land boundary, to sea level at its southern and western land boundaries. The slope of the corridor property is from east to west toward Narragansett Bay (RKG Associates, Inc. et al. 2011). Storm water runoff from Defense Highway sheet flows to a series of roadside swales and a drainage collection system and intermediate culverts located along the highway, which convey the storm water towards Narragansett Bay (RKG Associates, Inc. et al. August 2011).

10.8.4 Other Utility Systems

Electricity

National Grid is the primary electrical utility providing connection and distribution services on Aquidneck Island. This is a user-supported utility service, and the customers pay for the service and electricity supplied. An overhead electrical line runs along the Defense Highway (RKG Associates, Inc. et al. 2011).

Table 4.8-1 in Section 4.8 provides the electrical usage for the City of Newport, Town of Middletown and Town of Portsmouth between 2009 through 2011.

Natural Gas

The City of Newport and the surrounding region is serviced by National Grid. This is a user-supported utility service, and the customers pay for service and natural gas supplied. There are currently no gas lines to the property (RKG Associates, Inc. et al. 2011).

Table 4.8-2 in Section 4.8 provides the natural gas usage for the City of Newport, Town of Middletown and Town of Portsmouth in 2010 and 2011.

10.8.5 Solid Waste

Solid wastes are not routinely generated at the Midway Pier/Greene Lane property. The former Midway Pier is not in use and, except for litter, solid waste is not generated on Defense Highway .

10.9 Cultural Resources

This section describes the existing cultural resources and historic properties that are located within the APE for the proposed action along the Midway Pier/Greene Lane property. The boundary of the APE is the same as the boundary of the property that will be disposed. Cultural resources within the APE would consist of archaeological sites and archaeologically sensitive areas, and architectural resources. Archaeological and architectural resources are discussed in greater detail in Sections 10.9.1 and 10.9.2, respectively. Native American resources are discussed in Section 10.9.3. Those resources that were determined historic properties are discussed in greater detail in Section 10.9.4.

In general, the APE was considered sensitive for cultural resources that were associated with a variety of cultural periods of human occupation. Previously recorded archaeological sites or archaeologically sensitive areas were identified in the vicinity of the APE and indicate prehistoric and historic settlement and/or use of the general project area. Extant buildings and structures in the vicinity of the APE document more recent occupation and use of the area from the mid-nineteenth century to the present, including the mid-nineteenth century construction of the Old Colony and Newport Railroad that parallels the Midway Pier/Greene Lane property.

10.9.1 Archaeological Resources

The 2013 Phase I archaeological investigation conducted within the APE at the Midway Pier/Greene Lane property consisted of the excavation of a total of 22 shovel tests, as well as an intensive pedestrian survey in the vicinity of the location of the previously reported Site RI-942.1. Because of the presence of road shoulders, ditches, overhead and underground utility lines and the rail line of the former Old Colony and Newport Railroad located along much of the Defense Highway, shovel tests were confined to areas where adjacent land extended away from the disturbed road shoulders, rail line and utility corridors, and were designed primarily to retrieve baseline soil data and determine if intact soils might be present. None of the shovel tests contained artifacts (Gould and LeeDecker 2014).

Generally, the APE at the Midway Pier/Greene Lane property showed evidence of disturbance by previous cutting and filling activities, and the generally flat nature of the areas investigated appeared to have been artificially created by grading. No intact soil profiles were identified in any of the shovel tests although a few of the test locations could not be excavated by shovels or with augers to subsoil because of rock-laden fill. Based on these results, the APE at the Midway Pier/Greene Lane property appears to have been extensively disturbed by the previous construction of the roadway, the overhead and underground utility lines, the railway, demolition of shoreside structures, and other development by the Navy in parcels adjacent to, but outside the APE. No archaeological sites were identified within the APE at the Midway Pier/Greene Lane property and no further archaeological investigations of the APE at the Midway Pier/Greene Lane property were recommended (Gould and LeeDecker 2014). The Navy consulted with the Rhode Island SHPO on the lack of archaeological sensitivity of the Midway

Pier/Greene Lane property and the Rhode Island SHPO concurred that no further archaeological investigations of this area were required (Lin 2013; Sanderson 2013b).

10.9.2 Architectural Resources

The 2013 architectural survey and evaluation update conducted within the APE at the Midway Pier/Greene Lane property concluded that the Midway Pier and Greene Lane were not eligible for the NRHP (Groesbeck and Bedford 2014). Although the pier was associated with the build-up of Newport by the Navy during World War II and was important in providing a second fueling station for ships at the Naval Operating Base, the majority of the pier is no longer extant and only the earth and stone fill remain. Furthermore, the pier lacks context, since all other associated buildings and structures have been demolished. Greene Lane is considered part of a larger network of roads in the vicinity of the APE and does not have significant associations to render this resource NRHP-eligible (Groesbeck and Bedford 2014). The Navy consulted with the Rhode Island SHPO on the evaluation of the Midway Pier and Greene Lane structures for NRHP-eligibility and the Rhode Island SHPO concurred that neither of these structures were NRHP-eligible (Lin 2013; Sanderson 2013b).

10.9.3 Native American Resources

The Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at the Midway Pier/Greene Lane property: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

10.9.4 NRHP-Listed or -Eligible Historic Properties

The 2013 Phase I archaeological investigation and the 2013 architectural survey and evaluation update conducted for the proposed action resulted in determination that no historic properties are present within the APE (Gould and LeeDecker 2014, Groesbeck and Bedford 2014). The Navy consulted with the Rhode Island SHPO on this determination of and the Rhode Island SHPO concurred that no historic properties were present within the APE at the Midway Pier/Greene Lane property (Lin 2013; Sanderson 2013b).

10.10 Topography, Geology, and Soils

This section summarizes the existing topography, geology, and soils along the Midway Pier/Greene Lane property. This section also includes a discussion of existing conditions for bathymetry and marine sediment present in the Narragansett Bay off-shore of the former Midway Pier.

10.10.1 Topography

The topography of the Midway Pier/Greene Lane property generally decreases from north to south. Elevations range from approximately 30 feet amsl at its northern land boundary and eastern land boundary, to sea level at its southern and western land boundaries. The nearest body of water other than Narragansett Bay is the Lawton Valley reservoir, which is located approximately 3,200 feet east from the northern end of the corridor and east of Main Street.

10.10.2 Geology

The Midway Pier/Greene Lane property lies within the New England Physiographic Province (USGS 2002). It is located on the Rhode Island Formation of the stratified Narragansett Bay Group of the Pennsylvanian period (323 to 290 million years ago). The Narragansett Bay Group rocks are part of the Esmond-Dedham subterrane of the Southeastern New England Avalon zone. The Esmond-Dedham Subterrane Narragansett Bay Group is deposited upon older rocks of both West Bay and East Bay parts of the Esmond-Dedham subterrane. The Narragansett Bay Group – Rhode Island Formation consists of

meta-sandstone, meta-conglomerate, schist, carbonaceous schist, and graphite. Plant fossils are common (USGS 2013).

The Midway Pier/Greene Lane property is not near any known fault locations (USGS 2005). According to the USGS, only one earthquake has ever been recorded as possibly being centered within the State of Rhode Island. This earthquake was recorded on February 27, 1883 (USGS 2009). No other earthquakes have been recorded within the State of Rhode Island. The Midway Pier/Greene Lane property is located within an earthquake zone where, in a 50-year period, there is only a 2 percent chance of an earthquake occurring with peak acceleration (ground movement) of 8 percent to 10 percent acceleration due to gravity (%g). It takes a peak acceleration of 10%g to cause damage to buildings; therefore, there is minimal risk of an earthquake that would cause damage to the Midway Pier/Greene Lane property (USGS 2009).

10.10.3 Soils

10.10.3.1 Soil Types

The soil types present on the Midway Pier/Greene Lane property are listed in Table 10.10-1 and illustrated on Figure 10.10-1.

Table 10.10-1 Soil Types, Midway Pier/Greene Lane Property

Soil Name	% Slope Range	Acres
Newport silt loam, 3 to 8 % slopes (NeB)	3 – 8%	8.8
Pittstown silt loam, 0 to 3 % slopes (PmA)	0 – 3%	0.04
Pittstown silt loam, 3 to 8 % slopes (PmB)	3 – 8%	0.64
Water, saline (Ws)	Not applicable	1.2
Total		**10.7**

Source: USDA 2012

Newport Silt Loam, 3 to 8% Slopes (NeB)

Newport silt loam, 3 to 8% slopes, is suitable for community development but is limited by the slow or very slow permeability of the substratum. Roads and streets need careful design to prevent frost-heaving (USDA 1981). The soils are well-drained and potential highly erodible. Excavation is difficult and there is a high probability of hydraulically restrictive lower layers (USDA 2012).

Pittstown Silt Loam, 0 to 3% Slopes (PmA)

Pittstown silt loam, 0 to 3% slopes, is suitable for community development but is limited by the high water table and the slow permeability of the substratum. Roads and streets need careful design to prevent frost-heaving (USDA 1981).

Pittstown Silt Loam, 3 to 8% Slopes (PmB)

Pittstown silt loam, 3 to 8% slopes, is suitable for community development but is limited by the seasonal high water table and the slow permeability of the substratum. Roads and streets need careful design to prevent frost-heaving (USDA 1981). The soils are moderately well-drained and potentially highly erodible. Excavation is difficult and there is a high probability of hydraulically restrictive lower layers (USDA 2012).

10.10.3.2 Soil Characteristics and Limitations

As indicated in Section 3.10, the USDA rates soils according to characteristics that could limit development (see Table 10.10-2). These characteristics include the following:

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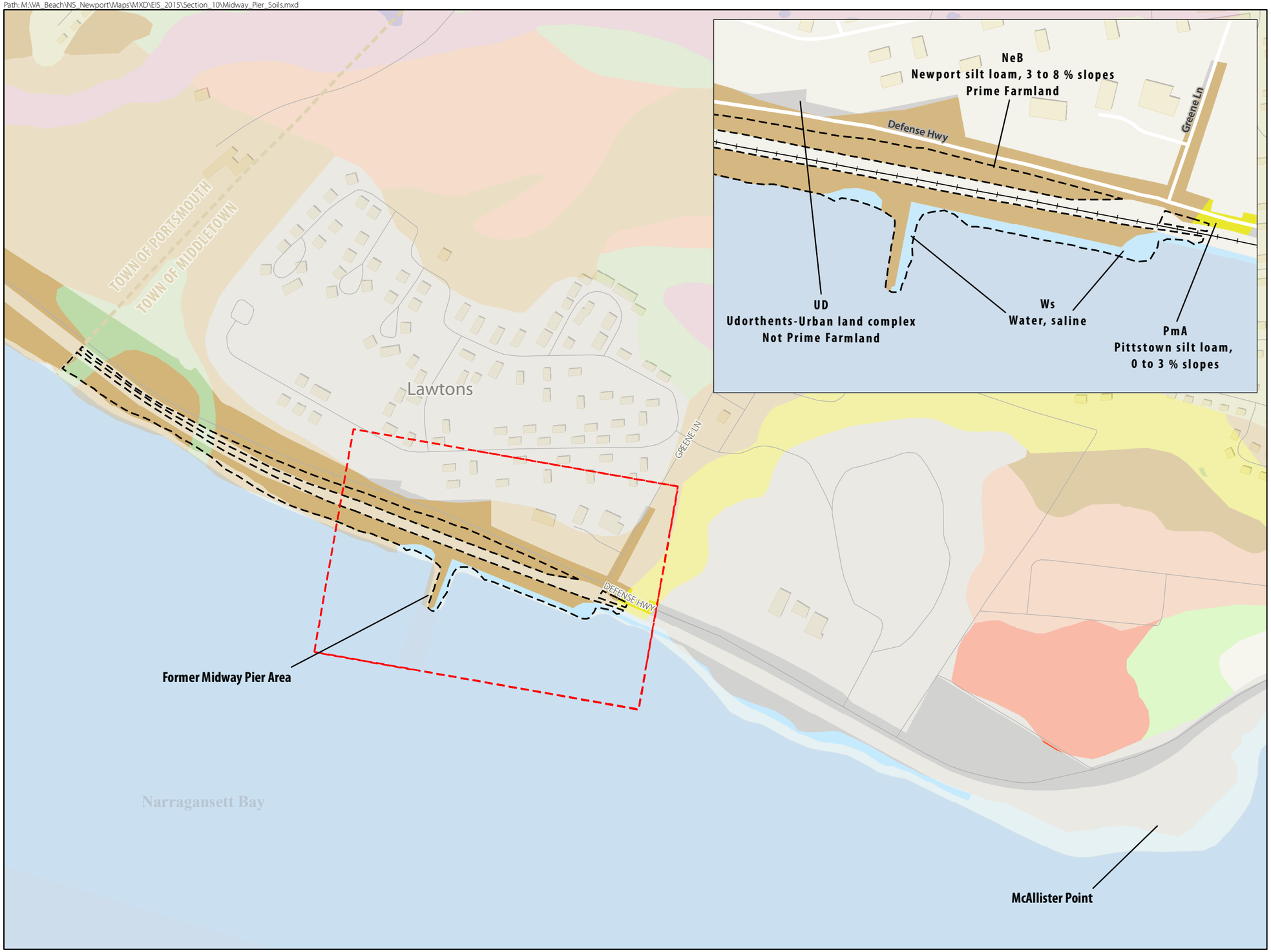

Figure 10.10-1
Midway Pier/Greene Lane Property Soils
NAVSTA Newport, Rhode Island

Legend

- Street
- Town Boundary
- Property Boundary

Soil Name

- Be - Beaches, Undifferentiated
- MmA - Merrimac sandy loam, 0 to 3 % slopes
- NP - Newport-Urban land complex
- NeA - Newport silt loam, 0 to 3 % slopes
- NeB - Newport silt loam, 3 to 8 % slopes
- NeC - Newport silt loam, 8 to 15 % slopes
- PmA - Pittstown silt loam, 0 to 3 % slopes
- PmB - Pittstown silt loam, 3 to 8 % slopes
- Se - Stissing silt loam
- UD - Udorthents-Urban land complex
- WgB - Windsor loamy sand, 3 to 8 % slopes
- Ws - Water, saline

N

SCALE

0 0.1 0.2 Miles

SOURCE: U.S. Department of Agriculture, Natural Resources Conservation Service, Rhode Island State Office 2012

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Erosion Potential

The soil erosion potential for Newport silt loam, 3 to 8% slopes and Newport silt loam, 8 to 15% slopes is moderate. The soil erodibility factor is 0.24 at a depth of 24 inches to 30 inches, which means the soils are moderately susceptible to detachment and they produce moderate runoff.

The soil erosion potential for Pittstown silt loam, 0 to 3% slopes and Pittstown silt loam, 3 to 8% slopes is moderate. The soil erodibility factor is 0.28 at a depth of 24 inches to 30 inches, which means they are moderately susceptible to detachment and they produce moderate runoff.

Hydric Soils

None of the soils listed in Table 10.10-1 are hydric. The following soils were listed as dominantly non-hydric, although non-hydric soil can contain hydric inclusions:

- Newport silt loam, 3 to 8% slopes
- Pittstown silt loam, 0 to 3 % slopes
- Pittstown silt loam, 3 to 8% slopes.

For instance, Pittstown silt loam, 0 to 3% slopes and Pittstown silt loam, 3 to 8% slopes are listed as partially hydric (USDA 2012).

Constructability

In general, the severe restrictions included in Table 10.10-2 could represent a major increase in construction effort and special design; or intensive maintenance could be required. In general, the moderate restrictions included in Table 10.10-2 are unfavorable, but these limitations can be overcome or minimized by special planning or design.

Table 10.10-2 Soil Limitations

Soil Name	Erosion Potential	Limits to Constructability
Newport silt loam, 3 to 8 % slopes (NeB)	Moderate	Slight restrictive soil feature for shallow excavations, a moderate frost action, and seasonal high water table (3.5 to 1.5 feet)
Pittstown silt loam, 0 to 3 % slopes (PmA)	Moderate	Severe restrictive soil feature for shallow excavations (wetness), a moderate wetness and frost action, and seasonal high water table (3.5 to 1.5 feet)
Pittstown silt loam, 3 to 8 % slopes (PmB)	Moderate	Severe restrictive soil feature for shallow excavations (wetness), a moderate slope, and frost action

Sources: USDA 1981; 2012

10.10.3.3 Farmland Soils

The following soils are designated as prime farmland soils (USDA 2012):

- Newport silt loam, 3 to 8% slopes
- Pittstown silt loam, 0 to 3% slopes
- Pittstown silt loam, 3 to 8% slopes.

10.10.4 Bathymetry

The bathymetric contours for the Narragansett Bay offshore of the former Midway Pier along the Midway Pier/Greene Lane property range from 0 to 20 feet to 20 to 40 feet (see Chapter 6, Figure 6.10-2). The area around the former Midway Pier is within a 0- to 20-foot bathymetric contour.

10.10.5 Marine Sediment

Eleven sediment types have been identified in Narragansett Bay, ranging from clayey silt to coarse gravel (NBNERR 2009 [see Chapter 6, Figure 6.10-3]). The distribution of these sediment types depends on two key factors: currents and circulation patterns. These factors generally result in finer grained materials, such as sand-silt-clay and clayey silt, being located in the middle and upper portions of the Bay and in protected coves and harbors (Raposa n.d.). Coarser sediments, mostly sandy, are found in the lower reaches of the Bay and in constricted areas where current velocities are greater. The most prevalent sediment types found in Narragansett Bay are clay-silt and sand-silt-clay sediments (Raposa n.d.).

Offshore of the Midway Pier/Greene Lane property, within approximately 0.1 miles of the shoreline, marine sediment types are largely unsampled (see Chapter 6, Figure 6.10-3). Farther out, the dominant sediment type is clay-silt, with a larger area of sand located between the former Midway Pier and Weaver Cove.

10.11 Water Resources

The following sections provide a summary of the existing conditions and physical characteristics of water resources found in the vicinity of the Midway Pier/Greene Lane property.

10.11.1 Surface Water

The Midway Pier/Greene Lane property is located in the Upper East Passage and Lower East Passage subwatersheds (HUC 010900040907 and 010900040909, respectively) of the Narragansett Bay watershed. The Upper East Passage subwatershed includes a small portion of Middletown and a larger portion of Portsmouth and drains 14.58 square miles. It consists mostly of forested and residential areas (University of Rhode Island Environmental Data Center 2013c). The Lower East Passage subwatershed includes the southwestern portion of the island and drains approximately 11.02 square miles. The majority of the watershed consists of residential areas (University of Rhode Island Environmental Data Center 2013b).

No surface water resources are found at the Midway Pier/Greene Lane property; however, two surface waters are adjacent to the property: Narragansett Bay and Gomes Brook (see Figure 10.11-1. Because of the topography of the area, the Midway Pier/Greene Lane property drains to the southwest.

Portions of the surplus property directly abut Narragansett Bay, specifically along the seaward portion of the property, from the town line south to Gomes Brook (see Figure 10.11-1).

10.11.2 Water Quality

Gomes Brook is classified as a Class A water (Tetra Tech, Inc. 2014) and a Type 4 multipurpose water. Class A waters are designated for primary and secondary contact recreational activities and for fish and wildlife habitat and have excellent aesthetic value. It was not included on the *State of Rode Island 2012 303(d) List – List of Impaired Waters Final* as being impaired (RIDEM 2012a).

For Narragansett Bay in general, due to the densely populated areas in the upper Narragansett Bay and its major rivers, a general water quality gradient has been created along the Bay's north-south axis

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Figure 10.11-1
Midway Pier/Greene Lane Property Surface Waters and Floodplains
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Rivers/Streams
- Town Boundary
- Property Boundary
- Ponds
- Waterbody

FEMA Floodplain

- AE

Zone A: 100 year floodplains in which base flood elevation does not exist

Zone AE: 100 year floodplains in which base flood elevation exists

SCALE

0 0.1 0.2 Miles

SOURCE: FEMA 2010; RIDEM, Office of Water Resources 2010

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(Narragansett Bay Estuary Program 2009). Sources of pollution are largely concentrated in the Bay's upper reaches and range from public wastewater treatment facility discharges, storm water and CSO outlets, and urban runoff from densely populated areas (Narragansett Bay Estuary Program 2009). Pollution typically decreases toward the mouth of the estuary due to dilution from seawater coupled with fewer point sources of pollution.

Wastewater treatment facilities are a major source of nitrogen in Narragansett Bay, and those facilities that treat CSOs are also major sources of pathogens and other contaminants during periods of heavy rains, resulting in discharges to the Bay and its tributaries (Narragansett Bay Estuary Program 2009).

10.11.3 Groundwater

Groundwater in the east bay section of Rhode Island is generally provided by aquifers in till and bedrock. Depth to the water table varies along the Midway Pier/Greene Lane property from 1.5 to 3 feet in areas underlain by Pittstown soils, to less than 6 feet in areas underlain by Newport loams (University of Rhode Island Cooperative Extension and Rhode Island Health Source Water Assessment Program 2003).

Groundwater in the vicinity of the Midway Pier/Greene Lane property is classified by RIDEM as GA (RIDEM 2010d). As described in Section 3.11, GA groundwater resources are designated as suitable for public or private drinking water use without treatment and are not described under GAA groundwater resources. No wellhead protection areas exist around the Midway Pier/Greene Lane property; the closest wellhead protection area is located approximately 3.0 miles to the southeast (RIDEM 2010d).

Because of the former fueling operations at the former Midway Pier, groundwater quality in this portion of the Midway Pier/Greene Lane property has been documented as containing levels of total petroleum hydrocarbons (TPH) above the RIDEM reporting limits (Tetra Tech EC, Inc. 2008c). Between October 2007 and March 2008, five groundwater monitoring wells were installed to determine the impacts on groundwater as a result of the former 75,000-gallon UST located at the former Building 70 near the pier (Tetra Tech EC, Inc. 2008c). Additional groundwater monitoring will be conducted following investigation and contaminated soil removal along various portions of Defense Highway (Dorocz 2013 [see Section 10.5 for additional discussion]).

10.11.4 Floodplains

FEMA-delineated 100-year floodplains exist within the Midway Pier/Greene Lane property and are associated with the Gomes Brook as well as small areas associated with Narragansett Bay (see Figure 10.11-1). Approximately 0.7 acres of 100-year floodplains exist within the property boundaries. The Defense Highway near the Midway Pier/Greene Lane property would be slightly inundated during a 100-year flood event, and coastal flooding with wave action hazard would be anticipated along the coastline of Narragansett Bay (Tetra Tech, Inc. 2014a).

10.11.5 Wetlands

Approximately 0.35 acres of estuarine and marine wetlands exist along the shoreline (see Figure 10.11-2). These wetlands are discussed further in Section 10.12.4. Other estuarine and marine wetlands are located immediately adjacent to the corridor, along the coast.

10.12 Biological Resources

This section summarizes the existing vegetation and wildlife, including threatened and endangered species and significant wildlife habitat, along the Midway Pier/Greene Lane property.

10.12.1 Vegetation

Habitat cover along the Midway Pier/Greene Lane property comprises a range of cover types (see Figure 10.12-1). At approximately 5.2 acres (49 percent), developed land covers almost half of the most area. At approximately 5.5 acres (51 percent), old field habitat covers the remaining half of the Midway Pier/Greene Lane property (see Table 10.12-1).

Table 10.12-1 Habitat Cover Types in the Midway Pier/Greene Lane Property

Habitat Cover	Approximate Acreage	Percent
Developed	5.2	49
Old Field	5.5	51

Old Field

This community was represented by various stages of succession following disturbance. While it is unknown how mature the old field community is at the Midway Pier/Greene Lane property, it can be assumed that it would include herbaceous species like sweet vernal grass, orchard grass, pathrush, goldenrods, clover, and knapweed. Vines and woody vegetation likely includes some of the following: Japanese honeysuckle, Allegheny blackberry, eastern red cedar, apple, and hawthorne.

10.12.2 Wildlife

The Midway Pier/Greene Lane property spans approximately 0.8 miles along the coast, thus providing ample opportunity for a variety of terrestrial mammals, birds, and aquatic wildlife.

Terrestrial Mammals

Mammals occurring along the Midway Pier/Greene Lane property are limited to those species adapted to urban/suburban conditions, such as the eastern gray squirrel (*Sciurus carolinensis*), common raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Small mammals such as the white-footed mouse (*Peromyscus leucopus*), meadow vole (*Microtus pennsylvanicus*), and woodchuck (*Marmota monax*) are also likely present along the Midway Pier/Greene Lane property.

Marine Mammals

Harbor seals have been frequently documented in Coddington Cove and could potentially visit other areas of the installation. No other marine mammal species have been documented as occurring in the Bay near the Midway Pier/Greene Lane property (U.S. Department of the Navy 2009). Additional discussion on marine mammals occurring in Narragansett Bay is included in Section 3.12.1.2.

Herpetofauna

The Midway Pier/Greene Lane property provides wetlands and forest habitat for herpetofauna. Species of herpetofauna common to the state of Rhode Island and the islands of Narragansett Bay include the dusky salamander (*Desmognathus fuscus*), Fowler's toad (*Bufo fowleri*), green frog (*Rana clamitans*), black rat snake (*Elaphe obsoleta*) and the common garter snake (*Thamnophis sirtalis*) (NBNERR 2009; RIDEM 2005). Characteristic habitats for herpetofauna species are ponds, forested and shrubland wetlands, and woodland pools.

Benthos

The presence of benthic species is likely within the Midway Pier/Greene Lane property because it supports aquatic eelgrass beds and is close to the Bay. Common benthic species in Narragansett Bay include annelids (Phylum *Annelida*), nematodes (Phylum *Nematoda),* gastropods (Class *Gastropoda*), bivalves (Class *Bivalvia*), and mollusks (Phylum *Mollusca*) (Frithsen 1989). Benthic fauna may be found in the tidal flats and intertidal zones sediments.

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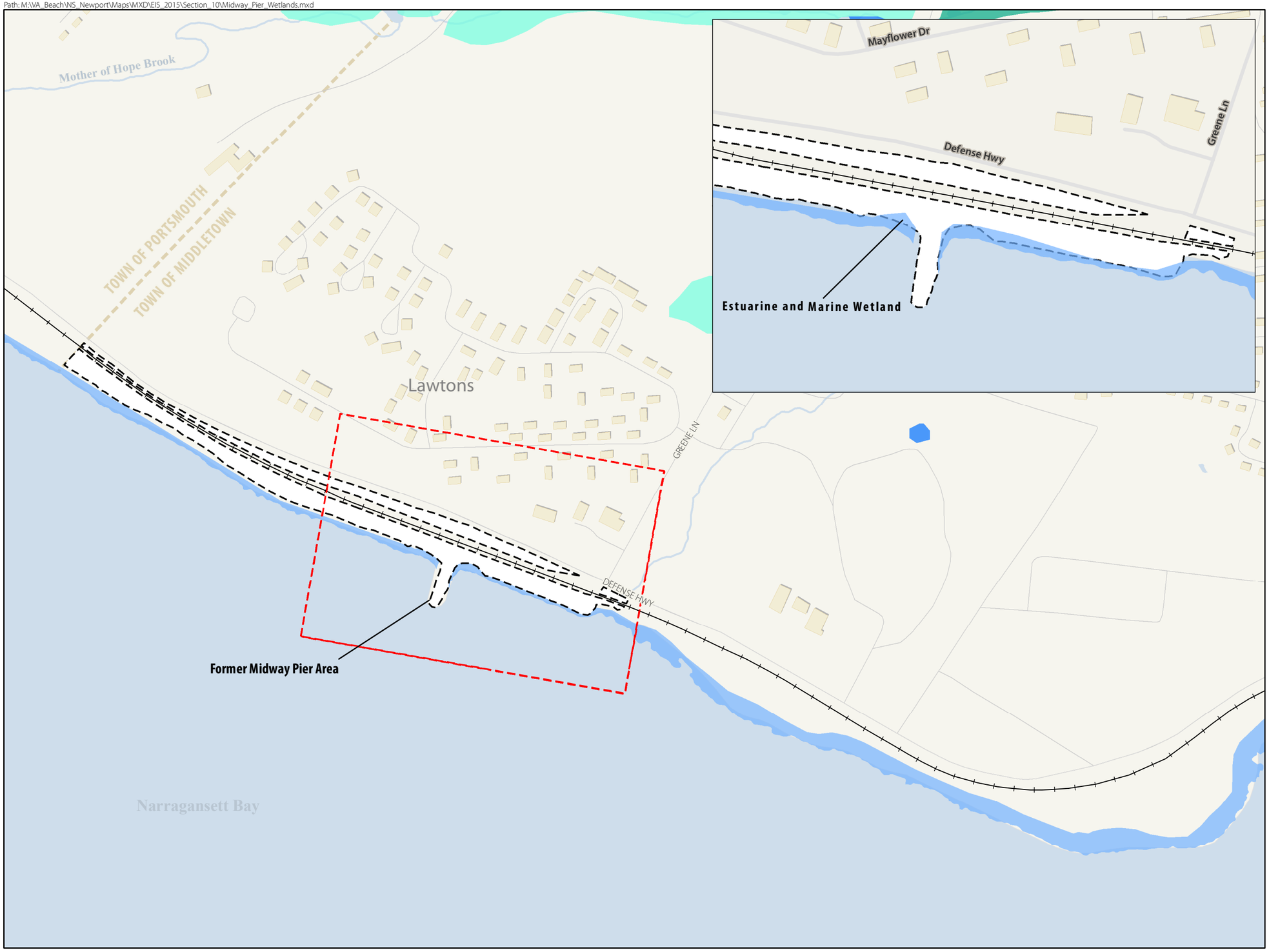

Figure 10.11-2
Midway Pier/Greene Lane Property Wetlands
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Rivers/Streams
- Town Boundary
- Property Boundary
- Waterbody

NWI Wetlands

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

SCALE

0 0.1 0.2 Miles

SOURCE: U.S. Fish and Wildlife Service 2011

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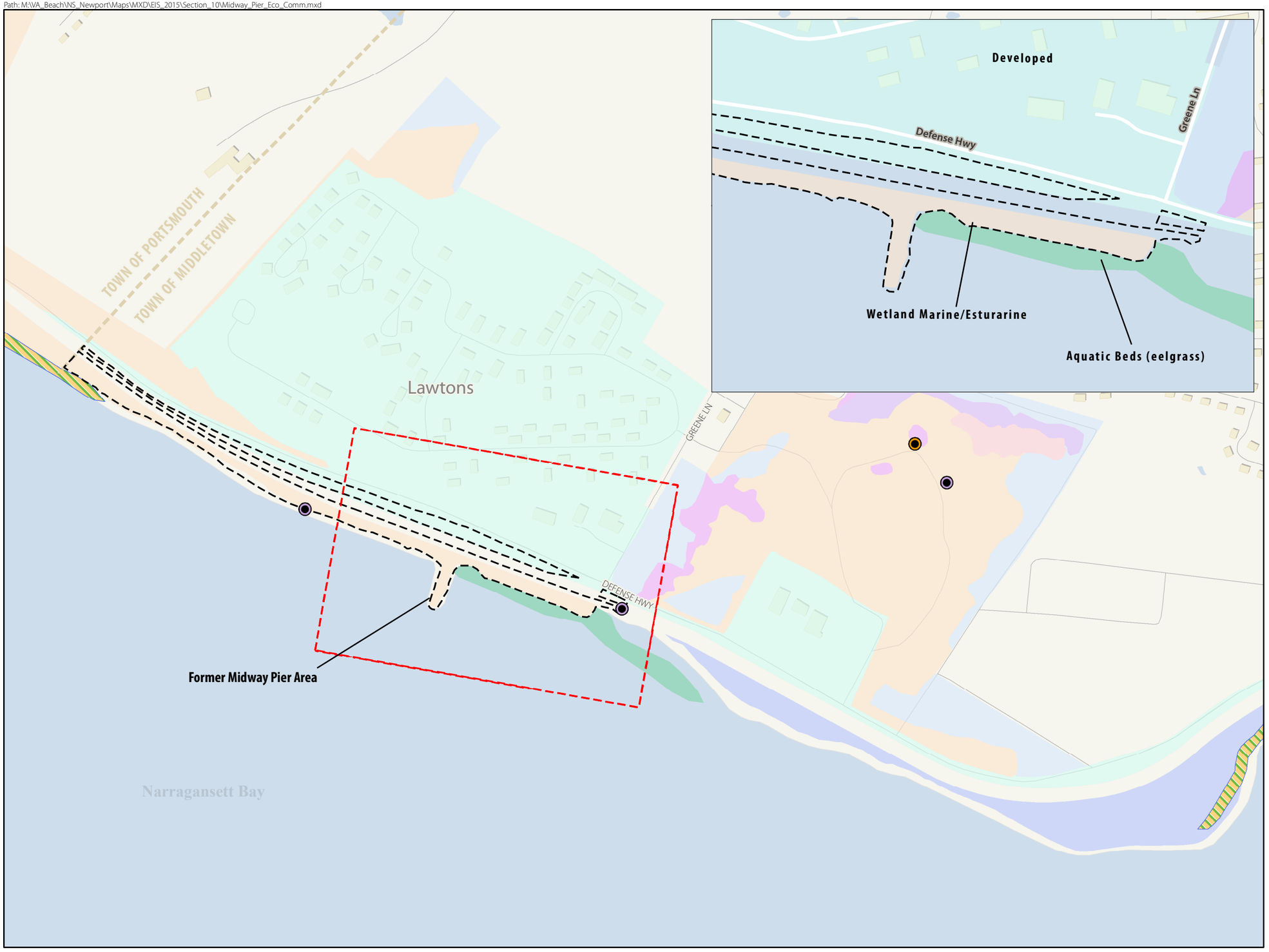

Figure 10.12-1
Midway Pier/Greene Lane Property Ecological Communities
NAVSTA Newport, Rhode Island

Legend

- Street
- Town Boundary
- Property Boundary
- Bat Detector Location (2013)
- Mist Net Survey Location (2013)

Narragansett Bay Estuarine Habitat
- Aquatic Beds (eelgrass)
- Beach

Ecological Community
- Developed Land
- Emergent Marsh
- Maritime Shrubland
- Old Field
- Ruderal Forest
- Shrub Swamp
- Tree Plantation

N

SCALE

0 0.1 0.2 Miles

SOURCE: University of Rhode Island RIGIS 2003; Univeristy of Rhode Island Department of Natural Resources 2012

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Avian Species

A discussion of avian species common to the areas around the surplus properties, including the Midway Pier/Greene Lane property, and nearby IBAs is provided in Section 3.12.1.2.

Finfish

A discussion of finfish common to the areas around the surplus properties, including the Midway Pier/Greene Lane property, is provided in Section 6.12.2.

Shellfish and Crustacea

As indicated in Section 3.12.1.2, species typical of Narragansett Bay include quahog, soft-shelled clam, mussel, American lobster, and squid. All of these species are harvested from the bay. These species may potentially occur off the shore of the Midway Pier/Greene Lane property (NAVFAC Mid-Atlantic 2001).

A 20-acre aquaculture venture, Salt Water Farms, is located approximately 400 feet from the shoreline near Vigilant Street at its closest point, approximately 350 feet northwest of the former Midway Fueling Pier (Beutel 2013). Salt Water Farms is the largest producer of oysters in the state of Rhode Island and currently holds a 10-year aquaculture limited lease. The farm harvests primarily oysters (around 90 percent of their crop), along with some mussels and sugar kelp seaweed. Suspended long lines are submerged at 6 feet below the water surface and distanced 40 feet apart. The lines are also marked at the water surface with yellow and black buoys for navigational purposes. There is no limitation to recreational boating or recreational or commercial fishing in the area of the suspended long lines.

10.12.3 Threatened and Endangered Species

As indicated in Section 3.12.2, agency-review letters were sent to the USFWS and NMFS, as well as to RIDEM, in order to obtain updated information regarding listed species. A response from the USFWS received on February 13, 2013, indicated that no federally listed or proposed threatened or endangered species or critical habitat are known to occur within the Midway Pier/Greene Lane property (Chapman 2013). However, since that time, the northern long-eared bat has been listed as a federally threatened species under the ESA, effective May 4, 2015 and USFWS issued a final 4(d) rule on January 14, 2016. NMFS stated that certain New England coastal waters support various listed species, including sea turtles, and five distinct population segments (DPSs) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) (Colligan 2013). As stated in Section 7.12.3, no listed marine mammals are expected to exist in the project area. A response from RIDEM received on February 12, 2013, indicated that no state-listed rare, threatened, or endangered species are located within the Midway Pier/Greene Lane property (Jordan 2013).

See Section 6.12.2 for a discussion of threatened and endangered species potentially occurring in Narragansett Bay offshore of the Midway Pier/Greene Lane property.

A discussion of the Navy's ongoing informal consultation with the USFWS regarding the northern long-eared bat is discussed in Section 3.12.1.3.

During the spring, summer, and fall months, the northern long-eared bat is likely to use forested edge habitat; spaces under tree bark, in cavities, or in crevices of both live and dead trees; coastlines; and/or abandoned buildings within NAVSTA Newport for roost sites, foraging, and/or travel. Suitable roost trees are defined as those that have a DBH greater than 3 inches. Bats are also known to roost in structures such as barns and sheds when suitable roost trees are not available. Summer foraging habitat consists of a variety of forested habitats, including both dense forests and loose aggregates of trees. In addition, bats may forage in adjoining lands such as wetlands, old fields, and agricultural lands (USFWS 2013a).

The Navy conducted various passive acoustic monitoring surveys for bats between 2009 and 2013 at NAVSTA Newport in support of a proposed 20 MW wind energy facility within the NAVSTA Newport installation. The general survey areas were coastal areas at the southern end of the station (such as the Bishop Rock peninsula and a coastal met tower) and Tank Farms 4 and 5. Results for northern long-eared bats are summarized in Table 6.12-4. The 2009 and 2010 surveys did not report results for northern long-eared bats, which was not a named species for those surveys. During a survey conducted in the spring and late summer of 2011, northern long-eared bats were detected at two of the three locations monitored: the coastal met tower and a 1.5-meter-high stake at Tank Farm 4. The third survey location used in 2011 consisted of a met tower at Tank Farm 4, at which the northern long-eared bat was not detected (Tetra Tech, Inc. 2011c). Fifteen northern long-eared bat calls were reported for the 2013 survey: three calls at Bishop Rock peninsula, two calls at a stake location at Tank Farm 4, five calls at a stream location at Tank Farm 4, and five calls at a wetland location at Tank Farm 5 (Tetra Tech, Inc. 2014b, 2014c). The closest monitoring location is located within Tank Farm 5, approximately 0.3 miles from the southern boundary of the surplus property. No monitoring was conducted in 2012 (Tetra Tech, Inc. 2014b).

Active acoustic monitoring for bats was conducted in summer 2013 along transects in the same general areas of the station—coastal areas at the southern end of the station and Tank Farms 4 and 5. Northern long-eared bat calls were not specifically reported as a result of the active acoustic monitoring. The Navy conducted mist netting for bats over seven nights in July 2013 at various locations, including three locations adjacent to or near the Midway Pier/Greene Lane property: one adjacent to the northern end of the property, one adjacent to the southern end of the property (near the intersection of Greene Lane and Defense Highway), and one within the interior of Tank Farm 5. Because few bats were caught, and none were northern long-eared bats, radiotelemetry for northern long-eared bats has not been performed. Echolocation bat passes that were documented in conjunction with the mist-netting survey did not attribute any of the passes to the genus *Myotis* (Tetra Tech, Inc. 2014b).

The Navy conducted a field survey in December 2014 of the vegetation at Tank Farms 4 and 5 and three PPV housing sites, to evaluate the presence of summer roosting habitat for northern long-eared bats. The closest site to the Midway Pier/Greene Lane property is Tank Farm 5, located just across the Defense Highway from the Midway Pier/Greene Lane property. The Greene Lane Housing Site, located across the Defense Highway, north of the northern end of the Midway Pier/Greene Lane property, is also discussed below.

Suitable summer roosting habitat was considered to be trees with one or more of the following characteristics:

- DBH greater than 3 inches,
- Thick peeling, flaking, and loose bark,
- Knot holes,
- Hollows,
- Natural decaying areas,
- Woodpecker holes,
- Cracks, splits, or gaps,
- Thick ivy, and/or
- Root cavities.

Suitable summer roosting habitat was considered to consist of high-quality forest stands of mature and successional species, with roosting trees having the general characteristics listed above. Potentially suitable summer roosting habitat was defined as smaller stands of trees with fewer roosting characteristics. About 26 percent (17 acres) of the 65-acre Tank Farm 5 consists of suitable or potentially suitable summer roosting habitat for the northern long-eared bat. Approximately 14.6 acres were deemed to be suitable summer roosting habitat and approximately 2.4 were deemed to be potentially suitable. Suitable habitat is located along eastern and southern portions of Tank Farm 5 (see Figure 10.12-3). All six of the ornamental trees at the Greene Lane Housing site were determined to be potentially suitable summer roosting habitat.

The Navy contacted the USFWS regarding the potential presence of the northern long-eared bat at the surplus properties on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). Additional discussion regarding the status of ESA consultation for the northern long-eared bat is presented in Section 11.2.3. The Navy contacted the USFWS regarding the potential presence of the northern long-eared bat at the surplus properties on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). To date, USFWS has not provided a response, and further informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing. ESA consultation for northern long-eared bat is ongoing.

10.12.4 Significant Habitats

Based on a review of the Rhode Island Natural Heritage Program database, RIDEM's Division of Planning and Development has indicated that no unique natural communities or other significant wildlife communities exist at or near the Midway Pier/Greene Lane property (Jordan 2013). However, the following aquatic communities have been documented.

Submerged Aquatic Vegetation

Approximately 1.1 acres of eelgrass habitat have been identified within the property boundaries of the Midway Pier/Greene Lane property, and approximately 1.8 acres of eelgrass have been mapped within 200 feet of the surplus property (RIDEM, Narragansett Bay Program, and RI CRMC 2003; Applied Science Associates 2011 [see Figure 10.12-2]). In addition to eelgrass, widgeon grass has been previously documented at this surplus property, likely in similar environments as eelgrass (U.S. Department of the Navy 2009); however, digital data from the state of Rhode Island did not confirm this. The eelgrass habitat is found towards the southern end of the property immediately to the south of the former Midway Pier. Eelgrass can provide habitat for up to 40 different species of fish, as well as waterfowl, crustaceans, and benthos.

Wetlands

As noted in Section 10.12.1, approximately 0.35 acres of estuarine and marine wetlands are found on the Midway Pier/Greene Lane property.

Vernal Pools

There are no vernal pools within the Midway Pier/Greene Lane property.

Essential Fish Habitat

EFH for 17 individual fish species have been documented off the shore of the Midway Pier/Greene Lane property: Atlantic sea herring (*Clupea harengus*), Atlantic plaice (*Hippoglossoides platessoides*), haddock (*Melanogrammus aeglefinus*), Atlantic mackerel (*Scomber scombrus*), king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), red hake (*Urophycis chuss*), cobia (*Rachycentron canadum*), windowpane flounder (*Scopthalmus aquosus*), winter flounder (*Pleuronectes americanus*), summer flounder (*Paralicthys dentatus*), winter skate (*Leucoraja ocellata*), little skate (*Leucoraja erinacea*), bluefish (*Pomatomus saltatrix*), scup (*Stenotomus chrysops*), black sea bass (*Centropristus striata*), and sand tiger shark (*Carcharias taurus*) (NOAA Fisheries Northeast Regional Office n.d.) (see Table 10.12-2).

Table 10.12-2 Essential Fish Habitat in Proximity to the Midway Pier/Greene Lane Property

Common Name	Scientific Name	Eggs	Larvae	Juveniles	Adults	Spawning Adults
Atlantic Herring	*Clupea harengus*		X	X	X	
Atlantic plaice	*Hippoglossoides platessoides*		X	X	X	
Haddock	*Melanogrammus aeglefinus*		X			
Atlantic mackerel	*Scomber scombrus*	X	X	X	X	
King mackerel	*Scomberomorus cavalla*	X	X	X	X	
Spanish mackerel	*Scomberomorus maculatus*	X	X	X	X	
Red Hake	*Urophycis chuss*		X	X	X	X
Windowpane Flounder	*Scophthalmus aquosus*	X	X	X	X	X
Winter Flounder	*Pseudopleuronectes americanus*	X	X	X	X	X
Winter Skate	*Leucoraja ocellata*	X	X	X	X	X
Cobia	*Rachycentron canadum*	X	X	X	X	
Summer flounder	*Paralicthys dentatus*		X	X	X	
Little skate	*Leucoraja erinacea*	X	X	X	X	X
Bluefish	*Pomatomus saltatrix*			X	X	
Scup	*Stenotomus chrysops*	X	X	X	X	
Black sea bass	*Centropristus striata*			X	X	
Sand tiger shark	*Carcharias taurus*		X			

Source: NOAA Fisheries Northeast Regional Office n.d.

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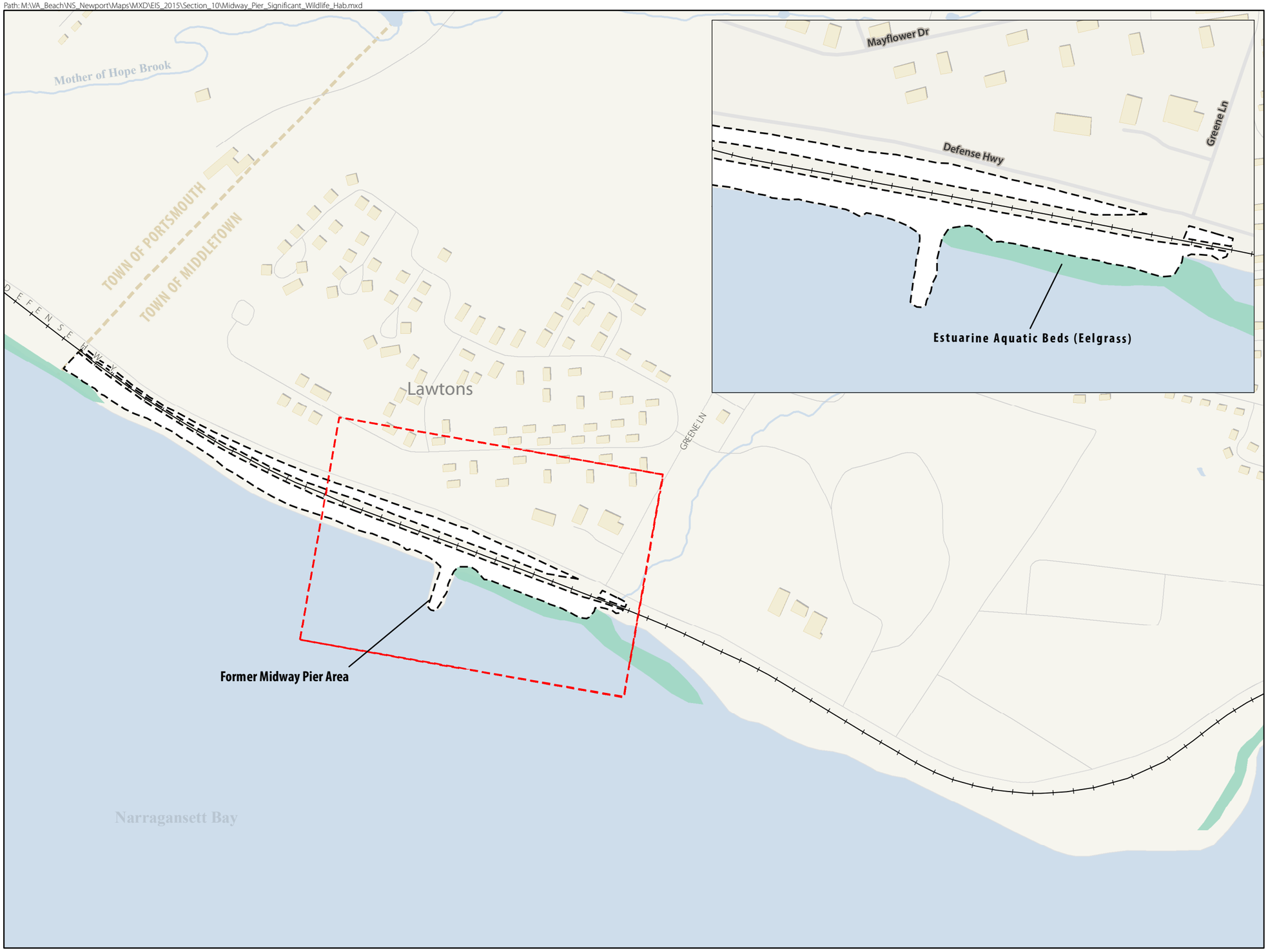

Figure 10.12-2
Midway Pier/Greene Lane Property Significant Wildlife Habitat
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Property Boundary
- Eelgrass Habitat
- Waterbody

N

SCALE

0 0.1 0.2 Miles

SOURCE: NOAA Office of Response and Restoration 2011; Applied Science Associates 2011

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SCALE

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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Legend

- Tank Farm 5 Property Boundary
- Potentially Suitable Northern Long-eared Bat Summer Roosting Habitat
- Suitable Northern Long-eared Bat Summer Roosting Habitat

Figure 10.12-3

Summer Roosting Habitat for Northern Long-eared Bat at Tank Farm 5

Naval Station Newport

Newport County, Rhode Island

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11 Midway Pier/Greene Lane Environmental Consequences

11.1 Land Use, Zoning, and Coastal Resources

This section describes the potential land use impacts resulting from disposal and reuse of the Midway Pier/Greene Lane property under Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of site-specific land uses, direct and indirect[19] impacts on surrounding existing land uses, consistency with local zoning and land use plans, and consistency with the enforceable policies of the RI CRMP.

The study area comprises the Midway Pier/Greene Lane property and land within 0.25 miles of the corridor in the Town of Middletown. While a small area of low-density residential land in the Town of Portsmouth is located within 0.25 miles of the property, the proposed action would not be expected to have notable indirect impacts on this land use because maintaining the open space land uses at the site is not expected to induce changes in land use on surrounding properties. Therefore, the discussion of impacts in the following sections focuses on surrounding properties in the Town of Middletown.

Upon completion of the BRAC disposal process under both Alternative 1 and 2, the Midway Pier/Greene Lane property would be under the jurisdiction of the Town of Middletown. The use of shoreline park land and areas designated as open space along the Defense Highway and the development of new buildings or structures on the site would be regulated by the town and its zoning ordinance and guided by applicable plans and regulations.

11.1.1 Alternative 1 (Preferred Alternative)

11.1.1.1 On-Site Land Use

Under Alternative 1, Defense Highway and Stringham Road would be retained under Navy ownership, but the land parcels adjacent to the Defense Highway would be used for open space and recreation. The former Middletown Transfer Station in the former Midway Pier/Greene Lane area and Navy-owned utility lines along the road corridor would be left in place. A bituminous concrete multi-use pathway would be constructed in a greenbelt between the railroad right of way and the shoreline, although the railroad right-of-way is not included in the surplus property boundaries. The pathway would be 12 feet wide in most areas; in areas that are constrained because of topography or other factors, the width may be reduced to 10 feet. A shoreline park would be constructed at the Midway Pier/Greene Lane area. The park would include a fishing pier, kayak launch, restrooms, playgrounds, a 0.3-acre parking lot, picnic areas, and pathways (see Figure 11.1-1). The restrooms, playground, and picnic area would comprise 0.09 acres. The existing pier would be rebuilt to be a 15-foot-wide and 250-foot-long concrete pier.

Alternative 1 would minimally impact the existing land use at the site. In the former Midway Pier/Greene Lane area, the gravel parking lot would be replaced with open space and recreational land uses, including the buildings, structures, and parking area previously noted. Redevelopment of the existing pier at the same location would not change the existing land use. Implementation of Alternative 1 would result in opening public access to previously restricted military property and the maintenance of open space and creation of new recreational facilities on the site, a regional increase in public open space and recreational areas compared with existing conditions.

[19] Indirect impacts on surrounding land uses are based on the potential for the proposed action to generate changes in the land use type, pattern, or density.

11.1.1.2 Surrounding Land Use

Implementation of Alternative 1 would include minor changes to the existing open space along the corridor; the open space parcels would transition from federal government use to public use. Public use of these parcels would not cause changes in land use substantially different from existing conditions and would be consistent with surrounding land uses in the Town of Middletown. The proposed shoreline park under Alternative 1 would be contained entirely within the site boundaries and would have no direct impacts on surrounding land uses. Access to the shoreline park would be provided off of Defense Highway and Greene Lane, and no new access points would be required. Indirect impacts on the surrounding transportation network are discussed in Section 11.4.

Maintaining existing open space land uses and creating a shoreline park on the site would not result in any growth-induced changes in land use in the surrounding area because these uses would be similar to existing land uses and would not increase the residential population or create significant new opportunities for employment. The Redevelopment Plan notes that the Defense Highway is a "critical third transportation connection for north-south circulation on the island, with a high volume of traffic" (RKG Associates, Inc. et al. 2011). Routes 114 and 138 are the only other major north-south roadways on the island. Defense Highway and Stringham Road currently are open to civilian vehicle traffic; development of the shoreline park and multi-use path would increase vehicle use of the roadway only slightly more than existing conditions (see Section 11.4 for a discussion of additional trips generated and impacts on LOS). Given the other factors that affect urban development and growth, such as economic conditions, the availability of land, and local zoning ordinances, additional access points created along these roadways would have a minor, long-term impact on surrounding land uses.

11.1.1.3 Consistency with Land Use Plans and Zoning

Town of Middletown. Redevelopment and reuse of parcels in the Midway Pier/Greene Lane property would be subject to the zoning ordinances of the Town of Middletown. Alternative 1 would be consistent with the regulations of the Town of Middletown's public zoning district. Parcels along the roadway would remain under the ownership of the town government, and use of the parcels for a public park and open space would be consistent with the existing zoning. Alternative 1 would be consistent with the recommended future land use of the site for conservation, recreation, and open space land uses, identified in the *Town of Middletown's Comprehensive Community Plan* and the town's 2014 comprehensive plan update (Town of Middletown Planning Department 2008, Town of Middletown Planning Department 2015). Alternative 1 also would be consistent with the comprehensive plan recommendations to protect and enhance scenic vistas and provide new public spaces and facilities (including the proposed Greene Lane Park) on Narragansett Bay. The creation of public recreational facilities under Alternative 1 would facilitate public use and enjoyment of these coastal parcels.

Shoreline Park Master Plan. Alternative 1 generally would be consistent with the preferred conceptual plan for the Midway Pier/Greene Lane property presented in the *Shoreline Park Master Plan*. The reuse plan presented as Alternative 1 does not include two of the recreational features identified as high priorities for the property, the concessions plaza and the train depot and visitor's center. However, implementing Alternative 1 would not preclude the Town developing these amenities in the future. Therefore, Alternative 1 would be consistent with the *Shoreline Park Master Plan*.

Aquidneck Island Transportation Study. Under Alternative 1, Defense Highway and Stringham Road and their ROWs would not be transferred to a non-Navy entity. Alternative 1 would be consistent with the transportation study recommendation for a bike path along the Defense Highway.

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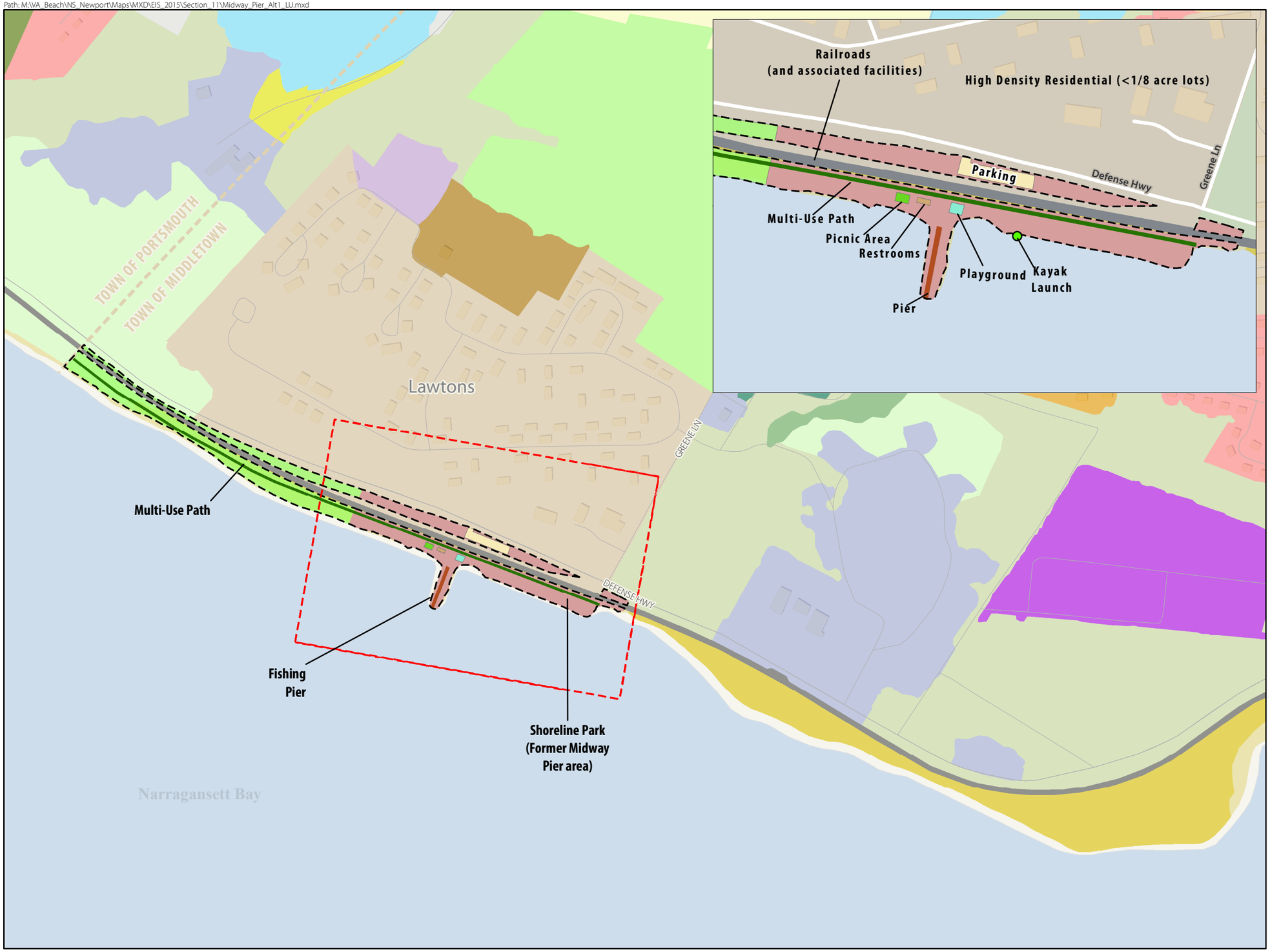

Figure 11.1-1
Midway Pier/Greene Lane Property
Alternative 1 – Proposed Site-specific Land Use and Surrounding Land Use
NAVSTA Newport, Rhode Island

Legend

- Street
- Town Boundary
- Property Boundary

Proposed Land Use
- Open Space
- Shoreline Park

Land Use
- Beaches
- Sandy Areas (not beaches)
- Pasture (agricultural not suitable for tillage)
- Idle Agriculture (abandoned fields and orchards)
- Brushland (shrub and brush areas, reforestation)
- Cropland (tillable)
- Orchards, Groves, Nurseries
- Deciduous Forest (>80% hardwood)
- Mixed Forest
- Softwood Forest (>80% softwood)
- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)
- Medium Density Residential (1 to 1/4 acre lots)
- Medium Low Density Residential (1 to 2 acre lots)
- Low Density Residential (>2 acre lots)
- Cemeteries
- Industrial (manufacturing, design, assembly, etc.)
- Water and Sewage Treatment
- Transitional Areas (urban open)
- Institutional (schools, hospitals, churches, etc.)
- Railroads (and associated facilities)
- Roads (divided highways >200' plus related facilities)
- Other Transportation (terminals, docks, etc.)
- Power Lines (100' or more width)
- Vacant Land
- Waste Disposal (landfills, junkyards, etc.)
- Wetland
- Water
- Waterbody

N

SCALE

0 0.1 0.2 Miles

SOURCE: RKG Associates et al. 2011;
Sanborn Map Company 2007;
Aquidneck Island Planning Commission 2013

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Aquidneck Island West Side Master Plan. Retaining Defense Highway under Navy ownership under Alternative 1 would not be consistent with the recommendations of the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005) to upgrade this road for use as a scenic byway. However, Alternative 1 would be consistent with the master plan recommendation to develop a scenic overlook, park, and fishing pier at the Midway Pier area and create a bike path parallel to Defense Highway.

In summary, Alternative 1 would be consistent with the Town of Middletown's *Comprehensive Community Plan* and 2014 comprehensive plan update, the *Shoreline Park Master Plan*, the *Aquidneck Island Transportation Study*, and partially consistent with the *Aquidneck Island West Side Master Plan*. Alternative 1 would not be consistent with the *Aquidneck Island West Side Master Plan* recommendations for Defense Highway, but would have no effect on the current ownership or use of the road corridor. Additionally, Alternative 1 would be consistent with the zoning established by the Town of Middletown. Therefore, no inconsistencies with local planning would result.

11.1.1.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 1 is reasonably likely to affect the use or natural resources of Rhode Island's coastal zone. Disposal of the property would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP and the Aquidneck Island SAMP. However, redevelopment of the Midway Pier/Greene Lane property would not be a direct federal action and would therefore fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area. Following disposal of the property, the local entity implementing redevelopment would be responsible for completing the state permitting process with CRMC.

For purposes of analysis, consistency of the reuse of the Midway Pier/Greene Lane property with the applicable policies of the RI CRMP and the Aquidneck Island SAMP is summarized below. For additional information, see Appendix B.

RICRMP

- **Section 200.4 Type 4 Waters** – Redevelopment activities at the Midway Pier/Greene Lane property –focus, in part, on the development of a shoreline park next to and with access to the waterfront that the public could use for, boating, fishing, kayaking, and beachcombing. The demolished and rebuilt former Midway Pier would be used as a recreational fishing pier. The Navy informally consulted with NMFS regarding designated EFH in Narragansett Bay and evaluated the effects of the proposed action on the 17 species of EFH designated for the bay. This evaluation was completed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. The Navy has determined that environmental impacts from the proposed reconstruction of the pier will not adversely affect designated EFH within Narragansett Bay. All impacts are expected to be minor and short-term. Thus, the redevelopment activities proposed for the Midway Pier/Greene Lane property would be consistent to the maximum extent practicable with the abovementioned policies of CRMP Section 200.4(C).
- **Section 210.3 Coastal Wetlands** - There are 0.35 acres of estuarine and marine wetlands within the Midway Pier/Greene Lane property boundaries, located along the shoreline. Redevelopment under Alternative 1 would not impact these wetlands because redevelopment would take place in areas outside these mapped wetland boundaries. Therefore, the proposed action would be fully consistent with these policies.

- **Section 300 Activities in Tidal and Coastal Pond Wetlands, on Shoreline Features, and Their Contiguous Areas** – Consistency with the policies listed in this section would be addressed through the state permitting process initiated by the developer. Through the permitting process, all applicable local zoning ordinances, flood hazard standards, and environmental requirements will be addressed. Therefore, the proposed action is consistent with these policies to the maximum extent practicable.
- **Section 300.9 Dredging and Dredged Materials Disposal**– The maintenance dredging proposed at the Midway Pier/Greene Lane property would include use of a clamshell bucket or similar equipment to excavate and remove the existing pier. It will be the responsibility of the developer(s)/property owners to identify and provide environmentally sound disposal locations and procedures to the CRMC. Prior to any dredging operation or disposal, the developer(s)/property owner would coordinate with the CRMC, RIDEM, and the USACE to obtain the appropriate approvals and authorizations. Through this coordination process, the dredging activities would be conducted in accordance with all applicable regulations and the proposed action would be consistent with this policy to the maximum extent practicable.
- **Section 300.18 Submerged Aquatic Vegetation and Aquatic Habitats of Particular Concern** – Approximately 1.1 acres of eelgrass habitat have been identified within the property boundaries of the Midway Pier/Greene Lane property and approximately 1.8 acres of eelgrass have been mapped within 200 feet of the surplus property. In addition to eelgrass, widgeon grass has been previously documented at this surplus property, likely in similar environments as eelgrass (U.S. Department of the Navy 2009); however, digital data from the State of Rhode Island did not confirm this (RIDEM, Narragansett Bay Estuary Program and RI CRMC 2003; Applied Science Associates 2011). The eelgrass habitat is located at the southern end of the property immediately to the south of the former Midway Pier. The eelgrass beds that are located along the waterfront near the proposed shoreline park would not be disturbed during construction of the pier because the development footprint, as assessed in the EIS and this negative determination, does not overlap with the mapped locations of SAV. Therefore, the proposed action would be fully consistent with the policies of this section.

Aquidneck Island SAMP

- **Section 130.2 Coastal Greenway –** Redevelopment under Alternative 1 at the Midway Pier/Greene Lane property would be undertaken to enhance public access to the shoreline and would likely be considered municipal projects not subject to Section 130.2. Nevertheless, redevelopment under Alternative 1 would include either the establishment and maintenance of a coastal greenway or the standards for setbacks and buffers stipulated in Sections 140 and 150 of the Aquidneck Island SAMP as stipulated in 130.2(c) of the Aquidneck Island SAMP. With adherence to one of the two options, the future developers/property owners would be complying with this policy. As such, the proposed action would be fully consistent with this policy.
- **Section 130.8 Open Space and Public Access –** The Midway Pier/Greene Lane property would be consistent with Coastal Policy 130.8 by creating both open space and public access as part of the proposed action. This previously federally held property along Narragansett Bay would be opened to the public and would include waterfront uses along Narragansett Bay. Therefore, the proposed action would be fully consistent with this policy.

- **Section 130.9 Visual Elements –** The proposed action is based upon the Redevelopment Plan developed by AIRPA; that plan targets specific types of development on each property based on each site's physical and environmental setting and location. The Plan, in summary, is consistent with Coastal Policy 130.9 because reuse and redevelopment at each property will restore and enhance visual quality in visually degraded areas. The visual quality of the Midway Pier/Greene Lane property would be enhanced by the newly created waterfront park and partial coastal greenway. The existing Midway Pier is a deteriorating and/or outdated pier structure which would be replaced under the Redevelopment Plan. As such, the proposed action would be fully consistent with this policy.
- **150.1 Standards Applicable to Entire Development–** The developer/property owner will be responsible during redevelopment of the Midway Pier/Greene Lane property for providing separate and appropriate environmental documentation and obtaining all the necessary permits from state and federal agencies that meet the applicable standards addressing areas such as storm water management (i.e., Rhode Island Stormwater Manual and CRMP 300.6), groundwater protection, infrastructure, vegetation cover (i.e., Section 150.1 Standards Applicable to Entire Development), SAV, open space, public access (i.e., CRMP Section 335. Protection and Enhancement of Public Access to the Shore and Aquidneck Island SAMP Section 150.5 Public Access Standards for all Coastal Greenways), construction setback, and water quality associated with the proposed activity (i.e., Water Quality Certificate from RIDEM and USACE permit, concurrent with their application to CRMC). Therefore, the proposed action would be consistent with these standards to the maximum extent practicable.

Official consultation with the Rhode Island CRMC was initiated on February 11, 2014 with a letter outlining the Navy's CCD. The CRMC concurred with the Navy's determination that disposal of the surplus property under Alternative 1 would be conducted in a manner that is consistent to the maximum extent practicable with the RI CRMP and that the developer of the Midway Pier/Greene Lane property would be required to comply with the applicable policies of the RI CRMP and the Aquidneck Island SAMP (Willis 2014). A copy of the letter is included in Appendix B.

11.1.2 Alternative 2

11.1.2.1 On-Site Land Use

Like Alternative 1, Alternative 2 would retain Defense Highway and Stringham Road under Navy ownership. The multi-use pathway between the railroad tracks and the shoreline would be the same under Alternative 2 as under Alternative 1. Alternative 2 includes expansion of the public recreational facilities in the Midway Pier/Greene Lane area. Under Alternative 2, a total of approximately 0.9 acres at the shoreline park would be redeveloped with parking, restrooms, a playground, picnic area, and the pier. Parking under Alternative 2 would total 0.6 acres and require two areas of cut-and-fill. The area of the playground would be increased to 0.1 acres, and the pier footprint also would be increased to approximately 0.1 acre. Alternative 2 would include installing a floating concrete pier at the end of the redeveloped Midway Pier in a T formation. The floating pier would be 8 feet wide and 50 feet long (see Figure 11.1-2).

Like Alternative 1, Alternative 2 would minimally impact the existing land use at the site. In the Midway Pier/Greene Lane area, the gravel parking lot would be replaced with open space and recreational land uses, including the buildings, structures, and parking area previously noted. Redevelopment of the existing pier at the same location would not change the existing land use. Like Alternative 1, Alternative 2 would result in opening public access to formerly restricted military property and in maintaining open

space and creating new recreational facilities on the site, resulting in a regional increase in public open spaces and recreational areas.

11.1.2.2 Surrounding Land Use

The land uses proposed under Alternative 2 would essentially be the same as the land uses proposed under Alternative 1. Therefore, impacts on surrounding land use under Alternative 2 would be the same as those described under Alternative 1.

11.1.2.3 Consistency with Land Use Plans and Zoning

The land use proposed under Alternative 2 would essentially be the same as those land uses proposed under Alternative 1. Therefore, Alternative 2 would be consistent with local zoning ordinances and land use plans for the same reasons discussed under Alternative 1.

11.1.2.4 Coastal Zone Management

The Navy has determined that disposal and reuse of the surplus property under Alternative 2 is reasonably likely to affect the uses or natural resources of Rhode Island's coastal zone. Disposal of the surplus property under Alternative 2 would be conducted in a manner that is consistent to the maximum extent practicable with the enforceable policies of the RI CRMP and the Aquidneck Island SAMP. However, redevelopment of the Midway Pier/Greene Lane property under Alternative 2 would not be a direct federal action and would therefore fall under the CRMC's direct state permitting authority under the Rhode Island CRMP for non-federal projects located within tidal waters, on a shoreline feature, or within the 200-foot contiguous area.

If Alternative 2 is selected, the Navy would be required to prepare a coastal zone consistency determination for the proposed disposal and reuse of the property under Alternative 2 and submit it to the Rhode Island CRMC for concurrence.

The enforceable policies of the RI CRMP and applicable policies of the Aquidneck Island SAMP are outlined in Section 10.1.4. Due to the similarities in land use types proposed, and the same geographic area of the proposed action under Alternative 2 compared with Alternative 1, consistency of the proposed action on the use and natural resources of the coastal zone under Alternative 2 would be similar to those under Alternative 1.

11.1.3 No Action Alternative

Under the No Action alternative, the surplus property at the Midway Pier/Greene Lane property would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur. The roadways would remain open to public access, but the other land parcels would remain vacant and closed to public access. Implementation of the No Action alternative would have no direct or indirect impacts on surrounding land uses.

Town zoning regulations would not be enforceable since the parcels would continue to be owned by the federal government and, therefore, would be outside the jurisdictions of the Town of Middletown. The No Action alternative would preserve open space along Defense Highway, which would be consistent with the land use designations included in the *Town of Middletown, RI, Comprehensive Community Plan*. However, the No Action alternative would prevent redevelopment of the parcels, which would not be consistent with local land use plan recommendations for redevelopment and reuse of this land. Under the No Action alternative, none of the potential benefits associated with redevelopment of the parcels along the corridor would be realized.

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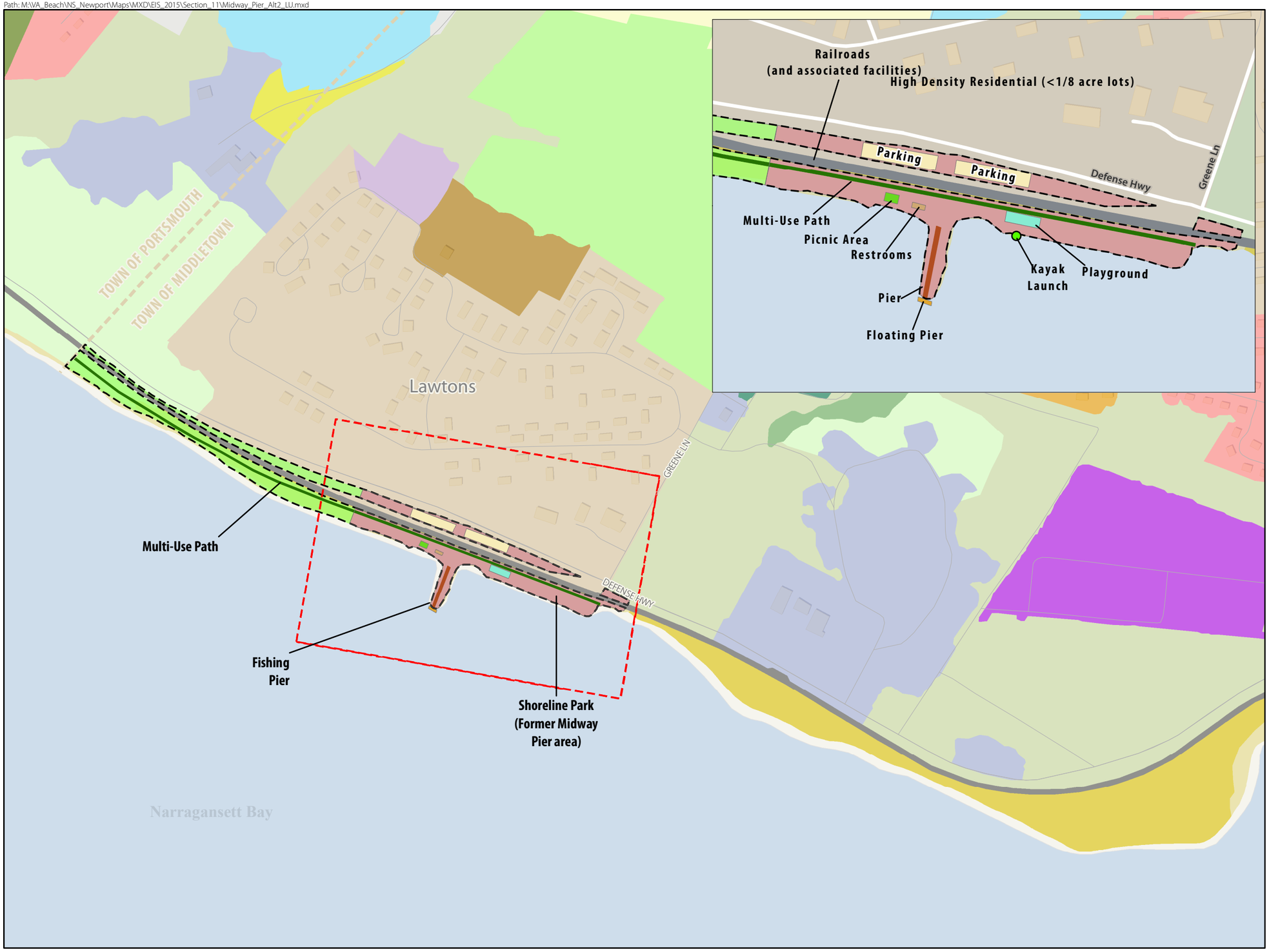

Figure 11.1-2
Midway Pier/Greene Lane Property
Alternative 2 – Proposed Site-specific Land Use and Surrounding Land Use
NAVSTA Newport, Rhode Island

Legend

- Street
- Town Boundary
- Property Boundary

Proposed Land Use
- Open Space
- Shoreline Park

Land Use
- Beaches
- Sandy Areas (not beaches)
- Pasture (agricultural not suitable for tillage)
- Idle Agriculture (abandoned fields and orchards)
- Brushland (shrub and brush areas, reforestation)
- Cropland (tillable)
- Orchards, Groves, Nurseries
- Deciduous Forest (>80% hardwood)
- Mixed Forest
- Softwood Forest (>80% softwood)
- Developed Recreation (all recreation)
- Commercial (sale of products and services)
- High Density Residential (<1/8 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)
- Medium Density Residential (1 to 1/4 acre lots)
- Medium Low Density Residential (1 to 2 acre lots)
- Low Density Residential (>2 acre lots)
- Cemeteries
- Industrial (manufacturing, design, assembly, etc.)
- Water and Sewage Treatment
- Transitional Areas (urban open)
- Institutional (schools, hospitals, churches, etc.)
- Railroads (and associated facilities)
- Roads (divided highways >200' plus related facilities)
- Other Transportation (terminals, docks, etc.)
- Power Lines (100' or more width)
- Vacant Land
- Waste Disposal (landfills, junkyards, etc.)
- Wetland
- Water

N

SCALE
0 0.1 0.2 Miles

SOURCE: RKG Associates et al. 2011;
Sanborn Map Company 2007;
Aquidneck Island Planning Commission 2013

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11.2 Socioeconomics and Environmental Justice

This section refers the reader back to Chapter 5, where the impact analysis for all four surplus properties for these resources is located.

11.2.1 Alternative 1 (Preferred Alternative)

A detailed discussion of the socioeconomic and environmental justice consequences associated with the redevelopment of all four surplus properties, including the Midway Pier/Greene Lane property under Alternative 1 (Preferred Alternative) can be found in Section 5.2.1.

In summary, implementation of Alternative 1 is anticipated to have a beneficial economic impact on the regional economy, no noticeable impact on local population and demographic characteristics, no noticeable impact on the local housing market, and a minor positive fiscal impact on the Town of Middletown, primarily in the form of construction expenditures. In addition, no disproportionate impacts on minority, Hispanic/Latino, low-income, or children are anticipated to occur under this alternative.

11.2.2 Alternative 2

A detailed discussion of the socioeconomic and environmental justice consequences associated with the redevelopment of all four surplus properties, including the Midway Pier/Greene Lane property under Alternative 2 can be found in Section 5.2.2. The summary of impacts described above for Alternative 1 would also apply to Alternative 2.

11.2.3 No Action Alternative

Under the No Action alternative, no redevelopment plan would be implemented and ownership of the properties would be retained by the Navy. The properties would not be developed and would remain in a caretaker status. No new economic activity would be generated and no increased employment opportunities would occur. Regional population and the regional housing market would not be impacted, nor would the regional commercial property market be impacted. Local government tax receipts would not increase as the properties would retain their current tax-exempt status.

11.3 Community Facilities and Services

This section refers the reader back to Chapter 5 where the impact analysis for all properties for these resources is located.

11.3.1 Alternative 1 (Preferred Alternative)

A discussion of the expected impacts on community facilities and services in the City of Newport and the Towns of Middletown and Portsmouth associated with the redevelopment of all four surplus properties, including the Midway Pier/Greene Lane property under Alternative 1 (Preferred Alternative) can be found in Section 5.3.1.

11.3.2 Alternative 2

A discussion of the expected impacts on community facilities and services in the City of Newport and the Towns of Middletown and Portsmouth associated with the redevelopment of all four surplus properties, including the Midway Pier/Greene Lane property under Alternative 2 can be found in Section 5.3.2.

11.3.3 No Action Alternative

There would be no impact on community facilities and services resulting from the No Action alternative because the properties would be held in caretaker status by the Navy. There would be no change in

population or employment resulting from this alternative. In addition, no new recreational facilities would be built if the No Action alternative were to be implemented.

11.4 Transportation

This section summarizes the potential transportation impacts resulting from construction and implementation of the Redevelopment Plan at the Midway Pier/Greene Lane property under Alternative 1, Alternative 2, and the No Action alternative. The evaluation of transportation impacts upon full build-out is based on the analysis completed for the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013). Roadways and intersections evaluated for the Midway Pier/Greene Lane property include:

- Defense Highway/Burma Road
- Stringham Road
- Defense Highway/Burma Road and Stringham Road Intersection
- Defense Highway/Burma Road and Greene Lane Intersection

Locations of these roadways are shown on Figure 11.4-1.

Traffic generated from construction was not captured in the traffic impact analysis. An evaluation of the impacts on existing traffic conditions from the construction traffic is based on the volume of construction vehicles and duration of construction at the Midway Pier/Greene Lane property.

11.4.1 Alternative 1 (Preferred Alternative)

The Midway Pier/Greene Lane property is accessible from a number of roads that intersect the project area. The proposed fishing pier and shoreline park would be accessed directly from Defense Highway. Greene Lane would be the nearest connector to West Main Road (State Route 114). Fifty-two parking spaces would be included under Alternative 1.

Construction-related traffic would consist of delivery trucks, dump trucks, heavy equipment, and vehicles driven by construction crews. Based on the square footage of the proposed demolition/new construction, an estimated thirty daily trips would occur for worker commutes, three daily trips would occur for demolition removal, and four delivery trucks would occur per day (see Appendix D for the methodology). This could result in short-term impacts on traffic from additional truck trips and slower-moving vehicles. However, the impacts would not be significant because the impacts would occur for the duration of the new construction period only. In addition, redevelopment of the Midway Pier/shoreline park is not expected to occur simultaneously over the course of the 20-year build-out. Impacts are therefore expected to be minor.

Short-term impacts are likely to occur during the construction period of the redevelopment. However, impacts would be minor for the duration of the construction due to the size of the proposed redevelopment activities.

The evaluation of impacts during full build-out under Alternative 1 includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS) and recommended mitigation measures.

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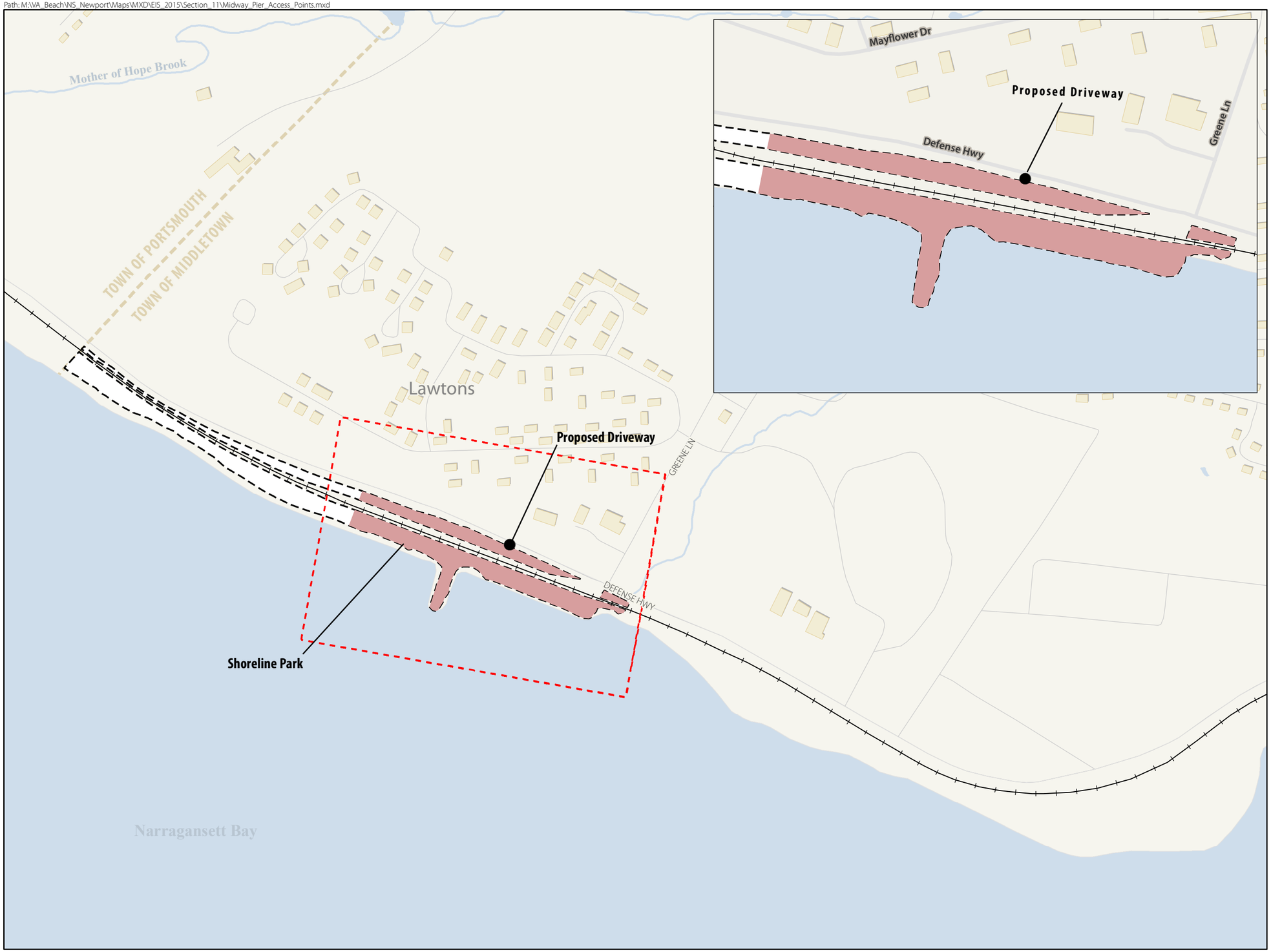

Figure 11.4-1
Midway Pier/Greene Lane Property
Proposed Access Points, Alternatives 1 and 2
NAVSTA Newport, Rhode Island

Legend

- Access Point
- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Property Boundary
- Waterbody
- Shoreline Park

SCALE

0 0.1 0.2 Miles

SOURCE: RKG Associates et al. 2011.

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11.4.1.1 Projected Traffic Volumes

Full build-out of Alternative 1 would result in a negligible number of new vehicle trips added to the existing transportation network. Trips generated by use of the proposed multi-use pathway and park are expected to occur primarily during off-peak hours and weekends. Not all trips to the park are expected to be new, as its use is likely to capture current drivers along the highway. Because the size of the park and multi-use pathway are relatively small and are not expected to generate more than one or two peak hour trips, trip generation was not modeled for this redevelopment.

However, the intersections of Defense Highway/Burma Road and Greene Lane and Defense Highway/Burma Road and Stringham Road would see an increase in morning and evening peak hour trips over existing conditions largely due to the full build-out of the nearby tank farms and annual growth in background traffic levels. See discussion in Section 9.4.1.1.

11.4.1.2 Projected Level of Service

The intersections of Defense Highway/Burma Road and Greene Lane and Defense Highway/Burma Road and Stringham Road would see a decrease in the LOS compared to existing conditions largely due to the full build-out of the nearby tank farms and annual growth in background traffic levels. See discussion in Section 9.4.1.2.

Because the size of the park and multi-use pathway are relatively small and are not expected to generate more than one or two peak hour trips, LOS would not be affected by this redevelopment. Therefore, redevelopment of the Midway Pier/Greene Lane property would have only a minor impact on the roadway network surrounding the surplus property.

11.4.1.3 Summary

The intersections of Defense Highway/Burma Road and Greene Lane and Defense Highway/Burma Road and Stringham Road would see an increase in morning and evening peak hour trips over existing conditions and a decrease in the LOS, largely due to the full build-out of the nearby tank farms and annual growth in background levels. Mitigation is proposed under Section 9.4.1.3. Implementation of Alternative 1 for redevelopment of the surplus property for use as a multi-use pathway and park would result in minor impacts on the road network near the site.

Sight distances for the potential driveway location at the shoreline park were reviewed and generally found to meet the AASHTO requirements for the 85th percentile travel speeds along Defense Highway. These distances should be reconfirmed once the final location of the driveway is determined. The driveway should also be designed to maximize the visibility for motorists turning into and out of the property while providing accurate information to the motorist to identify the site.

Other potential mitigation measures would depend on the final design of the site driveways and internal site roadway network. Improvements along the roadway could be as simple as revised signs, striping, or redesign to improve traffic flow. The implementation of these mitigation measures would be the responsibility of the future developer and/or the Town of Middletown.

11.4.2 Alternative 2

Accessibility to the Midway Pier/Greene Lane property would remain largely the same under both alternatives but with an increase of parking spaces to 107 spaces under Alternative 2.

The evaluation of impacts during full build-out under Alternative 2 includes a discussion of projected traffic volumes, the projected impacts on the road network (LOS), and recommended mitigation measures.

11.4.2.1 Projected Traffic Volumes

The land uses proposed under Alternative 2 would essentially be the same as those land uses proposed under Alternative 1. Therefore, impacts on projected traffic volumes under Alternative 2 would be the same as those described under Alternative 1.

11.4.2.2 Projected Level of Service

The land uses proposed under Alternative 2 would essentially be the same as those land uses proposed under Alternative 1. Therefore, impacts on the projected LOS under Alternative 2 would be the same as those described under Alternative 1.

11.4.2.3 Summary

The intersections of Defense Highway/Burma Road and Greene Lane and Defense Highway/Burma Road and Stringham Road would see an increase in morning and evening peak hour trips over existing conditions and a decrease in LOS, largely due to the full build-out of the nearby tank farms. Mitigation is proposed under Section 9.4.2.3.

The mitigation for impacts from the implementation of Alternative 2 would be the same as those discussed for Alternative 1.

11.4.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Under caretaker status, the Navy would reduce its overall maintenance on Defense Highway and Stringham Road, due to the lack of an active mission requirement north of Greene Lane and limited funding to maintain the road. The Navy is currently determining what their maintenance program would comprise.

The roads in the Midway Pier/Greene Lane property would continue to serve as two-lane roadways used by the general public. No reuse or redevelopment would occur at the property; however, traffic volumes are projected to increase 1 percent annually through the year 2032 due to other development projects in the area and general population and traffic growth.

11.4.3.1 Projected Traffic Volumes

Under the No Action alternative, traffic volumes are projected to increase 1 percent annually through the year 2032. Traffic volume increases are associated with development projects not specifically identified as well as annual population and traffic increases. Section 9.4.3.1 provides a comparison of existing peak hour traffic volumes under Alternative 1 with those projected under the No Action alternative for the Defense Highway/Burma Road and Greene Lane intersection and the Defense Highway/Burma Road and Stringham Road intersection.

11.4.3.2 Projected Level of Service

The southbound approach to the intersection of Defense Highway/Burma Road and Greene Lane would continue to operate at LOS A during the morning and evening peak hour. Operation of the westbound approach would decline from LOS C to LOS F during the morning peak hour and would decline from LOS C to LOS D during the evening peak hour. The northbound approach to the intersection of Defense Highway and Stringham Road would continue to operate at LOS A during morning and evening peak hours. The northeast approach would continue to operate at LOS F during morning peak hours and would decline from LOS D to LOS F during evening peak hours (Pare Corporation 2013).

Under caretaker status, reduced maintenance may result in deterioration of the roadway due to uncleared debris, snow, and degradation of pavement. Deterioration of the roadway may result in a decrease in LOS as vehicles may need to travel at reduced speeds for safety and to prevent damage from potholes.

Therefore, implementation of the No Action alternative may result in minor impacts on transportation.

11.5 Environmental Management

This section describes the potential impacts on environmental management from the implementation of Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of potential impacts on the management of hazardous waste, hazardous materials, and ER Program sites associated with disposal and reuse of the Midway Pier/Greene Lane property.

As discussed in Section 3.5.1.5, real property transactions under BRAC require preparing a FOST(s). The FOST summarizes how the applicable requirements and notifications for hazardous materials, petroleum products, and other regulated materials (such as ACM, LBP, PCBs, and pesticides) have been satisfied and whether the property is environmentally suitable for transfer. The FOST for the Midway Pier/Greene Lane property will address any restrictions, notifications, or covenants in deeds related to hazardous materials at the surplus property.

11.5.1 Alternative 1 (Preferred Alternative)

11.5.1.1 Hazardous Waste

Small amounts of RCRA hazardous wastes would be generated during the demolition of the former Midway Pier and construction of the new pier, multi-use path, and shoreline park planned for the Midway Pier/Greene Lane area under Alternative 1. Demolition and construction activities and the operation of heavy equipment and machinery would result in wastes such as waste oils and oily wastes, chemicals, acids, paints, and solvents. Demolition and construction contractors would be required under contract to manage hazardous waste in accordance with Town of Middletown and state and federal requirements. Future use of the new facilities would not be expected to generate hazardous waste. There would therefore be a minor short-term impact on hazardous waste management under Alternative 1. This impact would not be significant.

11.5.1.2 Hazardous Materials

Storage Tanks, Fuel Piping, and Oil/Water Separators

There are no storage tanks or OWSs at the Midway Pier/Greene Lane property. The two USTs associated with former Building 71 and the OWS associated with former Building 70 (see Figure 11.5-1) were removed in 1995 and 1999, respectively. Remediation in the area of former Buildings 70 and 71 has substantially been completed. With the possible exception of long-term groundwater monitoring that might be prescribed, isolated areas of petroleum contamination near former Buildings 70 and 71 and Defense Highway would be remediated before property transfer. No storage tanks or OWSs would be installed for the waterfront development proposed at the Midway Pier/Greene Lane area under Alternative 1. The active 1,000-gallon UST located at NAVSTA Newport Building 694 is just outside of the property to be disposed as surplus. There would be no impacts on the management of storage tanks and OWSs under Alternative 1.

The underground fuel pipeline that runs along Defense Highway, from the intersection of Defense Highway and Stringham Road to Pier 1 (see Figure 11.5-1), would remain in place under Alternative 1. That pipeline is adjacent to the Midway Pier/Greene Lane property. The pipeline was cleaned and abandoned in place in 2000 and is not known to contain any petroleum constituents. Most of the soil

along the pipeline length has not been assessed (see Section 10.5.2.2). Soil beneath and around pipeline portions that have not been assessed could be contaminated if the pipeline leaked when it was operational. There would be a minor impact under Alternative 1 related to the unknown condition of the soil near unassessed portions of the underground fuel pipeline. This impact would not be significant, and appropriate notifications in the deed or other real estate instrument transferring the property would alert future property owners to the presence of the nearby pipeline and further mitigate any impacts.

ACM, LBP, and Lead

The steam line that runs alongside the underground fuel pipeline along Defense Highway is wrapped in asbestos-containing pipe wrap. The steam line would remain in place during redevelopment of the property. Under Alternative 1, there would be a minor long-term impact from the ACM that remains on the underground steam line that runs along Defense Highway, adjacent to the Midway Pier/Greene Lane property. This impact would not be significant because the ACM would be on underground surfaces. There are no known sources of LBP or lead at the Midway Pier/Greene Lane property. There would be no impacts associated with construction activities and future use of the new waterfront facilities under the redevelopment plan because asbestos and LBP are no longer used in new building materials. Any potential impact would be further mitigated by including proper notifications of the existence of possible sources of ACM or LBP in the deed or other real estate instrument transferring the property.

PCBs and Pesticides

There are no known sources of PCBs at the Midway Pier/Greene Lane property and redevelopment of the property would not introduce new sources of PCBs. Therefore, there would be no impact associated with PCBs under Alternative 1.

Pesticides are currently used at NAVSTA Newport properties as needed and in accordance with the *Integrated Pest Management Plan* (see Section 3.5.1.2). It is expected that in the future pesticides would similarly be used responsibly and in accordance with applicable local and state regulations by the property managers of the open spaces and facilities that would occupy the Midway Pier/Greene Lane property under Alternative 1. Therefore, there would be no impact related to the use of pesticides under Alternative 1.

Radioactive Materials and Radon

Radioactive materials would not be used at the Midway Pier/Greene Lane property under Alternative 1. The redevelopment planned for Alternative 1 involves open-air spaces, for which radon would not be a concern. Therefore, there would be no impacts from radioactive materials and radon under Alternative 1.

11.5.1.3 Medical Waste

There would be no medical waste associated with the Midway Pier/Greene Lane property under Alternative 1, and therefore no impact.

11.5.1.4 Environmental Restoration Program

Under Alternative 1, remedial activities would continue at IRP Site 13, Tank Farm 5, which is near but not directly adjacent to the Midway Pier/Greene Lane property (see Figure 11.5-1). The remaining remedial activities are scheduled to be performed by 2016, with long-term groundwater monitoring continuing into the foreseeable future. As discussed in Section 3.5.1.4, the Navy will follow the provisions of CERCLA Section 120(h) related to property transfer. CERCLA-related covenants and restrictions likely would not apply to the Midway Pier/Greene Lane property because it does not overlap with Tank Farm 5. Alternative 1 would be compatible with the ER Program and there would be no significant impact.

Path: M:\VA_Beach\NS_Newport\Maps\MXD\EIS_2015\Section_11\Midway_Pier_Greene_Lane_Alts_1_2.mxd

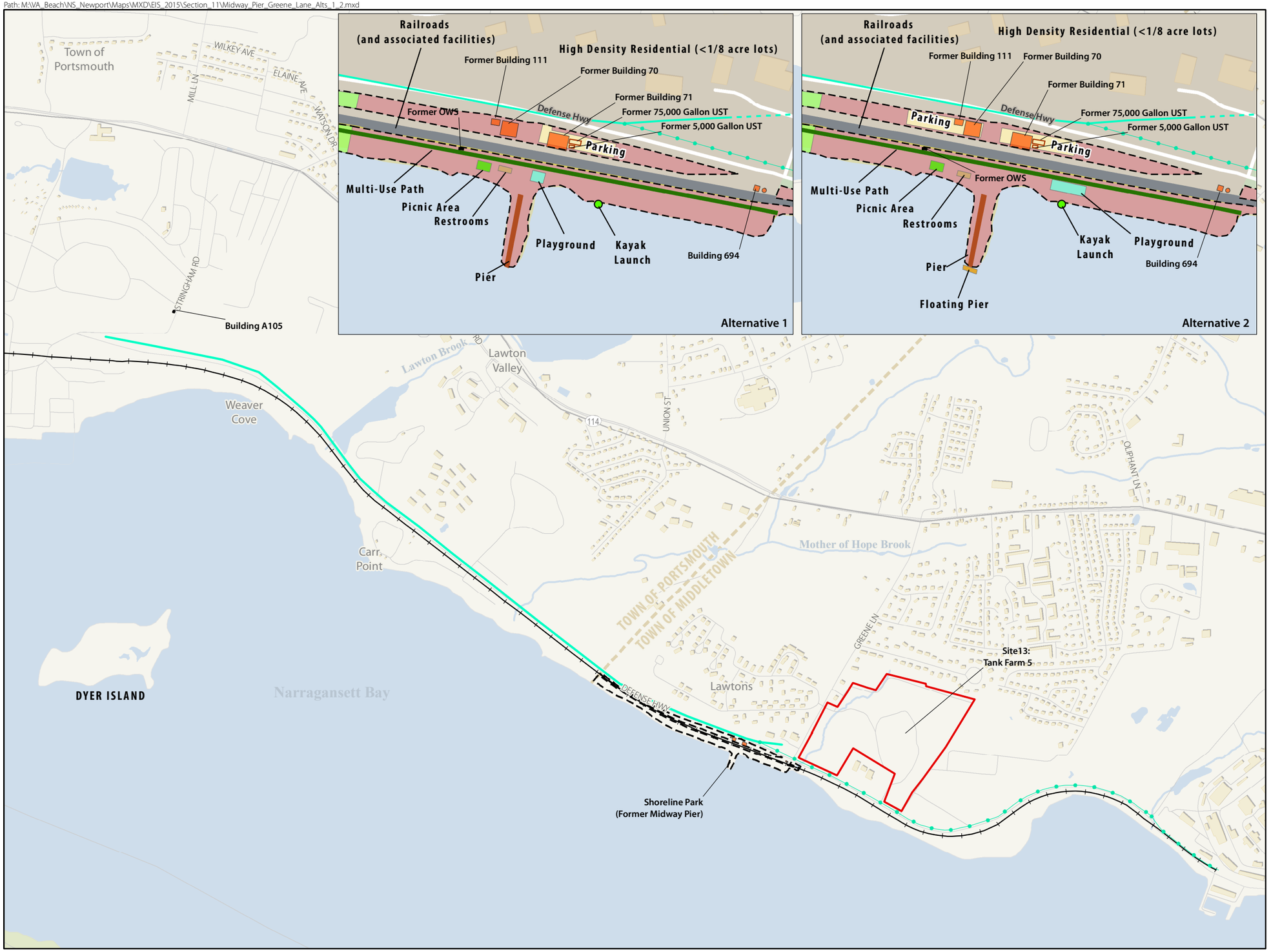

Figure 11.5-1
Midway Pier/Greene Lane Alternatives 1 and 2 Hazardous Materials NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Property Boundary
- Former Underground Storage Tank (UST)
- Former Building
- Waterbody
- Fromer Oil/Water Separator (OWS)
- Installation Restoration Program (IRP) Site/Study Area Boundary
- Fuel Pipeline Along Defense Highway
- Presumed Path of Fuel Pipeline Along Defense Highway

Proposed Land Use

- Open Space
- Shoreline Park

SCALE

0 0.25 0.5 Miles

SOURCE: Office of Water Resources 2010; U.S. Department of the Navy 2009; RKG Associates et al. 2011.

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11.5.2 Alternative 2

11.5.2.1 Hazardous Waste

Similar to Alternative 1, small amounts of RCRA hazardous wastes would be generated during the demolition of the former Midway Pier and construction of the new pier, multi-use path, and shoreline park planned for the Midway Pier/Greene Lane area. Future use of the new facilities would not be expected to generate hazardous waste. There would be a minor short-term impact on hazardous waste management under Alternative 2. This impact would not be significant.

11.5.2.2 Hazardous Materials

Storage Tanks, Fuel Piping, and Oil/Water Separators

The same locations of former storage tanks and an OWS in the former Midway Pier area would be affected under Alternative 2 as under Alternative 1. Remediation in the area of former Buildings 70 and 71 has substantially been completed. With the possible exception of long-term groundwater monitoring that might be prescribed, isolated areas of petroleum contamination near former Buildings 70 and 71 and Defense Highway would be remediated before property transfer. No storage tanks or OWSs would be installed for the redevelopment proposed for the Midway Pier/Greene Lane property. There would be no impacts on the management of storage tanks and OWSs under Alternative 2.

As described under Alternative 1, there would be a minor impact under Alternative 2 related to the unknown condition of the soil near unassessed portions of the fuel pipeline that runs along Defense Highway adjacent to the Midway Pier/Greene Lane property. This impact would not be significant.

ACM, LBP, and Lead

Under Alternative 2, the impacts on ACM, LBP, and lead management would be the same as described for Alternative 1. There would be a minor long-term impact from the ACM that remains on the underground steam line that runs along Defense Highway adjacent to the Midway Pier/Greene Lane property. This impact would not be significant because the ACM would be on underground surfaces. There are no known sources of LBP or lead at the Midway Pier/Greene Lane property. There would be no impacts associated with construction activities and future use of the new waterfront facilities under the redevelopment plan because asbestos and LBP are no longer used in new building materials.

PCBs and Pesticides

There are no known sources of PCBs at the Midway Pier/Greene Lane property and there would be no impact associated with PCBs under Alternative 2. There also would be no impact related to the use of pesticides for property management, the same as described under Alternative 1.

Radioactive Materials and Radon

There would be no impacts from radioactive materials and radon under Alternative 2, as described under Alternative 1.

11.5.2.3 Medical Waste

There would be no medical waste associated with the Midway Pier/Greene Lane property under Alternative 2 and therefore no impact.

11.5.2.4 Environmental Restoration Program

Under Alternative 2, the status of remedial activities at IRP Site 13, Tank Farm 5, which is near but not directly adjacent to the Midway Pier/Greene Lane property, would be the same as described under Alternative 1. The remaining remedial activities are scheduled to be completed by 2016, with long-term

groundwater monitoring continuing into the foreseeable future. The Navy will follow the provisions of CERCLA Section 120(h) related to property transfer. Alternative 2 would be compatible with the ER Program and there would be no significant impact.

11.5.3 No Action Alternative

Under the No Action alternative, the Midway Pier/Greene Lane property would be maintained in a caretaker status with no redevelopment.

11.5.3.1 Hazardous Waste

Hazardous wastes are not routinely generated at the Midway Pier/Greene Lane property; therefore, there would be no impact under the No Action alternative.

11.5.3.2 Hazardous Materials

Storage Tanks, Fuel Piping, and Oil/Water Separators

Under the No Action alternative, the Navy would complete remediation of isolated areas of petroleum contamination near former Buildings 70 and 71 and Defense Highway, the same as described for Alternatives 1 and 2. There are no storage tanks or OWSs associated with the Midway Pier/Greene Lane property. Therefore, there would be no impacts on the management of storage tanks and OWSs under the No Action alternative.

The fuel pipeline that runs along Defense Highway would remain as is underground. The pipeline was cleaned in 2000. There would be a minor impact related to the unknown condition of the soil near unassessed portions of the fuel pipeline, the same as described for Alternatives 1 and 2. This impact would be minor.

ACM, LBP, and Lead

Under the No Action alternative, there would be a minor long-term impact from the ACM that remains on the underground steam line that runs along Defense Highway, the same as described for Alternatives 1 and 2. The impact would not be significant because the ACM would be on underground surfaces. There are no known sources of LBP or lead at the Midway Pier/Greene Lane property.

PCBs and Pesticides

There are no known sources of PCBs at the Midway Pier/Greene Lane property; therefore there would be no impact associated with PCBs under the No Action alternative.

Pesticides would continue to be applied as necessary in accordance with the installation *Integrated Pest Management Plan*; therefore, there would be no impact related to the use of pesticides under the No Action alternative.

Radioactive Materials and Radon

Radioactive materials are not used at the Midway Pier/Greene Lane property and radon is not a concern for open spaces. There would be no impacts from radioactive materials and radon under the No Action alternative.

11.5.3.3 Medical Waste

Medical waste is not generated at the Midway Pier/Greene Lane property; therefore, there would be no impact on medical waste management under the No Action alternative.

11.5.3.4 Environmental Restoration Program

Under the No Action alternative, cleanup activities will continue at IRP Site 13, Tank Farm 5, in accordance with CERCLA and the RIDEM UST program. The No Action alternative would be compatible with the ER Program and there would be no significant impact.

11.6 Air Quality

This section summarizes the projected emissions associated with the disposal and reuse of the Midway Pier/Greene Lane property, including emissions from the construction and operation of the proposed new shoreline park and facilities and associated vehicle trips on local roadways after full build-out.

An analysis of the impact of the proposed action on regional air quality is provided in Chapter 12 and includes an evaluation of the total emissions of criteria pollutants and HAPs from continuing actions at all surplus properties upon full build-out (see Chapter 12, Summary of Impacts for all Surplus Property, for a discussion of the total impacts from this action in the Providence, Rhode Island, air quality region). Construction and operation emissions from each of the other individual surplus properties are described in Sections 5.6, 7.6, and 9.6.

Construction emissions have been evaluated individually for each surplus property based on the assumption that construction emissions are temporary and are not likely to occur within the same year at all locations or at the same time as ongoing operational emissions, especially considering a 20-year build-out period for the Redevelopment Plan.

Detailed calculations conducted to support the estimated construction emissions are provided in Appendix D-1. (Section 3.6 discusses regional air quality, applicable regulations and requirements, and methods used to assess the environmental consequences.)

11.6.1 Alternative 1 (Preferred Alternative)

Under Alternative 1, the existing pier would be demolished. The Defense Highway and Stringham Road would be retained under Navy ownership. However, a multi-use pathway in a greenbelt on the opposite side of the railroad tracks, next to the water, would be added. The pathway would be 10 to12 feet wide and would be surfaced with bituminous concrete. In addition to the roadways, recreation/open space use is proposed at the Midway Pier/Greene Lane area. A shoreline park would be included with a fishing pier, kayak launch, restrooms, playgrounds, a 0.3-acre parking lot, picnic areas, and pathways.

Construction-related emissions would be primarily exhaust emissions from demolition and construction vehicles and equipment, demolition material removal, construction materials delivery, construction employee commutes, and dust resulting from ground disturbance and road traffic. Construction emissions resulting from this action at the Midway Pier/Greene Lane property under Alternative 1 would be similar to yet slightly less than emissions from the action proposed under Alternative 2 (see Section 11.6.2). These emissions would be short-term and localized and would result in minor impacts on air quality.

Mitigation of construction emissions would be implemented with best management practices that could include proper maintenance of equipment, idling reduction measures, and the use of newer, more efficient equipment with diesel retrofits to control fine particulate ($PM_{2.5}$). Particle emissions can also be controlled by regularly watering graded areas and cleaning streets after grading activities.

Operational emissions include emissions from building energy use and increased vehicle traffic. Emissions from building energy use result from the direct use of natural gas for hot water, primarily for heating, as well as the indirect use of electricity. Emissions have been conservatively estimated for the shoreline park, including the restrooms, which have been assumed to be seasonal (i.e., closed during the

winter months). Emissions from increased vehicle use was calculated based on the new vehicle trips modeled for the proposed redevelopment at the Midway Pier/Greene Lane property in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013).

Total operational emissions after full build-out of the Midway Pier/Greene Lane property under Alternative 1 are provided in Table 11.6-1. Operational emissions would result in minor impacts on air quality, and the mitigation discussed below would reduce adverse impacts.

Implementing traffic-easing roadway designs to lower vehicle speed and reduce congestion, in addition to expanding public transportation and carpooling programs, would reduce vehicle emissions. These strategies would likely have limited mitigation effectiveness due to the relatively small build-out planned for Alternative 1 and limited vehicle trips projected.

Table 11.6-1 Building Energy and Vehicle Emissions, Midway Pier/Greene Lane Property (Alternative 1)

Energy Type	Emissions per year (tons)					
	CO	NO_X	Cs	SO_2	PM_{10}	$PM_{2.5}$
Fuel Oil	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas	0.001	0.002	0.000	0.000	0.000	0.000
Electricity	NA	0.004	NA	0.001	NA	NA
New Vehicle Emissions	0.065	0.006	0.008	0.000	0.001	0.001
Total Annual Operational Emissions	**0.066**	**0.012**	**0.008**	**0.001**	**0.001**	**0.001**

Key:
CO = Carbon monoxide.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOCs = Volatile organic compounds.

11.6.2 Alternative 2

Under Alternative 2, demolition and most new construction would be the same as Alternative 1, with the exception that, under Alternative 2, there would be greater expansion of the former Midway Pier, there would be more parking area, and the playground would increase to 0.1 acres.

Construction emissions resulting from the proposed redevelopment at the Midway Pier/Greene Lane property under Alternative 2 are provided in Table 11.6-2. These emissions would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. Construction emissions would result in minor impacts on air quality. Measures to mitigate construction emissions would be the same as those discussed for Alternative 1.

Operational emissions from building energy use and increased vehicle traffic under Alternative 2 would be the same as those estimated under Alternative 1 and would result in minor impacts on air quality (see Table 11.6-1.).

11.6.3 No Action Alternative

There would be no changes at the Midway Pier/Greene Lane property under the No Action alternative. There would be no new stationary or mobile sources of criteria, HAPs, or GHG emissions from the use of the property, and the No Action alternative would not impact air quality.

11.6.4 General Conformity Rule Applicability

Since Rhode Island is in attainment for all NAAQS, the General Conformity Rule does not apply to this action While not applicable to the action, the *de minimis* thresholds under the General Conformity Rule have been used to consider the potential level of significance of the air quality impacts under NEPA.

Emissions from construction at the Midway Pier/Greene Lane property under either alternative would be below General Conformity Rule *de minimis* thresholds. Thus, changes to air quality would not be significant as a result of this construction. The evaluation of all other surplus properties and the total impacts of this action are discussed in Chapter 12.

Table 11.6-2 Construction Emissions, Midway Pier/Greene Lane Property (Alternative 2)

Source	Emissions per year (tons)					
	VOCs	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Construction Equipment	1.07	5.02	10.40	0.015	1.03	1.03
Worker Commute	0.31	2.90	0.22	0.003	0.65	0.07
Demolition Removal/ Delivery Truck Traffic	0.009	0.03	0.22	0.006	0.09	0.01
VOCs and PM from Paving and Grading	0.017				0.11	0.11
Total Emissions(TPY)	**1.40**	**7.94**	**10.85**	**0.02**	**1.88**	**1.22**

Key:
CO = Carbon monoxide.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.

11.7 Noise

This section includes an analysis of the potential noise impacts resulting from the proposed redevelopment of the Midway Pier/Greene Lane property under Alternative 1, Alternative 2, and the No Action alternative. It includes an analysis of the potential impacts resulting from construction and operation of the proposed redevelopment plan for the property.

11.7.1 Alternative 1 (Preferred Alternative)

11.7.1.1 Construction

The proposed shoreline park at the former Midway Pier/Greene Lane area in the Midway Pier/Greene Lane property is expected to include a fishing pier, a kayak launch, restrooms, playgrounds, picnic areas, pathways, and parking. The addition of a multi-use pathway in a greenbelt on the opposite side of the railroad tracks, next to the water, is also proposed for the Midway Pier/Greene Lane property.

Demolishing the existing pier (shoreline park) would involve removing the existing pier and could include dredging around the pier with a clamshell bucket to excavate it. Any pilings would be removed via either direct-pull or vibratory extraction.

Table 11.7-1 provides an estimate of the number and type of construction equipment that would be required as well as the associated sound pressure level (SPL) for each type of equipment at a distance of 50 feet from the source and at the nearest residence. As seen in Table 11.7-1, the noise level at the nearest residential receptor along Mayflower Drive at a distance of 590 feet from the park construction

area is estimated to range from 51 to 67 dBA (see Figure 11.7-1). As indicated in Section 3.7.1.1, normal speech has a sound level of 60 dBA.

Table 11.7-1 Redevelopment Estimated Construction Equipment Noise at the Proposed Shoreline Park, Midway Pier/Greene Lane Property (Alternatives 1 and 2)

Construction Equipment	Quantity	Usage Factor %	SPL @ 50 Feet (dBA)	SPL[1] (dBA) Distance	
				50 feet (adjusted)[2]	Nearest Residence 590 feet
Pilings/ Dock Construction					
50-ton Crane	1	16	85	77	56
Diesel Generator	1	50	82	79	58
600 cfm Air Compressor	1	40	80	76	55
Diesel Drill Rig	1	20	84	77	56
Impact Pile Driver	1	20	95	88	67
600 hp Tug Boat	1	20	87	80	59
50 hp Service Boat	1	5	80	67	46
Paving/Road Construction					
Cement Mixer	1	40	85	81	60
Asphalt Paving Machine	1	50	85	82	61
Vibratory Compactor	1	20	80	73	52
Generators	1	50	82	79	58

Source: Federal Highway Administration 2006

[1] SPL = Sound pressure level
[2] SPL at 50 feet adjusted to equipment quantity and usage factor

The construction of the multi-use pathway along the Midway Pier/Greene Lane property would result in short-term noise impacts as construction activity moves along the pathway. Construction noise impacts would be temporary and would occur only during the period of construction, which is conservatively assumed to be one year. In addition, construction would take place between 7:30 a.m. and 7:00 p.m. when the noise would be less disturbing to area residents and in accordance with local zoning regulations.

Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

11.7.1.2 Operation

Operation of the park and pier under Alternative 1 would include noise sources such as traffic to and from the parking lots, children playing, and other recreational activities that would not be expected to result in a noise impact during the daytime, when the property would have the greatest use. Motor boat traffic is not anticipated as the pier would have no docking facilities.

Implementation of Alternative 1 at the Midway Pier/Greene Lane property would result in minor traffic-related noise impacts in the study area. Only one or two peak-hour trips would be generated for the shoreline park; therefore, peak evening-hour traffic noise levels at this property were not modeled for Alternative 1 because they would be assumed to be the same as existing conditions.

Recreational use of the shoreline park and traffic-related noise levels would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

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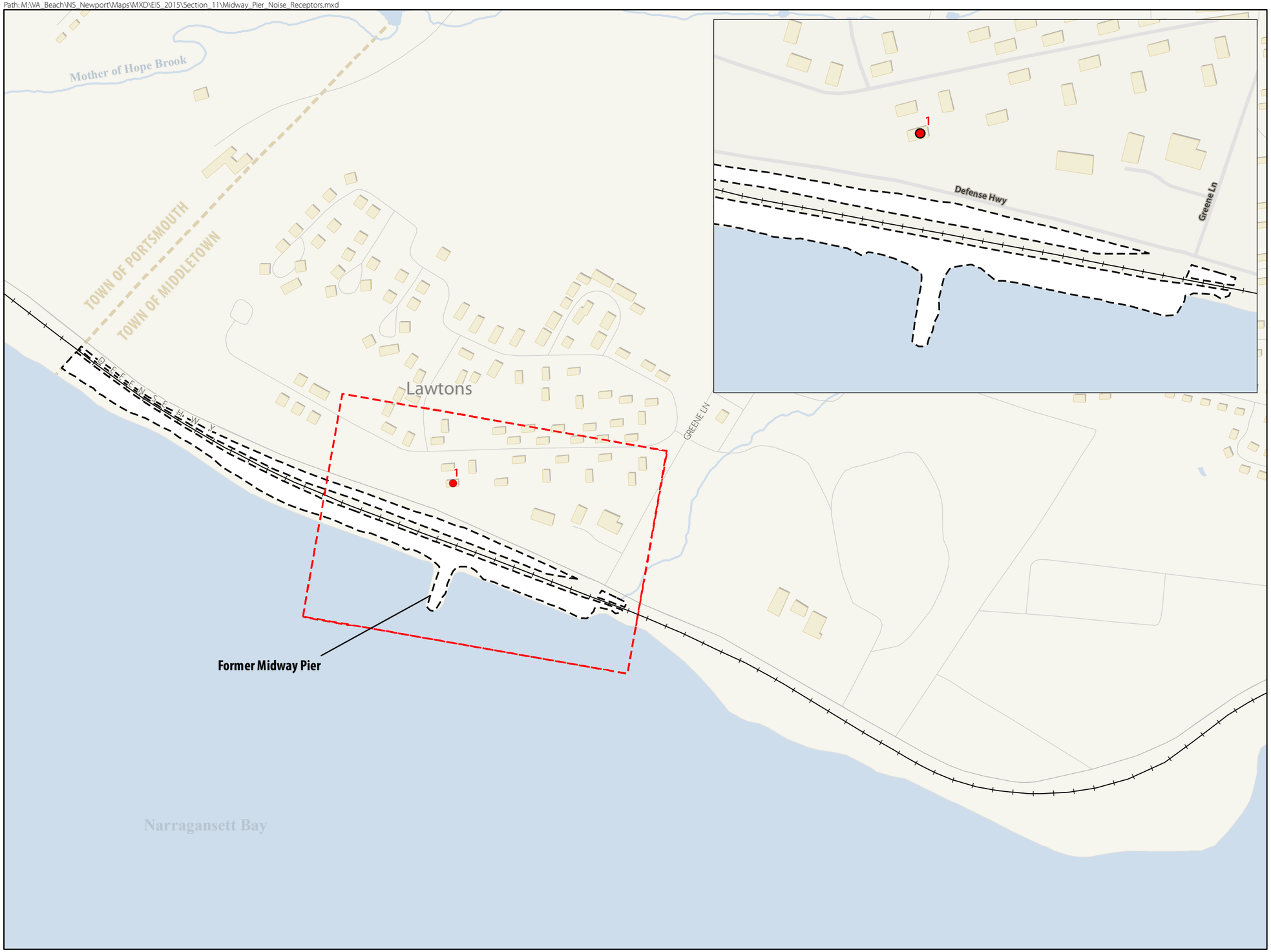

Figure 11.7-1
Midway Pier/Greene Lane Property Noise Receptor Locations
NAVSTA Newport, Rhode Island

Legend

- Noise Receptor Location
- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Waterbody
- Property Boundary

SCALE

0 0.1 0.2 Miles

SOURCE: U.S. Department of the Navy 2009

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11.7.2 Alternative 2

11.7.2.1 Construction

Although the redevelopment of the shoreline park under Alternative 2 would include greater expansion of the former Midway Pier area, including two areas of cut-and-fill for parking, the estimated construction noise levels would be similar to Alternative 1; however, the duration of construction may be slightly longer. Construction of the multi-use pathway along the Midway Pier/Greene Lane would result in short-term noise impacts as construction activity moves along the pathway.

Construction noise would result in minor impacts on the ambient noise environment, and mitigation (conforming to zoning regulations) would reduce short-term, adverse impacts on adjacent land uses.

11.7.2.2 Operation

Operation of the park and pier under Alternative 2 would include noise sources such as traffic to and from the parking lots, children playing, and other recreational activities that would not be expected to result in a noise impact during the daytime, when the property would have the greatest use

Implementation of Alternative 2 at the Midway Pier/Greene Lane property would result in minor traffic-related noise impacts in the study area. Only one or two peak-hour trips to and from the park would be generated; therefore, peak evening-hour traffic noise levels were not modeled for Alternative 2 because they would be assumed to be the same as existing conditions.

Recreational use of the shoreline park and traffic-related noise levels would result in minor impacts on the ambient noise environment; no mitigation measures are proposed.

11.7.3 No Action Alternative

Under this alternative, all excess property would be retained by the U.S. government in caretaker status. No reuse or redevelopment would occur at the Midway Pier/Greene Lane property and, as a result, there would be no additional noise generated and noise levels would be limited to existing traffic noise.

11.8 Infrastructure and Utilities

11.8.1 Alternative 1 (Preferred Alternative)

This section summarizes the potential impacts on infrastructure and utilities resulting from the implementation of Alternative 1, Alternative 2, and the No Action alternative for the Midway Pier/Greene Lane property. It includes an examination of the potential impacts on water supply, wastewater, storm water, and other utilities and solid waste management from disposal and reuse of the Midway Pier/Greene Lane property.

11.8.1.1 Water Supply

The City of Newport would be expected to have sufficient capacity to meet the future water demands resulting from implementing Alternative 1.

Water Demand

Full build-out of the Midway Pier/Greene Lane property under Alternative 1 would require a minimal amount of water (180 gpd) for the proposed restrooms at the shoreline park. Water demand for the restrooms was projected using planning multipliers for the campground (most applicable land use category) based on acreage (Nelson 2004). Table 11.8-1 shows the projected water demand for both

alternatives. For more information on the methodology and assumptions used to project water demand, see Appendix D-3.

Table 11.8-1 Projected Water Demand at Build-Out, Midway Pier/Greene Lane Property (Alternatives 1 and 2)

Land Use	Alternative 1 (gpd)	Alternative 2 (gpd)
Shoreline Park (Restrooms)	180	180
Total	**180**	**180**

Operation and Management

Implementation of Alternative 1 would be expected to have a negligible impact on the future capacity of the City of Newport's water treatment plant and distribution system. The current average daily demand is approximately 9.1 mgd, including the City of Newport and the Town of Middletown through the City of Newport's distribution system, and also wholesale water supply to NAVSTA Newport and the Portsmouth Water and Fire District. Total average daily demand is projected to increase to 10.75 mgd by 2030 (Rhode Island Division of Planning 2012).

The City of Newport currently operates two water treatment plants with a combined safe capacity of 13 mgd. Replacement of one of the existing plants and upgrades to the other are expected to increase capacity to 16 mgd by the end of 2014 (Water World 2012). The expected 180 gpd under Alternative 1 represents a negligible amount of the 5.25 mgd excess projected in 2030. Therefore, the projected increase in water demand would represent a negligible impact on the operation and maintenance of the City of Newport's water treatment plant.

Distribution System

The water mains along the Defense Highway are owned by NAVSTA Newport. Development of the waterfront park would likely require a new water distribution system to be installed, which would be the responsibility of the developer/future property owner and would be considered a moderate impact. Ground would be disturbed when laying new distribution lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new distribution systems would be constructed to ensure that they are adequately sized. In addition, all new distribution systems would avoid the right-of-way of the existing Navy-owned 10-inch and 12-inch water mains located along Defense Highway. A 30-foot easement, 15 feet on either side of the centerline of the pipe, would be needed for the existing Navy-owned infrastructure (Carlson 2012).

Connections to the City of Newport's water system could be obtained in the area along Greene Lane and the former Midway Pier (Carlson 2012). In addition, the design and installation of any new water supply infrastructure would require, if applicable, municipal review and approval and would need to comply with applicable local codes, ordinances, and regulations.

In summary, Alternative 1 would result in a negligible impact on water demand. New water distribution infrastructure would be constructed to accommodate redevelopment.

11.8.1.2 Wastewater

Implementation of Alternative 1 would be expected to have a minor impact on the wastewater system in City of Newport. The wastewater treatment facility currently has enough capacity to treat additional wastewater that would be generated by implementing Alternative 1.

Wastewater Volume

No wastewater is currently being generated on the Midway Pier/Greene Lane property as there are no facilities there. Wastewater flow from full build-out of Alternative 1 would result from the proposed shoreline park restrooms only. Based on standard multipliers for the park, it is projected that the development would produce 144 gpd of wastewater (Nelson 2004). Table 11.8-2 provides the projected volume of wastewater that would be generated by both action alternatives. For more information on the methodology, assumptions, and assumptions used to project wastewater demand, see Appendix D-3.

Table 11.8-2 Projected Wastewater Generation (gpd) at Build-Out, Midway Pier/Greene Lane Property (Alternatives 1 and 2)

Land Use	Alternative 1 (gpd)	Alternative 2 (gpd)
Shoreline Park (Restrooms)	144	144
Total	**144**	**144**

Operation and Management

The wastewater flow resulting from full build-out of Alternative 1 would not be expected to have an adverse impact on the City of Newport's wastewater infrastructure and treatment plant. The plant has a current capacity of 10.7 mgd and processes 9.46 mgd. Therefore, the projected increase in wastewater demand would represent a negligible impact on operation and maintenance of the City of Newport's wastewater treatment plant.

Collection System

A sewer line runs along the Defense Highway and a lift station located near the Midway Pier area is currently owned by NAVSTA Newport. New wastewater infrastructure would be needed for the shoreline park under Alternative 1, which would be the responsibility of the developer/future property owner and would be considered a moderate impact. Ground would be disturbed when laying new collection lines, and the developer would be required to comply with local and state regulations to minimize disturbance. All new collection system(s) would be constructed to ensure that they are adequately sized. In addition, all new infrastructure would avoid the right-of-way of the existing Navy-owned force main and series of pump stations located along Defense Highway. A 30-foot easement, 15 feet on either side of the centerline of the pipe, would be required for the existing Navy-owned infrastructure (Carlson 2012).

In summary, Alternative 1 would result in a negligible impact on wastewater demand, operation, and management of the City of Newport's wastewater treatment plan and the regional distribution system.

11.8.1.3 Storm Water

Implementation of Alternative 1 would be expected to decrease the amount of impervious surface area on the property, resulting in a lower volume of storm water runoff. Much of the existing impervious surface from the roadway would remain. Full build-out under Alternative 1 is estimated to result in a total of 56,180 square feet of impervious surface area, a decrease of 41 percent over existing conditions (assuming that the areas within the shoreline park that are not developed, i.e., exclusive of the parking, restrooms, picnic area, would be replaced with grass). Most of the impervious surface area would be associated with the roadways and would remain unchanged from existing conditions. The proposed multi-use pathway and parking area for the shoreline park are the largest areas of impervious surface, other than the roadways. Total impervious surface area is provided for both alternatives in Table 11.8-3. For more information on the methodology, assumptions, and assumptions used to calculate existing and future impervious surface, see Appendix D-4.

Table 11.8-3 Impervious Surface Area (sq ft) at Build-Out, Midway Pier/Greene Lane Property (Alternatives 1 and 2)

Structure	Alternative 1 (sq ft)	Alternative 2 (sq ft)
Multi-use Pathway	39,200	39,200
Parking	13,070	26,100
Restrooms	870	870
Playground	1,740	4,350
Picnic Area	1,300	1,300
Pier	3,920	3,920
Floating Dock	Not applicable	870
Total	**56,180**	**76,610**

The Town of Middletown requires development of a storm water management plan before a building permit can be obtained, as per Chapter 153, Stormwater Management Ordinance. The storm water management plan would describe measures to control the volume and quality of storm water runoff and would incorporate best management practices for water quality control as described in the *Rhode Island Stormwater Design and Installation Standards Manual*. Additionally, the storm water management plan must demonstrate soil and erosion control in accordance with the Town of Middletown Construction Site Runoff Ordinance (Chapter 151) and the *Rhode Island Soil Erosion and Sediment Control Handbook*.

A General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity, would also be necessary because redevelopment of the proposed shoreline park and multi-use pathway would disturb more than 1 acre. Prior to approval of a Construction General Permit, RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of E & S controls.

Additionally, as indicated in Section 3.8, Infrastructure and Utilities, Section 438 of the Energy Independence and Security Act of 2007 requires that any development or redevelopment project involving a federal facility with a footprint exceeding 5,000 square feet shall use site planning, design, construction, and maintenance strategies in order to maintain or restore the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow. Compliance with this requirement can be met through the implementation of LID technologies.

Section 438 applies to the "sponsor of any development or redevelopment project involving a Federal facility." The act of transferring the installation will result in the property being no longer federally owned; consequently, Section 438 would not apply to the redevelopment of the installation. However, as outlined in the *Rhode Island Stormwater Design and Installation Manual*, using LID techniques as a primary method of storm water control is required (RIDEM and CRMC 2010). Thus, although not required through federal ownership of the property, it is expected that the redevelopment of the Midway Pier/Greene Lane property would be consistent with the terms contained in Section 438 of the EISA.

Storm Water System

The existing storm water collection system would require modifications. New storm water infrastructure would be necessary to offset new impervious surfaces associated with redevelopment under this alternative. Ground would be disturbed during construction of new infrastructure, and the developer would be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future developer would be required to identify what infrastructure requirements may be necessary.

Operation and Management

Under Alternative 1, the property would likely be transferred to a non-federal agency and infrastructure would no longer be managed by the Navy. Upon completion of the BRAC disposal process, the new property owner would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 1 would result in a minor impact on storm water management because the impervious surface area would decrease, and compliance with state and local regulations and permit conditions regarding storm water management would mitigate impacts of storm water discharges.

11.8.1.4 Other Utility Systems

Electricity

Electricity would be supplied by National Grid. Upon full build-out of Alternative 1, it is expected that total electricity demand would be approximately 9,452 kWh (using U.S. averages for energy use per square foot, obtained from U.S. Department of Energy 2003, 2009). These averages were used to estimate total energy use by the proposed new restrooms at the shoreline park. Table 11.8-4 shows the projected electricity demand for the proposed uses under each alternative.

Table 11.8-4 Projected Electricity Use at Build-Out, Midway Pier/Greene Lane Property (Alternatives 1 and 2)

Structure	Alternative 1 (kWh)	Alternative 2 (kWh)
Restrooms	9,452	9.452
Total	**9,452**	**9,452**

As shown in Table 5.8-4 in Section 5.8, Infrastructure and Utilities, the Town of Middletown consumed more than 115 million kWh of electricity in 2011. The 2011 electric consumption represented a decrease from 2010 but was still an increase over the levels used in 2009. According to the *2012 Regional System Plan* developed by ISO New England (2012), Rhode Island's overall electricity demand has been forecasted to grow at a rate of 0.8 percent annually over the next decade.

The annual electricity demand under Alternative 1 would represent less than one tenth of a percent of 2011 energy usage in Middletown and a negligible amount of the total annual energy usage for Newport, Middletown and Portsmouth combined (Rhode Island Energy 2012a). Considering the 0.8 percent future annual growth rate in electricity demand at the state level, and the fact that Aquidneck Island comprises approximately 5.5 percent of the state's overall population, the annual growth rate for electricity demand would be expected to be far less than 0.8 percent. Therefore, the electricity demand of the redevelopment of the Midway Pier/Greene Lane property under Alternative 1 would be expected to be supported by current electrical capacity and would represent a negligible impact on regional demand.

All electric connections would be constructed to ensure an adequately sized and properly built electric transmission and conveyance system. Ground would be disturbed during construction of new systems, and implementation and extension of utility infrastructure would be fully funded and constructed by the future developer or owner of the property; plans regarding such would be part of the development review process at the local level.

Natural Gas

Natural gas to the property would continue to be supplied by National Grid. It is expected that a total of approximately 47,067 cf of natural gas would be needed annually under full build-out of Alternative 1.

Similar to electricity usage, estimates of future natural gas usage were calculated for full build-out as proposed under Alternative 1 using U.S averages for natural gas use per square foot, which were obtained from the U.S. Department of Energy's EIA for specific types of building use. These averages were used to estimate total natural gas use by the proposed new building spaces. Table 11.8-5 compares natural gas usage for the two alternatives. Upon completion of the BRAC disposal process, the future development would work with National Grid to identify what infrastructure requirements may be necessary.

Table 11.8-5 Projected Natural Gas Use at Build-Out, Midway Pier/Greene Lane Property (Alternatives 1 and 2)

Structure	Alternative 1 (cf)	Alternative 2 (cf)
Restrooms	47,067	47,067
Total	**47,067**	**47,067**

Natural gas use would be negligible for the proposed redevelopment at the shoreline park. Restrooms would be used seasonally and, therefore, would be unheated. Natural gas use would be limited to heated water.

The natural gas usage for the Town of Middletown in 2011 was over 105 billion cf (refer to Table 5.8-5 in Section 5.8 Infrastructure and Utilities). The quantity of natural gas needed under Alternative 1 represents a negligible percentage of the amount consumed in Middletown in 2011 (Rhode Island Energy 2012a), and therefore is assumed to be accommodated within existing capacities servicing existing demand. Redevelopment under Alternative 1 is not anticipated to create a strain on natural gas resources.

11.8.1.5 Solid Waste

Implementation of Alternative 1 and the demolition of the former Midway Pier would have a minor short-term impact on the generation and management of solid waste. Approximately 800 cubic yards of C&D waste would be generated from demolishing the deteriorating Midway Pier (see Appendix D-2). Nominal amounts of C&D waste would be generated from construction of the new pier and shoreline park at the Midway Pier/Greene Lane area. Much of the C&D waste would be recyclable, and it is anticipated that the demolition and construction contracts would contain traditional terms and conditions requiring C&D waste to be recycled to the extent practicable, which reduces disposal costs and is also protective of the environment. Solid wastes would be routinely generated by users of the new shoreline park and possibly the multi-use pathway and would consist of mixed trash, food waste, and recyclable beverage containers.

11.8.2 Alternative 2

11.8.2.1 Water Supply

The facilities proposed under Alternative 2 are essentially the same as those proposed under Alternative 1. Therefore, the water demand would be the same as described under Alternative 1, and impacts from the operation and management of the new water demand and its distribution system under Alternative 2 would be the same as those described under Alternative 1.

11.8.2.2 Wastewater

The facilities proposed under Alternative 2 are essentially the same as those proposed under Alternative 1. Therefore, the wastewater volume would be the same as described under Alternative 1, and impacts from the operation and management of the wastewater generated from the proposed redevelopment, and its collection system under Alternative 2 would be the same as those described under Alternative 1.

11.8.2.3 Storm Water

Similar to Alternative 1, under implementation of Alternative 2 the area of impervious surface area would decrease, resulting in a lower volume of storm water runoff. However, all of the existing impervious surface from the roadways would remain. Full build-out under Alternative 2 is estimated to result in a total of approximately 76,610 square feet of impervious surface area, a decrease of more than 20 percent below existing conditions. Most of the impervious surface area would be associated with the roadways and would remain unchanged from existing conditions. The proposed multi-use pathway and parking area for the shoreline park are the largest areas of impervious surface, other than the roadways. Estimates of the total impervious surface area for both alternatives are provided in Table 11.8-3.

Similar to Alternative 1, compliance with local and state storm water management regulations would be necessary. The Town of Middletown requires development of a storm water management plan before a building permit can be obtained, as per Chapter 153, Stormwater Management Ordinance. The storm water management plan would describe measures to control the volume and quality of storm water runoff and would incorporate best management practices for water quality control as described in the *Rhode Island Stormwater Design and Installation Standards Manual*. Additionally, the storm water management plan must demonstrate soil and erosion control in accordance with the Town of Middletown Construction Site Runoff Ordinance (Chapter 151) and the *Rhode Island Soil Erosion and Sediment Control Handbook*.

A General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity, would also be necessary because redevelopment of the proposed shoreline park and multi-use pathway would disturb more than 1 acre. Prior to approval of a Construction General Permit, RIDEM requires submittal of an NOI and a SWPPP that must include a discussion of E & S controls. As discussed above under Alternative 1, Section 438 would not apply to the redevelopment of the Midway Pier/Greene Lane property. However, as outlined in *Rhode Island's Stormwater Design and Installation Standards Manual*, use of LID techniques are required as a primary method of storm water control (RIDEM and CRMC 2010). Thus, although not required through federal ownership of the property, it is expected that the redevelopment of the Midway Pier/Greene Lane property would be consistent with the terms contained in Section 438 of the EISA.

Storm Water System

The existing storm water collection system would require modifications. New storm water infrastructure would be necessary to offset new impervious surfaces associated with redevelopment under this alternative. Ground would be disturbed during the construction of new infrastructure, and the developer would be required to comply with local and state regulations to minimize disturbance. Upon completion of the BRAC disposal process, the future developer would be required to identify what infrastructure requirements may be necessary.

Operation and Management

Under Alternative 2, the property would likely be transferred to a non-federal agency and infrastructure would no longer be managed by the Navy. Upon completion of the BRAC process, the future property owner would be responsible for the storm water infrastructure located on the property and for its service and maintenance.

In summary, Alternative 2 would result in a minor impact on storm water management because the amount of impervious surface area would decrease, and compliance with state and local regulations and permit conditions regarding storm water management would mitigate impacts of storm water discharges.

11.8.2.4 Other Utility Systems

Electricity

The facilities proposed under Alternative 2 are essentially the same as those proposed under Alternative 1. Therefore, the electrical and natural gas usage would be the same as described under Alternative 1 and would result in a negligible impact on regional demand.

11.8.2.5 Solid Waste

The same amount of C&D waste—about 800 cubic yards—would be generated under Alternative 2 from demolition of the deteriorating Midway Pier. Similar to Alternative 1, nominal amounts of C&D waste would be generated from construction of the new pier and shoreline park facilities at the former Midway Pier/Greene Lane area. Much of the C&D waste would be recyclable, as described for Alternative 1. Solid wastes would be routinely generated by users of the new shoreline park and multi-use pathway, the same as described for Alternative 1.

Implementation of Alternative 2 would have a minor, short-term impact on the generation and management of solid waste from the demolition of the former Midway Pier and a minor long-term impact, as described for Alternative 1.

11.8.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property there would be no demand for water, electricity, or natural gas, nor would wastewater or solid waste be generated. Some storm water runoff would occur from the existing 95,870 square feet of impervious surface area.

11.9 Cultural Resources

As discussed in Section 3.9, NEPA guidance requires the evaluation of impacts of a proposed action on cultural resources, including archaeological resources and architectural or built resources (see Sections 11.9.1.1 and 11.9.1.2, respectively), and Native American resources (see Section 11.9.1.3). The Navy has also evaluated the potential impacts of the proposed action in terms of their effects on cultural resources that are historic properties, pursuant to Section 106 of the NHPA (see Section 11.9.1.4).

11.9.1 Alternative 1 (Preferred Alternative)

11.9.1.1 Archaeological Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and determined that Alternative 1 would have no impacts on archaeological resources because none are present within the APE along the Midway Pier/Greene Lane property.

11.9.1.2 Architectural Resources

The Navy has evaluated the potential impacts of Alternative 1 under NEPA and determined that Alternative 1 would have direct impacts on architectural resources. Under Alternative 1, once the Midway Pier/Greene Lane property has been transferred out of Navy ownership, the former Midway Pier would be demolished as part of subsequent redevelopment of the area in the vicinity of the pier as a shoreline park for recreation/open space use, including construction of a multi-use pathway in a greenbelt located on the eastern side of the corridor in the vicinity of the pier, between the shoreline and the existing railroad tracks (see Figure 2-4). Under Alternative 1, no changes to Greene Lane are anticipated following property transfer. Midway Pier and Greene Lane have been evaluated for NRHP-eligibility and recommended not NRHP-eligible (Groesbeck and Bedford 2014). The Navy, in consultation with the

Rhode Island SHPO, determined that Midway Pier and Greene Lane are not NRHP-eligible (Lin 2013; Sanderson 2013b). Therefore, the direct impacts associated with demolition and subsequent redevelopment of this property would not be considered significant and would not require measures to avoid, minimize, or mitigate these direct impacts.

11.9.1.3 Native American Resources

As indicated in Section 10.9.3, the Navy is consulting with the following federally recognized Indian tribes regarding Native American resources within the APE at the Midway Pier/Greene Lane property: the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) (see Appendix A for copies of consultation letters). Consultation remains open.

11.9.1.4 NRHP-Listed or -Eligible Historic Properties

Under Alternative 1, the transfer of the Midway Pier/Greene Lane property out of federal ownership or control would have no effect on historic properties as none are located within the property. The Navy consulted with the Rhode Island SHPO regarding the lack of historic properties (archaeological or architectural) at the Midway Pier/Greene Lane property (Lin 2013). The Rhode Island SHPO concurred that transfer of the Midway Pier/Greene Lane property out of federal ownership or control would have no effect on historic properties (Sanderson 2013b).

11.9.2 Alternative 2

11.9.2.1 Archaeological Resources

The NEPA impacts of Alternative 2 on archaeological resources are the same as those identified for Alternative 1.

11.9.2.2 Architectural Resources

The NEPA impacts of Alternative 2 on architectural resources are the same as those identified for Alternative 1.

11.9.2.3 Native American Resources

The NEPA impacts of Alternative 2 on Native American resources are the same as those identified for Alternative 1.

11.9.2.4 NRHP-Listed or -Eligible Historic Properties

The Section 106 effects of Alternative 2 on historic properties are the same as those identified for Alternative 1.

11.9.3 No Action Alternative

The Navy has evaluated the potential impacts of the No Action alternative under NEPA and has determined that the No Action alternative would have no impacts on archaeological, architectural, or Native American resources, and no effect on historic properties, because there would be no changes to existing conditions for these resources.

11.10 Topography, Geology, and Soils

This section summarizes the potential impacts on topography, geology, and soil resources resulting from the implementation of Alternative 1, Alternative 2, and the No Action alternative at the Midway Pier/Greene Lane property. Because the disposal of the roads and open space along it would not result in any impacts on soils, this section focuses on redevelopment of the proposed shoreline park and the multi-use pathway. This section also includes a discussion of the potential impacts on the bathymetry and

marine sediment present in the Narragansett Bay off-shore of the Midway Pier/Greene Lane property from redevelopment of the former Midway Pier.

11.10.1 Alternative 1 (Preferred Alternative)

The majority of proposed development would be located in an area that has been previously developed by the Navy, so implementation of Alternative 1 would be expected to result in minor temporary impacts on topography, geology, and soils from construction of a new building, parking lot, and a multi-use pathway.

11.10.1.1 Topography

Under Alternative 1, development of the shoreline park and multi-use path would largely occur in an area near the former Midway Pier that was previously graded during the Navy's development of the area. Some alteration of existing topography would be expected as a result of grading and associated cut-and–fill activities necessary to accommodate the new building site (i.e., restrooms). The extent of grading and cut-and-fill activities would be localized and would depend on the building design and location. Because the site has already been developed, and because open space areas would be preserved, impacts on topography would be minor.

11.10.1.2 Geology

Alternative 1 would not impact geologic resources at the Midway Pier/Greene Lane property.

11.10.1.3 Soils

Most of the redevelopment proposed under Alternative 1 would be concentrated on approximately 1 acre of land. Approximately 0.3 acres of this total would be in an area that has been previously disturbed by the previous construction of the roadway, the overhead and underground utility lines, the railway, demolition of shoreside structures, and other development by the Navy in parcels adjacent to the Midway Pier/Greene Lane property. Since buildings previously existed on this property, it is assumed that urban/manmade soils in these areas have been modified from their original condition. Therefore, implementation of Alternative 1 would be expected to result in a minor impact on soils. However, considering the size of the shoreline park and multi-use path, it would be expected that temporary and permanent minor to moderate impacts could occur at full build-out.

Erosion Potential

All soil types located at the Midway Pier/Greene Lane property have the potential to be impacted by development, including construction activities and erosion from wind and water. There are two soil types that would be impacted by the construction of the shoreline park and multi-use path: Newport silt loam, 3 to 8% slopes, and Pittstown silt loam, 3 to 8% slopes. The soil erosion potential for Newport silt loam, 3 to 8% slopes, is moderate. The soil erodibility factor is 0.24 at a depth of 24 to 30 inches, which means the soils are moderately susceptible to detachment and they produce moderate runoff (USDA 2012; IWR 2002). The soil erosion potential for the Pittstown silt loam, 3% to 8% slopes, is also moderate. The soil erodibility factor is 0.28 at a depth of 24 inches to 30 inches, which means they are moderately susceptible to detachment and they produce moderate runoff. In addition, construction activities (clearing, grading, landscaping, and movement of equipment, material, and vehicles) would expose soils to wind and storm water erosion, compaction, and rutting. Soils that are heavily modified may suffer losses in fertility and productivity.

Soils would be impacted during implementation of Alternative 1, but the impact would be mitigated by using temporary erosion and sediment control measures during construction, permanent storm water management measures, and appropriate building site location and design. Project construction could result in removal of existing vegetation along the footprint for the multi-use pathway, thus requiring vegetation to be reestablished and slopes created by cutting and filling to be stabilized. If slope

stabilization and re-vegetation are not properly implemented and maintained, soil erosion and subsequent sedimentation could result after a rainfall or storm. Soils can be affected by sedimentation when soils from exposed areas are deposited over undisturbed areas as rainwater or storm water runs off the area.

To mitigate these impacts, it is expected that the developer would implement appropriate erosion and sediment control measures at construction and demolition sites in accordance with *Rhode Island's Soil Erosion and Sediment Control Handbook* (RIDEM et al. 1989) and other applicable state laws. The handbook provides descriptions of structural measures (e.g., grassed waterway, sediment basin, riprap, etc.) and non-structural measures (e.g., mulching, topsoiling, and silt curtains). RIDEM requires a General Permit, Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity for soil disturbances of more than 1 acre (RIDEM 2013c). Prior to approval of a Construction General Permit, the RIDEM requires submittal of an NOI and a SWPPP, which must include a discussion of erosion and sediment controls. This permit is discussed further in Section 11.11, Water Resources.

Farmland

The following soils are designated as prime farmland soils along the Midway Pier/Greene Lane property (USDA 2012):

- Newport silt loam, 3 to 8% slopes
- Pittstown silt loam, 0 to 3% slopes
- Pittstown silt loam, 3 to 8% slopes.

The FPPA requires that federal actions identify and consider adverse effects on protected farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. Assistance from a federal agency includes the following:

- Acquiring or disposing of land
- Providing financing or loans
- Managing property
- Providing technical assistance.

Under Alternative 1, approximately 1.2 acres of Newport silt loam, 3% to 8% slopes, a prime farmland soil, would be impacted, and less than 0.1 acres of Pittstown silt loam, 3% to 8% slopes. None of the installation, including the Midway Pier/Greene Lane property, is currently used or has been recently used for farming. For the purposes of farmland protection, the prime farmland has essentially been converted to urban uses as part of the Defense Highway, development of the railroad bed, and other development in the area. The NRCS Farmland Protection Policy Act Manual (USDA NRCS n.d.) provides a list of lands not covered by the act. One such category of lands is "lands identified as 'urban areas' on U.S. Census Bureau maps." According to the U.S. Census Bureau maps, the majority of Aquidneck Island, has been classified as an urban area (U.S. Census Bureau 2011). Therefore, Alternative 1 would have no impact on prime farmland.

Hydric Soils

No hydric soils would be impacted by redevelopment activities, as none exist on-site.

Constructability

The more common sources of construction limitations for the soils at the Midway Pier/Greene Lane property include severe restrictions on shallow excavations, e.g., cutbanks cave and wetness, and a severe slope and a low shrink-swell potential. In general, severe restrictions could lead to a major increase in construction effort or special design, or intensive maintenance could be required. However, because much of the area where these soils are located may be modified, it is not possible to determine the magnitude or severity of the limitations based on available information. Before construction begins, engineering evaluations will be completed and appropriate engineering techniques identified to mitigate any soil limitations.

Organic Soils

None of the soils located at the Midway Pier/Greene Lane property are listed as organic soils.

In summary, there would be minor impacts on soils under Alternative 1, and mitigation would reduce any temporary impacts. Mitigation would include implementation of appropriate erosion and sediment control measures in accordance with local and state laws and the Construction General Permit, as discussed in detail above.

11.10.1.4 Bathymetry

Under Alternative 1, installation of the new replacement pier would displace a volume of sediment at least equal to the volume of the pilings below the subsurface. The number of pilings needed would be determined during the pier design stage; however, displacement of sediment in Narragansett Bay associated with the pilings would result in a minor short- and long-term impact on bathymetry due to amount of bottom sediment to be removed and the fact that the pier is being rebuilt in the footprint of the existing pier.

11.10.1.5 Marine Sediment

As indicated above, installation of the pilings associated with the replacement pier would displace a volume of sediment at least equal to the volume of pilings below the subsurface. However, the impact on marine sediments would be minor and short-term during the construction period and localized within the bay and is not expected to affect the overall marine sediment dynamics in Narragansett Bay.

11.10.2 Alternative 2

Similar to Alternative 1, most of the proposed development would be located in areas that have already been developed by the Navy and implementation of Alternative 2 would be expected to result in minor temporary impacts on topography, geology, and soils during redevelopment of the property (e.g., construction of new buildings, parking lots, utilities).

11.10.2.1 Topography

Impacts on topography under Alternative 2 would be similar to those discussed above for Alternative 1.

11.10.2.2 Geology

Alternative 2 would not impact the geologic resources at the Midway Pier/Greene Lane property.

11.10.2.3 Soils

Implementation of Alternative 2 would be expected to have similar impacts on soils as described under Alternative 1, including impacts associated with erosion potential, farmland, hydric soils, and constructability. Alternative 2 would result in approximately 2 acres of disturbance (on land) associated with the redevelopment footprint, compared with 1 acre under Alternative 1 due to the addition of a larger parking and playground footprint. Minor impacts on soils would result, and mitigation would reduce

temporary impacts. The same mitigation measures discussed for Alternative 1 will be implemented to minimize soil impacts.

Under Alternative 2, approximately 2.9 acres of prime farmland soils would be impacted. However, no significant impact would occur for the reasons discussed above under Alternative 1.

11.10.2.4 Bathymetry

Impacts on bathymetry under Alternative 2 would be similar to those under Alternative 1; a slightly larger area would be disturbed under Alternative 2 due to the addition of a floating dock at the end of the pier.

11.10.2.5 Marine Sediment

Impacts on marine sediment under Alternative 2 would be similar to those under Alternative 1; a slightly larger area would be disturbed under Alternative 2 because of the addition of a floating dock at the end of the pier.

11.10.3 No Action Alternative

The No Action alternative is retention of the surplus property at the Midway Pier/Greene Lane property by the U.S. government in caretaker status. No reuse or redevelopment would occur on any of the property. As a result, the No Action alternative would be expected to have no direct or indirect impacts on topography, geology, or soils.

11.11 Water Resources

This section summarizes the potential environmental impacts on water resources resulting from implementation of Alternative 1, Alternative 2, and the No Action alternative along the Midway Pier/Greene Lane property. It includes a discussion of surface water, water quality, groundwater, floodplains, wetlands, and proposed mitigation measures.

11.11.1 Alternative 1 (Preferred Alternative)

11.11.1.1 Surface Water

Redevelopment of the Midway Pier/Greene Lane property would have direct impacts on Narragansett Bay in the form of disturbance of the sediment and substrate of the bay during pile installation and dredging activities associated with the removal of the existing Midway Pier. Indirect impacts on the Narragansett Bay as well as Gomes Brook, located adjacent to the surplus property, would also occur. These indirect impacts are discussed below in Section 11.11.1.2, Water Quality.

To protect surface water, the future developer would be required to consult with the USACE and USEPA through Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of 1899 at the federal level, and with the state through the CRMC/SAMP processes, as well as RIDEM for the Section 401 of the CWA, for any in-water work associated with the construction of the pier at the Midway Pier/Greene Lane property (discussed in Section 11.11.1.5). Given the BMPs developed during future permitting of the redevelopment, the Navy has determined that any adverse impacts associated with surface waters would be minor and the disposal and future reuse of the Midway Pier/Greene Lane property would be in compliance with the CWA.

11.11.1.2 Water Quality

Redevelopment of the proposed fishing pier would require in-water work. Under Alternative 1, the existing fishing pier (former Midway Pier) would be removed. Demolition of the existing pier would have a minor impact on the water quality in Narragansett Bay. Water quality could be temporarily

impacted by the potential re-suspension of sediments. Direct pull or using a clamshell bucket to remove the existing pilings could re-suspend sediment that is pulled up with and released through the water column as the pilings are pulled from the substrate. This could result in a temporary "plume" of turbidity. Although these activities would produce temporary, localized sediment plumes within the construction site, suspended sediments typically settle out of the water column relatively quickly (in one to several hours), thereby preventing any long-term adverse impacts on water quality.

After demolition activities are completed, a new 15-foot wide and 250-foot long concrete pier is to be constructed under Alternative 1. It is assumed that the pilings for this pier would be square, pre-stressed concrete piles measuring 1 foot by 1 foot. The installation of concrete pilings would have a minor impact on surface water and water quality in Narragansett Bay from re-suspension of sediments as the pilings are driven into the sediment and substrate. It is expected that the pilings would be constructed off-site and then driven into the substrate cured. During construction, sediment would be displaced as the pilings are embedded in bottom sediments. This would displace a volume of sediment at least equal to the volume of pilings below the subsurface. The displacement of this sediment and turbidity during the pile-driving operation would settle soon after pile driving has been completed.

Once in place, the concrete pier would not impact surface water because concrete is an inert material and not chemically coated. Thus, construction of the new concrete pier would have only a minor, short-term impact on surface waters and water quality in Narragansett Bay from sediment re-suspension during construction activities.

Construction vessel operation could also impact water quality through debris and trash losses, deck drainage, wastewater discharges, bilge pumping, and vessel transport and anchoring. Anchoring construction vessels may additionally scour the sediment bed and cause an increase in suspended sediment in the construction site area. Deck drainage is runoff that is introduced to the natural system during deck cleanings or as wash from rainfall. Drop pans and work areas are other sources of deck drainage, which often includes petroleum. Extra efforts will be made to avoid any and all oil spills during construction activities. The potential for petroleum runoff, for example, may be mitigated by installing gutters and filtration devices along the deck. In the event of an accidental spill, the construction contractor would implement an emergency response plan.

The proposed pier is to be used for fishing and is not designated for use by recreational boaters. Thus, recreational boat traffic should not increase in this general area and the potential for spills associated with boat traffic would be negligible.

On land there would be no direct impacts on surface water from the development of the picnic area, playground, restrooms, multi-use pathway, or parking area. However, indirect impacts on Gomes Brook, located just south of the proposed shoreline park, could result in the form of temporary erosion or sedimentation during construction activities. The same is true for Narragansett Bay.

All redevelopment would require compliance with applicable federal and state laws and regulations pertaining to storm water management. Since the proposed shoreline park is located in the Town of Middletown, the Town of Middletown's Stormwater Management Ordinance and the Town of Middletown's Construction Site Runoff Ordinance, Chapters 151 and 153 of the town code, respectively, would govern redevelopment. Additionally, a Construction General Permit would be required from RIDEM for land disturbance greater than 1 acre. Compliance with these laws and regulations and implementation of best management practices would decrease the magnitude of impacts of storm water runoff on water quality.

Full build-out of Alternative 1 is projected to result in a total of 1.3 acres (56,180 square feet) of impervious surface area. This represents a decrease of 41 percent below existing conditions because it is assumed that the areas within the shoreline park that are not developed (i.e., exclusive of the parking, restrooms, picnic area) would be replaced with grass or other vegetation. The portion of the existing gravel area not redeveloped as a parking area would be replaced with pervious cover. The impervious surface area associated with the shoreline park and multi-use pathway would continue to generate a long-term increase in precipitation runoff into the watershed and, ultimately, to waterbodies in the area, including Narragansett Bay. The runoff from the impervious surface area following implementation of Alternative 1 would be less than that under existing conditions. For more information on the methodology, assumptions, and calculations used to project the impervious surface area resulting from implementation of Alternative 1, see Appendix D-4.

The developer would be required to follow all applicable state and local laws and regulations discussed above, including the abovementioned town ordinances and state permitting requirements, in order to decrease impacts on water quality from storm water runoff.

Compliance with these laws and regulations and implementation of best management practices would decrease the magnitude of impacts on water quality from storm water runoff.

Alternative 1 would result in minor impacts on water quality, and mitigation, as outlined above, would reduce any adverse impacts. The future developer would be required to consult with the USACE and USEPA through Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of 1899 at the federal level, and with the state through the CRMC/SAMP processes, as well as RIDEM for the Section 401 of the CWA, for any in-water work associated with the construction of the pier at the Midway Pier/Greene Lane property (discussed in Section 11.11.1.5). Given the BMPs developed during future permitting of the redevelopment, the Navy has determined that any adverse impacts associated to water quality would be minor and the disposal and future reuse of the Midway Pier/Greene Lane property would be in compliance with the CWA.

11.11.1.3 Groundwater

As indicated in Section 10.11.3, depth to the water table varies along the Midway Pier/Greene Lane property from 1.5 to 3 feet in areas underlain by Pittstown soils to less than 6 feet in areas underlain by Newport loams (University of Rhode Island Cooperative Extension and Rhode Island Health Source Water Assessment Program 2003). Construction activities at the proposed shoreline park could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMPs as set forth in the *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010).

Because of former operations at the former Midway Pier, groundwater in this portion of the Midway Pier/Greene Lane property has been documented to contain levels of total petroleum hydrocarbons above the RIDEM reporting limits (Tetra Tech EC, Inc. 2008c). As indicated in Section 11.5, the FOST for the Midway Pier/Greene Lane property will address any restrictions, notifications, or covenants in deeds related to hazardous materials at this property.

Minor impacts on groundwater would result; mitigation would reduce adverse construction impacts.

11.11.1.4 Floodplains

Under Alternative 1, approximately 0.17 acres of the 100-year floodplain would be permanently impacted by the proposed redevelopment features. As shown on Figure 11.11-1, floodplains are located within the shoreline park, and the proposed redevelopment features would be located within the floodplain areas. The picnic area, restrooms, a portion of the playground, a small segment of the pier, and the easternmost portion of the multi-use pathway would be located in the100-year floodplain. The segment of the pier that is to be located in the floodplain would be a replacement of the existing structure, so redevelopment of the pier would have a negligible effect on floodplain storage capacity.

In the absence of hydraulic modeling, it is assumed that the approximately 0.17 acre of permanent floodplain fill would not result in a loss of floodplain storage capacity or a rise in the 100-year floodplain for Narragansett Bay. The existing vegetation on either side of the proposed redevelopment features within the shoreline park would remain undeveloped and would help to moderate storm surges and precipitation.

The future developer of the shoreline park will be required to minimize or offset impacts from redevelopment that could potentially degrade floodplain values[20] and increase the flood risk to upstream and downstream activities and will be subject to permitting and regulatory requirements at the local, state, and federal level. The local building permit process in the Town of Middletown will require that site plans be prepared showing floodplains. Article 10 of the Town of Middletown zoning code focuses on flood hazard areas and ensuring public safety, minimizing hazards to persons and property from flooding, protecting watercourses from encroachment, and maintaining the capability of floodplains to retain and carry off floodwaters. Under Article 10, all proposed construction or other development within a special flood hazard area, such as those within the proposed shoreline park, must obtain a permit.

At the state level, the buildings proposed in the flood hazard zones (i.e., restrooms) will be required to meet the specific requirements for flood zone construction included in the Rhode Island State Building Code (RISBC). Additionally, the CRMC requires all applicants proposing construction within flood hazard areas to demonstrate that all portions of the RISBC are to be met. In accordance with EO 11988, the conveyance of properties in floodplains proposed for disposal for non-federal parties would indicate restricted uses under floodplain regulations. Overall, the low-impact recreational uses proposed under Alternative 1 are consistent with the location of the property in a floodplain; due to the recreational nature of the uses, the risk and impacts from flooding would be minimized. Alternative 1 would result in a potentially moderate impact on the floodplains.

11.11.1.5 Wetlands

The Midway Pier/Greene Lane property has 0.8 acres of estuarine and marine wetlands along the shoreline. Redevelopment under Alternative 1 would not impact these wetlands. As shown in Figure 11.11-1, redevelopment would take place in areas outside of these wetlands.

The in-water work associated with the construction of the pier at the Midway Pier/Greene Lane property requires USACE permitting under Section 404 of the CWA (discussed in Section 11.11.1.5) and/or Section 10 of the Rivers and Harbors Act of 1899.

[20] Floodplains provide many natural values, including storing flood waters, stabilizing the shoreline in coastal areas, providing habitat for terrestrial and aquatic wildlife, controlling erosion and sedimentation, and improving water quality by filtering pollutants.

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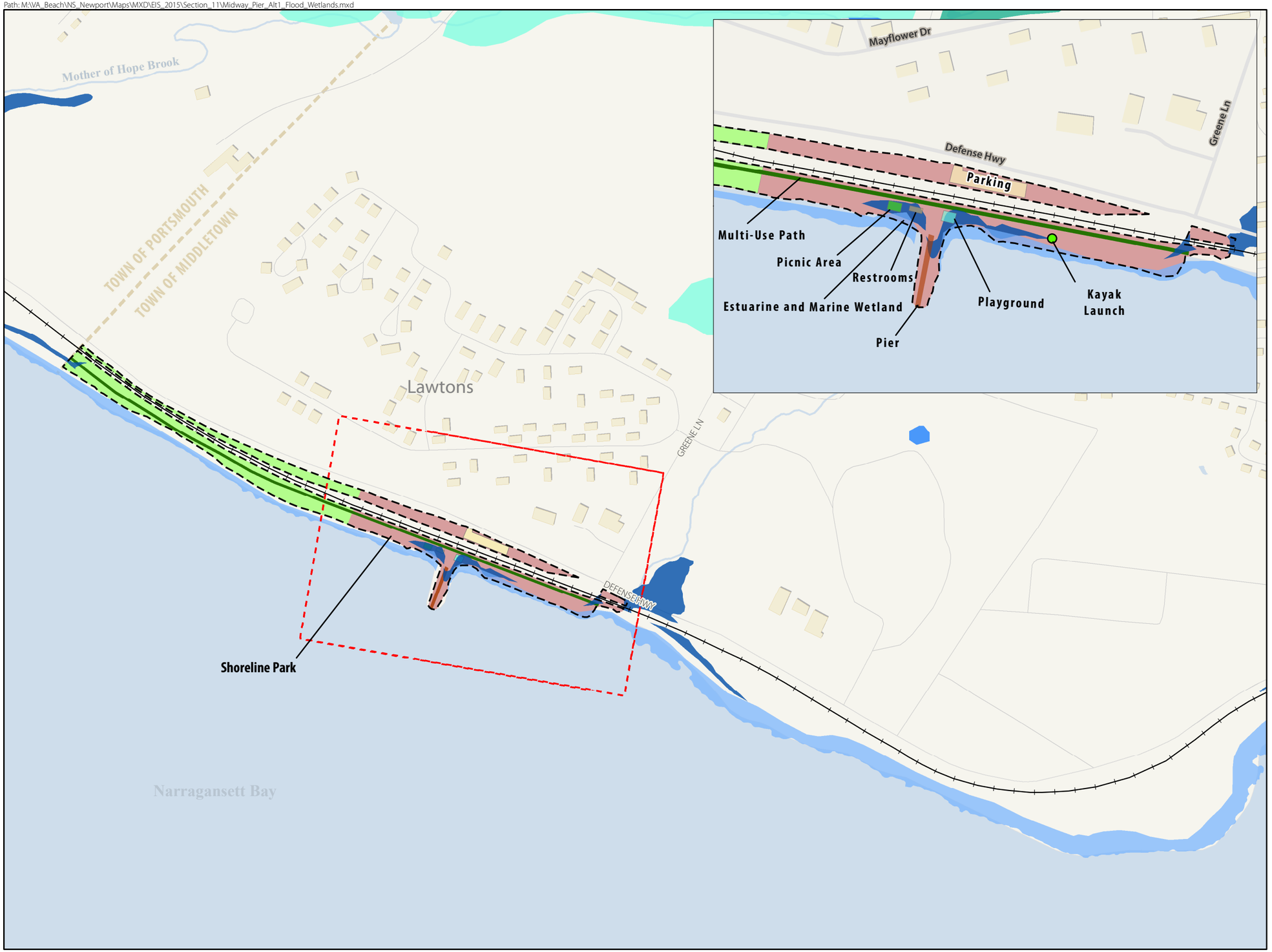

Figure 11.11-1
Midway Pier/Greene Lane Property Alternative 1 - FEMA Flood Zones, Surface Waters, and Wetlands
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Property Boundary
- Waterbody

NWI Wetlands

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

FEMA Floodplain

- AE

Proposed Land Use

- Open Space
- Shoreline Park

Zone AE: 100 year floodplains in which base flood elevation exists

SCALE

0 0.1 0.2 Miles

SOURCE: U.S. Fish and Wildlife Service 2011; RKG Associates et al. 2011; FEMA 2010

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11.11.2 Alternative 2

11.11.2.1 Surface Water

Impacts on surface water under Alternative 2 would be similar to those discussed under Alternative 1. Direct impacts on surface waters would occur during pile installation and dredging. Indirect impacts, in the form of sedimentation and turbidity would result, with the potential of being slightly greater with the addition of one more floating dock located at the end of the redeveloped pier and the addition of a larger parking area. These impacts are discussed below in Section 11.11.2.2.

Similar to Alternative 1, to protect surface water, the future developer would be required to consult with the USACE and USEPA through Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of 1899 at the federal level and with the state through the CRMC/SAMP processes, as well as RIDEM, for the Section 401 of the CWA for any in-water work associated with the construction of the pier and floating docks at the Midway Pier/Greene Lane property (discussed in Section 11.11.2.5). Given the BMPs developed during future permitting of the redevelopment, the Navy has determined that any adverse impacts associated with surface waters would be minor, and the disposal and future reuse of the Midway Pier/Greene Lane property would be in compliance with the CWA.

11.11.2.2 Water Quality

Similar to Alternative 1, the redevelopment of the shoreline park, including the fishing pier and the addition of the multi-use pathway, could have indirect impacts on Narragansett Bay and Gomes Brook. These indirect, temporary impacts could result from construction activities, both land-based and in-water. These impacts could potentially be greater under Alternative 2 due to the addition of a floating pier and the construction of a larger parking lot. All redevelopment would require compliance with the applicable state and local laws to decrease impacts on water quality from storm water runoff, including the abovementioned town ordinances. In accordance with these ordinances, prior to redevelopment, the developer would be required to receive a permit from the Town of Middletown as well as RIDEM (see Section 11.11.1.2).

As under Alternative 1, construction vessel operation could also impact water quality through debris and trash losses, deck drainage, wastewater discharges, bilge pumping, and vessel transport and anchoring. Anchoring construction vessels may additionally scour the sediment bed and cause an increase in suspended sediment in the construction site area. Deck drainage is runoff that is introduced to the natural system during deck cleanings or as wash from rainfall. Drop pan and work areas are other sources of deck drainage, which often includes petroleum. Extra efforts will be made to avoid any and all oil spills. The potential for petroleum runoff, for example, may be mitigated by installing gutters and filtration devices along the deck. In the event of an accidental spill, the construction contractor would implement an emergency response plan.

Full build-out of Alternative 2 is projected to result in a total of 1.8 acres (76,610 square feet) of impervious surface area. This represents a decrease of approximately 20 percent below existing conditions because it is assumed that the areas within the shoreline park that are not developed (i.e., exclusive of the parking, restrooms, picnic area) would be replaced with grass or other vegetation. The impervious surface area would continue to generate a long-term increase in precipitation runoff into the watershed and ultimately to waterbodies in the area, including Narragansett Bay. For more information on the methodology, assumptions, and calculations used to estimate the impervious surface area resulting from implementation of Alternative 2, see Appendix D-4.

Alternative 2 would result in minor impacts on water quality, and mitigation, as outlined above, would reduce any such impacts. The future developer would be required to consult with the USACE and

USEPA through Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of 1899 at the federal level, and with the state through the CRMC/SAMP processes, as well as RIDEM for the Section 401 of the CWA, for any in-water work associated with the construction of the pier at the Midway Pier/Greene Lane property (discussed in Section 11.11.1.5). Given the BMPs developed during future permitting of the redevelopment, the Navy has determined that any adverse impacts on water quality would be minor and the disposal and future reuse of the Naval Hospital property would be in compliance with the CWA.

11.11.2.3 Groundwater

Similar to Alternative 1, implementation of Alternative 2 would result in construction activities that could extend below ground surface to a depth that would directly impact the underlying water table. The developer/contractor would be required to use standard dewatering techniques and follow erosion sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources. Potential spills of fuels or other chemicals and hazardous materials could occur during construction activities. Impacts on groundwater resources would be minimized through compliance with storm water permits and management plans and implementation of BMP's as set forth in the *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010). Minor impacts on groundwater would result; mitigation would reduce any adverse construction impacts.

11.11.2.4 Floodplains

Under Alternative 2, approximately 0.19 acres of the 100-year floodplain would be permanently impacted by the proposed redevelopment features, approximately 0.02 acres more than under Alternative 1. As shown in Figure 11.11-2, the same proposed redevelopment features as discussed above for Alternative 1 would also impact floodplains under Alternative 2.

In the absence of hydraulic modeling, it is assumed that the approximately 0.19 acres of permanent floodplain fill would not result in a loss of floodplain storage capacity or a rise in the 100-year floodplain for Narragansett Bay. The existing vegetation on either side of the proposed redevelopment features within the shoreline park would remain undeveloped and would help to moderate storm surges and precipitation.

The future developer of the shoreline park will be required to minimize or offset impacts from redevelopment that could potentially degrade floodplain values and increase the flood risk to upstream and downstream activities and will be subject to the permitting and regulatory requirements at the local, state, or federal level. The local building permit process in the Town of Middletown will require that site plans be prepared showing floodplains. Article 10 of the Town of Middletown zoning code focuses on flood hazard areas and ensuring public safety, minimizing hazards to persons and property from flooding, protecting watercourses from encroachment, and maintaining the capability of floodplains to retain and carry off floodwaters. Under Article 10, all proposed construction or other development within a special flood hazard area, such as those within the proposed shoreline park, must obtain a permit.

At the state level, the buildings proposed to be constructed in the flood hazard zones (i.e., the restrooms) will be required to meet the specific requirements for flood zone construction included in the RISBC. Additionally, the CRMC requires all applicants proposing construction in flood hazard areas to demonstrate that all portions of the RISBC are to be met. Although Alternative 2 would result in a potentially significant impact on floodplains, mitigation would reduce this impact on not significant.

11.11.2.5 Wetlands

Redevelopment under Alternative 2 is expected to impact less than 0.01 acre (approximately 0.003 acre) of the abovementioned wetlands at the Midway Pier/Greene Lane property. As shown in Figure 11.11-2, the majority of redevelopment would take place in areas outside of these wetlands. Using the most conservative estimate, the redeveloped pier could result in a corresponding less than 0.01 acre area of fill in the form of pilings to be used to anchor the redeveloped pier; however, final design would determine the actual locations of the pilings.

Filling a coastal wetland requires a permit from the CRMC and a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer will be required to coordinate wetland mitigation plans with the USACE and CRMC. CRMC Section 300.12(F), Coastal Wetland Mitigation, outlines the mitigation requirements for alterations to coastal wetlands. As indicated in the regulations, the following requirements apply:

- Replacement by a similar type of wetland, which provides an ecological value equal to or greater than that of the altered wetland; and
- A 2:1 mitigation ratio for the area of costal wetland restored to the area permanently altered or lost.

Section 404 of the CWA authorizes the USACE to issue permits regulating the discharge of dredged or fill materials into waters of the U.S., including wetlands. Compensation requirements typically vary based on the impacted wetland communities. Specific mitigation requirements for future development projects would be determined in coordination with the USACE and CRMC. Therefore, Alternative 2 may result in potential impacts on wetlands, but future development conducted in compliance with existing CWA regulations would ensure that any impacts on the wetlands would be minor, as any permanent impacts would be mitigated through the USACE's compensatory mitigation process under Section 404 of the CWA.

The in-water work associated with the construction of the pier at the Defense Highway/Stringham Road Corridor property requires USACE permitting under Section 404 of the CWA (discussed in Section 11.11.1.5) and/or Section 10 of the Rivers and Harbors Act of 1899.

Therefore, Alternative 2 would result in minor impacts on wetlands. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.

11.11.3 No Action Alternative

The No Action alternative is retention of the surplus property at NAVSTA Newport by the U.S. government in caretaker status. Since no development would occur on the property there would be no impacts on water resources from redevelopment. Some storm water runoff would continue from the existing approximately 2.2 acres of impervious surface area.

11.12 Biological Resources

This section summarizes the potential impacts on biological resources from the implementation of the Redevelopment Plan under Alternative 1, Alternative 2, and the No Action alternative. It includes an examination of impacts on vegetation, wildlife, threatened and endangered species, and significant wildlife habitat from disposal and future reuse of the Midway Pier/Greene Lane property.

GIS analysis was used to determine the extent of potential impacts on vegetation communities and wildlife habitat from implementation of the redevelopment alternatives.

Upon completion of the BRAC disposal process under both Alternatives 1 and 2, any future reuse of the Midway Pier/Greene Lane property would be required to comply with local, state, and federal laws and regulations pertaining to biological resources. Specifically, consultation with USFWS and NMFS for any species protected under the ESA would be required for any proposed activities in habitat known to support federally-listed threatened or endangered species. The USFWS and RIDEM have indicated that no federally or state-listed or candidate species are located within the Midway Pier/Greene Lane property (Chapman 2013; Jordan 2013); however, NMFS has indicated the potential presence of several listed sea turtles and fish offshore of the Midway Pier/Greene Lane property (Colligan 2013). Because of the length of time assumed between consultation for this EIS and the actual redevelopment of this surplus property, future consultation by the developer will likely be necessary. Additionally, in-water construction activities by a future developer would likely require Section 10 and/or Section 404 permits from the USACE. As a federally permited project, USFWS and NMFS would be responsible for reviewing impacts on fish and wildlife pursuant to the Fish and Wildlife Coordination Act and the ESA.

11.12.1 Alternative 1 (Preferred Alternative)

11.12.1.1 Vegetation

Implementation of the Redevelopment Plan under Alternative 1 would necessitate permanent removal of vegetation to accommodate new facilities and supporting infrastructure. Redevelopment plans under Alternative 1 along the Midway Pier/Greene Lane property are minimal and would comprise approximately 1.4 acres of disturbance, including the shoreline park, multi-use pathway, and Midway Pier (both on land and in water). The majority of the features associated with the shoreline park (restrooms, picnic area, playground, and parking) would be located in areas classified as developed land. Implementation of Alternative 1 would result in significant long-term impacts on vegetation at the Midway Pier/Greene Lane property; this is true for only the old field habitat, as discussed below. Table 11.12-1 identifies the habitat cover types that would be impacted by the redevelopment of Alternative 1 at the shoreline park. These impact acreages are representative of areas where the development footprint overlaps the habitat types.

Table 11.12-1 Habitat Impacts along the Midway Pier/Greene Lane Property (Alternative 1)

Habitat Cover	Acreage of Impact
Old Field	0.2
Open Water	<0.01
Total	**0.21**

As indicated in Section 11.11.1.2, full build-out of Alternative 1 is projected to result in a total of 1.3 acres (56,180 square feet) of impervious surface area. This represents a decrease of 41 percent below existing conditions because it is assumed that the areas within the shoreline park that are not developed (i.e., exclusive of the parking, restrooms, picnic area) would be replaced with grass or other vegetation.

Open Water

In-water construction under Alternative 1 would involve the removal of the existing pier (former Midway Pier) from open water habitat, followed by the redevelopment of the pier as a 15-foot by 250-foot long concrete pier to be used for fishing. The newly developed pier would be located within the same footprint as the existing pier. The redevelopment of the existing pier at the property would result in approximately 0.005 acres of disturbance of open water. This acreage impact reflects the difference in surface area between the existing pier and the proposed fishing pier.

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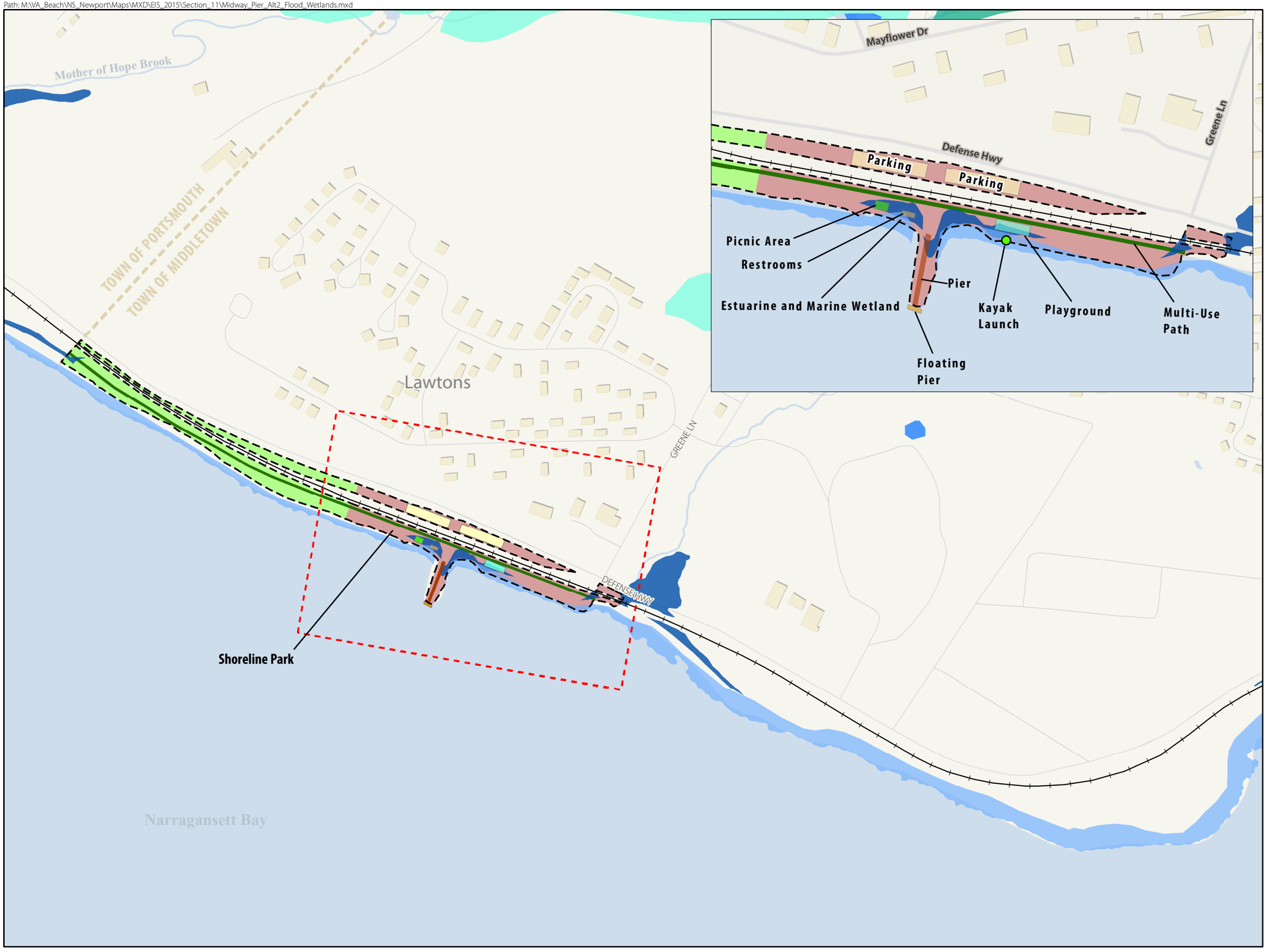

Figure 11.11-2
Midway Pier/Greene Lane Property Alternative 2 - FEMA Flood Zones, Surface Waters, and Wetlands
NAVSTA Newport, Rhode Island

Legend

- Street
- Rail Road
- Town Boundary
- Rivers/Streams
- Property Boundary
- Waterbody

NWI Wetlands

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

FEMA Floodplain

- AE

Proposed Land Use

- Open Space
- Shoreline Park

Zone AE: 100 year floodplains in which base flood elevation exists

SCALE

0 0.1 0.2 Miles

SOURCE: U.S. Fish and Wildlife Service 2011; RKG Associates et al. 2011; FEMA 2010

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Old Field

The proposed multi-use pathway would permanently impact an additional 0.2 acres of old field habitat in the Midway Pier/Greene Lane property. The old field habitat would be converted to impervious surface. This would be a permanent conversion of 0.2 acres of this habitat, which would not be considered a significant impact.

11.12.1.2 Wildlife

Because new development at the Midway Pier/Greene Lane property under Alternative 1 would be limited, impacts on wildlife would be minimal and limited to minor temporary disturbances during construction, with the exception of the approximately 0.2 acres of permanent impact on old field habitat from constructing the multi-use pathway. However, loss of 0.2 acres of habitat would not be a significant impact and adequate suitable habitat is adjacent to the shoreline park.

Terrestrial Mammals

Wildlife species may be temporarily displaced in peripheral areas during construction, when noise and human activity levels increase. Species that would be most affected include those with relatively small home ranges. During construction, short-term impacts may include displacement of mobile species such as eastern gray squirrel, common raccoon, Virginia opossum, woodchuck, and striped skunk. Habitat fragmentation is not likely to result from the implementation of Alternative 1 because the majority of the property would retain its current natural conditions. Overall impacts on species diversity and abundance on the property from construction activities would be minor since the majority of these species would avoid areas of construction where equipment and human activities create disturbance. Therefore, overall impacts on terrestrial mammals would be minor. Minor impacts on terrestrial mammals would result from the implementation of Alternative 1.

Marine Mammals

Construction of Alternative 1 at the Midway Pier/Greene Lane property would include in-water work when redeveloping the former Midway Pier into a fishing pier. The fishing pier is proposed to measure 15 feet by 250 feet. Demolition of the existing pier and construction of the pier would disturb the substrate and the open water habitat (in the form of hydroacoustic noise) at the surplus property.

While construction for Alternative 1 would include in-water work, it is unlikely that the activity would result in a take of a marine mammal. Removal of the existing pier would include activities such as dredging with a clamshell bucket as well as possible piling removal. Pilings would be removed by either direct-pull or vibratory extraction. New pilings would be installed using an impact hammer, in addition to a barge with a crane. It is assumed that pilings would be constructed off-site. As discussed in Section 10.12.2, reports of harbor seals and harbor porpoises have been documented within one-half mile of the Midway Pier/Greene Lane property, in Coddington Cove. (Additional marine mammals with the potential to be present in the project area are discussed in Section 11.12.1.3, Threatened and Endangered Species.) Marine mammals are likely to avoid the area during construction activities, and impacts on this species of marine mammal would not be anticipated to occur. Measures to reduce impacts on marine mammals would be implemented by the developer through state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA.

However, if a marine mammal such as a harbor seal or harbor porpoise were to stray into the waters immediately adjacent to the Midway Pier/Greene Lane property, potential impacts from noise generated during construction activities would be short-term and negligible.

Activities assumed to have hydroacoustic noise impacts include installing concrete piers using a diesel impact hammer, dredging with a clamshell bucket, and possible piling removal. Pilings would be removed by either direct-pull or vibratory extraction. New pilings would be installed using an impact

hammer and a barge-mounted crane. Other noise would also be generated by support vessels, small boat traffic, and other barge-mounted equipment; however, this other noise is likely consistent with existing vessel traffic in the Bay and in the nearby NAVSTA Newport and East Passage Yachting Center/Melville marinas. (See section 6.12.1 for a complete discussion regarding noise impacts on marine mammals.)

Measures to reduce impacts on marine mammals would be implemented by the developer through state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. This would result in the future developer's coordination with NMFS under the ESA and MMPA to minimize impacts on regulated marine mammals. Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. Therefore, the disposal and reuse of the Midway Pier/Greene Lane property under Alternative 1 would have minor impacts on marine mammals.

Other Marine Wildlife

In-water construction activities under Alternative 1 would generate minor, short-term effects on finfish, shellfish, and crustacean resources in Narragansett Bay. Direct impacts would include temporarily displacing fish by the operation of construction equipment and noise generated during pile driving. Noise generated during pile-driving would likely startle fish in the immediate vicinity, potentially displacing them. Once construction noise has stopped, fish would likely move back into the area.

For a complete discussion of potential impacts of underwater noise on fish, please refer to Section 6.12.1.2.

Additionally, as discussed in Section 10.12.2.2, a 20-acre aquaculture venture exists approximately 350 feet northwest of the proposed pier. Water quality impacts during construction are of most concern because the pier is to be used for fishing only. These impacts would include those discussed in Section 11.11.1.1, turbidity from increased sediment concentrations and the potential for construction spills, and would be mitigated to minimize any adverse impacts on the aquaculture farm.

In summary, Alternative 1 would result in minor impacts on other marine life and fish, and BMPs and/or protective measures implemented by the future developer following consultations with the USACE and NMFS would ensure that no significant impacts occur to other marine wildlife.

Benthic Organisms

The primary direct impacts on benthic organisms would include mortality during demolition of the existing pier and pile driving and loss of habitat due to the placement of piles associated with the fishing pier. Construction activity during demolition of the existing pier (former Midway Pier) would use a clamshell bucket to dredge around the existing pilings, while removal of any piles would involve either direct-pull or vibratory extraction. Depending upon the depth of the pile embedment, a vibratory hammer or water jets may be necessary to loosen the soil around the piles before pulling them out. This could result in the inadvertent take of benthic species around the existing piles.

Indirect impacts would include turbidity that could disturb the ability of certain organisms to feed, but this effect would be temporary and limited. Increased turbidities would temporarily cause difficulty in locating prey for predatory taxa but would not be expected to cause significant adverse effects on species in the area because they can easily migrate to another area to feed. Benthic organisms, especially slow-moving, fixed, or sediment-dwelling organisms (such as clams, small crustaceans, marine snails, sea cucumbers, worms, urchins, and sea stars) would be most vulnerable to this impact. Larger or more mobile benthic species such as the crab, shrimp, or groundfish would likely sense the construction activity and could move out of the area. Nevertheless, it is possible that these species may not sense which direction to move to avoid dredging, or become disoriented and could be caught directly by the dredge. The amount of suspended sediments settling in the surrounding area would not be significant enough to

bury benthic species in the area. Within a few hours of the dredging, mobile benthic scavenger species such as crab, shrimp, and sea stars would likely migrate to the impact area to feed on benthic organisms that had been crushed or injured.

The decrease in soft-bottom habitat (the footprint of the piles) and increase in hard substrate habitat would result in a localized change in species composition over the long term. Benthic species that burrow into a substrate, such as clams and worms, thrive in particular types of materials. By replacing (very small) portions of the seafloor with pilings, pre-construction benthic communities would be slightly altered by the proposed action. The pilings would increase the available in-water surface area and create colonization sites for hard-bottom species such as mussels (*Mytilus* spp.), barnacles (*Balanus* spp.), and sea anemones (the fouling community, or the community of organisms found on artificial surfaces). The new community also would support other species such as copepods, amphipods, annelids, gastropods, and sea stars that would feed and take refuge in the newly created environment (Kozloff 1996).

Filter- and suspension-feeding invertebrates (e.g., bivalves, tunicates, crustaceans, and some polychaetes) may close their shells, suspend feeding, or increase feeding rates in response to turbidity increases (LaSalle et al. 1991; Cruz-Rodriguez and Chu 2002). However, because of the limited time during which pile driving and dredging would occur (i.e., minutes at a time for several days), along with the limited increase in turbidity levels, there would not be a significant loss of benthic species in the vicinity of project areas.

Overall, the direct and indirect impacts under Alternative 1 would be considered minor impacts on the regional benthic community because the regional benthic community can recolonize over time and because impacts on the benthic organisms would be localized in relation to the larger regional benthic community of the Narragansett Bay.

Herpetofauna

Herpetofauna such as the black rat snake and common garter snake may be subject to temporary impacts under Alternative 1. During construction, these and any other herpetofauna species on the property would likely avoid areas impacted by noise and human activity. The habitat cover that herpetofauna would most likely populate at the surplus property are forested and shrubland habitat cover. Aside from a small portion of shrubland used for the multi-use pathway, no other redevelopment is proposed in either of these habitat covers under Alternative 1. As such, only minor impacts on herpetofauna would result from Alternative 1.

Avian Species

As discussed in Section 3.12.1.2, a number of migratory bird species occur at NAVSTA Newport. These include various species of passerines, waterfowl, and waterbirds. Short-term impacts on avifauna, such as displacement, may result during construction of Alternative 1. A total of approximately 0.2 acres of old field habitat would be permanently impacted by Alternative 1. The remaining areas of open space throughout the corridor property would be preserved as open space and would maintain their existing conditions. No permanent impact on breeding birds or migrating birds would result. Breeding birds would avoid areas of construction where equipment and human activities create disturbance. None of the impacts identified above would result in significant adverse effects on a population of migratory bird species. In May of 2015, the USFWS initiated a NEPA review of alternatives to authorize take under the MBTA. At the time of the publication of this Draft EIS, it is uncertain if the future implementation of the Redevelopment Plan under Alternative 1 may require a take permit under the MBTA. The future developer would be required to minimize impacts on migratory birds as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. Pursuant to the MBTA and BGEPA, the Navy has determined that implementation of Alternative 1 would have minor impacts on

avian species and the disposal and reuse of the Midway Pier/Greene Lane property would not result in significant impacts on, or harm of, migratory birds and bald and golden eagles.

11.12.1.3 Threatened and Endangered Species

As discussed in Section 10.12.1.3, NMFS Northeast Region has identified various listed species, including whales, sea turtles, and Atlantic sturgeon, as well as two federal species of concern (alewife and blueback herring) that have the potential to occur in the waters of Narragansett Bay due to their prevalence in New England waters (Colligan 2013). The results of the Navy's consultation with the NMFS under Section 7 of the ESA are summarized below. In addition, following initial consultation with the USFWS in 2013, the northern long-eared bat was listed as threatened and the Navy re-opened dialogue by sending a letter to the USFWS regarding the northern long-eared bat on June 17, 2015. The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). Consultation regarding the northern long-eared bat under the ESA is ongoing and additional discussion is provided within this section.

Whales

The North Atlantic right, humpback, and fin whales occur along the U.S. Atlantic Coast at various times of the year. None of these species are common in Narragansett Bay, although all have been documented in stranding and live sighting data in Narragansett Bay or along the south shore of Rhode Island (NBNERR 2009). These species are not likely to be present in Narragansett Bay near the Midway Pier/Greene Lane property. As such, disposal and reuse of the Midway Pier/Greene Lane property under Alternative 1 would have no effect on these species. Pursuant to the ESA, the Navy has determined that the disposal and reuse of the Midway Pier/Greene Lane would have no effect on the federally endangered North Atlantic right, humpback, or fin whale. NMFS concurred with the determination, based on the species preference for deeper water depths and the near-shore location of the proposed action, such that these species were deemed unlikely to exist in the vicinity of the project area (Colligan 2013). BMPs are included within this Draft EIS, to minimize the potential for noise-related affects.

Sea Turtles

As discussed in Section 10.12.1.3, four listed species of sea turtles (loggerhead, green, Kemp's ridley, and leatherback) are seasonally present in New England from early summer through late fall. Although sea turtle abundance at the project location in Narragansett Bay is unknown, sea turtles are regular summer visitors to Rhode Island waters during their southern migration to wintering grounds (NBNERR 2009). Both the loggerhead and Kemp's ridley have been documented within Narragansett Bay around Aquidneck Island (NBNERR 2009). Despite a documented occurrence in 2007, due to its highly pelagic nature, the leatherback does not usually make its way into Narragansett Bay north of the bay's mouth (NBNERR 2009). NMFS Northeast Region stated that the possibility may occur for the green sea turtle to occur in New England waters, but that it is rare and sporadic (Colligan 2013).

Direct and indirect dredging impacts on sea turtles would be insignificant. Sea turtles are not known to be vulnerable to capture in mechanical dredges. Additionally, even if a transient sea turtle were present, no sea turtles are likely to be injured or killed as a result of dredging operations (Bullard 2014). The dredge sites within the bay may provide suitable forage habitat for sea turtles; however, given the water depths in those areas, it is unlikely that sea turtles would be present in the area. Opportunistic foraging may occur at these sites and, thus, dredging could cause a short-term reduction in prey species through the alteration of existing biotic assemblages and habitat. Any such reduction would be temporary and recolonization would begin within two months (Bullard 2014). Sedimentation from dredging would be short-term, with suspended sediment settling out of the water column within a few hours following dredging activities. Therefore, any change in behavior due to the presence of suspended sediment is likely to be insignificant.

Similar to marine mammals and fish, in-water noise may also be audible to sea turtles within the vicinity of the project area. Sea turtles are expected to avoid disturbing levels of sound originating from impulse sources (O'Hara & Wilcox 1990; McCauley et al. 2000). There are currently no official threshold criteria for either potential injury or behavioral disturbance/harassment for sea turtles. However, McCauley et al. (2000) reported that impulsive source levels of 166 dB re 1µPa RMS were required to induce a behavioral reaction in captive green and loggerhead sea turtle. Based on this information, NMFS has determined that source levels of 166 dB re 1µPa RMS or greater could cause behavioral disturbance and/or other behavioral or physiological impacts (Lecky 2009).

Therefore, based on the threshold level used by NMFS, there is the potential for disturbance of sea turtles if impact pile-driving occurs when sea turtles are present in Narragansett Bay (early summer through late fall). Based on the practical spreading loss model, it is expected that disturbance of sea turtles could occur within 50 feet (15 meters) of active pile driving. It is likely that sea turtles would avoid the areas where in-water construction was occurring. Therefore, it is expected that impacts on sea turtles would be temporary and would result in temporary displacement during pile driving and construction activities. However, large numbers of sea turtles are not expected to be exposed to pile driving noise during the time frame of in-water work due to the limited spatial scale of the construction and the low density of sea turtles within the Narragansett Bay and, in particular the habitat characteristics of the project area within the vicinity of the Midway Pier/Greene Lane property. NMFS indicated that it is extremely unlikely that sea turtles would occur within 0 to 66 feet (0 to 20 meters) of the pile driving, and therefore, would not be exposed to underwater noise at or above the 166 dB re 1µPa RMS (Bullard 2014). No mitigation measures were identified through consultation with NMFS.

Pursuant to the ESA, the Navy has determined that the disposal and reuse of the former Midway Pier/Greene Lane property may affect, but is not likely to adversely affect the loggerhead, green, Kemp's ridley, or leatherback sea turtles. NMFS concurred with The Navy's determination that implementation of the disposal and reuse of the Midway Pier/Greene Lane property under Alternative 1 may affect, but is not likely to adversely affect the loggerhead, green, Kemp's ridley, and leatherback sea turtles (Bullard 2014). BMPs measures referenced by NMFS for sea turtles included implementing construction activities between November and May (a period when listed species are not likely to be present) and the installation of piles for the pier with an impact hammer (a technique that minimizes the generation of underwater noise).

Atlantic Sturgeon

The Atlantic sturgeon is distributed within estuarine and marine waters along the entire East Coast and, potentially, Narragansett Bay. Atlantic sturgeon travel wide ranges from their natal river. They spend spring months spawning upriver where the salt front and fall line of large rivers meet and inhabit estuarine and coastal waters when not spawning (NOAA Fisheries Office of Protected Resources 2012). Due to their broad distribution, any individuals from the threatened population of Atlantic sturgeon of the Gulf of Maine DPS or the endangered populations from the New York Bight, Chesapeake Bay, South Atlantic, and Carolina DPSs may occur in the waters of Narragansett Bay (Colligan 2013). Their reliance on benthic organisms for food and their affinity for shallow nearshore areas may bring them to the waters near the Midway Pier/Greene Lane property. The potential occurrence of Atlantic sturgeon near the surplus property would include the juvenile adult life stages, juvenile Atlantic sturgeon can spend months to years in estuaries. However, only transient Atlantic sturgeon are likely to be in the project area (Bullard 2014). It is expected that any adult Atlantic sturgeon potentially occurring in the vicinity of the Midway Pier/Greene Lane property during in-water construction would avoid the areas; thus, impacts on the Atlantic sturgeon from operation of construction equipment, including a mechanical dredge and pile driving equipment and resulting increased turbidity levels would not be significant.

Direct and indirect dredging impacts on sturgeon would be insignificant. It is likely that subadult or adult Atlantic sturgeon would easily be able to avoid the dredge. Additionally, because no overwintering sturgeon are likely to occur in the project area, there would be no increased risk of capture due to the lack of overwintering areas in the project area (Bullard 2014). Similar to the discussion above for the sea turtle, the dredge sites within the bay may provide suitable forage habitat for sturgeon. Opportunistic foraging may occur at these sites and, thus, dredging could cause a short-term reduction in prey species through the alteration of existing biotic assemblages and habitat. Any such reduction would be temporary and recolonization would begin within two months (Bullard 2014). Sedimentation from dredging would be short-term, with suspended sediment settling out of the water column within a few hours following dredging activities.

Pile-driving activities associated with the proposed action under Alternative 1 would generate underwater noise that the Atlantic sturgeon could be exposed to; however, no adverse effects on the sturgeon would be expected. As noted above, Atlantic sturgeon would not be expected to come close to the Midway Pier/Greene Lane property during construction. Any Atlantic sturgeon present in the general vicinity would be able to detect pile-driving noises, which may elicit an avoidance response. If they were present, comparison of the established injury thresholds for fish and comparing them, the pile driving sound levels (Table 7-12.3) indicates that the peak threshold for injury would not be exceeded as discussed in Section 11.12.1.2. There is a potential for impact based on accumulated SEL for a single pile within 33 feet of active impact pile driving and behavioral disturbance with 83 feet of impact pile driving (Table 7.12-6).

Pursuant to the ESA, the Navy has determined that disposal and reuse of the Midway Pier/Greene Lane property may affect, but is not likely affect, the federally threatened Atlantic sturgeon. NMFS concurred with this determination (Bullard 2014). BMPs and protective measures referenced by NMFS for Atlantic sturgeon included implementing construction activities between November and May (a period when listed species are not likely to be present) and the installation of piles for the pier with an impact hammer (a technique that minimizes the generation of underwater noise).

Results of Threatened and Endangered Species Consultation

In a letter dated May 5, 2014, NMFS concluded that based on the analysis above, any effects on listed species of sea turtles or Atlantic sturgeon would be insignificant or discountable; therefore, concurrence was provided with the Navy's determination that the proposed action may affect but is not likely to adversely affect any listed species of sea turtle or Atlantic sturgeon under NMFS jurisdiction and that consultation per Section 7 of the ESA has been completed (Bullard 2014). The consultation with the USFWS regarding the northern long-eared bat is ongoing.

On January 9, 2013, the Navy submitted a letter to the RIDEM requesting information in regards to the presence of any state listed species or unique natural communities within the Midway Pier/Greene Lane site (Drozd 2013). The RIDEM responded that the department has no concerns related to state listed or candidate rare, threatened or endangered species, unique natural communities or other significant wildlife communities at or near the surplus properties at NAVSTA Newport (Jordan 2013).

Northern Long-Eared Bat

As discussed in Section 10.12.3, the northern long-eared bat has recently been listed by the USFWS as threatened. The Navy has documented the presence of the northern long-eared bat within approximately 0.3 mile from the Midway Pier/Greene Lane property, as discussed below.

According to the Final 4(d) Rule, one must determine whether a project is located within the white-nose syndrome zone, which is an area comprising those counties within 150 miles of the boundaries of the U.S. counties or Canadian districts where the fungus or white-nose syndrome has been detected (USFWS 2016). If a project is located within the white-nose syndrome zone, certain conservation measures that

protect the bat's most vulnerable life stages are required. Newport County is located within the designated white-nose syndrome zone; therefore, informal or formal consultation with the USFWS is required to protect northern long-eared bats.

Based on the results of passive acoustic monitoring, the Navy documented five call sequences for the northern long-eared bat at Tank Farm 5, the closest monitoring site to the Midway Pier/Greene Lane property, in 2013. Of the 8,826 total call sequences reported at NAVSTA Newport from the passive acoustic monitoring conducted for bats from 2009 to 2013, 73 calls were documented as non-specific *Myotis* species calls, and 1,397 were documented as "unknown high-frequency" calls, which can be attributable to *Myotis* (Tetra Tech, Inc. 2014c). Northern long-eared bats were not captured during mist netting conducted at Tank Farm 5 in 2013.

Based on a field survey conducted in December 2014 to determine the suitability of summer roosting habitat for the northern long-eared bat, approximately 17 acres of suitable or potentially suitable summer roosting habitat was identified at Tank Farm 5. Suitable summer roosting habitat was defined as trees with the characteristics of northern long-eared bat roosting trees, described in Section 10.12.3.1.

Acoustic detections were made at Tank Farm 5, located across the Defense Highway from the Midway Pier/Greene Lane property, but no mist-net capture or roost tree data are available for the Midway Pier/Greene Lane property. Therefore, the potential effects of the proposed action include permanent loss of potential roosting habitat and potential impacts on foraging habitats. Approximately 17 acres of suitable summer roosting habitat was identified at Tank Farm 5. Therefore, the potential effects of the proposed action include permanent loss of potential roosting habitat and potential impacts on foraging habitats. According to the USFWS Final 4(d) rule, tree clearing within 150-feet of a known maternal roost is limited to those months outside the pup period (June 1 – July 31) and no tree clearing is allowed within a 0.25-mile of a hibernacula (USFWS 2016).

During the initial informal consultation process, prior to issuance of the final 4(d) rule, the Navy has proposed measures to protect the northern long-eared bat's most vulnerable life stages and ensure that reuse of the property does not result in the direct take of northern long-eared bats. These include certain conservation measures or BMPs as recommended deed restrictions for the future developer(s)/property owners of the Midway Pier/Greene Lane property. These recommended measures would be the responsibility of the developer(s)/property owners to implement as part of development and construction:

- Project activities must occur more than 0.25 miles from known, occupied hibernacula.
- All on-site tree and vegetation clearing shall take place in the timeframe between October 1st – April 15th (Chapman 2015).

Therefore the Navy has determined that the implementation of the proposed action may affect but is not likely to adversely affect the northern long-eared bat. The Navy contacted the USFWS regarding its concurrence on the potential effects of the proposed action on the northern long-eared bat at the Midway Pier/Greene Lane property (Preston 2015b). The Navy contacted the USFWS regarding the potential presence of the northern long-eared bat at the surplus properties on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). To date, USFWS has not provided a response, and further informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing. ESA consultation for northern long-eared bat is ongoing. As part of any future state and federal CRMC/SAMP and Section 404 CWA permitting processes, the developer will implement

measures to protect northern long-eared bat as needed to ensure the development is conducted in compliance with the ESA. Pursuant to ESA, the Navy has determined that the proposed action may affect, but is not likely to adversely affect the northern long-eared bat under Alternative 1 at the Midway Pier/Greene Lane property. The evaluation of impacts and potential for adverse effects to the northern long-eared bat will be updated upon completion of consultation with the USFWS; the ESA consultation is ongoing.

11.12.1.4 Significant Wildlife Habitat

Submerged Aquatic Vegetation

Alternative 1 would not result in any impacts on SAV at the Midway Pier/Greene Lane property. The eelgrass beds that are located along the waterfront near the shoreline park would not be disturbed during construction of the pier because the development footprint, as assessed in this EIS, does not overlap with the mapped locations of SAV.

Wetlands

Alternative 1 would not result in any impact on wetlands. The site does not contain wetlands.

Vernal Pools

There are no vernal pools at the Midway Pier/Greene Lane property. Alternative 1 would not have any impact on vernal pools.

Essential Fish Habitat

As noted in Section 10.12, EFH for 17 species is found off the coast of the Midway Pier/Greene Lane property. The proposed action would have minor temporary effects on EFH species and their habitat under Alternative 1. These short-term adverse effects, however, would be localized, as described above for other marine wildlife.

During construction a volume of sediment at least equivalent to the volume of pilings below the subsurface would be displaced as the pilings are embedded in the bottom sediments. The displacement of this sediment volume would increase suspended sediment and turbidity within the water column habitat during the pile-driving operation, but it would be localized in the project area and would settle soon thereafter (i.e., typically within one to several hours). Water column habitat would be affected, as would habitat serving as EFH for some species.

The portions of benthic communities within the footprint of the individual piles supporting the fishing pier and floating piers, as well as in the proposed area for dredging, would likely be destroyed, resulting in a minor, permanent loss of benthic substrate in the Narragansett Bay. (Impacts on benthic habitat and species are discussed in Section 11.12.1.2, Benthic Organisms.)

Marine fish use aquatic vegetation habitat for foraging and refuge. One of the most important marine vegetation types in the marine ecosystem is eelgrass. This environment is the habitat of various life stages of many marine species, including shellfish such as crabs and bivalves. The proposed redevelopment of the former Midway Pier at the Midway Pier/Greene Lane property would be located within the same footprint as the existing pier. This would result in approximately 0.005 acres of disturbance of seafloor. However, the eelgrass beds that are located along the waterfront near the proposed shoreline park would not be directly impacted during construction of the pier because the development footprint does not overlap with the mapped locations of eelgrass. Therefore, no impacts on the HAPCs designated for eelgrass within the summer flounder EFH would occur.

At the Midway Pier/Greene Lane property, the pier currently at the site would be reconstructed within the existing pier footprint. This pier would be fixed, not floating. The elevation would allow sufficient light to diffuse and refract under the pier. Furthermore, the existing pier is located far enough from nearby eelgrass beds that overshading from the reconstructed pier is unlikely to significantly impact the summer flounder HAPC in Narragansett Bay. (See Appendix A and the informal consultation letter to NMFS dated March 27, 2014, for additional background information regarding potential impacts of shading.)

Designated EFH within the vicinity of each project site would be affected as a result of temporary disturbance and displacement of fish, temporary increase in sediment loads and turbidity in the water column, and a minor but permanent disruption of benthic communities within the footprint of the individual piles and dredged area. The effects would generally be minor and short term, and would be further offset by implementation of mitigation measures. No eelgrass beds would be directly impacted by the proposed activity. In its response to the Navy's informal consultation letter, NMFS indicated that it cannot concur with the Navy's determination that the project would have minimal impacts on EFH due to the lack of specific project details (i.e., specific project design and/or engineering plans that indicate the exact location of proposed piers and in-water work, location and amount of material to be dredged, etc.). Additional project-specific details would be made available prior to the construction of the in-water components of the proposed action by the future developer(s). At such time, authorization from the USACE under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act of 1899 would be required. These USACE authorizations would be expected to trigger the requirement to consult with NMFS under the MSFCMA, where any potential effects on EFH would be minimized through the development of BMPs, to minimize adverse impacts on EFH. Pursuant to the MSFCMA, the Navy has determined that the project would not adversely affect designated EFH in the Narragansett Bay.

11.12.2 Alternative 2

11.12.2.1 Vegetation

Similar to Alternative 1, the proposed development for Alternative 2 would have minimal impact on vegetation. As such, implementation of Alternative 2 is not expected to result in significant long-term impacts on vegetation. The increased size of the shoreline park features (i.e., parking, playground and picnic area) would be accommodated in previously developed areas. Therefore, the terrestrial impacts under Alternative 2 are the same as under Alternative 1. Table 11.12-2 identifies the habitat cover types impacted by the redevelopment of Alternative 2 at this property.

Table 11.12-2 Habitat Impacts on the Midway Pier/Greene Lane Property (Alternative 2)

Habitat Cover	Acreage of Impact
Old Field	0.2
Open Water	0.02
Total	**0.22**

Open Water

Under Alternative 2, the footprint of the proposed pier and additional floating dock would be slightly larger than that under Alternative 1; there would be an approximately 0.02-acre increase in area under Alternative 2 because of the floating dock (see Section 11.12.1.1 above for a discussion of general impacts).

Old Field

Impacts on shrubland would be the roughly the same as Alternative 1.

11.12.2.2 Wildlife

Similar to Alternative 1, due to the limited new development along the Midway Pier/Greene Lane property, impacts on wildlife would be minimal and limited to minor temporary disturbances during construction.

Terrestrial Mammals

Alternative 2 would result in temporary displacement of terrestrial mammals in the vicinity of the Midway Pier/Greene Lane property (see Section 11.12.1.2 for further discussion on potential impacts on terrestrial mammals). Minor impacts would result (see Section 11.12.1.2 above).

Marine Mammals

The impacts associated with the in-water construction of Alternative 1 also apply to Alternative 2, as discussed in Section 11.12.1.2. The extent of these impacts would be slightly increased as a result of the increase in proposed in-water construction for the expansion of the additional floating concrete pier. The additional floating pier would measure 8 feet by 50 feet and would be constructed at the end of the rebuilt pier.

Measures to reduce impacts on marine mammals would be implemented by the developer through state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. This would result in the future developer's coordination with NMFS under the ESA and MMPA to minimize impacts on regulated marine mammals. Pursuant to the MMPA, the Navy concluded the proposed action would be unlikely to result in a take of a marine mammal. Therefore, the disposal and reuse of the Midway Pier/Greene Land property under Alternative 2 would have minor impacts on marine mammals.

Other Marine Wildlife

Implementation of Alternative 2 would have minor short-term impacts on finfish, shellfish, crustacean, and benthic resources in Narragansett Bay, similar to those discussed for Alternative 1. However, as the extent of the proposed in-water construction is greater under Alternative 2 than Alternative 1, the potential impacts on these resources would be greater. The additional floating pier would measure 8 feet by 50 feet and would be constructed at the end of the rebuilt pier. The impacts associated with the in-water construction of Alternative 1 also apply to Alternative 2, as discussed in Section 11.2.1.2. Alternative 2 would result in minor impacts on other marine life and fish, and BMPs developed through the future developers consultations with the USACE under the CWA and NMFS under the ESA and MMPA, will ensure that no significant impacts occur to other marine wildlife.

Herpetofauna

Impacts on herpetofauna as a result of Alternative 2 would be similar to those listed under Alternative 1.

Avian Species

Similar to Alternative 1, implementation of Alternative 2 would result in short-term impacts, such as displacement. The future developer would be required to minimize impacts on migratory birds as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA. Pursuant to the MBTA and BGEPA, the Navy has determined that implementation of Alternative 1 would have minor impacts on avian species and the disposal and reuse of the Midway Pier/Greene Lane property would not result in significant impacts on, or harm of, migratory birds and bald and golden eagles.

Benthic Organisms

Under Alternative 2, the proposed installations would have minor short-term impacts on benthic resources in Narragansett Bay, similar to those discussed for Alternative 1. The extent of these impacts would be

slightly more as a result of the increase in proposed in-water construction for the expansion of the pier and the additional floating concrete pier.

11.12.2.3 Threatened and Endangered Species

Under Alternative 2, impacts on federally listed threatened and endangered species would be the same as those discussed under Alternative 1.

11.12.2.3.1 Federally Listed Species

Impacts on the federally listed threatened northern long-eared bat would be the same as those discussed under Alternative 1 because the acreage of old field to be lost under both alternatives is the roughly the same.

11.12.2.4 Significant Wildlife Habitat

Submerged Aquatic Vegetation

Alternative 2 would not result in any impacts on SAV at the Midway Pier/Greene Lane property. The eelgrass beds that are located along the waterfront near the shoreline park would not be disturbed during construction of the pier because the development footprint does not overlap with the mapped locations of SAV.

Wetlands

Construction of the pilings under Alternative 2 would impact approximately 0.01 acres of the marine/estuarine wetlands associated with the former Midway Pier/Greene Lane property. The developer would be required to avoid, minimize, and mitigate impacts on wetlands as required under state and federal permitting processes of the CRMC/SAMP and Section 404 of the CWA (see Section 11.11 for a discussion of required wetland permit and a discussion of wetland impact mitigation).

Vernal Pools

There are no vernal pools at the Midway Pier/Greene Lane property.

Essential Fish Habitat

Implementation of Alternative 2 would have minor, short-term impacts on EFH resources at the Midway Pier/Greene Lane property, similar to Alternative 1. However, the extent of the proposed in-water construction and expansion of the existing pier with the addition of a floating concrete pier would result in slightly more minor and short-term impacts on EFH resources. There would be no significant long-term adverse impacts on fish or their respective EFH. The future developer's consultation with the USACE under the CWA and NMFS under the MSFCMA would ensure the development of BMPs to minimize any adverse effects to EFH. Pursuant to the MSFCMA, the Navy has determined that the project would not adversely affect designated EFH in the Narragansett Bay.

11.12.3 No Action Alternative

11.12.3.1 Vegetation

Under the No Action alternative, the Midway Pier/Greene Lane property would be retained by the U.S. government in caretaker status; no redevelopment would occur. The vegetation along the corridor would be left in a natural state, with no management, and the various habitat types would not be anticipated to change in habitat quality.

11.12.3.2 Wildlife

Under the No Action alternative, the property would be retained by the U.S. government in caretaker status. Overall wildlife abundance would likely increase as a result of continued lack of human activity. Diversity would likely remain constant, as the variety of habitats along the corridor would be maintained.

11.12.3.3 Threatened and Endangered Species

Under the No Action alternative, the property would be retained by the U.S. government in caretaker status. The potential for the federally listed endangered northern long-eared bat to be present on the site along with other federal or state-listed species would continue to exist at the Midway Pier/Greene Lane property.

11.12.3.4 Significant Wildlife Habitat

The SAV, marine/estuarine wetlands, and EFH that currently exists off the shore of the Midway Pier/Greene Lane property is likely to improve in quality over time, with continued limited use of the area.

12 Regional Air Quality Impact Analysis

This section presents the air quality impact of the total emissions of criteria pollutant and GHG emissions projected from the redevelopment of the former Navy Lodge property, the former Naval Hospital property, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property. Emissions of HAPs from the proposed action would be negligible and so these have not been quantified. This section provides a summary of the total estimated emissions associated with the action at all the surplus properties.

(Note: Section 3.6 describes the existing air quality in the region, applicable air quality regulations and requirements, and methods used to assess the environmental consequences. Sections 5.6, 7.6, 9.6, and 11.6 describe the projected emissions from construction and operation of the Redevelopment Plan at the individual locations: the former Navy Lodge property, the former Naval Hospital property, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property, respectively.)

12.1 Alternative 1 (Preferred Alternative)

Construction Emissions

Total annual construction emission estimates for each property are summarized in Sections 5.6, 7.6, 9.6, and 11.6. Emissions would occur from demolition, construction equipment, construction materials delivery, demolition material removal, construction employee commute, and dust from ground disturbance. These emissions would be temporary and localized. Since full build-out of the Redevelopment Plan is assumed to occur over 20 years, it is also not likely that these construction emissions would occur within the same year at all locations or at the same time as the operational emissions. Thus, construction emissions were evaluated individually for each property. Construction emissions under Alternative 1 at each surplus property would be similar or slightly less than emissions from Alternative 2. See Section 12.2 Alternative 2 for estimated construction emissions for each property.

Operational Emissions

Operational emissions from building energy use and increased vehicle traffic have been calculated for all surplus properties. Emissions from building energy use include the direct use of fuel oil and/or natural gas—primarily for heating—as well as the indirect use of electricity. As evaluated in the draft *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013), vehicle traffic would increase by establishing residential, industrial, and retail land uses, resulting in an increase in vehicle emissions. Table 12.1-1 summarizes total annual operational emissions that would result from the proposed action under Alternative 1. These emissions would occur after full build-out of Alternative 1 at all locations.

To mitigate operational emissions, buildings can be designed to meet stringent energy-efficiency standards. Implementing traffic-easing roadway designs to lower vehicle speed and reduce congestion, in addition to expanding public transportation and carpooling programs, could reduce vehicle emissions.

12.2 Alternative 2

Alternative 2 provides for the disposal of the surplus property at NAVSTA Newport and redevelopment at a higher density than Alternative 1, which would result in more construction and operational emissions from larger buildings and more vehicle trips, compared with Alternative 1.

Table 12.1-1 Total Annual Operational Emissions, All Surplus Properties, Alternative 1

Property	Emissions per year (tons)					
	CO	NO_X	VOCs	SO_2	PM_{10}	$PM_{2.5}$
Former Navy Lodge	12.76	1.40	1.51	0.06	0.27	0.18
Former Naval Hospital	12.39	2.81	1.47	0.64	0.28	0.19
Tank Farms 1 and 2	27.06	3.80	3.20	0.48	0.59	0.39
Midway Pier/Greene Lane	0.066	0.012	0.008	0.001	0.001	0.001
Total Annual Operational Emissions	**52.27**	**8.01**	**6.18**	**1.19**	**1.15**	**0.76**

Key:
CO = Carbon monoxide.
N/A = Not applicable.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

Construction Emissions

Construction emissions under Alternative 2 at each surplus property (see Table 12.2-1) would be similar or slightly more than emissions from Alternative 1. These emissions would be temporary, and would occur only during the period of construction.

Table 12.2-1 Construction Emissions, All Surplus Properties, Alternative 2

Property	Emissions per year (tons TPY)					
	VOCs	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Former Navy Lodge	0.82	4.21	7.31	0.011	0.91	0.69
Former Naval Hospital	3.40	21.09	42.06	0.07	4.64	3.99
Tank Farms 1 and 2	4.96	26.25	38.37	0.08	6.68	5.44
Midway Pier/Greene Lane	1.40	7.94	10.85	0.023	1.88	1.22

Key:
CO = Carbon monoxide.
N/A = Not applicable.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

Operational Emissions

Operational emissions from building energy use and increased vehicle traffic under Alternative 2 would be slightly higher than Alternative 1. Table 12.2-2 summarizes total annual operational emission increases that would result from Alternative 2. These emissions would occur after full build-out. Mitigation of these emissions could be similar to those described under Alternative 1.

Table 12.2-2 Total Annual Operational Emissions, All Surplus Properties, Alternative 2

Property	Emissions per year (tons)					
	CO	NO_X	VOCs	SO_2	PM_{10}	$PM_{2.5}$
Former Navy Lodge	25.52	2.79	3.01	0.12	0.55	0.36
Former Naval Hospital	15.58	3.26	1.84	0.72	0.35	0.24
Tank Farms 1 and 2	30.87	4.46	3.65	0.57	0.68	0.45
Midway Pier/Greene Lane	0.066	0.012	0.008	0.001	0.001	0.001
Total Annual Operational Emissions	**72.03**	**10.53**	**8.52**	**1.41**	**1.58**	**1.05**

Key:
CO = Carbon monoxide.
N/A = Not applicable.
NO_X = Nitrogen oxides.
PM_{10} = Particulate matter less than 10 microns in diameter.
$PM_{2.5}$ = Particulate matter less than 2.5 microns in diameter.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

12.3 Conformity Applicability and Impact Assessment

Following the disposal of the NAVSTA Newport surplus properties, the Navy would not retain control of the properties and implementation of either Alternative 1 or Alternative 2 would not be considered a federal action; therefore the General Conformity Rule would not apply. In addition, Rhode Island is in attainment for all current NAAQS. Rhode Island had previously been designated nonattainment for the 1997 ozone standard; however, on March 6, 2015, the EPA revoked the 1997 8-hour ozone NAAQS (80 FR 12264; Federal Register 2015. Although the General Conformity Rule does not apply to the redevelopment, the rule presents conservative thresholds that can be used to determine the potential air quality impact significance of a proposed action. As a result, the analysis was completed for emissions resulting from construction and operations at full build-out, and annual emission totals were compared with General Conformity Rule thresholds.

The data shown in sections 5.6, 7.6, 9.6, and 11.6 indicate that temporary emissions from construction at each of the surplus properties under either alternative would be below the General Conformity Rule *de minimis* thresholds. Tables 12-1 and 12-2 show that annual operational emission increases that result from total changes at all surplus properties under Alternative 1 or Alternative 2 are also below these thresholds, and changes in air quality would not be significant as a result of this action.

12.4 GHG Emissions and Climate Change

Office of the Chief of Naval Operations Manual M-5090.1 (January 10, 2014) states that the Navy must address the effects of climate change, identifying and quantifying GHG emissions (where possible) that may be generated in executing the proposed action, and also describing the beneficial activities being implemented Navy-wide to reduce GHG emissions. The guidance also requires the Navy to consult the latest guidance on climate change from the CEQ.

In December 2014, the CEQ issued new draft guidance "to provide Federal agencies direction on when and how to consider the effects of GHG emissions and climate change in their evaluation of proposed federal actions in accordance with NEPA and CEQ Regulations implementing the NEPA" (CEQ 2014). While this guidance is in draft form, "[it] does not change or substitute for any law, regulation, or of legally binding agreement and is not legally enforceable," it is intended to describe controlling requirements under the terms of NEPA and the CEQ regulations (CEQ 2014). The analysis of this action

has considered the recommendations in this guidance and has included the quantitative and qualitative review and documentation of GHG emissions and climate change effects for the action.

GHG emissions were estimated for the energy usage in new buildings and for increased vehicle use in the region associated with the action. Energy use was calculated as described in Chapter 3, and EPA emission factors have been used to estimate GHG emissions (see Appendix D-1 for detailed assumptions and calculations). Table 12.4-1 provides a summary of estimated annual GHG emissions that would result from the full implementation of the proposed action at all surplus properties.

Table 12.4-1 Greenhouse Gas Emissions, Alternatives 1 and 2 (All Properties)

Emission source	Global Warming Potential per year (MT CO2-e)			
	CO_2	N_2O	CH_4	Total
Alternative 1				
Building Emissions	2,963.92	53.97	3.31	3,021.20
Mobile Emissions	11,684.64	NA	9.99	11,694.62
Total Alternative 1 Emissions	**14,648.56**	**53.97**	**13.29**	**14,715.83**
% of Total CO_2 emissions in RI, 2010				**0.134%**
Alternative 2				
Building Emissions	3,614.55	70.88	3.79	3,689.22
Mobile emissions	16,129.73	NA	13.78	16,143.52
Total Alternative 2 Emissions	**19,744.28**	**70.88**	**17.57**	**19,832.73**
% of Total CO_2 emissions in RI, 2010				**0.180%**

GHG emissions that could result from Alternative 1 and Alternative 2 would be less than 25,000 metric tons annually under either alternative. While CEQ guidance has noted that the 25,000 metric ton level is not a threshold for NEPA review, but a threshold for quantifying emissions, it provides a frame of reference for considering significance of impacts. These totals are from direct and indirect, stationary and mobile sources associated with the implementation of this project, and they represent about a tenth of a percent of the state of Rhode Island's total annual GHG emissions. There would be no new sources that would require reporting or GHG emission mitigation.

GHG emissions from construction would not be from stationary sources, would be temporary, and would also be minimal.

GHG construction emissions can be mitigated by using the most efficient equipment available, sourcing construction materials locally, and implementing a waste management program in order to recycle as much C & D debris as possible. To mitigate operational emissions, buildings can be designed to meet energy-efficiency standards. The Department of the Navy has certified more than 30 military construction projects using the U.S. Green Building Council's Leadership in Energy Efficient Design (LEED) program, ensuring energy-efficient construction (U.S. Department of the Navy 2015). Including a 1 MW photovoltaic solar array would offset some of the electricity needed for the new buildings at Tank Farms 1 and 2. Implementing traffic-easing roadway designs to lower vehicle speed and reduce congestion, in addition to expanding public transportation and carpooling programs, would reduce vehicle emissions.

The 2014 INRMP includes a discussion of future climate change trends, with a focus on storm surge and the installation's vulnerability. By the end of this century in Rhode Island, sea level is projected to increase by 3 to 5 feet above levels observed in the 1990s, and storm surges associated with more intense hurricanes is expected to be 2 to 4 feet above sea level (Tetra Tech, Inc. 2014a). Sea level rise and storm surge projections were completed for NAVSTA Newport and show a range of sea level rise above mean higher high water (MHHW) along a thin band along the coastline of the former Naval Hospital property from 1foot above sea level to 3 feet above sea level, with areas that could be affected by a 3-foot storm

surge. At the Midway Pier/Greene Lane property, a similar range of sea level rise above MHHW is projected, as well as a 4-foot storm surge (Tetra Tech 2014a). No sea level rise or storm surge concerns are projected for the former Navy Lodge and Tank Farms 1 and 2 because they lie more inland.

A future project has been identified for the installation to develop a climate change vulnerability assessment and adaptation plan. The results of this assessment can be used to develop installation-specific climate adaptation strategies. The assessment and adaptation plan will include a detailed analysis of installation resources that are at risk from climate change and will also address sea-level rise scenarios, potential flood zone shifts caused by the sea-level rise scenarios, and an evaluation of risk to hazardous waste and oils locations from sea-level rise, storm surge, and flood zone shifts (Tetra Tech, Inc. 2014a).

12.5 No Action Alternative

Under the No Action alternative, there would be no new stationary or mobile sources of criteria, HAPs, or GHG emissions from the surplus properties, and the No Action alternative would not change existing air quality in the Newport, RI region.

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13 Cumulative Impacts

This section examines the potential cumulative effects of the disposal and reuse of surplus property at NAVSTA Newport. This cumulative impact analysis was developed to be consistent with guidance published by the CEQ (1997b) and the EPA (1999). In addition, the CEQ issued further guidance to federal agencies in June 2005 regarding the consideration of past actions in cumulative effects analyses. The guidance directs the agency preparing a NEPA document to determine the relevant information pertaining to past actions that could be useful in illuminating or predicting the reasonably foreseeable direct and indirect effects of a proposed action.

CEQ regulations stipulate that the cumulative effects analysis within an EIS should consider the potential environmental impacts resulting from "the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in considering cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographical and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions. Cumulative effects are most likely to arise when a relationship or synergy exists between the proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those geographically separated.

Research, literature reviews, and contacts with applicable government and nongovernment agencies were used to determine impacts and to identify past, present, and future actions within the project area.

13.1 Cumulative Impact Study Area

The study area for this cumulative impacts analysis was identified by first determining the geographic area that includes the resources that would be directly affected by the proposed action and, second, by extending the boundaries of the initial geographic area to include the same and other resources affected by the combined impacts of the project and other actions. The geographic range varies depending on the resource area analyzed; resource-specific geographic study areas are specifically described. The cumulative impact analysis is an analysis of resource areas that can be evaluated meaningfully and that are of concern to resource agencies, local officials, and/or the public. Resource areas evaluated here for cumulative impacts include land use and zoning, transportation, environmental management, air quality, utilities and infrastructure, water resources, and biological resources. The cumulative impact analysis includes a description and evaluation of the past, present, and reasonably foreseeable future actions that could potentially have direct or indirect impacts in combination with the proposed action on these resource areas.

13.2 Past, Present, and Reasonably Foreseeable Actions

Navy representatives met with municipal officials to identify and discuss any recently completed or reasonably foreseeable future actions in the vicinity of the surplus property. Available land uses and development plans and project-specific documents were also reviewed to identify other reasonably foreseeable future actions near the surplus property. Additionally, NAVSTA Newport documents and plans were reviewed for Navy-specific projects. Specific projects or actions that were either recently implemented (past), currently ongoing (present), or considered reasonably foreseeable in the future are listed and described in Table 13-1. The locations of these projects in relation to the surplus property at NAVSTA Newport are shown on Figure 13-1.

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
Projects closest to Former Navy Lodge Property[2]					
1	West Main/ Coddington Development Center	Mixed use development on four parcels totaling 14 acres	Near intersection of West Main and Coddington Highway, Town of Middletown	0.00	Town administration has proposed funding in the FY2016 budget to continue work to implement the West Main/Coddington Plan; the project relies on the release of 3 acres of Navy land to the town
2	BRACCON, Army Reserve Center	Construction of a new 62,532 square foot Army Reserve Center at Coddington Cove	On NAVSTA Newport	0.30	Constructed
3	Lucy's Hearth Housing Project	Redevelopment of office building into 15 affordable housing units	19 Valley Rd, AP 107NE, Lot 35A, Town of Middletown	0.33	Developer securing funding; construction expected in the next several months
4	MILCON, P448	Construction of 11,916 square feet of HazMat storage and demolition of Building 1166	On NAVSTA Newport	0.38	Constructed
5	MILCON, P346	Demolition of buildings 25, A-10, and 307.	On NAVSTA Newport	0.49	Awarded; to be completed by summer 2016
6	U.S Coast Guard facility	Construction of a U.S. Coast Guard facility that replaced the maintenance augmentation team facility located in Building 68 on Pier 2	On NAVSTA Newport	0.78	Constructed
7	MILCON, P459	Renovation of Gate 4	On NAVSTA Newport	0.82	Project not yet funded
8	BRACCON, P112	Construction of Maritime Subsurface Sensor Operations Facility, a one-story, 40,000 square foot addition to Building 1176	On NAVSTA Newport	0.84	Constructed
9	MILCON, P076	Construction of a 44,000 square foot, two-story building near Building 1246 to use as an Undersea Launcher and Missile Systems Laboratory	On NAVSTA Newport	0.87	Project not yet funded
10	MILCON, P079	Construction of a 43,000 square foot ASW Technology Center that will include the demolition of Buildings 1272 and 165 and partial demolition of Building 35	On NAVSTA Newport	0.90	Project not yet funded

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
11	MILCON, P075	Construction of a Submarine Payloads Integration Laboratory via a 26,000 square foot addition to Launcher Laboratory (Building 1246) to accommodate the expanded mission	On NAVSTA Newport	0.92	Project not yet funded
12	MILCON, P068	Construct new electromagnetic sensor facility inside the main NUWC campus and partially demolish Building 68 on Pier 2	On NAVSTA Newport	0.92	Constructed
13	MILCON, P466	Consolidation of the Administration Building and Post Office. This project would demolish Buildings 1 and 1900 and construct a replacement facility (40,946 square feet) to accommodate 190 NAVSTA and regional administrative personnel, including the Public Works Division as well as the Post Office and other administrative functions	On NAVSTA Newport	0.92	Project not yet funded
14	MILCON, P469	Re-bulkheading of the quay wall between Piers 1 and 2	On NAVSTA Newport	0.96	Project under way; project completion anticipated in summer 2016
15	MILCON, P452	Construction of multi-story OTC Quarters and BQs hosting an estimated 464 students in 116 standard 2 +2 modules (121,275 square feet). This project also includes the demolition of Building 291 (King Hall).	On NAVSTA Newport	0.96 (Two locations)	Funded but not initiated; project completion anticipated in summer 2016
16	BRACCON, P100	Renovation/addition of 2,000 square feet at the Dental Clinic	On NAVSTA Newport	0.99	Constructed
17	MILCON, P103	Hewitt Hall Offices ; renovation of two-and one-half floors of a five-story building	On NAVSTA Newport	1.07	Project not yet funded
18	MILCON, P451	Construction of new OTC bachelor quarters (BQs) in a 118,692 square foot facility; demolition of 143,000 square foot Nimitz Hall	On NAVSTA Newport	1.10	Constructed
19	MILCON, P489	Installation of central air conditioning for the 18 classrooms in Building 440 (Perry Hall) that are currently lacking A/C. This requires disturbance of 18,000 square feet on Coddington Point.	On NAVSTA Newport	1.12	Project not yet funded

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
20	MILCON, P370	Construction of 15,522 square feet training pool replacement	On NAVSTA Newport	1.14	Constructed
21	Subdivision on Green End Ave.	12-lot conservation subdivision	Lot 106 located at 385 Green End Ave., Town of Middletown	1.15	Under construction
22	BRACCON, P101	Construction of NSCS building at two-stories and 58,000 square feet	On NAVSTA Newport	1.16	Constructed
23	BRACCON, P102	Renovation of 38,535 square feet of Callaghan Hall	On NAVSTA Newport	1.18	Constructed
24	West Main Road and Browns Lane Retail Development	More than 400,000 square feet of retail development on 70 acres of land	Land bounded by West Main Road and Browns Lane, Town of Middletown	1.26	Applicant was successful in court and the matter was remained back to the town for consideration of the development application; applicant has yet to take action; unclear if the project will proceed
25	MILCON, P488	MWR Running Track/Trail	On NAVSTA Newport	1.26	Project not yet funded
26	MILCON, P481	Construction of a 12,000 square-foot addition to the existing Ney Hall to meet increased demand for galley space as a result of BRAC and other mission growth at NAVSTA Newport	On NAVSTA Newport	1.27	Project not yet funded
27	Seaview Inn, LLC	Rebuild and expansion of motel to 198-room hotel and suites	Fronting on Aquidneck Ave, Valley Road and John Clarke Rd., Assessor's Plat 115, Lots 1x, 5, 53, 54 and 55, Town of Middletown	1.76	Construction underway

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
28	Subdivision at Bailey Ave. and Sachuest Drive	12-lot subdivision	At the point at which Bailey Ave. turns into Sachuest Drive, Town of Middletown	2.06	Plan was approved; development has yet to start
29	St. George's School Addition	Construction of academic/science building addition	372 Purgatory Road, Town of Middletown	2.24	Construction underway; completion anticipated in 2016
Projects closest to Former Naval Hospital Property					
30	MILCON, P865	Construction of a 17,736 square foot visitor center/pass and Identification/NWC Museum facility	On NAVSTA Newport	0.32	Project not yet funded
31	Pell Bridge Ramps Relocation and Innovation Hub Development	City of Newport and Matrix Design Group (Colorado) conceiving a mixed-use resilience innovation hub development	North and South of Admiral Kalbfus Road, east of J.T. Connell Highway, City of Newport	0.47	Zoning study under way to determine feasibility of performance zoning that would facilitate redevelopment
32	Visitor Quarters (VQ) and Demolition of Building 444	Construction of new 200-room VQ and demolition of Building 444	On NAVSTA Newport	0.54	Demolition of Building 444 completed; new construction to be completed by summer/late fall 2016
33	RM09-1075	Repair Mahan Hall (Building 3)	On NAVSTA Newport	0.56	Project not yet funded
34	MILCON, PXXX	Renovation of 32,735 square feet of Building 114 (Brett Hall)	On NAVSTA Newport	0.58	Project not yet funded
35	RM09-2185	Special project to repair Connolly Hall (Building 686); no new construction.	On NAVSTA Newport	0.62	Project not yet funded

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
36	MILCON, P479	Construction of a new 85,000 square foot facility (Naval War College [NWC] International Forum), which includes a new 1,800-seat auditorium, research rooms, student study areas, and a café. If site planning determines that Building 52 (Schonland Hall) requires demolition then relocation of the business Operations Center will be necessary.	On NAVSTA Newport	0.71	Project not yet funded
37	MILCON, P455	Renovation of the Naval Justice School through construction of a new three-story façade and main quarterdeck totaling 7,535 square feet	On NAVSTA Newport	0.75	Project not yet funded
38	MILCON, P347	Construction of a 66,892 square foot fitness facility and gym	On NAVSTA Newport	0.79	Constructed
39	BRACCON, P104	Renovation of 20,204 square feet of Fitzgerald Hall for the Center for Service Support Center	On NAVSTA Newport	0.81	Constructed
40	MILCON, P339	Vehicular bridge	On NAVSTA Newport	0.85	Constructed
41	MILCON, P946	Construction of new permanent party quarters in the 1+1E configuration. The project will provide 185 beds. Buildings 688 and 689 will be demolished following construction of the new transient BQs (P478), which will allow space for the new 79,588 square-foot permanent party quarters.	On NAVSTA Newport	0.87	Project not yet funded
42	MILCON, P482	Improvements to 47,444 square feet of Tomich Hall (Building 1269)	On NAVSTA Newport	1.02	Constructed
43	MILCON, P485	Relocation of Naval Academy Preparatory School HQ to Perry Hall and construction of 15,140 square feet of space	On NAVSTA Newport	1.12	Constructed
44	MILCON, P480	Renovation of existing, historic Building 1801 (Kay Hall) and construction of a new fitness center to accommodate increased student populations (OTC, Marine Detachment Athens, NAPS, etc.) with total disturbance of 65,197 square feet	On NAVSTA Newport	1.17	Project not yet funded

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
45	VSH Realty and Cumberland Farms, Inc. Renovation/ Expansion	Renovation and expansion of gasoline dispensing facility	94 & 106 Aquidneck Avenue, Assessor's Plat 115, Lots 132, 133 and 134, Town of Middletown	1.94	Special use permit requested; project still under review
46	Atlantic Beach District Roadway and Public Improvements	Series of roadway and public improvement projects ranging from reconfiguration of intersections to creation of public parks	Atlantic Beach District, southern portion of Town of Middletown	2.07	Rhode Island DOT expected to begin work to improve four of the intersections in the district in 2016
Projects closest to Tank Farms 1 and 2					
47	DLA: Project DE 15-1640	Demolition of abandoned facilities at Tank Farm 1	On NAVSTA Newport	0.00	Tank Farm 1 component scheduled for 2016; other tank farms are yet unscheduled
48	Development of Melville Backyard Property	Potential development of 32 acres of NAVSTA Newport property intended to be excessed in the future; various plans to date	NAVSTA Newport property located west of Alexander Road and bounded by Alden Way to the south and the Melville Marina to the north, Town of Portsmouth	0.12	Developer in negotiations with RIDEM on details surrounding cleanup of the property
49	O'Neil Properties Group Redevelopment	Potential redevelopment of a parcel of land near Weaver Cove into 887 boat slips and 900 dwelling unit facilities	Shore of Weaver Cove, south of Melville, Town of Portsmouth	0.42	No documented activity since April 2014
50	Potential Sale of Raytheon Property	Potential sale and redevelopment of three buildings and land on West Main Road; multiple uses possible	West Main Road, Town of Portsmouth	0.59	Property for sale with indication of potential buyers

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
Projects closest to Midway Pier/Greene Lane Property					
51	Solar Photovoltaic System	Construction of solar PV facilities on up to 120 acres at one or more sites generating up to 31 MW of electricity.	Multiple sites on NAVSTA Newport	0.10 (Multiple locations)	To be potentially awarded in 2016
52	MILCON, P486	Construction of a 2,000 square foot Morale, Welfare, and Recreation (MWR) Sports Complex at Carr Point	On NAVSTA Newport	0.70	Project not yet funded
53	Light Industrial Redevelopment on West Main Road	Potential light industrial development of 24 acres of land	West Main Road, opposite of Marshall Lane, Town of Middletown	0.97	A plan for development of a self-storage facility was approved; the applicant has yet to proceed
54	MILCON, P911	Improvements to Gate 32 security to make it completely anti-terrorism- and force protection-compliant	On NAVSTA Newport	1.07	Project not yet funded
55	MILCON, P082	Renovations and construction at Building 119 including 15,000 square feet of interior space demolition to accommodate two new floors (30,000 square feet) for an Unmanned Anti-Submarine Warfare Support Facility	On NAVSTA Newport	1.27	Constructed
56	MILCON, P083	Renovation of Building 35 on Gould Island and construction of a new pier and a new Gould Island Waterfront Range Facility (3,000 square feet)	On NAVSTA Newport	2.32	Project not yet funded
Other Projects[3]					
57	Adaptive Reuse of School Buildings	Redevelopment of five excess school buildings. One specific proposal for the development of a mix of one-, two-, and three-bedroom condominium units along with surface parking at former Carey Elementary	Multiple locations, City of Newport	0.83 (Former Naval Hospital) * Distance measured from the Newport Public Schools District Office	Carey School has been redeveloped as condos; Sheffield School redevelopment as technology accelerator expected completion fall 2016; analysis being conducted for reuse of four other schools

Table 13-1 Recently Completed, Currently Ongoing, or Reasonably Foreseeable Actions

Project Number[1]	Project Name	Description	Location	Distance to Closest Surplus Property (miles)	Status
58	MILCON, P468	Water system improvements	Multiple locations, NAVSTA Newport	N/A	Project not yet funded
59	MILCON, P484	Replacement of sectionalized switches base-wide	Multiple locations, NAVSTA Newport	N/A	Project not yet funded

Notes:

[1] The Project Number corresponds to Figure 13-1, which shows the locations of recently completed, currently ongoing, or reasonably foreseeable actions on and around NAVSTA Newport, Rhode Island.

[2] Projects are grouped by the parcel to which they are closest; then they are listed in order of distance from that parcel.

[3] Project #s 57, 58, and 59 are not specifically marked on Figure 13-1 as they are located across larger geographic areas and not associated with a specific point.

This section identifies foreseeable non-project actions and long-term trends in or near the study area that may pose a cumulative effect on the resources, ecosystems, and human environment in the project area when considered with the effects of the proposed action. Actions are considered reasonably foreseeable future actions if they have been formally proposed; if plans, plats, or concepts have been prepared; or if the relevant authorization and/or permits have been obtained but construction has not yet started. Additionally, due to the uncertainty in the regional economy and ability to secure funding, several projects listed in Table 13-1 still in the preliminary planning stages are included in the analysis. These projects have been marked with an asterisk in the discussion below.

13.2.1 U.S. Navy – NAVSTA Newport

13.2.1.1 Other BRAC Actions

The 2005 BRAC Commission realigned several tenants to and from NAVSTA Newport. Incoming tenants included Rhode Island Army Reserves; the Center for Service Support (CSS); Marine Detachment (MARDET) Athens; Navy Support Corps School (NSCS); Navy Array Technical Support Center (NATSC) and other command, control, communications, computers, surveillance, and reconnaissance functions at the Naval Undersea Warfare Center (NUWC); and Officer Training Command (OTC)-Pensacola. Also, the following outgoing realignments were implemented: Chaplains School (CHAPS), Naval Reserve Readiness Command (REDCOM), and Navy Warfare Development Command (NWDC) (EDAW/AECOM 2008). These realignments led to population changes at NAVSTA Newport in 2011. Table 13-2 shows the population changes from these realignments.

Table 13-2 BRAC Population Changes (2011)

Tenant Command	Officer	Enlisted	Student[2]	Civilian	Total
Army Reserves[1]	16	17	0	1	34
CSS	7	21	0	47	75
MARDET Athens	4	20	80	0	104
REDCOM	-2	-19	0	0	-21
Navy Underseas Warfare Center	2	0	0	162	164
NSCS	20	7	285	21	333
NWDC	-58	-4	0	-54	-116
OTC-Pensacola	28	28	299	14	369
Chaplains School	-11	-11	-38	-2	-62
Total	**6**	**59**	**626**	**189**	**880**

Source: Adapted from Table 1.2 *in* EDAW/AECOM 2008

Notes:
[1] Army Reserve population does not include weekend reservists.
[2] Numbers shown in student column reports average on-board (AOB) loading.

The realignments that occurred under the 2005 BRAC Law resulted in new construction at NAVSTA Newport in preparation for the incoming personnel and missions; all of these projects were completed in 2011 (Sullivan 2013). The projects in relation to BRAC construction (BRACCON) included:

- P101: Construction of a Naval Supply Corps School Building, a 58,000 square foot, two-story structure. A classroom, multipurpose spaces, a library and instructor offices were constructed in addition to renovations to Building 1112 to accommodate MARDET Athens.
- P104: Renovation of 20,204 square feet of Fitzgerald Hall (Building 1183) to accommodate CSS uses.

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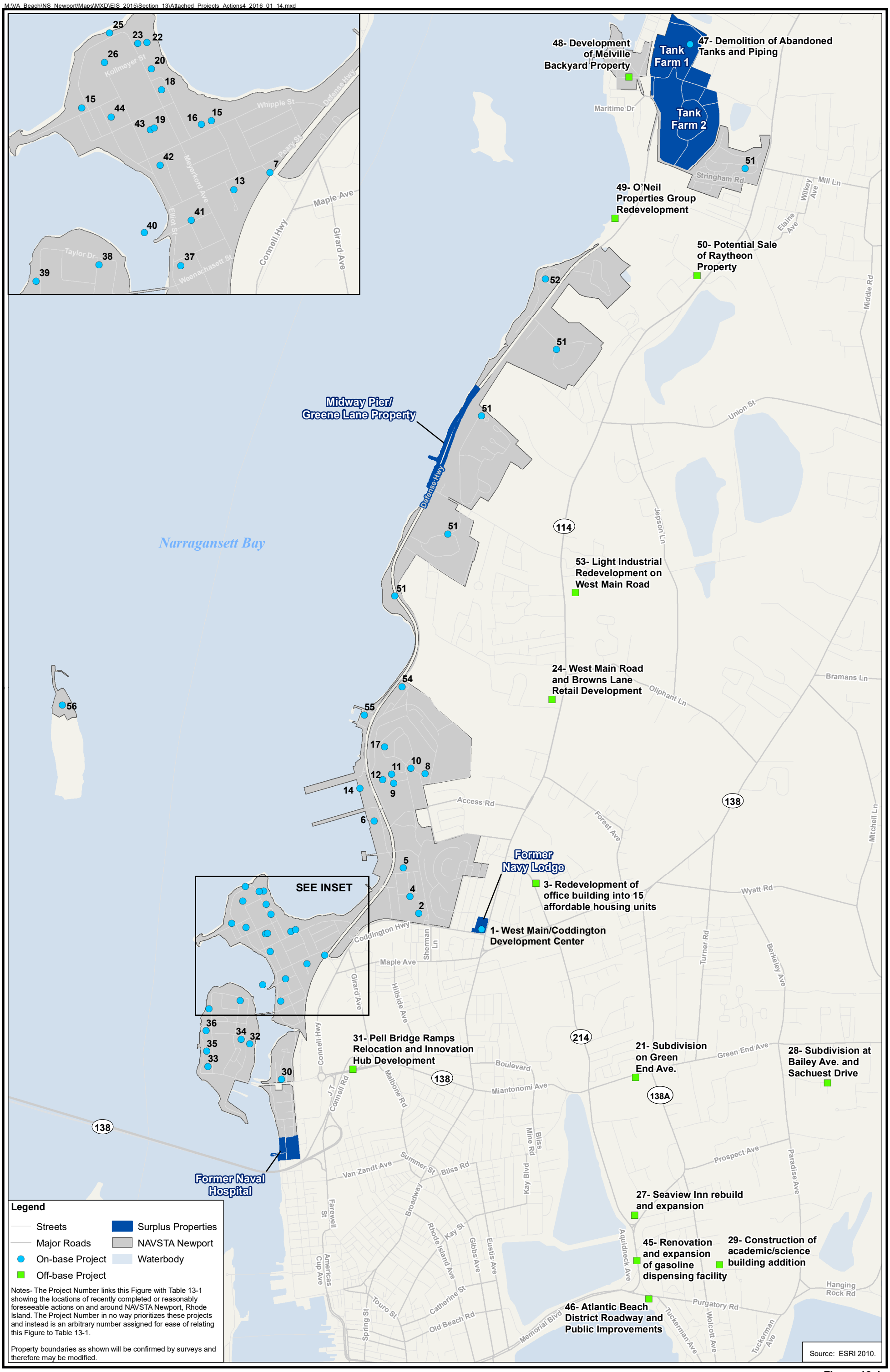

Figure 13-1
Recently Completed or Reasonably Foreseeable Actions
NAVSTA Newport, Rhode Island

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- P112: Construction of a Maritime Subsurface Sensor Operations Facility that includes a 40,000 square foot one-story addition to Building 1176 to accommodate administrative and laboratory spaces in relation to NUWC Newport Division.
- P100 and P102: Renovations to the Dental Clinic in Building 1173 on Coddington Point and Callaghan Hall (Building 270).
- 65075: New construction of an Army Reserve facility at Coddington Cove that includes a vehicle parking area and vehicle maintenance facility. The facility is a total of 62,532 square feet.

The Navy also intends to dispose of other excess properties, including the Melville Backyard and Tank Farms 3 and 4. The Town of Portsmouth has developed some concepts for the Melville Backyard and Tank Farms 3 and 4, which are addressed in Section 13.2.4.

13.2.1.2 MILCONs and Other Projects

MILCON

Military construction (MILCON) projects include construction projects for all types of buildings, roads, airfield pavements, and utility systems costing $750,000 or more, including construction work necessary to produce a complete and usable facility or complete and usable improvement to an existing facility. MILCON projects were identified as part of NAVSTA Newport's facilities master plan, *Naval Station Newport Vision 2035, Master Plan, Newport, Rhode Island* (EDAW/AECOM 2008). The plan identifies both programmed and unprogrammed projects.

Since the development of the plan, nine MILCON projects have been completed (Sullivan 2013; 2015). They include a vehicular bridge (P339); 15,522 square feet of construction for a training pool replacement (P370); 11,916 square feet for hazardous materials storage, including demolition of Building 1166 (P448); construction of a 66,892 square foot fitness facility and gym (P347); construction of new OTC bachelor quarters (P451); improvements to Tomich Hall (P482); relocation of the Naval Academy Preparatory School (P485); construction of a new electromagnetic sensor facility (P068); and renovations and construction at Building 119 (P082) (EDAW/AECOM 2008; Sullivan 2015). One other MILCON project is currently under way at NAVSTA Newport, a re-bulkheading of the quay wall between Piers 1 and 2 to prevent erosion (P469); in addition, one demolition project has been awarded (P346) (Sullivan 2015). In addition, there is a funded project to demolish tanks and associated facilities at Tank Farm 1, with the scheduled work to be completed in 2016.

Twenty-two projects have not yet been funded at NAVSTA Newport. They are summarized below in Table 13-3 (also see Table 13-1 for additional detail).

Table 13-3 Unfunded Programmed and Unprogrammed MILCON Projects as of April 2015 at NAVSTA Newport

Project	Description	Building (square feet)
P075	Submarine Payloads Integration Laboratory	23,218
P076	Undersea Launcher and Missile Systems Laboratory	44,401
P079	ASW Technology Center	43,056
P083	Gould Island Waterfront Range Facility	14,000
P452	OTC Quarters and Bachelor Quarters (BQ) and Demo Building 291	121,275
P455	Naval Justice School Renovations	7,535
P459	Renovate Gate 4	1,604

Table 13-3 Unfunded Programmed and Unprogrammed MILCON Projects as of April 2015 at NAVSTA Newport

Project	Description	Building (square feet)
P466	Consolidated Administration Building/Post Office	40,946
P468	Water System Improvements	N/A
P479	Naval War College (NWC) International Forum	85,000
P480	Drill Hall Replacement	65,197
P481	Galley Expansion	12,000
P484	Replace Sectionalized Switches Base-wide	N/A
P486	Morale Welfare and Recreation (MWR) Sports Complex at Carr Point	2,000
P488	MWR Running Track/Trail	N/A
P489	A/C 18 Classrooms Building 440 on Coddington Point (CP)	18,000
P865	Visitor Center/Pass & ID/NWC Museum	17,736
P911	Gate 32 Security Improvements	N/A
P946	Construct Permanent Party BQ and Demo Buildings 688 and 699 CP	79,588
PXXX	Renovate Brett Hall	32,735
RM09-2185	Repair Connolly Hall	-
RM09-1075	Repair Mahan Hall	-

Sources: Sullivan 2015; EDAW/AECOM 2008

Other Large Projects

Construction of a U.S. Coast Guard facility was completed in December, 2015. This new facility replaced the maintenance augmentation team facility located in Building 68 on Pier 2 (Sullivan 2013; 2015).

A new visitor quarters (VQ) will be constructed at NAVSTA Newport and this project includes the completed demolition of Building 444. The new VQ is intended to be a 200-room visitor quarters. Construction of the VQ is anticipated to be completed in summer/late fall 2016 (Sullivan 2015).

The Navy proposes to allow up to 120 acres to be developed by an independently operated commercial power utility for the construction, operation, and decommissioning of a solar PV facility at one or more sites at NAVSTA Newport. Renewable energy generated by the solar PV facilities would be used by the Navy for operations and activities at NAVSTA Newport. NAVSTA Newport identified three on-station sites (Tank Farm 4, 5, and the McAllister Point Landfill) and three PPV housing sites (Coddington Cove, Greene Lane, and Melville) that could accommodate a utility-scale solar PV facility project. If a solar PV facility is constructed at each of the proposed sites, approximately 31 MW of electricity would be generated.

13.2.2 Rhode Island Department of Transportation

Pell Bridge Access Improvements

In July 2011, the Aquidneck Island Planning Commission (AIPC) published the *Aquidneck Island Transportation Study*. As part of this study, the AIPC developed a conceptual plan for Pell Bridge access improvements. The plan includes a new two-way connection along J.T. Connell Highway through Van Zandt Avenue; removing a ramp and reconfiguring the downtown Newport off-ramp to provide more storage for vehicles on ramp; widening J.T. Connell Highway to four lanes from Admiral Kalbfus Road to a new connector east of J.T. Connell Highway; constructing four additional roundabouts with medians

for access management; and removing the elevated highway, which would create land for redevelopment (Vanasse Hangen Brustlin, Inc. 2011). At the time of the development of the transportation study, the Pell Bridge access improvements project was still in the conceptual stages. The City of Newport is advancing a concept in which Pell Bridge access ramps would be redeveloped by RIDOT as part of the development of the Newport Innovation Hub (Carroll 2015) (see Section 13.2.5).

13.2.3 Town of Middletown

13.2.3.1 Large-scale Projects

Two large-scale projects have been formally proposed in planning documents for the Town of Middletown.

The West Main/Coddington Development Center consists of four parcels that total approximately 14 acres: the former Navy Lodge, the town's recreation complex, Middletown Public Library, and the former JFK Elementary School. The preferred scenario for the West Main/Coddington Development Center would include a mix of uses, including civic (50,000 square feet), retail (80,000 square feet), office (45,000 square feet), and residential (175 units), along with streetscaping and parking (Vanasse Hangen Brustlin, Inc. and RKG Associates, Inc. 2011). The town administration has proposed funding in the 2016 fiscal year budget to continue work to implement the plan. The project relies on the release of three acres of Navy-owned land to the town.

The *Atlantic Beach District Master Plan* (Maguire Group and Gates Leighton & Associates 2007) was created to guide the redevelopment of the Atlantic Beach District, located in the southern end of Middletown adjacent to the City of Newport boundary and on the east side of Easton Pond, to a pedestrian-oriented commercial area. The plan recommends a series of roadway and other public improvements, including the following (Maguire Group and Gates Leighton & Associates 2007):

- Roundabout at Valley Road and Aquidneck Avenue – Create a roundabout at this intersection.
- Sidewalks and new lane configuration for Aquidneck Avenue – Create a more pedestrian-friendly concept along Aquidneck Avenue, including increasing the width of the sidewalks to 6 feet on the east side.
- Create a park on Newport Avenue at the intersection of Newport and Aquidneck Avenues. Excess right-of-way would be used to create a park of approximately 8,900 square feet.
- Reconfiguration of Crescent Road – Make this roadway a one-way road and reconfigure the intersection of Crescent Road with Aquidneck Avenue to provide a 90-degree intersection.
- Reconfiguration of the intersection of Aquidneck Avenue and Purgatory Road – Create a "bump-out" in front of the Atlantic Beach Club to provide additional pedestrian space.
- Improvements to a public parking lot and pedestrian bridge at Dunlap-Wheeler Park – Reconfigure the parking lot and construct a new bridge connecting the boardwalk at Easton's Beach to the park.

RIDOT is expected to begin work to improve four intersections in the district in 2016 (Wolanski 2015), and the Town of Middletown continues to seek funding for the remaining roadway and public improvements (Wolanski 2013).

13.2.3.2 Potential Future Redevelopment

There are additional projects that show redevelopment potential in the Town of Middletown.

West Main Road and Browns Lane Retail Development

A project on a 70-acre parcel of land roughly bounded by West Main Road and Browns Lane is in the planning stages. The proposed project includes more than 400,000 square feet of retail development. A legal proceeding concluded with the court remanding the development application to the town for consideration, but the applicant has yet to advance the project and it is unknown whether the project will proceed (Wolanksi 2015).

Subdivision at Bailey Avenue and Sachuest Drive

The town approved a plan to build 12-lot subdivision at the terminus of Bailey Avenue where Sachuest Drive begins. Development has yet to start (Wolanski 2015).

Light Industrial Redevelopment on West Main Road

A 24-acre property located on West Main Road roughly opposite Marshall Lane is zoned for light industrial use and offers significant development (Pare Corporation 2013). A plan for development of a self-storage facility was approved, but the applicant has yet to proceed (Wolanski 2015).

Convenience Store and Gas Station Renovation and Expansion

A special use permit was requested for the renovation and expansion of a Cumberland Farms retail store and gasoline dispensing facility on Aquidneck Avenue. The project is being reviewed by the town.

13.2.4 Town of Portsmouth

O'Neil Properties Group Redevelopment

A parcel of land next to Weaver Cove could be redeveloped to include approximately 900 boat slips and 900 dwelling unit facilities. The majority of development is proposed along the shore of Weaver Cove, south of Melville, with a small portion on the parcel of land immediately east of Defense Highway (Pare Corporation 2013). The last project-related activities occurred in April 2014 (Crosby 2015).

Development of Melville Backyard Property

The NAVSTA Newport Melville Backyard property is approximately 32 acres located at the northern end of the installation. NAVSTA Newport intends to dispose of the property as surplus sometime in the future. The property, located west of Alexander Road, is bounded by Alden Way to the south and the Melville Marina to the north. This parcel is zoned as vacant land but the adjacent parcels are zoned for developed recreation. Various concepts for development have been discussed to date, although no plans are currently being reviewed (Pare Corporation 2013). The developer and RIDEM are in discussions regarding cleanup of the property (Crosby 2015).

Potential Sale of Raytheon Property

Raytheon has been actively trying to sell three buildings on the southeast corner of their property along with an undisclosed amount of land surrounding the buildings located on West Main Road. The town has been made aware of potential buyers (Crosby 2015). This area could be redeveloped into any number of uses, including light manufacturing, a technical school, or indoor storage (Pare Corporation 2013).

13.2.5 City of Newport

Several projects in the City of Newport are anticipated; however, none of these are currently programmed or funded. Projects with higher likelihood to move forward are discussed below.

Redevelopment as Part of Pell Bridge Realignment

A Statewide Planning Challenge Grant was awarded to the City of Newport to complete a detailed planning assessment, market review, circulation and parking review, and a reuse plan for lands adjacent to the Pell Bridge Ramp, J.T. Connell Highway interchange, and Naval Health Clinic–New England (Bronk 2012). As indicated in the *North End Master Plan* (City of Newport 2006), the approximately 32 acres comprising several parcels near the Pell Bridge Realignment are recommended for redevelopment. The city has been working with Matrix Design Group of Colorado on the development of an integrated project to position the potential redevelopment of the bridge ramps as part of a larger mixed-use resilience innovation hub development. Activities to date include a SWOT analysis, draft of new zoning for the area around the ramps from Commercial/Industrial to Commercial Technology zoning, public outreach, development of an investment portfolio document and a Request for Proposals for potential developers (Carroll 2015).

Adaptive Reuse of Surplus School Buildings

Due to shifts in demographics and a decrease in the school-age population, the City of Newport is proceeding with adaptive reuse of surplus school buildings designated as excess by the City of Newport (DeIonno 2013). The former Carey Elementary School has been redeveloped as condos and is no longer city property; Sheffield School is being converted to a technology accelerator with expected completion in fall 2016; and reuse and market analysis is being conducted for four other schools (Carroll 2015).

13.3 Cumulative Impact Analysis

This section identifies the cumulative effects associated with redevelopment of surplus properties at NAVSTA Newport and the projects listed above in Section 13.2. This analysis focuses on the human environment. If redevelopment of surplus properties does not result in a direct or indirect impact, then no further analysis of potential cumulative effects is necessary. The following resources have been included in the cumulative effects analysis:

- Land Use, Zoning, and Coastal Resources
- Transportation
- Environmental Management
- Air Quality
- Infrastructure and Utilities
- Cultural Resources
- Water Resources
- Biological Resources.

13.3.1 Land Use, Zoning, and Coastal Resources

13.3.1.1 Geographic Study Area

The geographic study area for land use included the City of Newport and Towns of Middletown and Portsmouth. Because the surplus properties are currently not in use and would be transferred from Navy to local government ownership, the proposed action under Alternative 1 or Alternative 2 would have no direct impacts on land use on NAVSTA Newport. Redevelopment of the surplus properties would have indirect impacts on land use on NAVSTA Newport because they are located next to portions of either the active installation or military housing areas. These indirect impacts would be in the form of increased traffic (see Section 13.3.2.2 for a discussion of transportation cumulative impacts). Therefore, the

installation is not included in the study area for cumulative impacts on land use. The geographic study area for coastal resources included portions of the City of Newport, the Towns of Middletown and Portsmouth, and NAVSTA Newport in the 200-foot contiguous zone of Narragansett Bay.

13.3.1.2 Cumulative Impact Analysis

To assess cumulative impacts on land use, the following actions were considered:

- Future actions that would convert existing land uses to new uses. Projects identified include new mixed-use, marina-related, residential, commercial, and industrial development, which could result in changes in land use types, and state and local transportation projects, which could result in indirect land use impacts.
- Future actions that would convert or expand existing land uses in the 200-foot contiguous zone of Narragansett Bay and, therefore, would require state-permitting or a federal consistency determination. Projects identified include marina-related, residential, recreational, and various federal development and redevelopment projects.

The proposed action would result in the transfer of approximately 158 acres of federal land to local governments, including approximately 8.3 acres to the City of Newport, approximately 13.7 acres to the Town of Middletown, and approximately 136 acres to the Town of Portsmouth.

Under Alternative 1 or Alternative 2, existing land use for the surplus properties would change. The former Navy Lodge property would be incorporated into the Town of Middletown, and the vacant property would be converted to commercial use. The former Naval Hospital property would be incorporated into the City of Newport and converted to a mixed-use development. Tank Farms 1 and 2 would be incorporated into the Town of Portsmouth. Portions of the tank farms would be converted to office, light industrial, marina-related, and infrastructure uses, while the remainder would be preserved as open space. The Midway Pier/Greene Lane property would be incorporated into the Town of Middletown and converted to recreational use or preserved as open space. Under the No Action alternative, land use on the surplus properties would not change. The surplus properties would remain under the ownership of the U.S. government in caretaker status, and public access would be prohibited.

The majority of the state, local, and private projects identified in Section 13.2 would result in changes in land use in the study area, either through development of vacant land or redevelopment of developed land. Many of these projects would be small-scale and would not be located adjacent to the surplus properties. Compliance with local zoning ordinances would be expected to ensure consistency of these projects with existing land uses in the study area and local land use controls.

In addition, several larger planned development and redevelopment projects are located near the surplus properties:

- West Main/Coddington Development Center – Government to mixed-use
- O'Neil Properties Group Redevelopment – Open space and recreational to marina-related and residential uses
- Development of the Melville "Backyard" Property – Various plans under consideration
- Pell Bridge Ramps Relocation and Innovation Hub Development – Reconfiguring transportation facilities.

Each of these projects is addressed in local land use plans, including the draft *Portsmouth Tank Farm Redevelopment Plan* (Town of Portsmouth 2008b), *West Main/Coddington Development Center Master Plan* (Vanasse Hangen Brustlin, Inc. and RKG Associates, Inc. 2011), and the *2006 North End Master Plan* (City of Newport 2006). Additionally, each of these projects is included in the analysis and recommendations put forward in the *Aquidneck Island West Side Master Plan* (The Cecil Group et al. 2005). Each of these planned projects would result in changes in land use and could increase the density of land use on the properties identified in the community plans. Depending on the availability of land and economic incentives for additional development, these projects could indirectly result in conversion of additional land to denser development. As a result, the proposed action—when considered with the other development and redevelopment projects identified in Section 13.2—could have long-term changes and potential cumulative impacts on land use. The local planning process would ensure that changes in land use associated with the proposed projects and redevelopment under Alternative 1 or 2 would be consistent with local land use controls and compatible with existing surrounding land uses or planned land uses on the surplus properties. The local land use plans previously identified include recommendations for measures to implement these projects and the proposed action at the local government level, including any necessary changes in local zoning ordinances, to ensure the consistency of these projects with local land use controls.

Multiple private, local government, and federal projects would occur in the 200-foot contiguous zone of Narragansett Bay. These projects would be subject to federal consistency review or would be under CRMC's direct state permitting authority for non-federal projects, and the Navy, local implementing entity, or private entity would be responsible for completing the state permitting process with CRMC, which would ensure consistency with the RI CRMP and the Aquidneck Island SAMP. While development and redevelopment projects identified in Section 13.2 would increase the built area along the Narragansett Bay shoreline, maintaining consistency with the RI CRMP and the Aquidneck Island SAMP would ensure this development occurs in a way that maintains public access to the shoreline and avoids or mitigates impacts on coastal resources.

13.3.2 Transportation

13.3.2.1 Geographic Study Area

For the purposes of this analysis, the study area includes the area defined in the *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at the Naval Station Newport* (Pare Corporation 2013). The traffic study area encompasses key roadways and intersections in the vicinity of each of the surplus properties. The former Navy Lodge property, located in the southwestern area of Middletown, is accessed from Coddington Highway and West Main Road. The former Naval Hospital property is located just north of Pell Bridge and is accessed via Third Street and Admiral Kalbfus Road. Tank Farms 1 and 2 are located in Portsmouth and have a series of access points from Stringham Road, West Main Road, Bradford Avenue, Alexander Road and the Defense Highway/ Burma Road.

13.3.2.2 Cumulative Impact Analysis

The *Traffic Impact Analysis for the Disposal and Reuse of Excess Parcels at Naval Station Newport* (Pare Corporation 2013) generated future traffic volumes by projecting the existing traffic volumes with an annual growth rate coupled with the inclusion of known potential developments within the study area. Background growth is defined as the growth expected within a study area based on development projects not specifically identified as well as annual population and traffic increases (Pare Corporation 2013). Therefore, by taking into account the combination of known potential developments and background growth with the project-specific traffic volumes, cumulative impacts have already been accounted for in the impacts presented for each property in Chapters 5, 7, 9, and 11.

Alternative 1 is projected to generate more than 5,319 combined weekday trips and Alternative 2 would generate more than 7,345 weekday trips. This would include an additional 598 and 851 evening peak hour trips under Alternative 1 and Alternative 2, respectively. These trips would likely be dispersed across the City of Newport and Towns of Middletown and Portsmouth. Cumulative impacts on traffic from the combined proposed action and proposed projects could be expected. However, as discussed in the individual property impacts and mitigation discussions (5.4.1.3, 7.4.1.3, 9.4.1.3, and 11.4.1.3), the following measures would help to address and mitigate cumulative impacts:

- Use of public transportation routes located near the surplus properties, such as the former Naval Hospital
- Review and confirmation of sight distances for potential driveway locations and design of driveways to maximize visibility for motorists
- Potential improvements along the roadways including revised signs, striping, or possible geometric improvements.

13.3.3 Environmental Management

13.3.3.1 Geographic Study Area

The geographic study area for evaluating cumulative impacts on environmental management consists of NAVSTA Newport, the City of Newport, and the Towns of Middletown and Portsmouth.

13.3.3.2 Cumulative Impact Analysis

The transfer and redevelopment of the surplus properties under Alternative 1 or 2 would not result in quantifiable impacts on storage tanks, fuel piping, oil/water separators, PCBs, pesticides, radioactive materials, radon, or medical waste. Minor impacts would be associated with the management of hazardous waste, ACM, and LBP. These areas are therefore not addressed under the cumulative impact analysis. This analysis focuses on cumulative impacts associated with the ER Program.

The transfer and redevelopment of the surplus properties under Alternative 1 or 2 would be compatible with the Navy's ongoing ER Program at NAVSTA Newport. As discussed in Section 3.5.1.3, two of the surplus properties—Tank Farms 1 and 2—are ER Program sites that would be remediated under CERCLA before redevelopment would take place. Only one of the recent or reasonably foreseeable projects in Table 13-1 is near Tank Farms 1 and 2. The Melville Backyard area is about 0.1 miles west of Tank Farms 1 and 2, at the northernmost end of NAVSTA Newport (see Figure 13-1). The Melville Backyard is a former industrial area that supported the Navy's distribution of fuel from the tank farms to ships. Development of that waterfront property within the next 20 years is being considered. That timeframe would be compatible with the ER Program timetable for the CERCLA remediation of Tank Farms 1 and 2, which is scheduled to be completed in FY17 (see Section 9.5.1.4). As a result, these two projects under remediation would pose beneficial cumulative impacts resulting from site cleanup.

13.3.4 Air Quality

A variety of factors influence the air quality of a region. These factors include weather (air speed and temperature), traffic patterns, individual commuting choices, and economic activity. In addition, the extent of the impacts of many of the other reasonably foreseeable projects identified for consideration of cumulative impacts cannot be accurately determined with the currently available project information. The recently completed BRAC projects and the future MILCON projects were assumed to not exceed the General Conformity Rule *de minimis* thresholds because of their size. The Navy and other developers are required to adhere to planning, permitting, and monitoring requirements as set forth through state and federal review processes. As discussed in Chapter 3, Rhode Island is in attainment for all NAAQS. The

Office of Air Resources (OAR) of RIDEM is responsible for the preservation, protection, and improvement of air quality in Rhode Island. This is accomplished, in partnership with the EPA, by regulating the emission of air pollutants from stationary and mobile emission sources (RIDEM 2013d). Through air quality monitoring, inspecting emission sources, developing state implementation plans and permit requirements, and establishing and implementing an air pollutant emission inventory, the OAR manages state resources and development to protect air quality and ensure progress toward compliance with the NAAQS. Each of the reasonably foreseeable projects would be subject to the OAR requirements.

13.3.4.1 Geographic Study Area

The geographic study area for evaluating cumulative impacts for air quality comprises NAVSTA Newport, the City of Newport, and the towns of Middletown and Portsmouth. Air quality is also managed at the state level, and the regional level through the implementation of NO_x transport regional requirements. In addition, GHG emissions are generated locally but are contributing to impacts on a global scale.

13.3.4.2 Cumulative Impacts Analysis

Construction Emissions

Under Alternative 1 or Alternative 2, construction would result in a temporary increase in regional emissions. However, as indicated in Chapter 12, although the General Conformity Rule does not apply to redevelopment, temporary emissions from construction were analyzed for all surplus properties and were below the General Conformity Rule *de minimis* thresholds. Therefore, changes to air quality would not be significant as a result of the implementation of the proposed action under either alternative.

Other construction projects in the region would result in a temporary increase in emissions, and there could be the potential for temporary cumulative impacts on air quality. With a build-out duration of 20 years, the extent of cumulative impacts on air quality would depend on concurrent construction schedules of projects located in the same geographic area. For most projects, specific data regarding construction schedules and final configurations of project size, type, and location are unavailable; thus, potential cumulative impacts cannot be quantified. Cumulative construction emissions would be reduced through dust control, proper equipment maintenance, and idling restrictions on construction equipment.

Building Use Emissions

Under Alternative 1 or Alternative 2, building use emissions would be generated from heating and operation of residential, commercial, industrial, and marina-related buildings. However, as indicated in Chapter 12, although the General Conformity Rule does not apply to redevelopment, annual operational emissions were analyzed for all surplus properties and were below the General Conformity Rule *de minimis* thresholds. Therefore, changes to air quality would not be significant as a result of the implementation of the proposed action under either alternative.

For other proposed construction and community development projects, building use could have potential cumulative impacts on air emissions. The extent of cumulative impacts on air quality would depend on building size and type, location, use, and timeline during the 20-year build-out. However, this information is not available, so the extent of cumulative impacts cannot be quantified. These potential impacts could be reduced by using modern building construction techniques and installing energy-efficient heating and cooling systems and appliances.

Mobile Sources

Under Alternative 1 or Alternative 2, vehicle traffic patterns and volumes would change and the number of automobiles and trucks would increase at full build-out. However, these mobile sources have been

taken into account as part of the analysis for construction and operational emissions, as discussed above. Those mobile sources, as one component of the total construction and the total annual operational emissions, were below the General Conformity Rule *de minimis* thresholds.

Cumulative mobile source emissions could be mitigated by providing public transportation and carpooling programs and thereby reducing the number of vehicles.

Greenhouse Gas Emissions

GHGs are a leading cause of climate change. GHGs contribute to climate change by slowing or preventing the loss of heat to space, acting as a blanket. This process is commonly referred to as the "greenhouse effect." Global climate change threatens ecosystems, water resources, coastal regions, crop and livestock production, and human health. Many scientific studies have correlated the observed rise in global annual average temperature and the resulting change in global climate patterns with the increase in GHGs in the Earth's atmosphere (U.S. EPA 2014).

As discussed in Chapter 12, GHG emissions were estimated for the energy usage in new buildings and for increased vehicle use in the region associated with the action. The total GHG emissions associated with the action are less than 25,000 metric tons annually under either alternative, which is below the total that the CEQ guidance (CEQ 2014) recommends for detailed description in NEPA analyses. These totals also only represent about a tenth of a percent of the State of Rhode Island's total annual GHG emissions.

The CEQ guidance notes that climate change is a global problem that results from global GHG emissions. From a quantitative perspective, there are no dominating sources and few sources that would even be close to dominating total GHG emissions. Potential GHG emissions from the Project will be reduced through the implementation of energy efficiency building and transportation BMPs. The global climate change problem is much more the result of numerous and varied sources, each of which might seem to make a relatively small addition to global atmospheric GHG concentrations.

Federal agencies are, on a national scale, addressing emissions of GHGs through reductions mandated by Executive Orders. Most recently, on March 19, 2015, President Obama issued EO 13693, "Planning for Federal Sustainability in the Next Decade," which replaces EO 13423 and EO 13514. EO 13693 requires federal agencies to meet emission-reduction goals associated with energy use, water use, building design and utilization, fleet vehicles, and procurement and acquisition decisions. The CEQ provided implementation guidance to meet these new goals (CEQ 2015). In addition, recent federal laws and regulations will require inventorying and tracking GHG emissions from large sources (74 FR 56260) and CAA Prevention of Significant Deterioration (PSD) and Title V permitting (74 FR 55292).

The Navy has developed the U.S. Navy Climate Change Roadmap (U.S. Department of the Navy 2010b) to describe actions to assess, predict, and adapt to global climate change, noting that climate change is a national security challenge with strategic implications for the Navy. The Navy's *Energy Strategy,* a separate guidance document, addresses mitigation efforts in reducing GHG emissions through energy efficiency and renewable energy (U.S. Department of the Navy 2010b).

The Roadmap states that climate change is affecting and will continue to affect U.S. military installations worldwide and notes that sea level rise and storm surge will lead to an increased likelihood of inundation of coastal infrastructure (U.S. Department of the Navy 2010b). The Rhode Island Climate Change Commission produced a 2012 progress report that notes that, as a result of climate change, Rhode Island will most likely experience stronger, more frequent hurricanes and Nor'easter storms (Rhode Island Climate Change Commission 2012). Both reports identify the need to address these impacts with improved coastal infrastructure. The goal of the Rhode Island Climate Change Commission is to foster new initiatives that invest in climate change assessment and adaptation, including the revision of

infrastructure design and construction standards, interagency and inter-government planning and coordination, public education and outreach, and research and monitoring.

It will be important for the development under this action to consider the potential impacts of sea level rise and storm surges in the design and construction of the project. Building resilient structural integrity into buildings, roads, and wharfs will minimize these effects of climate change on the project under both Alternatives 1 and 2. As discussed in Section 12.5, the installation will be undertaking a climate change vulnerability assessment and adaptation plan and the results of those efforts will be used to develop installation-specific climate adaptation strategies.

13.3.5 Utilities and Infrastructure

13.3.5.1 Geographic Study Area

For the purposes of this analysis, the study area includes the NAVSTA Newport surplus properties, the City of Newport and the towns of Middletown and Portsmouth.

13.3.5.2 Cumulative Impacts Analysis

Water, Wastewater, Other Utility Systems

The reuse and redevelopment of the former Navy Lodge, former Naval Hospital, Tank Farms 1 and 2, and the Midway Pier/Greene Lane properties are projected to require 32,361 gpd of water under Alternative 1 and 38,480 gpd under Alternative 2, accounting for less than 1 percent of Newport's projected water surplus (6.7 mgd) in 2030. The total wastewater generated by all properties would be 30,453 gpd under Alternative 1 and 36,621 gpd under Alternative 2. The Newport wastewater treatment facility is currently near capacity and the majority of the Town of Portsmouth relies on on-site treatment or storage for wastewater. Virtually any new development on Aquidneck Island would require upgrades to infrastructure and/or capacity, which would be the responsibility of the future developer and local municipality to address. The combined electricity consumption of the five properties is estimated to be approximately 4,930,379 kWh under Alternative 1 and 6 and 308,189 kWh under Alternative 2. It is assumed National Grid would be able to meet demand, although some infrastructure improvements may be needed in some areas. The combined natural gas consumption for the surplus properties is 17,344,883 cf under Alternative 1 and 20,830,440 cf under Alternative 2. It is assumed National Grid would also be able to meet the additional natural gas demand although, similar to electricity, infrastructure improvements may be necessary. A total of 1,795,290 to 1,970,520 square feet of impervious surface would be created under Alternative 1 and Alternative 2, respectively. This represents an increase of 106 percent to 126 percent in impervious surfaces over existing conditions. The *Rhode Island Stormwater Design and Installation Standards Manual* (RIDEM and CRMC 2010) includes requirements for mitigating storm water runoff.

A proposed subdivision at Bailey Avenue and Sachuest Avenue would include 12 lots. Nearby, another 12-lot subdivision on Green End Avenue is under construction as of 2015. Housing units built in these subdivisions can be expected to increase demand for water, electricity, and natural gas and generate a wastewater and storm water runoff. Minor cumulative impacts on utilities from the housing subdivisions and reuse of the former Navy Lodge property could occur.

The proposed West Main/Coddington Development Center would include the development of the former Navy Lodge property with four other parcels. The development would increase the demand for all utilities in this area. The existing wastewater pumping stations in the vicinity do not have additional capacity for new development. Upgrade costs are estimated at $750,000 to $1,000,000 (Vanasse Hangen Brustlin Inc. and RKG Associates, Inc. 2011). Therefore, the proposed development center and

redevelopment of the Navy Lodge property would pose cumulative impacts on wastewater. LID storm water systems would be required to manage storm water runoff and would provide some mitigation of the increase in impervious surface. Therefore, minor cumulative impacts on storm water could occur. The Development Center and redevelopment of the former Navy Lodge property could pose cumulative impacts on water supplies and other utilities.

A proposed development of 400,000 square feet of retail along West Main Road and Brown Lane would be expected to require 50,000 gpd of water and generate 47,600 gpd of wastewater in addition to increased requirements for electric and gas service. As with the West Main/Coddington Development Center, this development is likely to increase wastewater capacity limitations. As a result, cumulative impacts would be expected from the proposed retail and redevelopment of the former Navy Lodge property. Cumulative impacts on other utilities from the retail development and reuse of the former Navy Lodge property would be expected but would be offset by the ability of private service providers to upgrade and expand electric and gas utilities, as needed.

A proposed development near Weaver Cove would be expected to increase the demand on all utilities. Water usage and wastewater generation for the 900 housing units is estimated to be 162,000 gpd and 145,800 gpd, respectively. The proposed development is located near the Tank Farms 1 and 2 properties in an area that has limited wastewater infrastructure. Due to the scale of the projects, cumulative impacts on wastewater and storm water from the development near Weaver Cove and the reuse of Tank Farms 1 and 2 and reuse of the Midway Pier/Greene Lane property would be expected. Cumulative impacts on water and other utilities from the proposed development and reuse of Navy surplus properties could also occur. Cumulative impacts would be offset with the 20-year build-out period and ability of private service providers to upgrade and expand services, as needed.

Development of the innovation hub and relocation of the Pell Bridge access ramps in the City of Newport would be expected to increase the density of land use within the 32-acre area and increase demand for all utilities, as it would entail constructing new office space, housing, and retail facilities. Cumulative impacts on wastewater and storm water would be expected, along with minor cumulative impacts on water and other utilities.

Cumulative impacts from several projects would be expected; however, the extent of the impacts cannot be accurately determined with the currently available project information. Demand for utilities would vary depending on the type and size of development. These projects include the following:

- Plans for adaptive reuse of additional excess school buildings would be expected to increase demand for all utilities. Cumulative impacts on utilities would be expected for the adaptive reuse of excess school buildings and reuse of the surplus Navy properties.
- The light industrial redevelopment on West Main Road would be expected to increase demand for utilities, depending on the proposed square footage. Cumulative impacts from light industrial development on West Main Road and reuse of the Midway Pier/Greene Lane property would be expected.
- Development of 32 acres of the Melville “Backyard” would be expected to increase demand for utilities. Cumulative impacts from the development of the Melville “Backyard” and reuse of Tank Farms 1 and 2 would be expected.
- Redevelopment of the Raytheon parcel in Portsmouth would be expected to increase demand for utilities. Cumulative impacts of the redevelopment of the Raytheon property and reuse of Tanks Farms 1 and 2 would be expected.

A number of BRAC action projects were recently completed on NAVSTA Newport in 2011 that resulted in the demolition and construction of a number of buildings; the constructed buildings include space for an additional 880 personnel. These projects are located on Coddington Point, Coasters Harbor Island, and the NUWC campus. The remaining MILCON projects would also be located on Coddington Point, Coasters Harbor Island, and the NUWC campus and would involve rehabilitating existing buildings or constructing new buildings on the base. Impacts on NAVSTA Newport's utility infrastructure and capacity allotments as well as the City of Newport's water and wastewater treatment infrastructure would occur. Therefore, no cumulative impacts with the redevelopment of the surplus properties would be expected.

Solid Waste

The transfer and redevelopment of the surplus properties would impact the generation and management of solid waste from the C&D waste created from demolition and construction. Nearly all of the projects listed in Table 13-1 would similarly generate large quantities of C&D waste, resulting in local cumulative impacts associated with those projects that have been recently completed, are under way, or are approved for imminent implementation.

C&D wastes commonly consist of materials such as wood, concrete, masonry, metal, building materials (e.g., shingles, wallboard, carpeting), asphalt, and structural and mechanical components. Table 13-4 shows the estimated quantities of C&D waste that would result from construction or demolition of a representative 25,000-square-foot nonresidential building and a representative 1,500-square-foot residential dwelling.

Table 13-4 Typical C&D Waste Generation

Structure	Approximate C&D Waste Generated from Demolition (cubic yards)	Approximate C&D Waste Generated from Construction (cubic yards)
25,000-square-foot nonresidential building	8,000	220
1,500-square-foot residential dwelling	350	10

Source: U.S. EPA 2009; Townsend 2000.

For example, demolition of the 143,000-square-foot Nimitz Hall at NAVSTA Newport generated more than 45,000 cubic yards of C&D waste. If the 400,000-square foot West Main Road and Browns Lane retail development project is approved and implemented for the Town of Middletown, more than 3,500 cubic yards of C&D waste would result from construction.

C&D waste is recyclable and it is typically more cost-effective to recycle than to dispose of in a landfill with landfill fees being weight-based. RIDEM encourages C&D recycling, discourages the disposal of C&D waste in landfills, and regulates at least two C&D debris-processing facilities in the state (RIDEM 2012). The Central Landfill, which is the primary state sanitary landfill, has submitted an application to RIDEM to expand the landfill for the sixth time, which would be projected to extend landfill life by about 17 years (RIDEM 2011b). The state's other licensed landfill, in Tiverton, is close to capacity (Tiverton-Little Compton Patch 2011).

Demolition and construction contractors typically recycle C&D waste based on cost benefits. Applicable mitigation for the cumulative impact of generating and managing large quantities of C&D waste from planned and potential projects in the geographic study area may include the following:

- NAVSTA Newport projects: Ensure that demolition and construction contracts follow the installation's Solid Waste Management Plan (Nobis Engineering 2003), which would require that solid waste be minimized and recycling be maximized. NAVSTA Newport annually reports the amount of C&D debris recycled and the amount disposed of (NAVSTA Newport 2012c).
- Non-NAVSTA Newport projects: Require that demolition and construction contracts contain traditional terms and conditions mandating the recycling of C&D waste to the extent practicable.

Non-C&D solid wastes would be routinely generated by future industrial, commercial, and residential uses planned under Alternative 1 or 2 as well as by the recent and reasonably foreseeable projects listed in Table 13-1. Such solid wastes would consist of mixed trash, food waste, and traditional recyclables such as paper, cardboard, and containers. It would be expected that existing solid waste management services (including the Central Landfill) could accommodate non-C&D solid wastes because of the long build-out times anticipated for the projects. Applicable mitigation could include the implementation and enforcement of solid waste management policies that minimize solid waste generation and maximize recycling. These include pay-as-you-throw programs in Middletown which are being considered in Newport and Portsmouth, and comprehensive recycling programs undertaken by all three municipalities.

Implementation of the proposed action under Alternative 1 or 2, coupled with the recent and reasonably foreseeable projects listed in Table 13-1, thus would be anticipated to result in cumulative impacts on C&D waste management and non-C&D solid waste management. These cumulative impacts could be partially offset by recycling and waste minimization practices. In addition, the build-out period of 20 years and economic conditions would serve to space construction and demolition projects over time.

13.3.6 Cultural Resources

13.3.6.1 Geographic Study Area

The geographic study area for evaluating cumulative impacts on cultural resources encompasses the APE for the proposed action, collectively comprised of the former Navy Lodge property, the former Naval Hospital property, the Tank Farms 1 and 2 property, and the Midway Pier/Greene Lane property.

13.3.6.2 Cumulative Impacts Analysis

This analysis focuses on the cumulative impacts on cultural resources (archaeological sites, architectural resources, and Native American resources) and historic properties (those cultural resources that are listed in or determined eligible for listing in the NRHP) that are in the APE for the proposed action. Only one of the Navy projects listed in Table 13.1, the demolition of abandoned facilities at Tank Farm 1 (MILCON, N32411), overlaps the geographic study area for cultural resources as defined above. None of the other projects listed in Table 13.1 are located within the geographic study area for cultural resources.

The Navy project to demolish abandoned facilities at Tank Farm 1 (MILCON, N32411) overlaps the APE at the Tank Farms 1 and 2 property. Therefore, this project, when considered in conjunction with the proposed action, has the potential to result in cumulative impacts on cultural resources only where it overlaps the APE at Tank Farms 1 and 2, as discussed below. It would have no cumulative impacts on any other cultural resources that are located in remaining portions of the geographic study area for cultural resources, such as the portion of the U.S. Naval Hospital Newport Historic District within the APE at the former Naval Hospital property (there are no cultural resources located within the APE at the Navy Lodge property or within the APE at the Midway Pier/Greene Lane property).

Description of Navy Project to Demolish Abandoned Facilities at Tank Farm 1

In July 2015, the Navy determined that it must demolish abandoned facilities at Tank Farm 1 to comply with Rule 13 of the Rhode Island Rules and Regulations for Underground Storage Tank (UST) Facilities used for Petroleum Products and Hazardous Materials. The proposed demolition of abandoned facilities at Tank Farm 1 to comply with Rule 13 is a separate action from the disposal of the Tank Farms 1 and 2 properties that are part of this proposed action. The proposed demolition of abandoned facilities at Tank Farm 1 consists of the demolition of eight abandoned fuel underground storage tanks and all associated fuel distribution piping and concrete pipe chamber, bottom sediment water piping, ring drain piping, oil-water separators, other fuel operating-related structures and piping, as well as the earth berm containments for Tank Farm 1 (Dorocz 2015a). Subsequently, the Navy determined that the proposed demolition of abandoned facilities at Tank Farm 1 would also consist of the demolition of the concrete utility trenches and the associated fuel distribution piping, bottom sediment water piping, and steam distributing piping in trenches within Tank Farm 1 (NAVSTA Newport 2015). In summary, as part of the demolition of abandoned facilities at Tank Farm 1 to comply with Rule 13, the following buildings or structures at Tank Farm 1 will be demolished: Tanks 9 and10 and 13 through18; Buildings 49, B60, and P30; underground direct piping (including steam lines, berm drain lines, fuel lines, bottom sludge and waste lines, and foam lines) and concrete utility tunnels and pipe chambers (Structures S133, S140, S267, S268, U238; all remaining separators tanks, chambers and valve chamber pits; and two transformers vaults (S359, S360). Additionally, Building 30 (an underground reservoir that is located outside the currently drawn boundaries of Tank Farms 1 and 2 but is associated with the fueling operation of the Tank Farm) is part of the same demolition action at Tank Farm 1 (Dorocz 2015a; NAVSTA Newport 2015).

The Navy project to demolish abandoned facilities at Tank Farm 1 (MILCON, N32411) would result in long-term direct and indirect impacts on architectural resources within the APE at the Tanks Farms 1 and 2 property, consisting of the demolition of tanks and associated piping and other ancillary facilities at Tank Farm 1. Because the buildings and structures comprising Tank Farm 1 are considered contributing resources to the NRHP-eligible Melville Naval Historic District, the long-term direct and indirect impacts of demolition are considered an adverse effect on historic properties under Section 106 of the NHPA and require mitigation, as discussed in greater detail below.

With regard to the proposed demolition of abandoned facilities at Tank Farm 1, the Navy has evaluated the project-specific effects of the demolition of the abandoned facilities at Tank Farm 1 and determined that the demolition project would have an adverse effect on Tank Farm 1, which is eligible for listing on the NRHP (Dorocz 2015a). Tank Farm 1 is considered NRHP-eligible because its facilities are contributing resources to the Melville Naval Historic District (Groesbeck and Bedford 2014; Sanderson 2013b). In a letter dated July 28, 2015, the Navy initiated Section 106 consultation with the Rhode Island SHPO in order to resolve the adverse effects of the demolition project on historic properties (Dorocz 2015a). The Rhode Island SHPO concurred with the Navy's determination that the demolition of the abandoned facilities at Tank Farm 1 will have an adverse effect on historic properties because Tank Farm 1 is located within the Melville Naval Historic District and indicated that a memorandum of agreement (MOA) for the mitigation of the adverse effect should be prepared by the Navy (Sanderson 2015).

The Navy also notified the Advisory Council for Historic Preservation (ACHP) in a letter dated September 8, 2015, of the proposed demolition of abandoned facilities at Tank Farm 1 and the determination that the demolition project would have an adverse effect on historic properties. The Navy also invited the ACHP to participate in consultation to resolve the adverse effect on historic properties and be a signatory party to the MOA between the Navy and the Rhode Island SHPO. The Navy further indicated that the Navy's proposed resolution of adverse effects would be to prepare Rhode Island Historic Resources Archive Documentation for the demolition of structures at Tank Farm 1 and create documents and drawings for review and approval by the Rhode Island SHPO before demolition is begun.

The Navy also indicated that it will notify, by letter, the Town of Portsmouth, the Aquidneck Land Trust, the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) as part of the Section 106 consultation process to resolve the adverse effect on historic properties (Dorocz 2015b). The ACHP acknowledged receipt of the Navy's correspondence and declined to participate in consultation to resolve adverse effects. However, the ACHP requested that the Navy file the MOA developed in consultation with the Rhode Island SHPO and supporting documentation with the ACHP in order for Navy to complete the requirements of Section 106 of the NHPA (Thompson 2015).

Cumulative Impacts on the NRHP-eligible Melville Naval Historic District

The proposed demolition of abandoned facilities at Tank Farm 1, considered in conjunction with the disposal of the Tank Farms 1 and 2 property out of federal ownership, represents a cumulative long-term negative impact on architectural resources. This cumulative impact on architectural resources would occur because all of the extant buildings and structures located at Tank Farms 1 and 2 will either be removed or will no longer be under the control of the Navy. This cumulative impact would be significant because all of the architectural resources that respectively comprise Tank Farms 1 and 2 are considered historic properties as contributing resources to the NRHP-eligible Melville Naval Historic District.

Similarly, the proposed demolition of abandoned facilities at Tank Farm 1, considered in conjunction with the disposal of the Tank Farms 1 and 2 property out of federal ownership, represents a cumulative adverse effect on historic properties. This cumulative adverse effect on architectural resources would occur because all of the extant buildings and structures located at Tank Farms 1 and 2 will either be removed or will no longer be under the control of the Navy. As such, this cumulative adverse effect would result from physical destruction of contributing resources to the NRHP-eligible Melville Naval Historic District, changes to the physical features (e.g., removal of buildings and structures) within the historic district's setting that contribute to its historic significance, and transfer of property out of federal ownership or control (i.e., the disposal of the Tank Farms 1 and 2 property) without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

With regard to the proposed transfer of the Tank Farms 1 and 2 property out of federal ownership, the Navy is in the process of consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA, including consulting on the effects of the proposed action on historic properties within the APE (Preston 2013; Lin 2013; Sanderson 2013b), as discussed in Section 9.9.1.4. As part of this ongoing consultation, the Rhode Island SHPO has acknowledged that once the Navy has disposed of the property, subsequent redevelopment is outside of the Navy's control and has indicated that a standard treatment to mitigate any indirect adverse effects of subsequent redevelopment on historic properties would be to include historic preservation provisions, such as a historic preservation easement, in a deed of transfer (Sanderson 2013a). The evaluation of cumulative impacts and effects on historic properties will be updated upon completion of consultation with the Rhode Island SHPO with regard to the proposed transfer of the Tank Farms 1 and 2 property.

13.3.7 Water Resources

13.3.7.1 Geographic Study Area

The geographic study area for evaluating cumulative impacts on water resources encompasses the watersheds in which Aquidneck Island is located: Mount Hope Bay, Upper East Passage, Lower East Passage, Aquidneck Island-Frontal Atlantic Ocean, and the Sakonnet River watershed.

13.3.7.2 Cumulative Impacts Analysis

This analysis focuses on surface waters and wetlands as well as water quality.

Surface Waters and Wetlands

The cumulative impacts analysis for surface waters and wetlands focuses on direct (alteration) and indirect (water quality-related) impacts. In the absence of specific data pertaining to water resources for each of the proposed projects in Sections 13.2.2, 13.2.3, 13.2.4, and 13.2.5, a desktop analysis was completed using USFWS wetland and riparian data, as developed for use in Google Earth. With the exception of Narragansett Bay, the Navy projects proposed in Sections 13.2.1.1 and 13.2.1.2 do not appear to be located on or near other surface waters, with the exception of the proposed solar PV facility, which would avoid all direct impacts on wetlands and streams. Therefore, impacts on surface waters would be indirect, as discussed below.

Non-Navy project areas where surface waters or wetlands were observed during the desktop analysis are discussed below. These projects have been evaluated qualitatively, as no specific information is available regarding proposed impacts or mitigation.

- The subdivision proposed in Middletown at the terminus of Bailey Avenue has the potential to impact a wetland located south of Bailey Avenue and approximately 285 feet west of Sachuest Drive; no other surface waters were noted. Twelve lots are proposed as part of this subdivision and in the absence of specific subdivision plans, it is not possible to determine whether that wetland would be directly impacted (permanent fill) to facilitate the construction of the various lots, or whether indirect impacts would result. The developer for this subdivision would be required to comply with the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* and to obtain a permit from RIDEM if alteration to a wetland is necessary, as well as a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer would be required to submit mitigation plans. Although potential cumulative impacts on wetlands could occur, the requirement to avoid, minimize, and mitigate impacts on wetlands under federal and state permit programs would prevent significant cumulative impacts on wetlands.
- The proposed O'Neil Properties Group Redevelopment would be located immediately adjacent to Narragansett Bay and would require in-water work to construct the proposed slips. Similar to the proposed action, indirect impacts on water quality of the Narragansett Bay would be anticipated due to the in-water construction. Turbidity would be short-term and localized and the same precautions pertaining to construction-related spills would be taken. Although potential cumulative impacts on water resources could occur, impacts would be expected to be minor.
- Additionally, according to the USFWS wetland and riparian data, a coastal wetland is located along the shoreline in that area of Weaver Cove. Depending on the locations of the piles or other structures needed to construct and anchor the proposed slips, permanent impacts on the coastal wetland would likely result. Filling a coastal wetland requires a permit from the CRMC and a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer will be required to coordinate wetland mitigation plans with the USACE and CRMC. Although potential cumulative impacts on wetlands could occur, the requirement to avoid, minimize, and mitigate impacts on wetlands as required under federal and state permit programs would reduce significant cumulative impacts on wetlands.
- Development of the Melville "Backyard" property would be located adjacent to the Narragansett Bay. Similar to the proposed action, indirect impacts on water quality of the Narragansett Bay would be similar to those discussed below under Water Quality.

- Realignment of the Pell Bridge access ramps could have the potential to impact a wetland area north of Route 138, west of Malbone Road – either directly or indirectly. As previously discussed above, if the wetland would be directly impacted (permanent fill), compliance would be required with the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act*. A permit from RIDEM would have to be obtained if alteration to the wetland is necessary as well as a permit from the USACE under Section 404 of the CWA. As part of the permitting process, the developer would be required to submit mitigation plans. Although potential cumulative impacts on wetlands could occur, the requirement to avoid, minimize, and mitigate impacts on wetlands as required under federal and state permit programs would prevent significant cumulative impacts on wetlands.

Water Quality

This cumulative impacts analysis for water quality focuses on two primary variables related to water quality: ground disturbance associated with clearing and grading activities, and the addition of impervious surface. Any project requiring earth-moving activities during construction or the permanent addition of impervious surface has the potential to impact water quality. Degradation of water quality could occur from increased storm water volume and uncontrolled runoff.

Construction and implementation of the Navy projects discussed in Sections 13.2.1.1 and 13.2.1.2 would result in short- and long-term impacts on surface water quality as a result of increased storm water runoff. However, these impacts would be avoided or mitigated by the following:

- Using best management practices that meet current RIDEM storm water management standards, including sediment barriers, minimizing disturbed areas, and planting temporary vegetation cover where needed
- Implementing LID measures during construction and operation of the new facilities that meet the basic and general standards set forth in the *Rhode Island Stormwater Design and Installation Manual*, which requires the use of LID techniques as a primary method of storm water control
- Adhering to the Navy's LID policy, which sets a goal of no net increase in storm water volume and sediment or nutrient loading from major renovation and construction projects through use of LID techniques, as applicable.

Adhering to these standards and policies during construction and operation of the identified Navy projects would reduce impacts on surface water quality to minimal levels. Thus, the Navy projects described above coupled with the proposed action would pose cumulative impacts; however, impacts would not be expected to be significant.

The non-military projects described under Sections 13.2.3, 13.2.4, and 13.2.5 could also impact surface water quality. Similar to the proposed action, temporary impacts would be anticipated as a result of ground-disturbing activities associated with the various development projects, specifically, the O'Neill Properties Group Redevelopment and the development of the Melville "Backyard" property, which are both adjacent to the Narragansett Bay; and the potential redevelopment of the Raytheon property, as across West Main Road is the Lawton Valley reservoir. However, it is assumed that state and local permits and regulations pertaining to storm water management and erosion and sediment control would be adhered to. Each of the three municipalities on Aquidneck Island has ordinances that focus on storm water management. Additionally, a General Permit—Rhode Island Pollutant Discharge Elimination System Storm Water Discharge Associated with Construction Activity—would be necessary for any

project that would disturb more than 1 acre. Therefore, cumulative impacts on water quality could occur but would likely be minimal.

Due to the lack of detail regarding final development plans for the reasonably foreseeable projects in Sections 13.2.3, 13.2.4, and 13.2.5, determining the amount of impervious surface to be added as a result of the construction of these projects is not feasible. It is assumed that these developments would be required to provide for on-site storm water management, in compliance with local and state regulations. Therefore, cumulative impacts on water quality would be anticipated but would not likely be significant.

13.3.8 Biological Resources

13.3.8.1 Geographic Study Area

For the purposes of this analysis, the study area includes all of Aquidneck Island.

13.3.8.2 Cumulative Impact Analysis

Vegetation

At full build-out under Alternative 1, inclusive of all surplus properties, approximately 9.4 acres of old field, 14.5 acres of ruderal forest, and 2.7 acres of mixed oak/white pine forest would be impacted. Under Alternative 2, approximately 9.4 acres of old field, 16.4 acres of ruderal forest, and 2.7 acres of shrubland would be impacted. In addition to these permanent conversions of natural vegetation to developed land, additional temporary impacts (i.e., disturbance) would occur during construction. These temporary disturbances would cease following construction and redevelopment, and the developer would restore that land to the originally existing conditions.

To date, no environmental studies have been completed for the foreseeable projects; therefore, any potential resource impacts resulting from their implementation cannot be identified at this time. In the absence of specific data pertaining to habitat and impacts for the foreseeable projects, a desktop analysis was completed using aerial photographs to determine vegetation cover types at the locations of the other proposed projects to provide for a qualitative analysis. A summary of that analysis is provided below.

The majority of other recently completed or reasonably foreseeable actions identified in Section 13.2, (i.e., MILCON and BRACCON redevelopment projects), would be located on previously developed sites and would not be expected to result in impacts on vegetation. The development of the proposed MILCON and BRACCON projects typically involve redevelopment or renovation of existing buildings or disturbed areas. Given that most of the vegetation on the MILCON and BRACCON project properties is either regularly maintained or has been previously disturbed, long-term impacts from a loss of vegetation during construction would be minor and, therefore, cumulative impacts on vegetation would be negligible.

The subdivision proposed for the terminus of Bailey Avenue would primarily impact areas of open, maintained grass. Therefore, no cumulative impacts on vegetation would result. The subdivision proposed for Lot 106, located at 385 Green End Avenue, would result in the permanent conversion of upland forested and shrubland habitat types. Cumulative impacts on these habitat types would result because 14.1 acres of grassland and 2.2 acres of shrubland would be impacted under Alternative 2, the higher development alternative. These cumulative impacts would be considered minor because these habitat types occur throughout Aquidneck Island.

Development of the West Main/Coddington Development Center would primarily impact previously developed land and areas of maintained grass and other landscaped areas. The plan for the development

center would integrate areas of open space and landscaping. As such, long-term cumulative impacts from a loss of vegetation would be very minor.

The West Main Road and Brown Lane retail development is approximately 1.32 miles from the Midway Pier/Greene Lane property, and the more than 400,000 square feet of retail development proposed could impact 9.2 acres of agricultural land. Implementation of Alternatives 1 or 2 for the proposed action would not impact agricultural land, so there would be no cumulative impacts on agricultural land.

The light industrial redevelopment along West Main Road, opposite Marshall Lane, would primarily impact grassland and shrubland cover types. The property covers 24 acres and, assuming that the entire property would be redeveloped, permanent conversion of grassland and shrubland habitat would be necessary. Therefore, cumulative impacts on these habitat types would result because grassland and shrubland habitat would be impacted under Alternative 2. These cumulative impacts would be considered minor because these habitat types occur throughout Aquidneck Island.

The proposed development of the Melville "Backyard" Property could disturb up to 32 acres of upland forested land and grassland just south of Tank Farms 1 and 2, if the entire property were to be redeveloped. However, given that the property is currently developed with some outbuildings and other infrastructure, the total area of potential disturbance would be less. Given the lack of details regarding redevelopment, it can be assumed that there would be some permanent conversion of forested and grassland habitat, and cumulative impacts on these habitat types would result due to the grassland and shrubland habitats that would be impacted under Alternative 2. These cumulative impacts would be considered minor because these habitat types occur throughout Aquidneck Island.

The O'Neil Properties Group Redevelopment proposes a new marina with 1,500 boat slips and 900 residential units along the shore in Weaver Cove in Portsmouth. Construction of the residential units would impact previously disturbed land and existing impervious surface. The proposed project could also impact vacant grassland along the shore and, potentially, shrubland and upland forest. Because the land is already paved with concrete, new development would not be anticipated to adversely impact the existing vegetation because it is limited to the shoreline areas. Therefore, long-term cumulative impacts on vegetation would not be anticipated.

Development of the proposed solar PV facility at Tank Farms 4 and 5 would require clearing existing vegetation. Habitat types at Tank Farms 4 and 5 include old field, northern hardwood forest, and ruderal forest; cumulative impacts on these habitat types would result because these same habitats also would be impacted by Alternatives 1 and 2. These cumulative impacts would be considered minor because these habitat types occur throughout Aquidneck Island.

The potential sale of the Raytheon property could lead to redevelopment of that site, which is dominated by an existing developed footprint of two buildings and associated parking. The remainder of the site is maintained grass. Therefore, long-term cumulative impacts from a loss of vegetation would be very minor.

The foreseeable projects proposed in the City of Newport are proposed in previously developed areas. Neither conversion of habitat nor cumulative impacts would result from the projects.

Wildlife

The cumulative impacts analysis for wildlife focuses on terrestrial and marine mammals.

Terrestrial. Alternatives 1 and 2 would not result in long-term adverse impacts on wildlife at the surplus properties. The diversity of wildlife on the surplus properties such as the former Navy Lodge and the

former Naval Hospital is limited because maintained landscaping and impervious surfaces from previous development and disturbance at these sites are predominant. Under Alternative 1 or Alternative 2, small terrestrial mammals, amphibians, and reptiles could be impacted during construction. Upon completion of construction, recolonization of these species would be expected.

Based on the review of the sites on which the foreseeable projects would be located, the following projects, due to their locations on previously developed sites or sites with limited vegetation, would not be expected to result in an impact on wildlife resources and thus, would not contribute to cumulative impacts:

- MILCON and BRACCON projects
- West Main/Coddington Development Center project
- O'Neil Properties Group Redevelopment
- Raytheon Property
- Redevelopment of the Pell Bridge Realignment
- Adaptive Reuse of Surplus School Buildings.

As indicated above under the discussion of vegetation, the subdivision proposed for the terminus of Bailey Avenue would primarily impact areas of open, maintained grass. Wildlife diversity in this type of habitat would be low and therefore, only minor, temporary cumulative impacts on wildlife would result, primarily from construction-related disturbance. The subdivision proposed for Lot 106 located at 385 Green End Avenue would result in the permanent conversion of upland forested and shrubland habitat types. These habitat losses, coupled with the proposed action would result in the permanent loss of habitat area and would be considered a cumulative impact on wildlife.

The more than 400,000 square feet of retail development proposed for the West Main Road and Brown Lane retail development project would impact 9.2 acres of agricultural land. While agricultural land is not a naturally occurring ecological community, it provides a transition corridor between adjacent habitats as well as foraging opportunities for terrestrial mammals, raptors, and other birds of prey. Wildlife typical of this property would avoid the areas of disturbance during construction and would recolonize in nearby suitable habitat following finalization of the project. The additional temporary impacts that would be incurred from the redevelopment of the Navy surplus properties increase the potential for cumulative temporary impacts on wildlife resources.

The light industrial redevelopment along West Main Road, opposite Marshall Lane, would primarily impact grassland and shrubland cover types. Given the potential impacts on these habitat types, and that Alternatives 1 and 2 would also impact the same habitat types, there is a potential for temporary impacts (temporary displacement, etc.) as well as long-term cumulative impacts (direct habitat loss) on wildlife.

The proposed development of the Melville "Backyard" Property could result in the disturbance of up to 32 acres of upland forested land and grassland just south of Tank Farms 1 and 2 if the entire property were to be redeveloped. However, given that the property is currently developed with some outbuildings and other infrastructure, the total area of potential disturbance would be less. Given the lack of details regarding redevelopment, it can be assumed that there would be some permanent conversion of forested and grassland habitat. Therefore, there is a potential for temporary impacts as well as long-term cumulative impacts on wildlife.

Similarly, development of Tank Farms 4 and 5 would result in some permanent conversion of old field and forested habitat, and there is a potential for temporary and long-term cumulative impacts on wildlife.

Marine Mammals and Fish. Under Alternatives 1 and 2, marine mammals and fish would be temporarily disturbed during construction of floating docks at the former Naval Hospital and pier demolition and reconstruction at the proposed shoreline park along the Midway Pier/Greene Lane property. Noise from construction equipment and activity in the water (i.e., pile driving) would result in marine mammals and fish temporarily avoiding these areas. According to reference source levels, impact pile driving of 16-inch diameter concrete piles would produce SPLs of approximately 169 dB re 1µPa RMS at 10 meters from the source (unattenuated). This source level is less than NMFS Level A threshold criteria for both pinnipeds and cetaceans. Therefore, no marine mammals would be injured as a result of Alternative 1 or 2. Although there is the potential for Level B behavioral harassment within 130 feet of active impact pile driving, it would be expected that the implementation of possible mitigation measures such as the use of a bubble curtain would reduce the source level and, therefore, the distance to the threshold range for Level B harassment. Additional mitigation measures may include driving piles with cushions made of wood to reduce the pressure pulse (Miller et al. 2010). Appropriate mitigation measures will be identified through consultation with NMFS as part of the Section 7 process. Also, by ensuring that the Level B acoustic-filled area around active impact pile driving is monitored by a trained marine mammal/protected species observer, the risk of a marine mammal being exposed to harassing levels of sound would be reduced.

Based on conservative calculations regarding the distance range from active impact pile driving that the threshold for potential behavioral impacts would reach coupled with the average number of strikes to drive a concrete pile, it would be expected that injury based on accumulated SEL could occur to fish greater than 2 grams within 33 feet of impact pile-driving and to fish less than 2 grams within 66 feet of impact pile driving. Behavioral disturbance could occur to fish of all sizes within 83 feet of impact pile-driving. However, due to this very small acoustic-filled area, and the mitigation measures that will be put in place, such as the bubble curtain, it would be expected that these areas would be reduced in size, and therefore impacts would be minor and temporary.

Additional direct impacts include the potential for vessel strikes with marine mammals during construction and operation. However, strike risk would be expected to be minor because the animals can avoid the vessels. Indirect impacts on marine mammals include temporary displacement as they avoid areas of turbidity. Turbidity could also affect foraging success and prey availability. Resuspension of bottom sediments during both the installation and removal activities would likely have a short-term, minor adverse impact on the water column due to the small area of disturbance compared with the greater Narragansett Bay size.

Those foreseeable projects with the potential to result in cumulative impacts when considered with the proposed action are discussed below.

Proposed re-bulkheading of the quay wall between Piers 1 and 2 under MILCON P469 could result in noise and suspended sediments in the water column, which would affect the water quality and habitat of marine resources. These impacts would be short-term, however, and sediments would resettle after the construction is completed. Potential cumulative impacts would be minimized by avoidance and minimization measures during all planned in-water construction projects, in addition to the proposed erosion control planned upon completion of construction. Temporary short-term cumulative impacts could result from the proposed in-water construction of MILCON P469, considering the in-water work also proposed for the Navy surplus properties. If construction schedules overlap, potential impacts on marine mammals would increase from simultaneous proximate in-water projects. Piers 1 and 2 are located

approximately 1.8 miles north of the former Naval Hospital property and approximately 2.3 miles north of the proposed shoreline park along the Midway Pier/Greene Lane property.

The O'Neil Properties Group Redevelopment proposes 1,500 new slips and 900 residential units along the shore in Weaver Cove in Portsmouth. Construction would include in-water work to develop the boat slips, potentially impacting marine habitat and wildlife in the vicinity. Noise and vibration would likely result from these activities, causing temporary disturbance of any marine mammals nearby. Installation of the marina would result in increased boat traffic in the water, which could result in a long-term direct impact on marine mammals from vessel strikes.

Threatened or Endangered Species

NMFS Northeast Region has identified various listed species, including whales, sea turtles, and Atlantic sturgeon, as well as two species of concern (alewife and blueback herring) that have the potential to occur in the waters of Narragansett Bay offshore of the former Naval Hospital and the Midway Pier/Greene Lane properties due to their prevalence in New England waters (NOAA 2013).

The North Atlantic right, humpback, and fin whales are not likely to be present in Narragansett Bay near the former Naval Hospital property or the proposed shoreline park. As such, it is not anticipated that implementation of Alternatives 1 or 2 would impact these species. Both the loggerhead and Kemp's ridley sea turtles have been documented within Narragansett Bay around Aquidneck Island (NBNERR 2009). Despite a documented occurrence in 2007, due to its highly pelagic nature, the leatherback sea turtle does not usually make its way into Narragansett Bay north of the bay's mouth (NBNERR 2009). NMFS Northeast Region stated that the possibility may occur for the green sea turtle to occur in New England waters, but that it is rare and sporadic (Colligan 2013). Similar to marine mammals and fish, in-water noise may also be audible to sea turtles within the vicinity of the project area. NMFS has determined that source levels of 166 dB re 1μPa RMS or greater could cause behavioral disturbance, and/or other behavioral or physiological impacts on sea turtles (Lecky 2009). Therefore, there is the potential for disturbance to sea turtles should impact pile driving occur when sea turtles are present in Narragansett Bay. Based on modeling, it would be expected that disturbance to sea turtles could occur within 82 feet of active pile driving. It is likely that sea turtles would avoid the areas where in-water construction was occurring. It would be expected that any sea turtle potentially occurring in the vicinity of the surplus property during in-water construction would avoid the areas and therefore avoid impacts. Impacts on sea turtles would be temporary and result in temporary displacement during demolition, pile driving, and construction.

Any adult Atlantic sturgeon potentially occurring in the vicinity of the former Naval Hospital during in-water construction would likely avoid the areas and therefore impacts on the Atlantic sturgeon from operation of construction equipment, including pile driving equipment, and resulting increased turbidity levels would not be significant. Pile-driving activities associated with Alternative 1 or 2 would generate underwater noise that the Atlantic sturgeon could be exposed to; however, no effects on the sturgeon would be expected. Atlantic sturgeon would not be expected to come close to the former Naval Hospital property or the Midway Pier/Greene Lane property during construction. Any Atlantic sturgeon present within the general vicinity would be able to detect pile-driving noises which, as a result, may elicit an avoidance response to the waters around the surplus property. If they were present, using the established injury thresholds for fish and comparing them to the summary of pile driving sound levels, the peak threshold for injury would not be exceeded. However, there is a potential for impact based on accumulated SEL for a single pile within 33 feet of active impact pile driving and behavioral disturbance within 83 feet of impact pile driving.

The only other reasonably foreseeable projects with in-water work are the proposed re-bulkheading of the quay wall between Piers 1 and 2 under MILCON P469 and the O'Neil Properties Redevelopment; these

two projects and the potential impacts associated with them are discussed above. Temporary short-term cumulative impacts could result from the proposed in-water construction of MILCON P469, considering the in-water work also proposed for the Navy surplus properties. Construction of the boat slips for the O'Neil Properties Redevelopment would include in-water work to develop the boat slips, potentially impacting marine habitat and wildlife in the vicinity. Noise and vibration would likely result from these activities, causing temporary disturbance to any marine mammals nearby. Installing the marina would result in increased boat traffic in the water, which could result in a minor but long-term cumulative impact on threatened and endangered species due to vessel strikes.

Federally Listed Species

As discussed in Sections 6.12.3, 8.12.3, and 10.12.3, the northern long-eared bat was listed as threatened in April 2015, and this species has been observed at NAVSTA Newport. The Navy re-opened dialogue by sending a letter to the USFWS regarding the northern long-eared bat on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). The Navy contacted the USFWS regarding the potential presence of the northern long-eared bat at the surplus properties on June 17, 2015 (Preston 2015a). The Navy received a response from the USFWS via electronic mail requesting that the Navy initiate informal consultation and provide additional information about the potential effects of the proposed action on the northern long-eared bat (von Oettingen 2015). The Navy provided an assessment of the potential impacts on August 27, 2015 (Preston 2015b). To date, USFWS has not provided a response, and further informal consultation with the USFWS on the potential effects of the proposed action on the northern long-eared bat is ongoing. ESA consultation for northern long-eared bat is ongoing.

The Navy has documented the presence of the northern long-eared bat within approximately 0.3 mile from the Midway Pier/Greene Lane property and suitable habitat within approximately 50 feet from the Midway Pier/Greene Lane property, the closest surplus property to documented species presence and suitable habitat presence. While no specific habitat surveys have been completed on the Midway Pier/Greene Lane property or the Tank Farms 1 and 2 property (approximately 1 mile away from documented suitable habitat) to identify suitable habitat, the same general habitat types ——old field and ruderal forest—exists on the surplus property and Tank Farms 4 and 5, the closest sites where suitable habitat has been surveyed and identified. Permanent removal of old field and ruderal forest habitat would be necessary to facilitate redevelopment at the Midway Pier/Greene Lane and Tank Farms 1 and 2 properties. To be conservative, the ultimate property developer and/or property owner of the Midway Pier/Greene Lane property and the Tank Farms 1 and 2 property would implement a number of BMPs, specific to safeguarding the northern long-eared bat.

Several of the past, present, or reasonably foreseeable projects —the light industrial redevelopment along West Main Road, the Melville "Backyard," the O'Neil Properties Group Redevelopment, and the proposed solar facility at Tank Farms 4 and 5—would also permanently remove shrubland and forested habitats. However, given the amount of total forest cover in the state, coupled with remaining forested areas around Aquidneck Island, cumulative impacts on these habitats may affect, but are not likely to adversely affect northern long-eared bats in the state.

13.3.8.3 Significant Wildlife Habitat

This discussion focuses on those significant wildlife habitats that would be impacted as a result of implementation of Alternatives 1 and 2.

Wetlands

Cumulative impacts on wetlands are discussed above in Section 13.3.7.2.

Essential Fish Habitat

The proposed action under Alternatives 1 and 2 at the former Naval Hospital and Midway Pier/Greene Lane surplus properties and development of MILCON P469 would result in temporary minor impacts on EFH. These impacts would be temporary and not expected to be significant. As indicated in Sections 7.12.1.4 and 11.12.1.4, the Navy has determined environmental impacts from the proposed action at the former Naval Hospital and Midway Pier/Greene Lane properties will not adversely affect designated EFH within the Narragansett Bay.

The marina development and resulting increase in boat traffic from the O'Neil Properties Group Redevelopment could adversely affect EFH for 17 species as a result of this development.

Short-term minor impacts associated with in-water construction activities, such as from the installation of new pilings, would increase suspended sediments and noise levels. However, the majority of EFH species are highly mobile and would likely leave the area during construction activities and return when these activities are completed; even the less mobile species (e.g., flounder) could readily avoid harm from construction. Also, the adverse effects on the habitat and forage species that occur at the property would be short-term and localized. The increased vessel traffic associated with operation of the enhanced pier would result in minor adverse effects on EFH through increased disturbance of the water column and the increased potential for spills or fuel leaks into the water column. However, because vessel usage within the bay already is extensive, cumulative impacts would not be significant. Therefore, overall cumulative impacts on EFH would be short-term and minor.

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14 Best Management Practices, Mitigation, and Monitoring

This section provides a summary of the BMPs applicable to all of the surplus properties and action alternatives and the site-specific mitigation measures that are presented in Chapters 5, 7, 9, and 11 for each alternative at the former Navy Lodge property, former Naval Hospital property, Tank Farms 1 and 2, and the Midway Pier/Greene Lane property, respectively, to mitigate site-specific impacts. These BMPs and mitigation measures are appropriate and reasonable and would reduce the environmental impacts associated with the redevelopment of the surplus properties at NAVSTA Newport. All of the BMPs and mitigation measures discussed below are the responsibility of the developer, except where indicated otherwise.

The BMPs and mitigation measures identified below generally apply to both Alternative 1 and 2. Where a BMP or mitigation measure is specific to one of the four properties, it is noted in parentheses.

14.1 Best Management Practices

There are not specific BMPs associated with Socioeconomics and Environmental Justice or Cultural Resources. BMPs associated with the other resource areas evaluated in this EIS are noted below.

Land Use, Zoning, and Coastal Resources

- The Town of Middletown should implement the proposed Coddington Center Overlay District and retain ownership of the parcel (Navy Lodge).
- Modify the site's existing zoning designation rezoning the area or revising the types of uses permitted in the Residential R-10 zoning district (City of Newport), or obtain a variance from the requirements of the current zoning ordinance (Naval Hospital).
- Apply for a use variance from the requirements of the zoning ordinance (Tank Farms 1 and 2).

Transportation

- Before construction, the developer should confirm sight distances for the potential driveway location and design driveway to maximize visibility for motorists turning into and out of the property while providing accurate signs enabling motorists to identify the site.

Environmental Management

- The developer should ensure that demolition and construction contracts contain traditional terms and conditions requiring recycling C&D waste to the extent practicable.
- The developer should note the possibility of an on-site UST in the construction contract. If a UST is encountered during redevelopment of the property, it will have to be managed in accordance with RIDEM's UST regulations.
- The developer should note the possibility of asbestos wrap on underground utility pipes in the construction contract. Any underground ACM encountered during building construction would need to be evaluated by a specialized ACM removal contractor.
- If the one transformer reported at the former Navy Lodge is handled or removed during redevelopment activities, the developer should inspect it for a "PCB-free" label. If such a label is not found, the transformer should be evaluated for PCBs (Navy Lodge).
- Use specialized and authorized removal contractors for removal and disposal of the ACM and LBP during removal of Tanks 9 and 10 and demolition of various structures (Tank Farms 1 and 2).

Air Quality

- The developer should properly maintain equipment, adhere to idling-reduction measures, and use newer, more efficient equipment with diesel retrofits to control fine particulate matter (PM_{10}) to decrease air emissions.
- The developer should regularly water graded areas and clean streets after grading activities.
- The developer should design buildings to meet stringent energy-efficiency standards to mitigate operational air emissions.
- The developer should implement traffic-easing roadway designs to lower vehicle speed and reduce congestion and expand public transportation and carpooling programs to reduce vehicle emissions.

Noise

- The developer should conduct construction activities between the hours of 7:00 a.m. and 8:00 p.m. when the noise would be less disturbing for area residents.

Infrastructure and Utilities

- The developer should use BMPs for water quality control as described in the Rhode Island Stormwater Design and Installation Standards Manual (RIDEM and CRMC 2010).
- The developer should use BMPs for structural measures (e.g., grassed waterway, sediment basin, riprap, etc.) and non-structural measures (e.g., mulching, placing topsoil, silt curtains, etc.) as described in the Rhode Island Soil Erosion and Sediment Control Handbook (RIDEM et al. 1989) to decrease impacts on soils and erosion.
- Adhere to the Town of Portsmouth's 2008 Storm Water Discharge Control Ordinance and 2010 Storm Water and Sediment Control Ordinance. Implement temporary erosion and sediment control measures during construction, permanent storm water management measures, and appropriate building site location and design (Tank Farms 1 and 2).

Topography, Geology, and Soils

- The developer should use BMPs for structural measures (e.g., grassed waterway, sediment basin, riprap, etc.) and non-structural measures (e.g., mulching, placing topsoil, silt curtains, etc.) as described in the *Rhode Island Soil Erosion and Sediment Control Handbook* (RIDEM et al. 1989) to decrease impacts on soils and erosion.
- The developer should implement temporary erosion and sediment control measures during construction, permanent storm water management measures, and appropriate building site location and design.

Water Resources

- The developer should implement temporary erosion and sediment control measures during construction, permanent storm water management measures, and appropriate building site location and design.
- The developer should use standard dewatering techniques and follow erosion sediment control plans and BMPs that would involve preventing erosion, selecting an appropriate discharge location, removing sediment from collected water, and preserving downgradient natural resources.
- Minimize or offset impacts from redevelopment that could potentially degrade floodplain values and increase the flood risk to upstream and downstream activities (Naval Hospital).

- Implement an emergency response plan by the construction contractor in the event of an accidental spill into the water (Naval Hospital).
- Install gutters and filtration devices along the deck to decrease petroleum run-off into the water from construction vessels (Naval Hospital and Midway Pier/Greene Lane).
- Minimize or offset impacts from redevelopment that could potentially degrade floodplain values or increase the flood risk to upstream and downstream activities (Midway Pier/Greene Lane).
- Implement an emergency response plan by the construction contractor in the event of an accidental spill into the water (Midway Pier/Greene Lane).

Biological Resources

- The developer should restore temporarily disturbed areas.
- Implement an SPCC plan that will minimize the adverse effects on fisheries resources of any spill and provide procedures for clean-up effort (Naval Hospital and Midway Pier/Greene Lane).
- Restore bottom contours and shoreline areas in the vicinity of the construction activities to mitigate impacts on fisheries resources (Naval Hospital).
- To minimize potential impacts on the northern long-eared bat, the developer should implement the following BMPs or protective measures (Tank Farms 1 and 2 and Midway Pier/Greene Lane):
  - Project activities must occur more than 0.25 miles from known, occupied hibernacula.
  - All clearing of trees and vegetation on-site shall take place in the timeframe between October 1st – April 15th.
- To minimize potential impacts on marine mammals, the developer should implement the following potential protective measures (Naval Hospital and Midway Pier/Greene Lane):
  - Monitoring for the presence of marine mammals with a trained marine mammal/protected species observer stationed at shore-side locations or from a boat in the harbor during all pile-driving activities. Work will be stopped if marine mammals are spotted.
  - Installing a bubble curtain to reduce in-water noise during pile driving.
  - Driving piles with a cushion made of wood to reduce pressure pulse.

14.2 Mitigation Measures

There are not specific mitigation measures associated with certain resource areas, such as Land Use, Zoning and Coastal Resources, Socioeconomics and Environmental Justice, Community Services and Facilities, Environmental Management, Air Quality, Noise, Infrastructure and Utilities, and Water Resources. Mitigation measures and/or protective measures associated with the other resource areas evaluated in this EIS are noted in below.

Transportation

- The developer will review sight distances and driveway design to maximize visibility for motorists.

- The developer will improve roadways by revising signs, striping, or by instituting requirements for improving roadway and traffic configurations, depending on final design of the driveway and parking lot network.
- Review the need for new traffic signals or signs to ensure that safety and the level of service is not impacted. With an increase in traffic and risks, signalize the intersections of West Main Road and Bradford Avenue and Defense Highway and Stringham Road to mitigate safety concerns at these intersections (Tank Farms 1 and 2).
- If Bradford Avenue is ultimately to be used an as access point, signalization/roadway improvements would need to be considered to improve safety in the vicinity of the Melville School per the Traffic Impact Assessment. These may include limiting the existing easement along the road to only emergency vehicles or installing a traffic light (Tank Farms 1 and 2).

Cultural Resources

- The Navy is in the process of consulting with the Rhode Island SHPO pursuant to Section 106 of the NHPA, including consulting on the effects of the proposed action on historic properties within the APE (Preston 2013; Lin 2013). As part of this ongoing consultation, the Rhode Island SHPO has acknowledged that once the Navy has disposed of the property, subsequent redevelopment is outside of the Navy's control and has indicated that a standard treatment to mitigate any indirect adverse effects of subsequent redevelopment on historic properties would be to include a historic preservation easement in a deed of transfer (Sanderson 2013a) (Naval Hospital and Tank Farms 1 and 2).

Topography, Geology, and Soils

Biological Resources

- Continue consultation with USFWS once project-specific details (i.e., construction plans) are available to determine appropriate mitigation measures (Tank Farms 1 and 2 and Midway Pier/Greene Lane).
- Continue consultation with NMFS for EFH once project-specific details (i.e., construction plans) are available to determine appropriate mitigation measures (Naval Hospital and Midway Pier/Greene Lane).

14.3 Monitoring

No long-term monitoring has been found to be applicable for this EIS.

15 Other Considerations Required by NEPA

15.1 Consistency with Other Federal, State, and Local Land Use Plans, Policies, and Controls

Disposal of the surplus property at NAVSTA Newport would comply with existing federal regulations and state and local policies and programs.

As discussed in Section 1, this EIS has been prepared in accordance with the requirements of NEPA of 1969, as amended; the CEQ regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); and Navy procedures for implementing NEPA (32 CFR 775).

Other federal laws, regulations, and Executive Orders with which the proposed action must demonstrate compliance are discussed below, followed by a discussion of pertinent local and state policies and controls.

15.1.1 Federal Acts, Executive Orders, Policies, and Plans

15.1.1.1 NEPA

Compliance with NEPA is discussed in detail in Section 1.6.1, The National Environmental Policy Act.

15.1.1.2 Clean Air Act and General Conformity Rule

Compliance with the CAA and General Conformity Rule are discussed in Section 1.6.3, Other Environmental Regulations, as well as Section 3.6.1, Resource Overview and Regulatory Authority for Air Quality. Additionally, property-specific redevelopment compliance discussions are found in Sections 5.6, 7.6, 9.6, and 11.6, along with a regional overview in Chapter 12.

15.1.1.3 Executive Order 12898

Compliance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, is discussed in Section 3.2.1, Resource Overview and Regulatory Authority for Socioeconomics and Environmental Justice. Additionally, Sections 5.2.1 and 5.2.2 provide surplus property redevelopment compliance discussions.

15.1.1.4 Executive Order 13045

Compliance with Executive Order 13045, Environmental Health Risks and Safety Risks to Children, is discussed in Section 3.2.1, Resource Overview and Regulatory Authority for Socioeconomics and Environmental Justice. Additionally, Sections 5.2.1 and 5.2.2 provide surplus property redevelopment compliance discussions.

15.1.1.5 Endangered Species Act

Compliance with the ESA is discussed in Section 1.6.3, Other Environmental Regulations, as well as in Section 3.12.1.3, Threatened and Endangered Species. Additionally, property-specific redevelopment compliance discussions are found in Sections 5.12, 7.12, 9.12, and 11.12.

15.1.1.6 Migratory Bird Treaty Act

Compliance with the MBTA is discussed in Section 1.6.3, Other Environmental Regulations, and in Section 3.12.1.2, Wildlife.

15.1.1.7 Sikes Act

Compliance with the Sikes Act is discussed in Section 3.12.1.3, Threatened and Endangered Species.

15.1.1.8 Clean Water Act

Compliance with the CWA is discussed in Section 1.6.3, Other Environmental Regulations, and in Section 3.11.1, Resource Overview and Regulatory Authority for Water Resources. Additionally, property-specific redevelopment compliance discussions are found in Sections 5.11, 7.11, 9.11, and 11.11.

15.1.1.9 National Historic Preservation Act, American Indian Religious Freedom Act, Archaeological Resources Protection Act, and Native American Graves Protection and Repatriation Act

Compliance with the above-noted regulations is discussed in Section 1.6.3, Other Environmental Regulations, and in Section 3.9.1, Resource Overview and Regulatory Authority for Cultural Sources. Additionally, property-specific redevelopment compliance discussions are found in Sections 5.9, 7.9, 9.9, and 11.9.

15.1.1.10 Marine Mammal Protection Act

Compliance with the MMPA is discussed in Section 1.6.3, Other Environmental Regulations, and in Section 3.12.1.2, Wildlife. Additionally, property-specific redevelopment compliance discussions are found in Sections 7.12 and 11.12.

15.1.1.11 Magnuson Stevens Fishery Conservation and Management Act

Compliance with the Magnuson Stevens Fishery Conservation and Management Act is discussed in Section 1.6.3, Other Environmental Regulations, and in Section 3.12.1.2, Wildlife. Additionally property-specific redevelopment compliance discussions are found in Sections 7.12 and 11.12.

15.1.1.12 Coastal Zone Management Act

Compliance with the CZMA is discussed in Section 1.6.3, Other Environmental Regulations, and in Section 3.1.1.2 Coastal Zone Management. Additionally, property-specific redevelopment compliance discussions are found in Sections 5.1, 7.1, 9.1, and 11.1.

15.1.1.13 Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act

Compliance with CERCLA and RCRA are discussed in Section 1.6.3, Other Environmental Regulations, and in Section 3.5.1. Additionally, property-specific redevelopment compliance discussions are found in Sections 5.5, 7.5, 9.5, and 11.5.

15.1.2 State, Local, and Regional Plans, Policies, and Controls

Compliance with various state, local and regional plans, policies, and controls is discussed throughout the EIS, including Section 1.6.3, Other Environmental Regulations, and Chapters 3 through 11.

15.2 Irreversible and Irretrievable Commitment of Resources

NEPA (42 U.S.C. § 4332 Section 102(2)(C)(v), as implemented by CEQ regulation 40 CFR 1502.16), requires an analysis of significant, irreversible effects resulting from implementation of a proposed action. Resources that are irreversibly or irretrievably committed to a project are those that are typically used on a long-term or permanent basis; however, those used on a short-term basis that cannot be recovered (e.g., non-renewable resources such as metal, wood, fuel, paper, and other natural or cultural resources) also are irretrievable. Human labor is also considered an irretrievable resource. All such resources are irretrievable

in that they are used for a project and, thus, become unavailable for other purposes. An impact that falls under the category of the irreversible or irretrievable commitment of resources is the destruction of natural resources that could limit the range of potential uses of that resource.

Short-term irreversible commitments of resources associated with the construction activities include the use of energy and utilities. Construction materials and building supplies would be committed to the redevelopment and reuse of the surplus properties at NAVSTA Newport. The use of these materials, such as gravel, concrete, steel, glass, etc., represents a long-term commitment of these resources that would not be available for other projects. Fuel, lubricants, and electricity would be required during construction activities for the operation of the various types of construction equipment and vehicles and for the transportation of workers and materials to the construction sites. However, these resources are not in short supply, and their use would not have an adverse effect upon their continued availability.

In the long-term, implementation of either Alternative 1 or Alternative 2 would result in irreversible or irretrievable commitments of resources if land development were to physically eliminate or diminish the character of natural resources on or immediately adjacent to the surplus properties. Specifically, this would include threatened and endangered species and significant wildlife habitat. Each of the surplus properties has been previously developed with buildings, roadways, and other infrastructure. As such, the properties do not represent unaltered or non-disturbed areas. No designated critical habitat exists within the surplus properties. However, several listed marine mammals and one fish (Atlantic sturgeon) have the potential to be present off-shore of the former Naval Hospital property and the Midway Pier/Greene Lane property. Any potential impacts on these listed species would not result in an irreversible or irretrievable commitment of resources. Under Alternatives 1 and 2, permanent wetland impacts would result. Approximately 0.04 acres of marine/estuarine wetland along the former Naval Hospital shoreline would be filled to facilitate construction of the floating docks. Additionally, approximately 0.08 acres of a potential wetland would be filled to facilitate redevelopment at Tank Farm 1 under Alternative 1, and 0.09 acres under Alternative 2.

Under Alternative 1, approximately 2.7 acres of mixed oak/white pine forest, 9.2 acres of old field, and 14.5 acres of ruderal forest at Tank Farms 1 and 2 would be permanently converted to facilitate redevelopment. Under Alternative 2, the same acreages for mixed oak/white pine forest and old field would be permanently converted as under Alternative 1. Additionally, 16.4 acres of ruderal forest would be permanently converted. These impacts would not be considered significant for several reasons: the tank farms have already been developed; undeveloped areas on-site following redevelopment would remain undeveloped; and the adjacent property would also remain undeveloped. Under Alternative 1, approximately 0.6 acres of old field habitat would be permanently converted to facilitate the development of the shoreline park and the multi-use pathway at the Midway Pier/Greene Lane property. Under Alternative 2, a slightly larger area of old field habitat would be converted, for a total of 0.7 acres. Similar to Tank Farms 1 and 2, these impacts would not be considered significant, as portions of the Midway Pier/Greene Lane property were previously developed, and open space areas within the property would be left undeveloped as old field habitat.

The disposal of surplus property, although an irreversible action, does not represent an irretrievable commitment of land resources, since this action makes resources available for future reuses. The proposed action also represents the irretrievable commitment of human resources and materials requiring the use of fossil fuels, electrical energy, and other energy resources during construction and operation of facilities. These resources would be irretrievably committed to the action. However, under both Alternatives 1 and 2, a solar array is proposed for development at the Tank Farm 1 and 2 properties. It is expected that 1.2 million kWh of energy would be generated by the solar array; it is assumed this energy would help to off-set the energy used for operation of the new facilities at the Tank Farm 1 and 2 properties.

15.3 Relationship between Short-term Use of the Environment and Long-term Productivity

NEPA requires consideration of the relationship between short-term use of the environment and the impacts that such use could have on the maintenance and enhancement of long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. Such impacts include the possibility that choosing one alternative could reduce future flexibility to pursue other alternatives, or that choosing a certain use could eliminate the possibility of other uses at the site.

Implementation of either Alternative 1 or Alternative 2 would result in new development requiring various services; under Alternative 2, the level of services needed would be higher than that under Alternative 1. Long-term benefits resulting from implementation of either of these alternatives would occur at the expense of short-term impacts in the vicinity of the surplus properties. These short-term impacts would occur during the construction period of the selected alternative. Implementation of either alternative would require an estimated 20-year build-out period. During this period, the following types of construction activities would occur: demolition, clearing, grading, excavating, surfacing, road and parking paving, erection of structures, and landscaping. Short-term impacts on local noise, air quality, water resources, and biological resources, as well as possible traffic detours and delays, could occur in the vicinity of the surplus properties. However, these impacts would be temporary, and proper controls, in the form of BMPs and other measures, would be utilized to prevent these effects from having significant impacts on the environment.

In addition, short-term gains in the local economy would occur if local workers are hired and if local businesses provide services and supplies during the construction period. Upon completion of redevelopment, the gains in the local economy would evolve into long-term benefits from the reuse of the surplus properties, including an expanded municipal tax base, new businesses and job creation and, potentially, new employee and business spending in the region.

16 List of Preparers

The following contributed to the development and review of this Environmental Impact Statement:

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Forbes, Jessica	Land Use, Zoning, Coastal Zone Management	• B.A., 2006, Environmental Studies, Randolph-Macon Woman's College
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Name	Role	Education
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Siener, Thomas, CIH	Noise	• B.S., 1971, Biology, Purdue University
Snyder, Natasha	Cultural Resources	• M.A., 2009, Anthropology, State University of New York at Buffalo • B.A., 1997, Anthropology/ Environmental Science, State University of New York at Buffalo • A.A., 1985, Liberal Arts, Bucks County Community College
Werth, Marcy	Topography, Geology, Soils	• B.S., 1995, Environmental and Natural Resource Policy Studies, Michigan State University
Kaitano, Anne-Elizabeth	Biological Resources	• M.A., 2006, Conservation Biology, Columbia University • B.A., 2000, Biology, Wittenberg University
Budzynkiewicz, Jaime	Biological Resources	• M.E.M., 2011, Coastal Environmental Management, Duke University-Nicholas School of the Environment • B.A., 2007, Marine Biology, Roger Williams University
Kondak, Tegan	Purpose and Need, Cumulative Impacts	• B.S., 2008, Environmental Science, University of Michigan, School of Natural Resources and Environment
Olson, Sam	GIS Analysis	• M.A. 2007, Geography/GIS, State University of New York at Buffalo • B.A. 2005, Geography, GIS, and Cartography Track, State University of New York at Buffalo
Marvin, Valerie	Editor	• PhD. 1975, English, State University of New York at Buffalo
Schill, Jeff	Graphic Artist	• B.F.A, 1997, Graphic Design, State University of New York College at Buffalo
Thomas, Danielle	Graphic Artist	• B.A., 1997, Psychology, State University of New York College at Buffalo • A.A.S., 2004, Graphic Design, Villa Maria College

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