

homes and businesses served by the Charleston Water System (Charleston Water System 2014). The potable water distribution system is currently in place and currently serves the study area.

### **Wastewater**

North Charleston Sewer District provides sanitary sewer service and industrial pretreatment programs to the residential and commercial customers of the Sewer District. It operates a 27-million-gallons-per-day (MGD) wastewater treatment facility with 480 miles of sewer transportation lines and 60 pump stations throughout the 59.3 square mile service area (North Charleston Sewer District 2014).

Wastewater collection and treatment services within the study area are provided by the North Charleston Sewer District. Currently, two pump stations exist on the Project site. Wastewater flows from these stations are accommodated by a 30-inch gravity pipeline and a 20-inch force main that extend along North Hobson Avenue. Wastewater treatment is performed at the Felix Davis Wastewater Treatment Facility (WWTF). This facility has a 27-MGD design capacity and currently operates at an average of 15 MGD, leaving a 12-MGD capacity for peak day loads and growth.

### **Solid Waste**

North Charleston Sanitation Division is responsible for solid waste and yard trash removal for all areas within the City of North Charleston city limits and the North Charleston District. The City of North Charleston does not pick up waste from commercial or industrial establishments (personal communication, Eric Sears, Landfill Manager, July 24, 2014). Solid waste collection and disposal within portions of the study area is provided by the North Charleston Sanitation Division. The Charleston Environmental Management Department also serves the City of Charleston, including the study area. Scheduled collections are performed weekly at curbside and dumpster sites by both of these departments. Waste disposal for the study area will be accommodated primarily at the Spring Grove Landfill. Current disposal capacity at the Spring Grove Landfill is estimated at 125 years (personal communication, Eric Sears, Landfill Manager, July 24, 2014).

## **3.10 CULTURAL RESOURCES**

### **3.10.1 Introduction**

The affected environment for cultural resources consists of numerous historic properties, which are sites, buildings, structures, objects, districts, or traditional cultural properties that are listed on or eligible for the National Register of Historic Places (NRHP). A cultural resource is a historic property (per 36 C.F.R. 60.4) when it is at least 50 years old, it meets one or more of the following NRHP criteria, and it retains sufficient integrity with respect to location, design, setting, materials,

workmanship, feeling, and association to convey or reflect these associations (36 C.F.R. 60.4, Savage and Pope 1998):

- Criteria A: Property is associated with events that have made a significant contribution to the broad patterns of our history.
- Criteria B: Property is associated with the lives of persons significant in our past.
- Criteria C: Property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components lack individual distinction.
- Criteria D: Property has yielded, or is likely to yield, information important in prehistory or history.

Resources less than 50 years of age also may be eligible if they meet one of the above criteria and are associated with an exceptionally significant aspect of our recent history.

The Cultural Resource study area is the equivalent to the Area of Potential Effects (APE), and includes the physical footprints of the Navy Base ICTF at the Project site and the River Center project site, as well as adjacent areas within approximately 300 feet of the physical footprints of the seven alternatives (Figure 3.10-1).

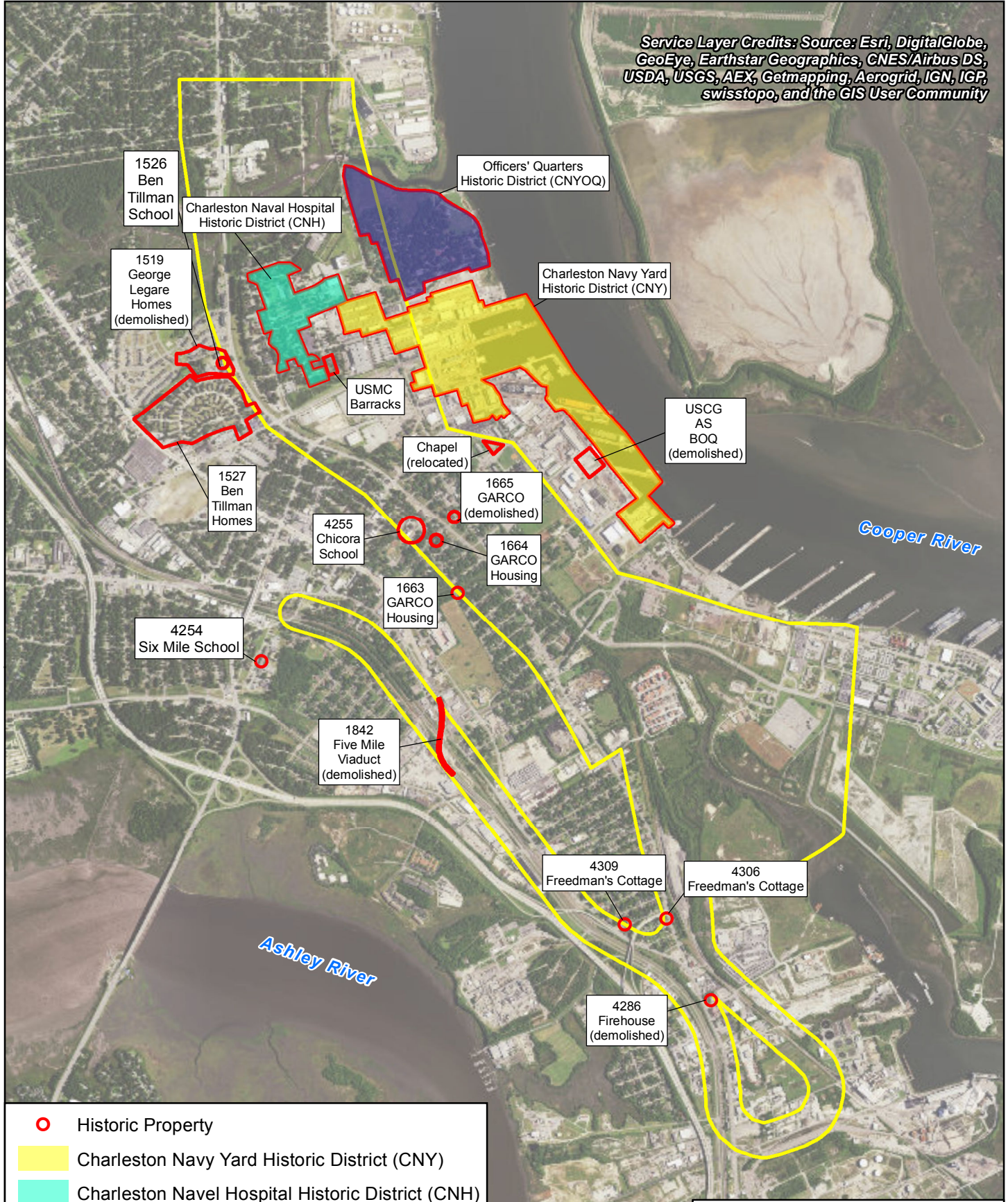
This section provides a brief description of the historical setting for the Charleston Naval Complex (CNC) and Cultural Resource study area, and describes the historic properties that are present within them. Previous cultural resources investigations that have been conducted in the Cultural Resource study area, including recent efforts that have been conducted in support of this EIS, are also discussed. All historic properties identified to date within or immediately adjacent to the Cultural Resource study area are buildings, structures, and collections of buildings and structures that form historic districts.

### 3.10.2 Historical Setting

The narrow area between the Ashley River and Cooper River, commonly referred to as the Charleston Neck, witnessed limited development during the late seventeenth and eighteenth centuries. Poor soils and salty marshes limited the agricultural potential of this area and its use and occupation. During the early nineteenth century, plantations developed with settlements and facilities focused along the Cooper River. Settlement remained sparse compared to other reaches of the coastal rivers.



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Historic Property
- Charleston Navy Yard Historic District (CNY)
- Charleston Navel Hospital Historic District (CNH)
- Officers' Quarters Historic District (CNYOQ)
- Study Area

Source: Brockington 2016  
 0 2,500 5,000 Feet  
 N

NAVY BASE ICTF EIS	
Cultural Resources Study Area	
Figure 3.10-1	

After the Civil War, the Charleston Neck witnessed expansive industrial growth with the establishment of phosphate processing mills and plants along both the Ashley River and Cooper River to the west and south of the Cultural Resource study area. In the 1890s, the City of Charleston acquired much of the land within the Cultural Resource study area for the anticipated growth of the City. The City of Charleston planned Chicora Park, designed by the Olmstead Brothers, as a rural retreat for City residents. In 1901, the U.S. Navy (USN) purchased the nascent Chicora Park and much of the surrounding land to create what would later become Navy Base Charleston.

Development of a USN installation on the Cooper River began in 1901. A portion of the landscaping that was started in Chicora Park was retained in the northern end of the navy base, where the quarters for senior officers were constructed. Rail connections with the Atlantic Coast Line and Seaboard Air Line tracks to the west (both completed in 1889 along the route of the original Charleston-to-Hamburg rail line—the oldest rail line in the United States) were quickly established to provide ready access for the materials needed to repair and outfit USN vessels. With the construction of the Charleston Navy Yard, repair services for USN vessels along the southeast Atlantic Seaboard were initially provided. By 1910, the USN was expanding its shipbuilding capabilities, and the Charleston Navy Yard experienced growth associated with this expansion. By the entry of the United States into World War I (WWI), the navy yard also based a torpedo boat squadron, training facilities and specialist schools, and support naval factories. Shipbuilding expanded during WWI with the Charleston yard producing small warships (eight submarine chasers, one destroyer, and one gunboat) and service vessels (two tugs, two coal barges, and one ammunition lighter); however, the Charleston yard was not designed to build battleships or cruisers, the largest warships of the USN. The factories established in the Charleston region also expanded their operations to accommodate the growth of the USN during the nation's involvement in a world war. The end of WWI saw a drastic reduction in the presence of the U.S. military, and operations, at the Charleston Navy Yard. As a result, many of the factories, schools, and training facilities closed (some even dismantled), and ship repair and construction were minimal.

The early 1930s witnessed a return to naval expansion as the United States began to compete with the growing powers of Europe and the Far East. The Charleston Navy Yard began its greatest period of growth over the late 1930s and the early 1940s as the United States prepared for and entered World War II (WWII). The Charleston Navy Yard focused on the repair and construction of destroyers and destroyer escorts, and a plethora of small service, support, and specialty vessels. Over 25,000 workers were employed at the shipyard in 1943, with four dry-docks in operation. This period witnessed the expansion of the facility to its southern limits, with massive dredging and filling operations necessary to create the land needed to support the shipbuilding and repair activities along the Cooper River. In addition to building and repair, the yard also was the home of antisubmarine activities using both fixed wing and lighter-than-air machines (blimps). The air station supporting these activities was closed at the end of WWII.



Although the end of WWII witnessed another drop in activity, the Charleston Navy Yard became Navy Base Charleston and received the headquarters of the Fleet Mineforce. As the USN changed its vessels during the 1950s and 1960s, the Naval Shipyard began the construction and maintenance of nuclear-powered vessels, with a fifth dry-dock built in the 1960s to accommodate nuclear-powered Polaris missile submarines that were home-berthed at Charleston. Navy Base Charleston replenished the nuclear missile submarines (including their ballistic missiles and nuclear warheads) that patrolled the Atlantic Ocean throughout the Cold War era. All of these facilities remained in operation until 1996, when the USN closed Navy Base Charleston. As the USN activities expanded during the early and mid-twentieth century, so too did the residential and commercial neighborhoods adjacent to the installation. Residences were needed for the thousands of workers who came to the shipyard for employment. Commercial enterprises sprang up to support these workers and the growing naval population on the base itself. Eventually, this growth contributed to the establishment of the City of North Charleston around the navy base. When the base closed in 1996, growth diminished in the surrounding neighborhoods, although the residential districts continue to be highly occupied. No ships are currently being built at the CNC.

The USN entered a Programmatic Agreement (PA) with the South Carolina State Historic Preservation Office (SHPO) in May 1995 to satisfy the Navy's obligations under the NHPA. The Redevelopment Authority (RDA- current managers of the CNC) was created to manage the conversion of the CNC into a non-military commercial/industrial complex within these parameters. The RDA continues this function today and must abide by the PA implemented by the USN and the SHPO when the base was closed. The PA requires that all owners/lessees of historic properties must follow its guidance concerning the maintenance, adaptive re-use, and treatment of these historic buildings and structures. Palmetto Railways currently owns a number of the historic properties within the CNC and would have to follow the stipulations of the PA and its associated covenants when dealing with these buildings and structures.

More comprehensive histories may be found in Bean (2011), Fick (1995), and Goodwin (1995).

### 3.10.3 Cultural Resources Investigations

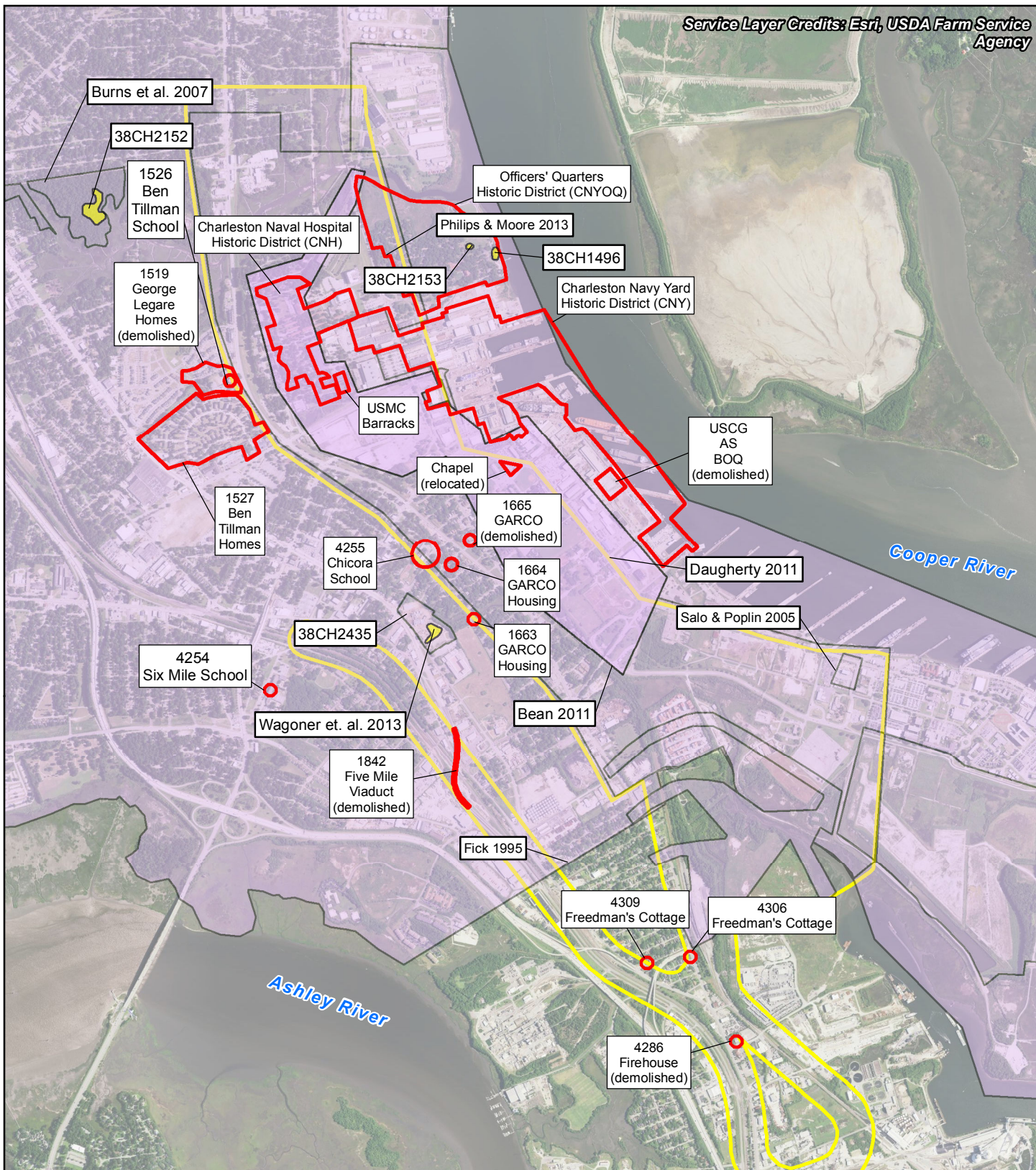
Over the last 20 years, 14 cultural resources investigations of this portion of North Charleston have been conducted, and each has inventoried historic properties (NRHP eligible) and other historic resources (survey eligible sites, buildings, structures, etc., that are greater than 50 years of age but are not eligible for the NRHP) within and near the Cultural Resources study area (Figure 3.10-1). These efforts include the recent cultural and architectural survey investigations undertaken by Owens et al. (2015) and Owens and Poplin (2016) in support of this EIS, which are documented in Appendix G. Table 3.10-1 lists the cultural resource investigations within and near the Cultural Resources study area, while Figure 3.10-2 shows their locations in relation to the Cultural Resource study area.

Table 3.10-1  
Cultural Resources Investigations

Author(s)	Date	Title
Fick	1995	City of North Charleston Historical and Architectural Survey
Goodwin	1995	Inventory, Evaluation, and Nomination of Military Installations: Naval Base Charleston
USC Legacy Project	1995	The Cold War in South Carolina, 1945–1991: An Inventory of Department of Defense Cold War Era Cultural and Historical Resources in the State of South Carolina
Shmookler	1995	Archaeological Sensitivity Assessment for the Disposal and Reuse of Charleston Naval Base, North Charleston, South Carolina
Poplin and Salo	2005	Historic Properties Assessment, Proposed Marine Container Terminal, Charleston Harbor, South Carolina
Poplin, Salo and Ellerbee	2006	Cultural Resources Survey of the Proposed Access Road Alternate Alignments, South Carolina Ports Authority's Charleston Naval Center Marine Container Terminal Project, Charleston County, South Carolina
Burns, Salo and Philips	2007	Cultural Resources Survey of the South Rhett Tract, North Charleston, Charleston County, South Carolina
Adams and Hughes	2009	Phase I Cultural Resources Survey of the Proposed SC 7 Bridge over SCL and Southern Railroad and S-39 Expansion, Charleston County, South Carolina
Bean	2011	Architectural Survey for the Intermodal Container Transfer Facility at the Charleston Naval Base, North Charleston, South Carolina
Daugherty	2011	Phase I Archaeological Survey of the Intermodal Yard at the former Charleston Naval Base, North Charleston, South Carolina
Philips and Moore	2013	Ground Penetrating Radar Investigations of a Possible Cemetery, Old Navy Base, Charleston County, South Carolina
Wagoner, Philips and Fletcher	2013	Cultural Resources Survey of the Chicora Elementary School Replacement Tract, Charleston County, South Carolina
Owens, Bragg and Poplin	2015	Cultural Survey in Support of South Carolina Public Railways' Proposed Intermodal Container Transfer Facility, Charleston County, South Carolina
Owens and Poplin	2016	Additional Cultural Survey in Support of South Carolina Public Railways' Proposed Navy Base Intermodal Container Transfer Facility, Charleston County, South Carolina

Source: Brockington 2016.





- Historic Property
- Previously Recorded Archaeological Site
- Previously Surveyed Area
- Study Area


Source: Brockington 2016

0 2,500 5,000 Feet

N  
▲

NAVY BASE ICTF EIS

Locations of  
Previous Investigations  
Figure 3.10-2





As part of recent survey investigations, Owens et al. 2015 and Owens and Poplin (2016) focused on those portions of the Cultural Resource study area that had not been inventoried within the last 20 years in an effort to document any resources built between 1945 (the terminal date for the major architectural surveys of North Charleston and the CNC) and 1971 (date of publication of the previous edition of the USGS North Charleston, SC quadrangle) that may now be eligible for the NRHP. Owens et al. 2015 also evaluated the NRHP eligibility of specific resources recommended as potential Cold War era resources in a 1995 study of the military installations in South Carolina and their role during the Cold War (University of South Carolina Legacy Project 1995). Survey results and recommendations of eligibility for individual resources were reviewed by and received concurrence from the SHPO.

The locations of known historic resources, identified during previous cultural resources investigations in the Cultural Resource study area (Adams and Hughes 2009; Bean 2011, Burns et al. 2007, Daugherty 2011, Fick 1995, Goodwin 1995, Poplin and Salo 2005, Poplin et al. 2006, USC Legacy Project 1995, Wagoner et al. 2013), were obtained from the online database of cultural resources information (ArchSite) maintained by the SHPO and the University of South Carolina Institute of Archaeology and Anthropology. Figure 3.10-2 shows the locations of the previous investigations with relation to the Cultural Resource study area, and the presence of nearby archaeological sites and historic properties.

#### **3.10.4 Archaeological Features or Deposits Within and Near the Cultural Resource Study Area**

Development of the CNC (originally Navy Base Charleston) and the surrounding neighborhoods throughout the twentieth and twenty-first centuries has disturbed much of the original ground surface, thereby significantly reducing the potential for encountering intact archaeological features or deposits in most of the Cultural Resource study area. Made and filled lands constitute much of the Cultural Resource study area south of Viaduct Road. In such areas, there is a very low potential for archaeological deposits. Shmookler's (1995) assessment of archaeological potential within the CNC found that there was a very limited potential for intact archaeological deposits to be present within any portion of the installation. Recent archaeological investigations within the Cultural Resources study area (e.g., Daugherty 2011, Philips and Moore 2013) discovered one to six feet of fill in almost all areas that were sampled, and recovered no artifacts or only found a few fragments that likely were redeposited with the fills brought in to build up and shape the landscape within the CNC.

Adams and Hughes (2009), Burns et al. (2007) and Wagoner et al. (2013) identified archaeological sites in undeveloped tracts within and near the Cultural Resources study area, not including underwater archaeological sites in the Cooper River. Both of these investigations discovered sites that were diffuse scatters of prehistoric and/or eighteenth- to twentieth-century artifacts determined not eligible for the NRHP. One archaeological site (38CH2435) lies within the Cultural Resource study area; site 38CH2435 is not eligible for the NRHP. Ten archaeological sites are located



near the Cultural Resources study area (38CH0702, 38CH1496, 38CH2152, 38CH2153, 38CH2297, 38CH2298, 38CH2299, 38CH2300, 38CH2301, and 38CH2302). Two sites near the Cultural Resources study area that lie in the central and eastern portion of the Charleston Navy Yard Officers' Quarters NRHP District (38CH1496 and 38CH2153) displayed extensive disturbances, including 1 to 2 feet of fill in some areas. Neither of these sites has been evaluated for NRHP eligibility. The other eight sites outside of the Cultural Resources study area are not eligible for the NRHP.

### 3.10.5 Historic Properties within and near the Cultural Resource study area

Historic properties within and near the Cultural Resources study area currently indicated in ArchSite include 3 historic districts (all associated with the CNC), 2 planned communities of houses and apartments (in the residential areas west of the CNC), 13 individual buildings (3 within the CNC that are not associated with the districts, and 10 in the adjoining residential neighborhoods), and 1 structure. All 3 historic districts have been listed in the NRHP, 4 of the individual buildings and the structure have been demolished or moved recently, and 1 of the planned communities of houses has been rebuilt. The SHPO determined that these rebuilt, demolished, and relocated historic properties no longer meet the criteria for NRHP eligibility (see Appendix G, SHPO comments on Owens et al. 2014). Thus, there are 11 historic properties within the Cultural Resources study area (3 historic districts, 1 planned residential community, and 8 individual buildings; 1 property contains 2 buildings). Documentation of the SHPO review and concurrence with the major recent investigations (the PA regarding the disposal of Navy Base Charleston; SHPO concurrence on mitigation of Structure 1842; Five Mile Viaduct prior to demolition; review and comment on Bean 2011 and Daugherty 2011; review and comment on Owens et al. 2014 and Owens and Poplin 2016) is included in Appendix G. Table 3.10-2 lists the historic properties within or adjacent to the Cultural Resources study area, and indicates their presence/absence in the footprints of Alternatives 1–7. Documentation of the descriptions of the districts and historic buildings and their NRHP eligibility and integrity were taken from Goodwin (1995).

#### 3.10.5.1 Historic Districts

##### The Charleston Navy Yard Historic District

The Charleston Navy Yard (CNY) Historic District lies both within and outside the Cultural Resource study area; however, most of the district is outside the Cultural Resource study area. The CNY primarily extends along the Cooper River, east of the Cultural Resource study area and mostly east of North Hobson Avenue. Only the northwestern elements of the district extend into the Cultural Resource study area. The CNY was listed in the NRHP in 2006 and contains 86 buildings, structures, and objects that are a cohesive representative example of permanent naval industrial construction that reflect the major trends in United States naval development between 1900 and 1945 (NRHP

Table 3.10-2  
Historic Properties

Historic Property		Alternative						
Resource #	Name	1	2	3	4	5	6	7
NA	Charleston Navy Yard Historic District (CNY- 89 elements / 57 contributing) <sup>1</sup>	No	No	Yes	No	Yes	Yes	Yes
NA	Charleston Naval Hospital Historic District (CNH- 35 elements / 32 contributing) <sup>1</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NA	Charleston Navy Yard Officers' Quarters Historic District (CHYOQ- 40 elements / 28 contributing) <sup>1</sup>	No	No	No	No	No	No	No
NA	USMC Barracks (CNC Building M17) <sup>1</sup>	Yes	No	Yes	Yes	Yes	Yes	Yes
1526	Ben Tillman Graded School (McNair Elementary School)	No	No	No	No	No	No	No
1527	Ben Tillman Homes	No	No	No	No	No	No	No
1663	GARCO Employee Housing (two residences)	No	No	No	No	No	No	No
1664	GARCO Employee Housing residence	No	No	No	No	No	No	No
4254	Six Mile Elementary School (Mary Ford Elementary School)	No	No	No	No	No	No	No
4255	Chicora Elementary School	No	No	No	No	No	No	No
4306	Charleston freedman's cottage	No	No	No	No	No	No	No
4309	Charleston freedman's cottage	No	No	No	No	No	No	No

Source: Brockington 2016.

1. Some District elements/historic property currently owned by Palmetto Railway.

NA – Not applicable.

Criteria A). Fifty-seven of the 86 buildings/structures/objects contribute to the NRHP eligibility of the District, including the Power House, which represents the architectural characteristics of the principal industrial elements of the Charleston Navy Yard (NRHP Criteria C); the remaining 29 do not contribute. The portion of the CNY District located within the Cultural Resources study area is approximately 10 percent of the overall historic district and includes eight contributing historic buildings/structures and one non-contributing element.

Functions of the CNY included industrial facilities, administrative facilities, support facilities, and storage facilities. The elements of the CNY District reflect four periods of construction/architectural styles. These are:

- 1901 to 1910: Neo-classical style
- 1910s to end of WWI: Modern industrial style
- Post-WWI to late 1930s: Modern Federal style
- Late 1930s to 1945: Utilitarian style

Defining architectural characteristics of the buildings and structures within the CNY District are their large scale and high density. Naval industrial processes required large spaces such as buildings and compact masses that create efficiency when combining various elements of the industrial processes to create larger objects, such as ships. Smaller buildings and structures scattered throughout the industrial facility elements generally are support and administration facilities. Some of the buildings and structures—particularly those built during the early periods of development—have ornate architectural elements. The later constructions tend to be more utilitarian, partly an effect of the acceleration of shipbuilding activities as the United States approached entry into WWII. Although different types of vessels were constructed throughout the life of the shipyard, most buildings and structures retained their original functions until the shipyard and base closed in 1996. Since then, some of the buildings have been sold or leased to private, commercial industrial facilities, engineering laboratories, Clemson University, and Palmetto Railways. Several of the dry docks continue to be used to maintain and repair ships, including USN vessels, with contractors leasing the facilities and carrying out the necessary repairs and refittings.

### The Charleston Naval Hospital Historic District

The Charleston Naval Hospital Historic District (CNH) lies in the northern portion of the CNC, completely within the Cultural Resources study area. This District was listed in the NRHP in 2010 and includes 35 buildings and structures; 32 buildings contribute to the NRHP eligibility of the district. The buildings and structures in the CNH District reflect the growth and development of the USN in the lead-up to and during WWII (NRHP Criteria A). All possess the same architectural style, Spanish Colonial or Mission Revival (NRHP Criteria B). This theme was common for military buildings throughout the 1920s and 1930s. Although one building in the CNH District was built during WWI, most of the buildings were constructed during the late 1930s and 1940s as the USN and Navy Base Charleston grew rapidly. There are three groups of buildings in this District:

- Treatment facilities (the central core of the district);
- Service-related buildings and structures (to the east of the hospital treatment facilities); and
- Hospital staff residences (to the west, south, and north of the hospital treatment facilities)

These hospital facilities served Navy Base Charleston until 1972, when a new hospital facility was built to the south and west outside the Cultural Resources study area. Many of the CNH buildings were refitted by the USN over the next two decades for other purposes, although the external configurations and layout of the hospital complex remained basically intact, despite the loss of



several buildings and structures. This is especially true for the central treatment facilities. Since the closure of the base in 1996, other CNH buildings, particularly the former staff residences, have been refitted once again for new private commercial purposes. Despite these changes in use with internal alterations to fit the new functions, the CNH remains a designed landscape or configuration of buildings that retain a high level of integrity with respect to their setting, materials, and associations. Palmetto Railways currently owns all of the CNH.

### **The Charleston Navy Yard Officers' Quarters Historic District**

The Charleston Navy Yard Officers' Quarters (CNYOQ) Historic District lies in the northern portion of the Cultural Resources study area; but is primarily outside of the Cultural Resources study area. This District was listed in the NRHP in 2007 and includes 40 buildings, structures, objects, and sites; 28 of these contribute to the eligibility of the CNYOQ District. Approximately 20 percent (eight buildings) of the district lies within the Cultural Resource study area; all eight buildings are contributing elements of the CNYOQ District. This is a residential and recreational landscape district, containing officers' quarters, support structures, curvilinear roads, and driveways, all within a recreational landscaped park. The district forms a cohesive representative example of permanent naval housing construction and trends in United States naval military housing history between 1898 and 1945 (NRHP Criteria A and C). Residences in the District were built at the northern edge of the CNC in the central core of the former Chicora Park. They include a variety of styles, depending on when they were constructed. Streets wind through the district rather than follow the grid network of the streets in the other portions of the base. Today, large trees are present throughout the district, creating a very pleasant residential neighborhood. Larger houses lie closer to the water and to the north of the district, where the base golf course was located. Senior officers occupied the larger residences, with junior officers living in smaller houses, some of which are multi-family units. Since 1996, the Redevelopment Authority employs one of these buildings for their headquarters. Others have been sold as private residences and restaurants. Many remain unoccupied. A group of these houses also served as sets for television and movie productions. Palmetto Railways owns seven of the eight buildings within the Cultural Resources study area that contribute to the CNYOQ District and all but one of the contributing buildings outside the Cultural Resource study area.

#### **3.10.5.2 Historic Buildings within the CNC**

There is one extant historic building within the Cultural Resources study area: the former U.S. Marine Corps (USMC) Barracks. Prior to March 2015, the Chapel of the Eternal Father of the Sea (a WWII-era historic building) stood within the Cultural Resources study area; Palmetto Railways, the Redevelopment Authority, and the City of North Charleston partnered on a project to deconstruct the Chapel and reuse as much original material as possible in a new structure on a site located in the CNYOQ District. Palmetto Railways contracted and managed the design and construction of this project. The Chapel is now owned by the City of North Charleston and is being used as a public venue for special events. The WWII-era USCG Air Station Bachelor Officers' Quarters was demolished prior

to March 2014. Owens et al. (2015) evaluated specific CNC resources recommended as potential Cold War-era resources within the Cultural Resource study area; the SHPO concurred that none possess significant associations with Cold War-era events that would make them eligible for the NRHP.

### **The Former U.S. Marine Corps Barracks**

The former USMC Barracks (CNC Building M17) on the CNC stands north of a grassed lawn on Marine Street within the Cultural Resources study area. This two-story, E-shaped building is a concrete structure with large columns on the south façade that frame and support ground-level and upper-level porticos with five dormers and a hipped roof. The USMC Barracks, built in 1910, served as the residence of USMC enlisted personnel and was the focal building of a small Marine Corps compound established to provide protection for the Charleston Navy Yard. The compound consisted of the barracks, a small parade ground, officer housing, recreational, and storage buildings, all added between 1914 and 1942. The former parade ground, originally 200 feet wide and 500 feet long, extends south and west of Building M-17. The parade ground provided drill, training, and recreational space for the resident Marines. The three former USMC residences, standing to the west and southwest of the barracks, were incorporated into the Charleston Naval Hospital complex after 1946, and are now contributing elements of the CNH District. The four support buildings, standing to the south and southeast of the barracks, were converted to various uses after 1946 and modified substantially; therefore, none are eligible for the NRHP. CNC Building M17 is currently unoccupied and owned by Palmetto Railways.

Of the pre-World War II Marine Corps compound, only the USMC Barracks and the portion of the parade ground south of the barracks meet the criteria of significance for listing (i.e., eligible) on the NRHP under Criteria A and C. Criterion A is applicable because the USMC Barracks are associated with the establishment and early development of Navy Yard/Navy Base Charleston and reflect the function of the USMC in the defense of U.S. Navy installations during first half of the twentieth century. Criterion C is applicable because the building displays a Neoclassical form popular during the late nineteenth/early twentieth centuries, and is similar to many early buildings constructed at Navy Base Charleston. The USMC Barracks had few exterior modifications even with changes in function after 1946, and retains its integrity of location, design, setting, materials, association, and feeling. The building's association with the parade ground reflects the former USMC compound and contributes to its integrity of setting.

#### **3.10.5.3 Historic Properties Outside the CNC**

Historic properties outside the CNC but within or nearby the Cultural Resources study area include three schools, five residences (two are on the same parcel), and one planned community of residences. All stand on the west side of Spruill Avenue or streets to the west of Spruill Avenue.

### Chicora Elementary School

Chicora Elementary School (Resource 4255), located at 1912 Success Street, near the western edge of the Cultural Resources study area, was built in 1920 to serve the children of local white families that moved into the neighborhoods adjacent to Navy Base Charleston. As a component of South Carolina's Equalization Program (an effort to maintain the state's segregated school system), additions were added to the school in 1955. It operated as an elementary school until 2011, when it was determined not to meet current earthquake-resistance standards. Replacement of the school on an adjoining tract is planned for the near future.

### The Ben Tillman Graded School

The Ben Tillman Graded School (Resource 1526), located at 3975 Spruill Avenue, was renamed the Ronald E. McNair Elementary School, and is now named as the Chicora School of Communications. It was built in 1942 to accommodate the growing populace associated with the expanding Navy Base Charleston. It remains in operation today. This school stands on the west side of Spruill Avenue within the Cultural Resources study area.

### Six Mile Elementary School

Six Mile Elementary School (Resource 4254) stands at 3180 Thomasina McPherson Boulevard, near the northern end of the Cultural Resources study area associated with the existing rail lines southwest of the CNC. This school was constructed in 1955 as part of South Carolina's Equalization Program, an effort to maintain the state's segregated school system by providing new schools for African American students. It is one of a few African American schools that has a two-story building similar to white schools in the area, reflecting efforts of the equalization program to create equivalent facilities for African American and white children (Dobrasko 2005:31). The school remains in operation today as Mary Ford Elementary School.

### GARCO Residences Resources 1663 and 1664

Three residences within the Cultural Resources study area were built to house employees of the General Asbestos and Rubber Company (GARCO). One residence (Resource 1664) stands on Carlton Street near the western edge of the Cultural Resource study area. Two additional GARCO residences (Resource 1663) stand at 3008 and 3012 Chicora Avenue at the western edge of the Cultural Resource study area. Hundreds of houses were constructed in the area on company land to support GARCO's new plant that was built in the North Charleston area between 1913 and 1916. Housing construction began in 1916. By 1941, there were 245 houses supporting the GARCO plant. In the 1970s to 1980s, GARCO sold most of the houses and many were moved to areas off the company's lands.



### Charleston Freedman's Cottages (Resources 4306 and 4309)

Resources 4306 and 4309 are residences located at 1985 Joppa Street and 2028 Irving Avenue, respectively, near the southern edge of the Cultural Resources study area. These residences are freedman's cottages, a vernacular style that developed in the City of Charleston after the Civil War when newly freed African Americans obtained land and built homes. This style is not very common outside of Charleston so the presence of these types of dwellings in North Charleston contributes to their NRHP eligibility. Both were likely built in the 1940s.

### The Ben Tillman Homes

The Ben Tillman Homes (Resource 1527) lie on the west side of Spruill Avenue, to the south of the former Ben Tillman School and adjacent to the Cultural Resources study area. These collections of residential buildings were built on land obtained by the City of Charleston Housing Authority and leased to the USN for the construction of housing to support the expanding Navy Base Charleston during WWII. After the war, these neighborhoods returned to the control of the Charleston Housing Authority, which operated them as affordable housing. In 1984, Charleston Housing Authority passed control to the City of North Charleston Housing Authority. The City of North Charleston Housing Authority sold the Ben Tillman Homes to a private owner in 1987. It still remains as a residential complex. These masonry multi-family residences or apartment blocks were constructed on a spacious campus, with clusters of buildings around parking areas and grassy parks, and with short, narrow alleys and curving perimeter roads connecting the clusters. Neighboring George Legare Homes (Resource 1519) were rebuilt in the late 2000s, but all of the buildings remain on the original footprints of their 1940s predecessors. This replacement compromised the NRHP eligibility of this resource (see SHPO comments on Owen et al. 2015 in Appendix G).

### 3.10.6 Agency Consultation

In June 2014, reports of cultural, architectural, and archaeological surveys undertaken for Palmetto Railways in 2011 were submitted to the SHPO for review with respect to the adequacy of the survey coverage and the identification of historic properties (included in Appendix G). These reports offered assessments of effect with respect to the Project site configured at that time. On July 24, 2014, the SHPO concurred with the findings of the reports with respect to the identification of historic properties and the adequacy of the coverage of the areas examined. This coordination resulted in a determination of areas within the Cultural Resources study area that required additional inventory to identify historic properties. Additional surveys within the Cultural Resources study area and an assessment of NRHP eligibility of potential Cold War-era resources within the CNC was completed in September 2014 and sent to the SHPO for review. On December 3, 2014, the SHPO concurred with the survey results and recommendations of eligibility for individual resources. As a result of Palmetto Railways' September 2015 revised proposal, an additional cultural and architectural survey was submitted to the SHPO for review in May 2016 (Appendix G). On July 7, 2016, the SHPO concurred

with the survey results and recommendations of NRHP eligibility for individual resources. As part of the Section 106 consultation process, the Corps, FRA, SHPO, Advisory Council on Historic Preservation (ACHP), the Muscogee (Creek) Nation, and the Applicant have met throughout 2016 to date to discuss the Proposed Project with respect to historic and archeological resources in the Cultural Resources study area. A revised final survey was prepared and submitted to SHPO in December 2016 (Appendix G). SHPO's final concurrence with the survey results and effects determinations is the signed Cultural Memorandum of Agreement (MOA).

## 3.11 VISUAL RESOURCES AND AESTHETICS

### 3.11.1 Introduction

The affected environment considers the location of both the visual resources and the viewers (i.e., in relatively close proximity to the Project footprint) within the study area. For the purposes of this analysis, the Visual Resource study area (VRSA) has been defined as within one-half mile of the boundaries of the Project site (Figure 3.11-1). As the Project site is flat, this prescribed VRSA is spatially sufficient to address the potential visual impacts that may result from the construction and operation of Alternative 1 (Proposed Project) or one of the alternatives. This section identifies and discusses the visual setting within the VRSA and includes a discussion of viewer sensitivity.

Visual resources are those visible natural or manmade elements that are particularly valued by a community and are afforded protection from alteration or obstruction through an adopted policy or regulation. Examples are water or land formations, trees, parks, buildings or clusters of buildings, or other distinctive manmade elements. The visual character of a resource is defined by its form, line, color, and texture. For example, building height and bulk, the density of vegetation, and distinct architectural styles would contribute to the visual character of a structure.

Viewer sensitivity is the degree to which viewers are sensitive to changes in the visual character of visual resources in the VRSA.

### 3.11.2 Visual Setting

Visual setting includes scenic views, natural features, built features, and existing light and glare. A landscape has two primary components: natural features, such as topography and vegetation, and built features, such as roads, buildings, and fences. In combination, natural and built features create the form, line, height, colors, and textures of an area—the visual setting of the landscape. Slightly more than 20 percent of land use in the City of North Charleston is industrial, 10.5 percent is single-family residential, and 22.1 percent is multi-family residential. The largest land use in the City of North Charleston is vacant, at nearly 29 percent (City of North Charleston 2008a).