

***FORT PICKENS FERRY SUPPORT FACILITIES AND SHUTTLE SERVICE
BIOLOGICAL ASSESSMENT***

**GULF ISLANDS NATIONAL SEASHORE
NATIONAL PARK SERVICE – US DEPARTMENT OF INTERIOR**

JUNE 19, 2015

Prepared for the National Park Service, US Department of the Interior,
By VHB, Sarasota, Florida

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FORT PICKENS FERRY SUPPORT FACILITIES AND SHUTTLE SERVICE
BIOLOGICAL ASSESSMENT

GULF ISLANDS NATIONAL SEASHORE (NPS UNIT)

JUNE 19, 2015

NATIONAL PARK SERVICE – U.S. DEPARTMENT OF INTERIOR

1.0 INTRODUCTION

The Endangered Species Act of 1973 (16 U.S.C. 153 et seq.), as amended (ESA or Act) directs in section 7(a)(1) that federal agencies conserve and recover listed species and use their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of endangered and threatened species so that listing is no longer necessary (50 CFR §402). Furthermore, the Act in section 7(a)(2) also directs federal agencies to consult (referred to as section 7 consultation) with the U.S. Fish and Wildlife Service (USFWS) when their activities “may affect” a listed species or designated critical habitat. Additionally, NPS Management Policy (2006b) directs the NPS to “inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible”.

1.1 PURPOSE OF THIS BIOLOGICAL ASSESSMENT

This biological assessment (BA) analyzes the potential effects of the proposed Fort Pickens Ferry Support Facilities and Shuttle Service Environmental Assessment on the Gulf Islands National Seashore (Park) on federally listed threatened, endangered, candidate mammal, bird, reptile, amphibian, fish, clam and plant species, pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (ESA). Federally and state listed threatened and endangered animal and plant species and critical habitat meeting the following criteria are addressed in this assessment:

1. known to occur in the Park based on confirmed sightings;
2. may occur in the Park based on unconfirmed sightings;
3. potential habitat exists for the species in the Park; or
4. potential effects may occur to these species.

1.2 CURRENT MANAGEMENT DIRECTION

Current management direction for federally listed and proposed threatened and endangered species can be found in the following documents, filed at our office:

- Endangered Species Act of 1973, as amended (ESA or Act)
- 1916 NPS Organic Act

- NPS General Authorities Act of 1978
- NPS Management Policies 2006
- Migratory Bird Treaty Act (MBTA)
- National Environmental Policy Act (NEPA)
- Species-specific recovery plans which establish population goals for recovery
- Species management plans, guides, or conservation strategies
- Gulf Islands National Seashore Final Management Plan, July 2014 (NPS 2014a)

2.0 CONSULTATION HISTORY

Pursuant to Section 7(a) of the Endangered Species Act, the National Park Service initiated consultation with US Fish and Wildlife Service and National Marine Fisheries Service regarding threatened or endangered species which may be present within the project area at Fort Pickens Area. On January 19, 2015, the USFWS Panama City field office provided a list of special status species potentially found within the project area. Additional species were included in this list based on a desktop survey including a cumulative summary of biological inventory data collected within the national seashore by the NPS Inventory and Monitoring Program (NPS 2010) and the Florida Natural Areas Inventory (FNAI) Biodiversity Matrix (FNAI 2013). Although it has been delisted, the bald eagle (*Haliaeetus leucocephalus*) was also included in this list.

Additional guidance concerning species present within the Fort Pickens Area was provided by the US Fish and Wildlife Service on April 2, 2015.

3.0 PROPOSED MANAGEMENT ACTION AND ALTERNATIVES CONSIDERED

The National Park Service (NPS) proposes to improve landside facilities near the ferry pier and to implement a shuttle service within the Fort Pickens Area. The purpose of the proposed facilities and shuttle service is to improve the visitor experience in the Fort Pickens Area, particularly for visitors arriving by ferry.

Passenger ferry access to Fort Pickens has been proposed since 1978 as part of the first general management plan for Gulf Islands National Seashore, and the updated general management plan calls for water access to the Fort Pickens Area (NPS 2014a). In addition to providing access, ferry service will enable visitors to experience the marine resources of the national seashore from the water. The landside shuttle service would provide visitors with an overall enhanced visitor experience and mobility options to various points of interests and recreational destinations within the Fort Pickens Historic District. The proposed project also aligns well with planning efforts by the local communities. A ferry system in Pensacola Bay will provide additional travel options and alleviate traffic congestion and will be a much-desired part of the tourist-driven economy of the Pensacola metropolitan area.

The purpose of the project is to provide a high quality visitor experience in two ways: (1) providing a gateway experience through improved landside facilities near the ferry pier and (2) providing access to visitor amenities within the Fort Pickens Area. The improvements identified as part of this project are specifically targeted at supporting the Pensacola Bay ferry passengers, and are intended to inform the national seashore's concessions contract prospectus.

Action is needed at this time because the Pensacola Bay ferry service is anticipated to begin in 2017, and facilities adjacent to the ferry pier do not provide a desirable gateway experience. The facilities immediately surrounding the ferry pier include three historic buildings, which currently function as national seashore storage facilities/workshops. There is a passenger shade shelter nearby, but the connections between the shelter, the pier, the visitor center, the restrooms, and other sites are unclear due to the lack of wayfinding and orientation. The existing public restroom facilities near the museum would serve all visitors, including ferry passengers, and these restrooms are approximately a quarter of a mile from the ferry pier. The nearest signs offering orientation to Fort Pickens can be found at the sidewalk on the opposite (southern) end of the parking lot near the ferry pier, approximately 400 feet away.

Additionally, action is needed at this time because visitors arriving by ferry would currently need to walk or bring their own bicycles to access areas beyond the immediate vicinity of the ferry pier. Some visitors may be able to walk longer distances or bring personal bicycles, but many others may not be able or willing to walk or provide a personal bicycle. The ability of visitors to move around the Fort Pickens Area and its environs may be further hindered by any beach accessories (e.g., towels, umbrellas, chairs, etc.) they may have and/or want to take with them. There is currently no transportation system in place to support movement of visitors beyond the immediate vicinity of the ferry pier.

ALTERNATIVE 1: NO ACTION

Under the no-action alternative, visitors would access the Fort Pickens Area by ferry, privately-owned watercraft, and Fort Pickens Road. Ferry operators would provide ferry service to the Fort Pickens Area using existing public facilities (figure 1). The ferry dock and shade shelter are the two existing structures currently reserved for use by ferry operations. The engineer's shop, the mine loading building, and the mine storage building (figure 1) are currently used by the national seashore's facility management division as workshops and storage space. No improvements or developments are proposed for the area surrounding the ferry pier, and no additional visitor services would be implemented.

Upon arrival to the Fort Pickens Area, ferry passengers would disembark from the ferry vessel onto the existing ferry pier. Visitors could access the beach via ramps on the bay side of the sea wall or could continue on the pier, over the seawall, to the sidewalk between the mine loading building and the mine storage building. Ferry passengers could access the resources in the Fort Pickens area on foot or by bicycle (or similar self-propelled vehicle) which they would bring with them on the ferry or rent from a portable facility in the ferry landing area. No orientation or wayfinding information is proposed for this area as part of the proposed action, though the national seashore could install signs and similar wayfinding information over time. The national seashore may also coordinate with the concessioner to provide orientation and wayfinding information on the ferry vessel. The nearest restroom facilities to the



Fort Pickens Ferry Support Facilities and Shuttle Service Biological Assessment

FIGURE 1
Alternative 1: No Action



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ferry pier would be the existing facilities on the east side of Fort Pickens and the existing facilities on the south end of the firehouse.

From the ferry pier, visitors would be within half a mile of a number of attractions in the Fort Pickens Area including

- Fort Pickens;
- The auditorium and museum;
- The snack bar in the firehouse;
- Batteries Trueman, Payne, Cullum, Sevier, and Van Swearingen;
- The fishing pier;
- The Florida National Scenic Trail;
- Bayside beaches; and
- Gulfside beaches.

Visitors who bring or rent bicycles would also have access to Batteries 234, Cooper, Worth, and Langdon; the Fort Pickens campground; and more bayside and gulfside beaches, including Langdon Beach, the only lifeguarded beach in the Fort Pickens Area. Rental bicycles would be limited in number, and not all ferry passengers would bring their own. While all ferry passengers would be able to access these areas, pedestrians would be less likely to walk to these areas, particularly Langdon Beach, which is a 5-mile round-trip walk from the ferry pier. Additionally, Fort Pickens Road does not have an adjacent sidewalk or trail.

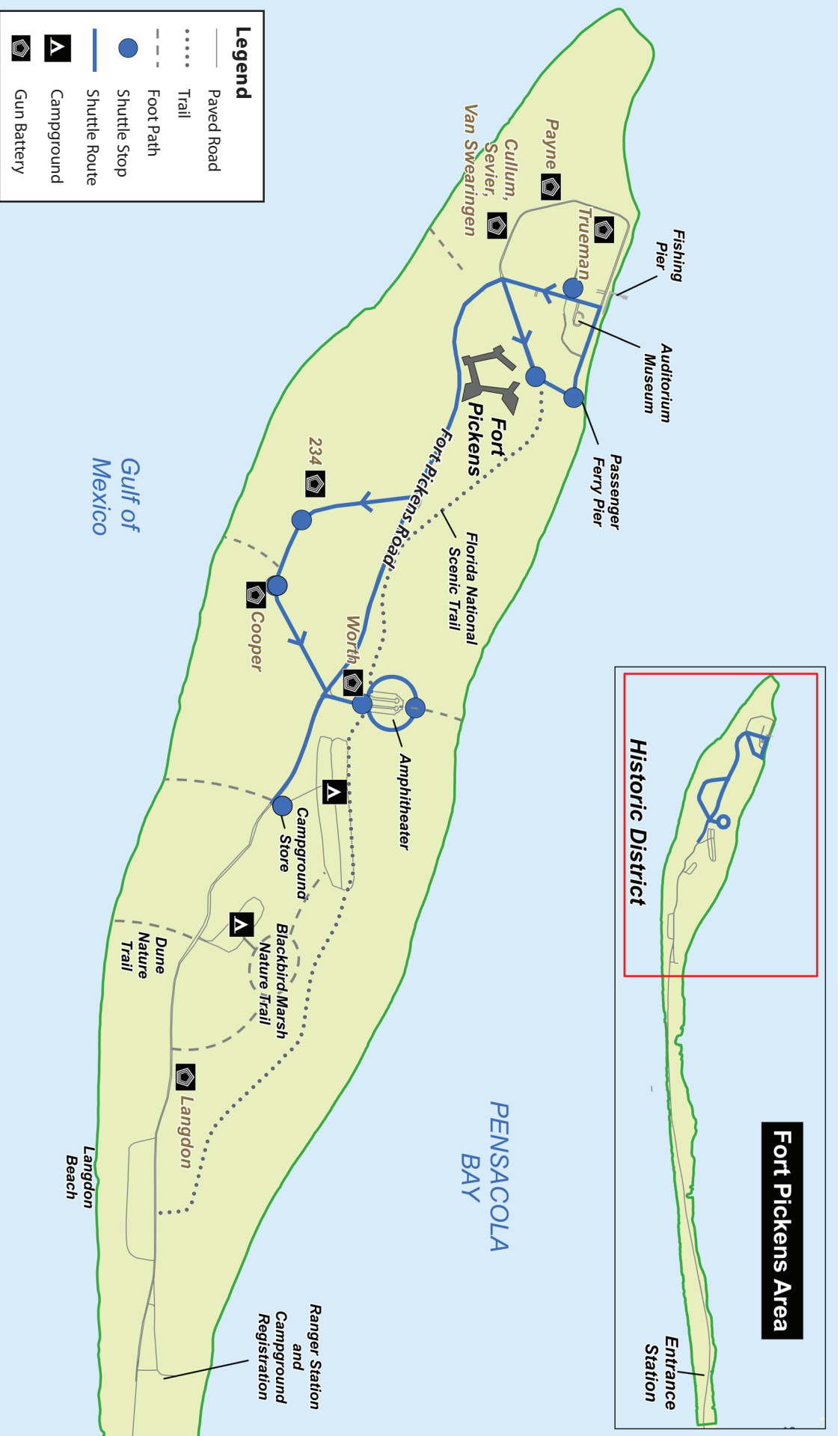
ALTERNATIVE 2: NEW LANDSIDE DEVELOPMENT AND SHUTTLE SERVICE (NPS PREFERRED)

Under alternative 2, the national seashore would improve facilities and provide additional visitor services. Visitors would continue to access the Fort Pickens Area by ferry, privately-owned watercraft, and Fort Pickens Road. Improvements would largely be focused on facilities adjacent to the ferry pier and shuttle support infrastructure but could also include a new restroom facility near Battery 234.

Landside Development

Under alternative 2, visitor services would be provided in three rehabilitated historic buildings, in one new building, and through a shuttle service (figures 2 and 3). The action alternative was designed to improve visitor services in the Fort Pickens Area through 11 programmatic elements:

1. Ferry departure queuing—A designated place for departing visitors to wait for the ferry
2. Landside orientation—Wayfinding and informational signs to direct arriving visitors to the various points of interest
3. Restrooms—Conveniently located facilities for visitors, particularly those who arrive and depart by ferry
4. Point of sale—Location for concession operations including ticket sales, equipment rentals, sales, etc.
5. Rental equipment pick-up/return—An area visible, but removed, from the mine storage building, where visitors could pick up and drop off rental equipment, such as bicycles
6. Shuttle stops—Highly visible stops at key locations in the Fort Pickens Area (figure 2)



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FIGURE 2

Alternative 2: Proposed Shuttle Route



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FIGURE 3
Alternative 2: Ferry Landing Area Improvements



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7. Gathering areas—Areas in the ferry landing area where large groups could gather before departing or after arriving
8. Educational exhibits—Interpretive displays about the history of and resources in the Fort Pickens Area
9. Food service—Simple and quick food options for ferry passengers
10. Concessioner storage—Areas for the concessioner to store merchandise and items necessary for operations in the Fort Pickens Area
11. Indoor and outdoor dining areas—Designated indoor and outdoor dining areas in the ferry landing area

The locations of these programmatic elements are identified on figure 3, and the improvements are described in more detail in the following sections.

As under alternative 1, ferry passengers would disembark from the ferry vessel onto the existing ferry pier upon arrival to the Fort Pickens Area. Visitors could access the beach via ramps on the bay side of the sea wall or could continue on the pier, over the seawall, to the sidewalk between the mine loading building and the mine storage building. The sidewalk would lead to an open area, from which a new plaza would be visible to the southwest. The new plaza would provide orientation information for arriving visitors. A shuttle stop would be located immediately southwest of the plaza. Visitors could continue to Fort Pickens from the plaza by way of the existing path.

The improved ferry landing area would provide gathering areas and would delineate departure queuing for departing ferry passengers. Visitors departing from the Fort Pickens Area could wait under the existing shade shelter, which has seating for up to 150 people, or in the open area south of the mine loading building and east of the new plaza. Any new plantings introduced in the plaza area would be coordinated in future project design phases to align with the previous historic character of the area. Any future plantings will align as closely as possible to previous landing area conditions and the historical character. New paving at the plaza would be minimized to honor historic fabric but would need to meet accessibility and drainage needs.

Rehabilitation of Historic Buildings

Under alternative 2, the three historic buildings adjacent to the ferry pier would be rehabilitated to accommodate visitor services. As shown in figure 3, the engineer's shop, the mine loading building, and the mine storage building would be adaptively reused to support visitor services and concessioner operations. All rehabilitation of historic buildings would follow the Secretary of the Interior's Standards for Rehabilitation (36 CFR 67) to limit any impacts on the historic fabric.

The engineer's shop (building 17) would be used for park and concessioner storage. The existing telecommunications infrastructure would remain in its current location.

The mine loading building (building 15) would be used for exhibits on the historical significance of Fort Pickens, and would include the following changes to the structure. The building would provide approximately 1,000 square feet of space for exhibits; as examples, exhibits could include wall-mounted and free-standing interpretive displays. There would be visual access to notable features such as the ceiling, brick walls, and other notable architectural elements in the existing structure. Documentation from the

National Register and Historic Structure Reports would be used to inform these exhibits. The following actions would rehabilitate the mine loading building for adaptive reuse:

- New, all-glass doors would be installed at both the eastern and southern entry points. The existing doors would remain operational but would not be used by visitors for entry into the mine loading building.
- With consideration for both visitor and staff comfort and preservation of historic fabric, the mine loading building would be minimally air conditioned and heated to provide comfortable working conditions for staff.
- Windows would be stabilized consistent with the Secretary of the Interior's Standards for Rehabilitation (36 CFR 67). The interior sides of the windows would be covered with a removable, clear cover which would prevent condensation and provide insulation.
- New sidewalks would be constructed to create an accessible entrance.
- The walls and roof would be cleaned and repaired consistent with the Secretary of the Interior's Standards for Rehabilitation (36 CFR 67).

The mine storage building (building 16) would be used for several functions: concession sales, food service, dining areas, and exhibits, and there would be the following changes to the structure. The existing snack bar in the firehouse and rental operation in the campground store would be relocated to the mine storage building. The space for concession operations could be minimized to allow for the majority of the approximately 2,000-square-foot building to be used for dining space and merchandise display. Exhibits in the mine storage building would likely be wall-mounted to maximize concessions space. There would be visual access to notable features such as the historic mine beam, hoist, and crane; the ceiling; and the brick walls. Documentation from the National Register and Historic Structure Reports would be used to inform these exhibits. The following actions would rehabilitate the mine loading building for adaptive reuse:

- A new floor would be installed 6–8 inches above the existing, historic floor in the mine storage building in order to make concession operations more resistant to flood damage. This elevation in the floor would preserve the required headroom under the historic craneway, and no change to the head height at the door is anticipated. The raised floor would incorporate cast-in-place concrete installed using bond breakers to allow its removal without damaging existing fabric.
- New, all-glass doors would be installed at the southern entry point and would be structurally attached to the existing jam and head door openings, with any attachment to the existing historic fabric being removable. The existing doors would remain operational but would not be used by visitors for entry into the mine storage building.
- With consideration for both visitor and concessioner comfort and preservation of historic fabric, the mine storage building would also be minimally air-conditioned and heated to provide comfortable working conditions for concessioner staff.
- Windows would be stabilized consistent with the Secretary of the Interior's Standards for Rehabilitation (36 CFR 67). The interior sides of the windows would be covered with a removable, clear cover which would prevent condensation and provide insulation. The interior operable glass window assembly would allow the building occupants to control the humidity and condensation through the ability to open and close the windows. The assembly would be attached to the head, jamb, and sill in a minimal nature and would be fully removable, allowing the

window opening to be returned to its original condition. No insulation would be provided at the window or wall assemblies.

- New sidewalks would be constructed to create an accessible entrance, and would be designed to avoid damaging the historic fabric of the site.
- The walls and roof would be cleaned and repaired consistent with the Secretary of the Interior's Standards for Rehabilitation (36 CFR 67).

The three historic buildings would require utility upgrades for their intended uses under alternative 2 (figure 4). The buildings currently have electric service, and improvements would be limited to upgrading panels and rewiring buildings to current codes. The engineer's shop would be equipped with a sump pump. Site drainage would be improved by grading, construction of concrete curb to direct stormwater, and construction of new drain inlets with a pipe outfall through the seawall and/or use of the existing outfall.

Construction of New Buildings and Structures

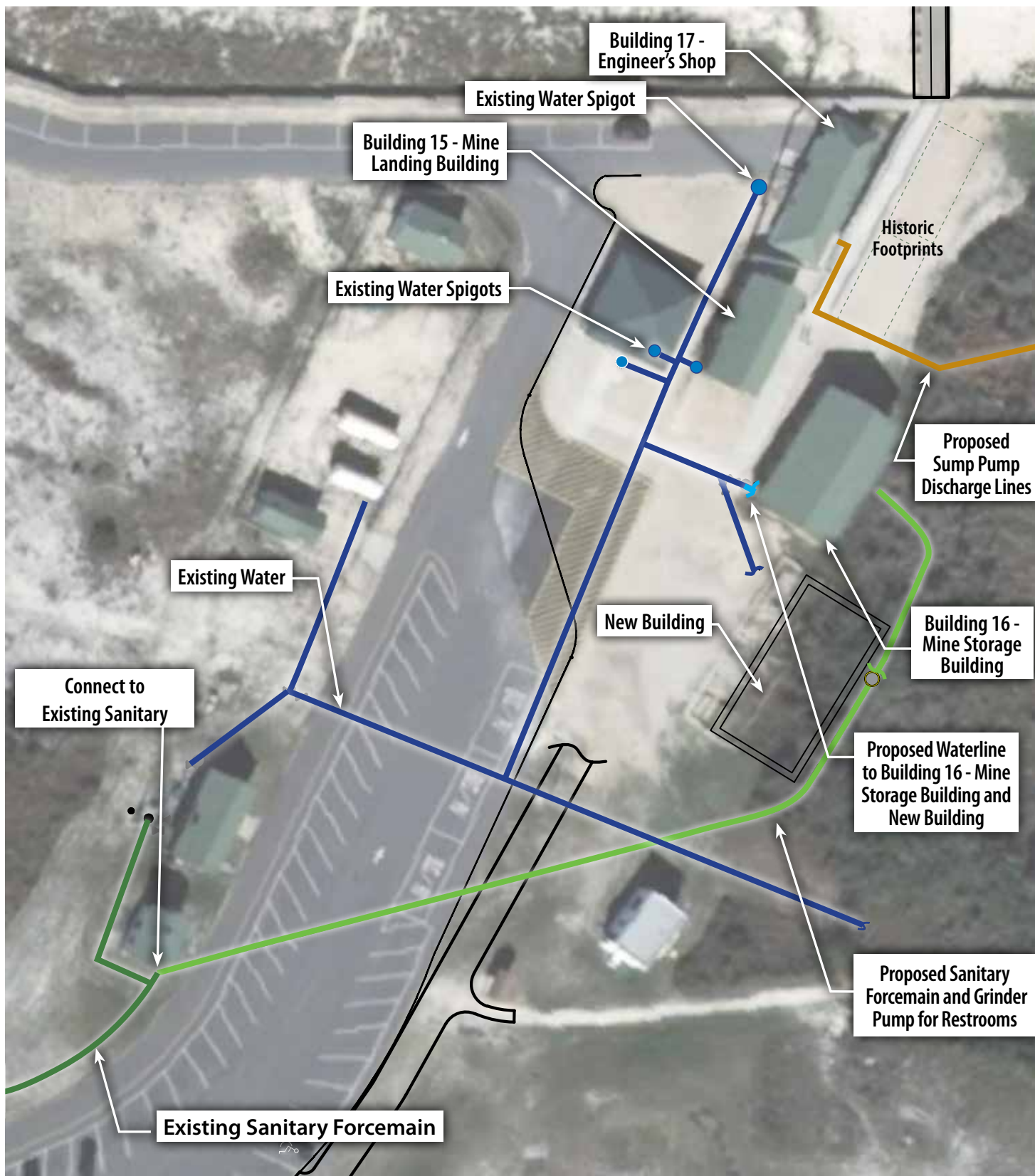
New Ferry Landing Area Building

The action alternative would include the construction of a new building, which would provide restrooms, rental storage, and an outdoor dining area. This building would be built above a historic foundation and would be elevated to minimize breaches in the historic foundation and to lessen the risk of flood damage. The new restrooms would provide closer and more visible facilities for ferry passengers. The rental storage area would protect concessioner property when not in use. The new building would include a canopy under which picnic tables would be available for outdoor dining. Construction could be phased if funding is not immediately available.

Utilities for the new building would be connected to nearby existing infrastructure. Electric service would be connected from the nearby transformer. Water to the new restrooms would connect to an existing water line and be run around the building to a convenient point of entry into the building from the east. The restrooms would require a new grinder pump station be constructed, similar to the five existing grinder pumps located in the Fort Pickens Area. The grinder pump would be placed near the back of the restroom building and a 1.5-inch sewer forcemain run approximately 400 feet to the existing forcemain located across the parking lot (on the south side of the paint locker [building 10]). As part of the utility construction, site drainage would be improved by grading, construction of concrete curb to direct stormwater, and construction of new drain inlets with a pipe outfall through the seawall. In an effort to minimize the risk of encountering archeological resources related to the historic rail line, the number of times the proposed water, sewer, and/or electric lines cross the rail lines or the existing foundation has been minimized to the extent possible. Utility lines should go under the existing rail lines where present.

Interpretive Elements near Fort Pickens

The pedestrian walkway to Fort Pickens from the ferry landing area is a focal point of the site. The walkway would be in line with the historic narrow gauge rail line that ran from the mine storage and mine loading buildings through the fort gate. The walkway would be approximately 15 feet wide, approximately 10 feet wider than the historic rail line. The walkway would be constructed of a hardened surface designed to avoid damaging the historic fabric of the railroad and may be designed to express the historic rail lines. Along the walkway, the National Park Service would place interpretive signs and displays such as weaponry (cannon,



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FIGURE 4
Alternative 2: Utilities Updates at the Ferry Landing Area



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cannon balls, mines, ordinance, etc.) and benches. Interpretive features would be designed with sensitivity to the integrity of the surrounding cultural resources.

The walkway is intended to strategically draw visitors directly down the ferry landing ramp and towards the fort, helping to quickly disperse visitors in an efficient and orderly manner.

Some of the existing vehicle parking along the pedestrian walkway would be reconfigured, including relocating the accessible parking spaces near the fort in order to accommodate a shuttle stop at the fort, as depicted in figure 5.

Restroom near Battery 234

In the future, a new restroom facility could be constructed near the Battery 234 shuttle stop (figures 6 and 7) to accommodate anticipated increase in use of this beach. The new facility would consist of basic men's and women's restrooms, each with a single toilet and sink, and an outdoor shower column for beach goers. A frost-free water hydrant would be provided near the restroom for visitor and maintenance staff use. The required utilities include water, sanitary, sewer and electric service to the comfort station. The proposed utilities would be routed along the western shoulder of the Battery 234 and Battery Cooper loop road to the intersection at Fort Pickens Road. The water would be connected to the existing 6-inch waterline located on the south side of Fort Pickens Road. Both the sanitary sewer and electric would be bored under Fort Pickens Road with the sewer connected to the existing 3-inch sewer forcemain located on the north side of Fort Pickens Road. The electrical service would be connected to the nearest point of service, also on the north side of Fort Pickens Road.

Any wayfinding or orientation signs would be designed with sensitivity to the integrity of the surrounding cultural resources.

Campground Store Shade Shelter

A new shade shelter would be constructed in the campground store parking lot, adjacent to the eastern corner of the building (figure 8). The structure would have no walls and be up to 18 feet by 18 feet and would remove up to 3 parking spaces. The shelter would provide a waiting area for shuttle passengers.

Shuttle Service

In addition to the improvements of the ferry landing area, the concessioner would provide a shuttle service within the Fort Pickens Area (figure 2). The national seashore would purchase a fleet of 5 electric shuttles, and 2 shuttles would provide service to 8 stops in the Fort Pickens Area in 15-minute intervals:

- Ferry landing area
- Auditorium and museum
- Battery 234
- Battery Cooper
- Battery Worth
- Worth Beach access

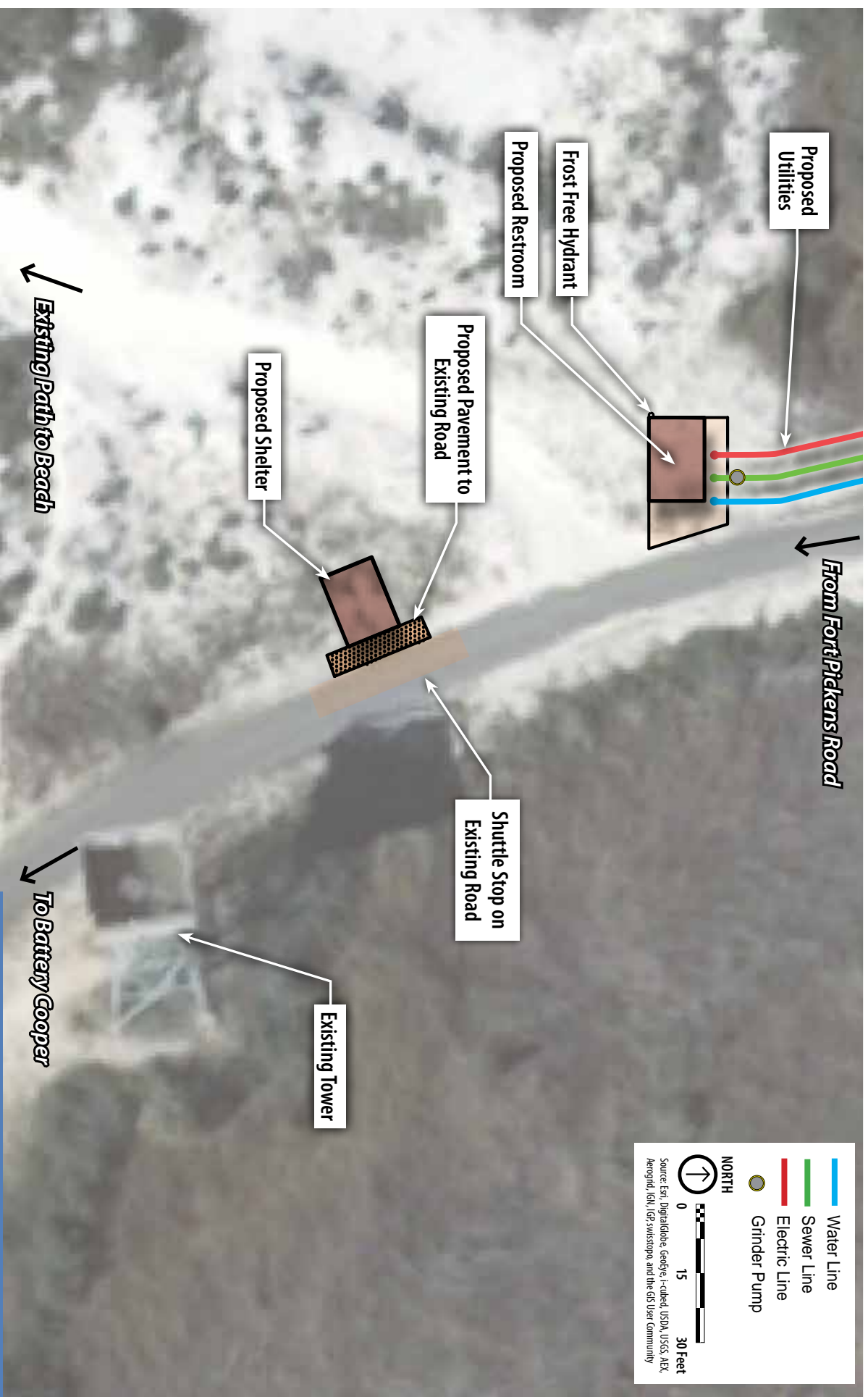


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FIGURE 5
Alternative 2: Proposed Reconfiguration of the Fort Pickens Parking Area



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FIGURE 6

Alternative 2: Proposed Restroom at Battery 234



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FIGURE 7
Alternative 2: New Utilities for Restroom at Battery 234





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FIGURE 8
Alternative 2: Proposed Shade Shelter
at Campground Store



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- Campground store
- Fort Pickens

Shuttles would comprise an electric tram unit and a passenger trailer, which together would accommodate up to 27 passengers. Passengers would be permitted to bring personal belongings on the shuttle; as such, shuttle capacity could be less than 27 passengers.

Battery Langdon

The shuttles would be stored in Battery Langdon, specifically the east casemate chamber and the corridors leading to that chamber. The shuttles would enter via the existing concrete-paved driveway access to the rear (north) doors of the battery and exit through the doors facing the gulf (south). Four would typically be used each day, and one would be kept for use if one of the other four needed repairs.

At the end of each shift, drivers would be able to wash off the shuttles, if necessary, and would then park them inside Battery Langdon and plug in each vehicle. The charging would be done in-vehicle, using standard 110 volt power. A solar photovoltaics (PV) system would provide power. The solar PV system would be installed on a nearby picnic shelter. Parking for driver's personal cars would be at the adjacent picnic pavilion or at the nearby maintenance facility.

Renovation to accommodate the shuttles would include removal of debris inside the battery, upgrading the electrical service to accommodate the charging locations, modifying the nonhistoric doors to the casemate, and constructing a driveway from the front door to the parking lot on Fort Pickens Road. In addition, the concrete access road to the north doors of Battery Langdon would be repaired or replaced in kind. A water spigot connection would be provided at the edge of the pavement (figure 9) for washing the shuttles. The spigot would be connected via a 1-inch waterline to the existing 3-inch waterline located north of the road in the vicinity of the existing shelter. Wash water would only contain particulates that already exist within the Fort Pickens Area (e.g., salt and sand) because the electric shuttles would not leak fluids, and particulates in the wash water would be filtered through infiltration in the adjacent sand.

NPS PREFERRED ALTERNATIVE

Based on the planning efforts leading up to and included in this environmental assessment, the National Park Service has identified alternative 2 as the NPS Preferred Alternative. Alternative 2 best meets the project objectives to improve visitor experience by providing a gateway experience through improved landside facilities near the ferry pier and to provide access to visitor amenities within the Fort Pickens Area. Alternative 2 would provide a wide range of benefits to national seashore visitors while preserving and interpreting cultural resources.

4.0 PROJECT AREA DESCRIPTION

Gulf Islands National Seashore (the national seashore) is located along 160 miles of the Gulf of Mexico in Escambia, Santa Rosa, and Okaloosa Counties in Florida, and Jackson, Harrison, and Hancock Counties in



Fort Pickens Ferry Support Facilities and Shuttle Service Biological Assessment

FIGURE 9
Proposed Shuttle Use of Battery Langdon and Surrounding Area



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Mississippi. The national seashore was established to “preserve for public use and enjoyment certain areas possessing outstanding natural, historic, and recreational values” (16 US Code [USC] 459h) and encompasses 139,175 acres in Florida and Mississippi, approximately 82% of which is water (NPS 2014a).

The Fort Pickens Area is in the Florida District of Gulf Islands National Seashore and is a fragile, 7-mile long section of barrier island separating Pensacola Bay from the Gulf of Mexico. It comprises the westernmost section of Santa Rosa Island and is adjacent to the community of Pensacola Beach. The Fort Pickens Area is a destination for some 700,000 visitors annually and is one of the largest tourist draws for the heavily tourist-dependent economy of the Pensacola and Pensacola Beach area. In addition to Fort Pickens historic sites and the fort grounds, the Fort Pickens Area provides visitors with recreational opportunities for swimming, beach activities, fishing, shelling, hiking, bicycling, camping, and educational programs focused on its diverse marine and land ecosystems.


Gulf Island National Seashore’s Fort Pickens Area is approximately 15 miles from Pensacola, Florida. The project area includes approximately 350 acres of the western end of Santa Rosa Island managed by the National Park Service (figures 10 and 11). The project area can be accessed by water, but public docks are not available within the national seashore. The majority of visitors access the national seashore on Fort Pickens Road by way of Pensacola Beach, Florida. Fort Pickens Road is closed an average of 10 to 12 times each year due to weather events that overwash the roadway with sand. In addition to the roadway and natural resources, cultural resources, the facilities in the Fort Pickens Area include many historic structures such as the brick fort and concrete gun batteries which were built between 1829 and the 1940s, as well as other historic structures which were associated with the fort and have been adaptively reused as the natural resources museum, restrooms, and residences.



As stated above, the majority of the Fort Pickens Area consists of marine and estuary habitats. Natural terrestrial communities within the Fort Pickens Area include beach, beach dune, coastal scrub, shrub wetlands, and coastal interdunal swale. Primary vegetation within beach and dune areas consists of grass species including sea oats, seashore paspalum, and seashore dropseed. Other species include railroad vine, beach morning glory, and goldenaster. Coastal scrub areas are dominated by scrub oak species with saw palmetto, yucca, and pricklypear. Wetlands are dominated by sawgrass, saltmarsh cordgrass, and saltmeadow cordgrass.

The new facilities proposed for the action alternative would be constructed within disturbed areas adjacent to existing buildings, roads, and parking lots, rather than within undisturbed habitats present throughout the park. No aquatic habitats would be impacted by the proposed action.

5.0 PRE-FIELD REVIEW

Species lists from the USFWS (dated January 19, 2015) with all federally listed and candidate species within the Fort Pickens Area of Escambia County, Florida were reviewed for this analysis. Additional species were included in this list based on a desktop survey including a cumulative summary of biological inventory data collected within the national seashore by the NPS Inventory and Monitoring Program (NPS 2010) and the Florida Natural Areas Inventory (FNAI) Biodiversity Matrix (FNAI 2013). Although it has been delisted, the bald eagle was also included. Using this list, those species with the potential to


Project Area (353.47 Acres)

NORTH


2,000 Feet

Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Aerophd, IGN, InGP, Swisstopo, and the GIS User Community



Fort Pickens Ferry Support Facilities and Shuttle Service Biological Assessment

FIGURE 10
Project Area



Fort Pickens Ferry Support Facilities and Shuttle Service Biological Assessment

FIGURE 11
Project Area - Ferry Arrival Detail



occur within the analysis area (shown in table 1 below) were determined. Species not known or with no potential of occurring in the analysis area are documented with rationale in table 1 and will not be discussed further in this document. Excluded species have been dropped from further analysis by meeting one or more of the following conditions:

- species does not occur nor is expected in the project area during the time period activities would occur;
- occurs in habitats that are not present; and/or
- is outside of the geographical or elevational range of the species.

In addition, table 1 below gives a very brief summary of federally listed/candidate species, designated critical habitat, species' habitat requirements, and occurrence information of species that are known to or may occur in the analysis area.

Within the analysis area, there is no proposed or designated critical habitat for any federally listed species addressed in this assessment; therefore, there will be no direct, indirect, or cumulative effects. Critical habitat will not be addressed further in this assessment.

6.0 SPECIES CONSIDERED AND EVALUATED

The following table indicates whether species from the USFWS official species list (dated January 19, 2015) are known or expected to occur within the analysis/action area, suitable habitat is present, or if not why they are excluded from further analysis (with rationale). The U.S. Fish and Wildlife Service species list (USFWS 2015a) was obtained and reviewed and species not having the potential to occur were excluded from further review with a no effect determination.

TABLE 1. THREATENED, ENDANGERED, CANDIDATE/PROPOSED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE ACTION/ANALYSIS AREA

Species Common and Scientific Name	Federal Status ¹	State Status ²	Potential to Occur	Rationale for Exclusion ³	Habitat Description and Range in Florida
MAMMALS					
Santa Rosa beach mouse <i>Peromyscus polionotus trisyllepsis</i>	E	E	No	ODR	Beach dunes
West Indian Manatee <i>Trichechus manatus</i>	E	E	No	HAB	Coastal waters, bays, rivers, lakes

¹ **Federal Status Codes:** E=federally listed endangered; T=federally listed threatened; P= federally proposed for listing; C= federal candidate for listing; and CH=designated critical habitat;

² **State Status Codes:** E=state listed endangered; T=state listed threatened; and SSC= state listed species of special concern;

³ **Exclusion Rationale Codes:** ODR=outside known distributional range of the species; HAB= no habitat present in analysis area; ELE= outside of elevational range of species; and SEA=species not expected to occur during the season of use/impact

TABLE 1. THREATENED, ENDANGERED, CANDIDATE/PROPOSED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE ACTION/ANALYSIS AREA (CONTINUED)

Species Common and Scientific Name	Federal Status ¹	State Status ²	Potential to Occur	Rationale for Exclusion ³	Habitat Description and Range in Florida
AMPHIBIANS AND REPTILES					
Alligator snapping turtle <i>Macroclmys temminckii</i>	--	SSC	No	HAB	Rivers, lakes, and waterways
American Alligator <i>Alligator mississippiensis</i>	SAT	SAT	No	HAB	Permanent bodies of freshwater
Eastern indigo snake <i>Drymarchon corais couperi</i>	T	T	No	HAB	Mesic and xeric upland habitats
Gopher tortoise <i>Gopherus polyphemus</i>	C	C	No	HAB	Dry, sandy uplands
Green sea turtle <i>Chelonia mydas</i>	E	E	Yes		Costal and oceanic waters
Hawksbill sea turtle <i>Eremochelys imbricata</i>	E	E	Yes		Costal and oceanic waters
Kemp's Ridley sea turtle <i>Lepidochelys kempii</i>	E	E	Yes		Costal and oceanic waters
Leatherback sea turtle <i>Demochelys coriacea</i>	E	E	Yes		Costal and oceanic waters
Loggerhead sea turtle <i>Caretta caretta</i>	T	T	Yes		Costal and oceanic waters
Reticulated flatwoods salamander <i>Ambystoma bishopi</i>	E	E	No	HAB	Pine flatwoods with wetlands
Frosted flatwoods salamander <i>Ambystoma cingulatum</i>	--	SSC	No	HAB	Pine flatwoods with wetlands
BIRDS					
American oyster catcher <i>Haematopus palliatus</i>	--	SSC	Yes		Beaches, sandbars, mudflats
Bald eagle <i>Haliaeetus leucocephalus</i>	DL	DL	Yes		Lakes, ponds, coastal waters and adjacent upland habitats
Black skimmer <i>Rhychops niger</i>	--	SSC	Yes		Coastal waters and beaches
Brown pelican <i>Pelecanus occidentalis</i>	--	SSC	Yes		Coastal estuarine waters
Burrowing owl <i>Athene cunicularia</i>	--	SSC	No	ODR	Sparsely vegetated sandy uplands
Least tern <i>Sterna antillarum</i>	--	T	Yes		Beaches, estuaries, and oceans
Little blue heron <i>Egretta caerulea</i>	--	SSC	No	HAB	Shallow freshwater wetlands
Marian's marsh wren <i>Cistothorus palustris mariana</i>	--	T	No	HAB	Spartina and black rush marshes

¹ **Federal Status Codes:** E=federally listed endangered; T=federally listed threatened; P= federally proposed for listing; C= federal candidate for listing; and CH=designated critical habitat;

² **State Status Codes:** E=state listed endangered; T=state listed threatened; and SSC= state listed species of special concern;

³ **Exclusion Rationale Codes:** ODR=outside known distributional range of the species; HAB= no habitat present in analysis area; ELE= outside of elevational range of species; and SEA=species not expected to occur during the season of use/impact

TABLE 1. THREATENED, ENDANGERED, CANDIDATE/PROPOSED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE ACTION/ANALYSIS AREA (CONTINUED)

Species Common and Scientific Name	Federal Status ¹	State Status ²	Potential to Occur	Rationale for Exclusion ³	Habitat Description and Range in Florida
BIRDS (Continued)					
Piping plover <i>Charadrius melodus</i>	T	T	Yes		Beaches and tidal mudflats
Red knot <i>Calidris canutus rufa</i>	T	T	Yes		Beaches
Red-cockaded woodpecker <i>Picoides borealis</i>	E	E	No	HAB	Open mature pine woodland
Reddish egret <i>Egretta rufescens</i>	--	SSC	No	HAB	Beaches and tidal mudflats
Snowy egret <i>Egretta thula</i>	--	SSC	No	HAB	Inland and coastal wetlands
Snowy plover <i>Charadrius alexandrinus</i>	--	T	Yes		Beaches and tidal mudflats
Southeastern American kestrel <i>Falco sparverius</i>	--	T	Yes		Woodlands, prairies, pastures
Tricolor heron <i>Egretta tricolor</i>	--	SSC	No	HAB	Inland and coastal wetlands
White ibis	--	SSC	No	HAB	Freshwater and brackish marshes
Wood stork <i>Myceteria americana</i>	E	E	No	HAB	Wetlands
FISHES					
Atlantic sturgeon (Gulf subspecies) <i>Acipenser oxyrinchus desotoi</i>	T	T	No	HAB	Coastal waters, bays, and rivers
Bluenose shiner <i>Pteronotropis welaka</i>	--	SSC	No	HAB	Rivers, streams, and springs
Saltmarsh topminnow <i>Fundulus jenkinsi</i>	--	SSC	No	HAB	Salt marshes and estuaries
CLAMS					
Choctaw bean <i>Villosa choctawensis</i>	E	E	No	HAB	Freshwater creeks and rivers
Fuzzy pigtoe <i>Pleurobema strodeanum</i>	T	T	No	HAB	Freshwater creeks and rivers
Narrow pigtoe <i>Fusconaia escambia</i>	T	T	No	HAB	Freshwater creeks and rivers
Round ebonyshell <i>Fusconaia rotulata</i>	E	E	No	HAB	Freshwater creeks and rivers

¹ **Federal Status Codes:** E=federally listed endangered; T=federally listed threatened; P= federally proposed for listing; C= federal candidate for listing; and CH=designated critical habitat;

² **State Status Codes:** E=state listed endangered; T=state listed threatened; and SSC= state listed species of special concern;

³ **Exclusion Rationale Codes:** ODR=outside known distributional range of the species; HAB= no habitat present in analysis area; ELE= outside of elevational range of species; and SEA=species not expected to occur during the season of use/impact

TABLE 1. THREATENED, ENDANGERED, CANDIDATE/PROPOSED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE ACTION/ANALYSIS AREA (CONTINUED)

Species Common and Scientific Name	Federal Status ¹	State Status ²	Potential to Occur	Rationale for Exclusion ³	Habitat Description and Range in Florida
PLANTS					
Godfrey's goldenaster <i>Chrysopsis godfreyi</i>	--	E	Yes		Back dunes and coastal scrub
Cruise's goldenaster <i>Chrysopsis gossypina</i> subsp. <i>cruiseana</i>	--	E	Yes		Coastal dunes
Curtiss' sandgrass <i>Calamovilfa curtissii</i>	--	T	No	HAB	Pinelands, wet prairies, marshes
Sweetshrub <i>Calycanthus floridus</i>	--	E	No	HAB	Slope forest, bottomland forest
Spoonleaf sundew <i>Drosera intermedia</i>	--	T	No	HAB	Wet flatwoods, depression marshes
Largeleaf jointweed <i>Polygonella macrophylla</i>	--	T	Yes		Sand pine / oak scrub

¹ **Federal Status Codes:** E=federally listed endangered; T=federally listed threatened; P= federally proposed for listing; C= federal candidate for listing; and CH=designated critical habitat;

² **State Status Codes:** E=state listed endangered; T=state listed threatened; and SSC= state listed species of special concern;

³ **Exclusion Rationale Codes:** ODR=outside known distributional range of the species; HAB= no habitat present in analysis area; ELE= outside of elevational range of species; and SEA=species not expected to occur during the season of use/impact

As indicated in the above table, there are eight federally listed threatened or endangered, candidate/proposed species (bald eagle, piping plover, red knot, green sea turtle, hawksbill sea turtle, Kemp's Ridley sea turtle, leatherback sea turtle, and loggerhead sea turtle) occurring or with the potential to occur (i.e., habitat is present). Therefore, only those species will be addressed hereafter in this assessment (evaluated species). The remaining species shown above without a potential to occur will not be analyzed further based on the rationale provided. The proposed action will have no effect on any of these other species.

7.0 EVALUATED SPECIES INFORMATION

7.1 FIELD RECONNAISSANCE

No field surveys have been conducted at this time. The species considered in this analysis are highly mobile and known to be present within the Fort Pickens Area, at least seasonally. Therefore a survey to indicate presence was deemed unnecessary. The majority of the listed species nest within the project area. Because nesting is seasonal and nests are established in different locations each year, surveys will be conducted during nesting season prior to construction activities to determine nest presence.

7.2 SPECIES STATUS AND BIOLOGY

Federal Species

Birds

Bald eagle – The bald eagle was listed as a federally endangered or threatened species until 2007 when it was determined the species had recovered and could be delisted. Currently the bald eagle is protected by the *Bald and Golden Eagle Protection Act*, the *Migratory Bird Treaty Act*, and the *Lacey Act* (18 USC 42-43; 16 USC 3371-3378). The adult bald eagle is a large raptor identified by a white head and tail with dark brown wings and body. Immature and subadult plumage varies depending on molt but can be described as mottled brown on white with a generally brown head and tail. Bald eagles use a number of habitats for foraging but typically prefer to perch and hunt near large bodies of water. Fish are their primary food source and they also feed on small mammals, birds, reptiles, amphibians, and carrion (FWC 2015b).

Piping plover – The piping plover is listed as Threatened by the US Fish and Wildlife Service. It is a small shorebird with a white belly, pale gray back and head, bright orange legs, and an orange and black bill (FWC 2015c). Breeding piping plovers have a black ring partially around their neck and a black stripe on their forehead (FNAI 2001a). Their diet consists primarily of crustaceans, marine worms, and other invertebrates found on beaches, typically within the intertidal zone. Piping plovers spend a portion of the year “wintering” in Florida but do not breed here (USFWS 2014a). Their primary habitat in the Fort Pickens Area consists of sandy beaches, mud flats, and sand flats.

Red knot – The red knot is a medium to large sandpiper listed as Threatened by the US Fish and Wildlife Service. The head and breast are reddish-brown in breeding plumage, but gray at other times of the year. The back is finely mottled with white, black, and gray. Red knots migrate over 9,300 miles in the spring and autumn between the Canadian Arctic and the shorelines of Chile and Argentina. During migrations they form large groups at stopover points where they rely on an abundance of food sources, including juvenile shellfish and horseshoe crab eggs, to support their long migration. Populations have declined in the 2000s primarily due to overharvesting of horseshoe crabs in Delaware Bay, an important stopping point on their migratory route. Florida is also an important feeding location on their migratory route and red knots are regularly identified within the Fort Pickens Area during migrations (USFWS 2014b).

Sea Turtles

Green sea turtle – The green sea turtle is a relatively large sea turtle federally listed as endangered for breeding and nesting populations in Florida. All other populations are listed as threatened. Carapace coloration is yellow to green to brown and scutes are smooth. Green sea turtles are typically found within shallow waters associated within reefs, bays, and other areas where sea grasses may be present. Adults are herbivorous and feed primarily on sea grass and algae. Primary threats to green sea turtles include entanglement in fishing gear, illegal harvesting of eggs from beach nesting areas, and shoreline development which disturbs nesting and may lead hatchlings away from the water with artificial lighting. Nesting typically occurs between June and September in the Southeastern United States (US), and females lay several clutches during each nesting season (NMFS 2014a). Green sea turtles nest within the Fort Pickens Area at regular intervals although nests are few in number.

Hawksbill sea turtle – The hawksbill sea turtle is a relatively small sea turtle federally listed as Endangered. The elongated head, tapering to a point, and beak-like mouth give the species its name. The carapace is brown with streaks of orange, red, and black, and scutes are overlapping. Adult hawksbills feed primarily on organisms associated with healthy coral reefs. Females nest every two to three years and generally return to the same beach where they were born. Nesting usually occurs between April and November. Nest are usually excavated high on the beach or in the beach dune vegetation. (NMFS 2014b). Hawksbill sea turtles are relatively rare within the waters of the Fort Pickens Area although occurrences have been recorded.

Kemp's Ridley sea turtle – The Kemp's ridley sea turtle is federally listed as Endangered. Adult Kemp's ridleys are considered the smallest of the sea turtles reaching a maximum weight of approximately 100 pounds. They can be identified by the five pairs of costal scutes found on their carapace. Generally Kemp's ridley and olive ridley sea turtles (*Lepidochelys olivacea*) nest in large synchronized groups, or arribadas, at only a few specific beach sites, none of which are located in Florida. Individual Kemp's ridleys do regularly nest on Florida Gulf coast beaches between May and July, although in much smaller numbers (NMFS 2014c). Kemp's Ridley sea turtles occur in small numbers at regular intervals.

Leatherback sea turtle – The leatherback sea turtle is the largest of the sea turtles and federally listed as Endangered. Leatherbacks do not have a hard bony shell; rather, their carapace consists of leathery connective tissue over loosely connected dermal bone. The carapace has seven ridges which intersect at the tail. Leatherbacks primarily inhabit deep ocean areas foraging for pelagic organisms such as jelly fish, salps, and other soft-bodied prey. Nesting peaks in May in coastal Florida, but it has been observed from February to August (NMFS 2014d). In Florida, female leatherbacks normally use east coast beaches rather than migrating in the Gulf of Mexico to nest on Gulf beaches, although they have been recorded nesting along the Gulf shore. Leatherback sea turtles are relatively rare within the waters of the Fort Pickens Area although occurrences have been recorded.

Loggerhead sea turtle – The loggerhead turtle is federally listed as Threatened. It is the most abundant sea turtle found in US coastal waters. Loggerheads were named for their relatively large head which provides structure for jaws required to feed on hard-shelled prey such as conchs and welks. In the southeastern US nesting occurs between late April and early September. The loggerhead sea turtle is by far the most common sea turtle to nest on Florida's Gulf coast beaches including the Fort Pickens Area of the national seashore. Although the Gulf coast of Perdido Key is designated Critical Nearshore Reproductive Habitat, the beaches located within the Fort Pickens Area are not considered Critical Habitat for loggerheads (NMFS 2014e).

State Species

Birds

Least tern – The least tern is a shorebird species listed as Threatened by the State of Florida. The least tern is the smallest of the tern species and can be identified by the black cap, mask-like black streak around the eyes, and bright yellow beak. The diet of the least tern consists primarily of fish with some small invertebrates. Nesting occurs from April to May, and nests consist of shallow depressions in bare beach sand into which the female lays her eggs. Least terns typically inhabit coastal areas in Florida such as estuaries, bays, and beaches (FWC 2015d). Least terns regularly nest on the beaches and dunes within the study area (Granger 2013; Granger 2015).

Snowy plover – The snowy plover is a small shorebird listed as Threatened by the State of Florida. Snowy plovers have a white belly, gray to light brown back, black beak, and black forehead. They subsist primarily on small invertebrates foraged within the intertidal zone. Nesting in Florida occurs between the months of February and August. Unlike many shorebirds, snowy plovers do not nest in colonies. Nests consist of small scrapes in the sand and are well camouflaged from predators. In Florida, snowy plovers inhabit the narrow fringe of sandy beaches along the coast of the Gulf of Mexico, and the breeding population occurs in two distinct groups, northwest Florida from Franklin County west and southwest Florida from Pasco to Collier Counties (FWC 2015e). Snowy plovers have been recorded within the national seashore (NPS 2010) and are known to nest annually within the Fort Pickens Area.

Southeastern American kestrel – The southeastern American kestrel is listed as Threatened by the State of Florida. It is the smallest falcon species in the US and has a brown back, white belly, and distinctive black marks extending from the eyes downward. Males have blue-gray wings and females have brown wings. Kestrels typically feed on small vertebrates and invertebrates such as grasshoppers and will perch to locate prey and catch it with their feet. Nesting occurs from March to June, and females will nest in tree cavities created by woodpeckers. The southeastern American kestrel inhabits open woodlands, sandhill, and pine savannahs (FWC 2015f). Southeastern American kestrels have not been recorded within the national seashore (NPS 2010) but they are a wide ranging species and appropriate habitat is located within the Fort Pickens Area.

Plants

Godfrey's goldenaster – Godfrey's goldenaster is listed as Endangered by the State of Florida. It is a biennial or perennial herb with a basal rosette and stems to eighteen inches long. The species has two forms: one with dense wooly leaf hairs giving the plant a bluish tint and one having green leaves and glandular hairs. Yellow ray and disk flowers are clustered at the ends of stems, and flowering occurs from mid-October to mid-November. Godfrey's goldenaster is found in back dunes and sandy open areas in coastal scrubs (FNAI 2001b). Godfrey's goldenaster has been recorded within the Florida District of the Gulf Islands National Seashore (NPS 2010).

Cruise's goldenaster – Cruise's goldenaster is listed as Endangered by the State of Florida. It is a perennial herb with a basal rosette and multiple flowering stems. Cruise's goldenaster flowers from mid-October to mid-November, and the yellow ray and disk flowers occur in clusters at the ends of stems. This species is distinguished from other goldenasters by the unbranched sprawling stems and nearly hairless leaves. Cruise's goldenaster occurs on stable coastal dunes along the northern Gulf coast (FNAI 2001c). Cruise's goldenaster has been recorded within the Florida District of Gulf Islands National Seashore (NPS 2010).

Largeleaf jointweed – Largeleaf jointweed is listed as Threatened by the State of Florida. It is a perennial with a woody base and stems to three feet in height, the largest of the jointweed species. Leaves are alternate, and white to red flowers occur in dense terminal clusters. Largeleaf jointweed occurs in coastal sand pine (*Pinus clausa*) and oak scrub along the northern Gulf coast (NatureServe 2014). It has been recorded within the Florida District of Gulf Islands National Seashore (NPS 2010).

Species of Special Concern

State-listed species of special concern remaining in this analysis include American oystercatcher, black skimmer, and brown pelican. Brown pelicans are known to be present in the study area (Granger 2013; Granger 2015). The primary threats to these species include increased coastal and upland development and human disturbance.

8.0 ENVIRONMENTAL BASELINE

As defined under the ESA, the environmental baseline includes past and present impacts of all federal, state, and private actions in the action area; the anticipated impacts of all proposed federal actions in the action area that have undergone formal or early section 7 consultation; and the impact of state and private actions which are contemporaneous with the section 7 consultation process. Future actions and their potential effects are not included in the environmental baseline. This section in combination with the previous section defines the current status of the species and its habitat in the action area and provides a platform to assess the effects of the proposed action under consultation with the USFWS/NMFS.

8.1 PREVIOUS CONSULTATIONS WITH THE USFWS/NMFS WITHIN THE ANALYSIS AREA

TABLE 2. PAST CONSULTATIONS WITH THE USFWS/NMFS AND DETERMINATIONS FOR ACTIONS WITHIN THE ANALYSIS/ACTION AREA FOR ALL FEDERALLY LISTED AND PROPOSED SPECIES

Project	Park Unit	Type of Project	Species Addressed	Determination ¹	Date
Fort Pickens Pier & Ferry Service	Fort Pickens	Transportation	Green sea turtle Hawksbill sea turtle Kemp's Ridley sea turtle Leatherback sea turtle Loggerhead sea turtle Shorebirds	NLAA NLAA NLAA NLAA NLAA NLAA	2011
Beach Enhancement Project	Fort Pickens	Habitat Enhancement	Green sea turtle Hawksbill sea turtle Kemp's Ridley sea turtle Leatherback sea turtle Loggerhead sea turtle Piping plover Red knot	NLAA NLAA NLAA NLAA NLAA NLAA NLAA	2014
Fort Pickens Road Realignment	Fort Pickens	Transportation	Green sea turtle Hawksbill sea turtle Kemp's Ridley sea turtle Leatherback sea turtle Loggerhead sea turtle Piping plover Other listed shorebirds	NLAA NLAA NLAA NLAA NLAA NLAA NLAA	2014

¹ ESA determinations: NE = No effect, NLAA = May affect, not likely to adversely affect, and LAA = May affect, likely to adversely affect.

8.2 PAST AND CURRENT ACTIVITIES WITHIN THE ANALYSIS AREA

The Fort Pickens Area is in the Florida District of Gulf Islands National Seashore and is a fragile, 7-mile long section of barrier island separating Pensacola Bay from the Gulf of Mexico. It comprises the westernmost section of Santa Rosa Island and is adjacent to the community of Pensacola Beach. The Fort Pickens Area is a destination for some 700,000 visitors annually and is one of the largest tourist draws for the heavily tourist-dependent economy of the Pensacola and Pensacola Beach area. In addition to Fort Pickens historic sites and the fort grounds, the Fort Pickens Area provides visitors with recreational opportunities for swimming, beach activities, fishing, shelling, hiking, bicycling, camping, and educational programs focused on its diverse marine and land ecosystems.

Due to public use of the Fort Pickens Area minimal impacts on protected species and wildlife habitat are expected over many years. Potential impacts include continued mortality of least tern and snowy plover from vehicle strikes on Fort Pickens Road (Cohen and Durkin 2013) and continued disturbance of habitat for species such as Godfrey's goldenaster, Cruise's goldenaster, and largeleaf jointweed. It is likely that wildlife within the vicinity of Fort Pickens and Fort Pickens Road have become habituated to human activity along the road and paths and would not be seriously affected by continued or increasing public use.

9.0 EFFECTS TO EVALUATED SPECIES AND DETERMINATIONS

9.1 FEDERALLY LISTED SPECIES

Direct and Indirect Effects

Bald Eagle

Under the proposed action, bald eagles could be affected in the following ways:

- Disturbance of foraging activities by construction noise and machinery.

The increased noise and machinery may cause bald eagles to vacate certain hunting or perching locations. Eagles are highly mobile and have large foraging territories, so it is anticipated disturbed eagles will move to another location while construction is occurring. There is an abundance of suitable foraging and roosting habitat within GUIS and within range of the construction areas to which eagles would be expected to move.

Due to these factors, the proposed action **may affect, but is not likely to adversely affect** the bald eagle.

Piping Plover

Under the proposed action, piping plovers could be affected in the following ways:

- Disturbance of foraging activities by construction noise and machinery;

- Disturbance or removal of small areas of degraded foraging habitat by construction;
- Disturbance of foraging activities by increased visitor use of specific locations within the Fort Pickens Area, particularly the beach at Battery 234; and
- Incremental, long term degradation of habitat adjacent to areas of increased public use.

Piping plovers have been recorded within the Fort Pickens area of the national seashore (NPS 2014c), but no wintering piping plover critical habitat is located within the project area (USFWS 2015). Habitats within the Fort Pickens Area are used for foraging and roosting by piping plover. Birds may be startled and flush from foraging or roosting locations by noise associated with construction activities. It is anticipated plovers would move away from the disturbance to other suitable areas with similar habitat. There is an abundance of suitable foraging and roosting habitat within GUIS and within range of the construction areas to which plovers would be expected to move. The noise produced by the machinery and movement of the machinery and personnel within the vicinity of proposed construction areas may disturb the piping plover present on site, but they could avoid disturbance by moving into adjacent areas of unimpacted habitat. Therefore we would not expect startling and temporary displacement to interrupt or have long-term consequences to normal behaviors.

A small amount of low quality foraging habitat would be removed or disturbed by new construction and utility installation including temporary impacts caused by heavy equipment. Although most of these habitats had been previously disturbed, they may be used for foraging by piping plover. Where feasible, construction mats would be utilized to protect soils from disturbance caused by construction machinery. All disturbed areas would be revegetated after the completion of construction activities (see Section 11).

Shuttle operation may affect piping plover, but it is unlikely to be adverse. The shuttle service would be limited to a maximum speed of 15 miles per hour, and shuttle operators would be formally trained to recognize small, cryptic species and avoid impacts. Due to the relatively low speed of the shuttles and special training of shuttle operators, it is unlikely special status species mortality from shuttle vehicle strikes would occur. No vehicle collisions with piping plover have been recorded along Fort Pickens Road (Cohen and Durkin 2013).

Additional public use near the ferry pier and on the beach at Battery 234 may also cause indirect impacts to piping plover. Although they may be habituated to some human activity, it is anticipated that public use of these areas would increase and that unintended impacts on habitat, and therefore plovers, would likely occur over many years. Potential impacts include disturbance of foraging habitat and flushing from foraging areas.

With mitigation (see Section 11), the proposed action **may affect, but is not likely to adversely affect** the piping plover.

Red Knot

Under the proposed action, red knot could be affected in the following ways:

- Disturbance of foraging activities by construction noise and machinery;
- Disturbance or removal of small areas of degraded foraging habitat by construction;

- Disturbance of foraging activities by increased visitor use of specific locations within the Fort Pickens Area, particularly the beach at Battery 234; and
- Incremental, long term degradation of habitat adjacent to areas of increased public use.

Florida is an important feeding location for red knots on their migratory route between nesting in the Canadian arctic and wintering in Chile and Argentina, and red knots are regularly identified within the national seashore during migrations (USFWS 2014b). Habitats within the Fort Pickens Area are used for foraging and roosting by red knots. Red knots may be affected by the proposed action similarly to the piping plover. Construction noise and activity may disturb foraging activities; however, it is anticipated red knots would move other suitable habitats within the Fort Pickens Area.

A small amount of low quality foraging habitat would be removed or disturbed by new construction and utility installation including temporary impacts caused by heavy equipment. Although most of these habitats had been previously disturbed, they may be used for foraging by red knots. Where feasible, construction mats would be utilized to protect soils from disturbance caused by construction machinery. All disturbed areas would be revegetated after the completion of construction activities (see Section 11).

Shuttle operation may affect red knots, but it is unlikely to be adverse. The shuttle service would be limited to a maximum speed of 15 miles per hour, and shuttle operators would be formally trained to recognize small, cryptic species and avoid impacts. Due to the relatively low speed of the shuttles and special training of shuttle operators, it is unlikely special status species mortality from shuttle vehicle strikes would occur. No vehicle collisions with red knots have been recorded along Fort Pickens Road (Cohen and Durkin 2013).

Additional public use near the ferry pier and on the beach at Battery 234 may also cause indirect impacts to red knots. Although they may be habituated to some human activity, it is anticipated that public use of these areas would increase and that unintended impacts on habitat, and therefore red knots, would likely occur over many years. Potential impacts include disturbance of foraging habitat and flushing from foraging areas.

With mitigation (see Section 11), the proposed action **may affect, but is not likely to adversely affect** the red knot.

Sea Turtles

Five species of sea turtle are found within the waters surrounding the Fort Pickens Area, and several of those species have been recorded nesting on the beaches. Under the proposed action, sea turtles could be affected in the following ways:

- Disturbance of nests, nesting females, or hatchlings by visitors;
- Disturbance of nocturnal activities by artificial lighting installed on new structures; and
- Potential disturbance by shuttle service.

The proposed action will not impact any aquatic environments; therefore only terrestrial sea turtle activities including nesting and hatchling behavior may be affected by the proposed activities.

Loggerhead turtles constitute the majority of sea turtle nesting in the GUIS Florida District. Atlantic green sea turtles occasionally nest in the GUIS Florida District, and five Kemp's Ridley nests and one leatherback sea turtle nest have been documented in recent years (NPS 2006).

Additional public use near the ferry pier and on the beach at Battery 234 may cause impacts to sea turtle nests and sea turtles, particularly day nesting turtle species. During sea turtle nesting season beaches within all areas of the GUIS including the Fort Pickens area are patrolled every morning, and all sea turtle nests are staked and flagged to prevent beachgoers from unintentionally damaging nests. The National Park Service also provides information on sea turtles and other nesting species to the public including signs and educational displays. These protective measures significantly reduce the potential for park visitors to impact sea turtle nests on the beaches, and it is anticipated impacts on sea turtles would be rare.

Impacts on sea turtles would also occur from artificial lighting installed at the locations of the new buildings at the ferry landing, Battery Langdon, and Battery 234. If artificial lighting is deemed necessary, wildlife certified LED lighting directed downwards, as is commonly used on the sea turtle nesting beaches in Florida (approved by FWC and USFWS), would be used to reduce the potential impacts to nesting sea turtles and hatchlings.

With mitigation (see Section 11), the proposed action **may affect, but is not likely to adversely affect** sea turtles.

Cumulative Effects

Cumulative effects are defined somewhat differently under the Endangered Species Act and the National Environmental Policy Act. Under the Endangered Species Act, cumulative effects include the environmental baseline plus the additive effect of reasonably foreseeable future state, private and tribal activities. Under ESA cumulative effects, the effect of future federal actions is not considered. Under the National Environmental Policy Act, the cumulative effects are almost identical to those described for the Endangered Species Act, the only difference being that cumulative effects under the National Environmental Policy Act also include the effect from reasonably foreseeable future federal actions as well.

The National Park Service manages all activities within the Fort Pickens area of the national seashore; therefore there are no cumulative impacts to federally threatened or endangered species within the study area.

Interrelated and Interdependent Actions and Their Effects

No interrelated or interdependent actions are proposed.

Incidental Take

No incidental take (as defined by the Endangered Species Act) is anticipated for any federally listed species with the implementation of the proposed action.

Effect Determination

The implementation of the Endangered Species Act often requires an evaluation of the effects of human activity on listed species and their habitats. The potential for hindering the attainment of a properly functioning environment for protected species is an example of one of questions posed by the dichotomous key for making a determination of effect. Potential impediments to a properly functioning environment may include physical barriers, and impacts to water quality, species disturbance, and habitat removal, for example. The following questions were reviewed and addressed as part of the decision-making process to make the determination of effect:

Are there any proposed/listed species and/or proposed or designated critical habitat in the project area or downstream from the project area?

Answer: Yes.

Does the proposed action have the potential to hinder attainment of relevant properly functioning indicators?

Answer: No.

Does the proposed action have the potential to result in “take” of proposed/listed species or destruction/adverse modification of proposed/designated critical habitat?

Answer: Yes, but not likely with mitigation (Section 10).

The information available for the project has been analyzed, and it has been concluded that the proposed action would have a negligible probability of take of listed species, which is summarized in table 2. The rationale for each of these determinations is included in the discussion of direct and indirect effects.

TABLE 3: FEDERALLY LISTED SPECIES EFFECTS DETERMINATIONS

Listed Species/Critical Habitat	Determination of Effect
Green sea turtle	Not likely to adversely affect
Hawksbill sea turtle	Not likely to adversely affect
Kemp's Ridley sea turtle	Not likely to adversely affect
Leatherback sea turtle	Not likely to adversely affect
Loggerhead sea turtle	Not likely to adversely affect
Bald eagle	Not likely to adversely affect
Piping plover	Not likely to adversely affect
Red knot	Not likely to adversely affect

9.2 CRITICAL HABITAT

No critical habitat is located within the study area.

9.3 STATE OR LOCALLY LISTED SPECIES OF CONCERN

Direct and Indirect Effects

Birds:

Least Tern

Under the proposed action, least tern could be affected in the following ways:

- Disturbance of nesting and foraging activities by construction noise and machinery;
- Disturbance or removal of small areas of degraded habitat by construction;
- Potential disturbance by shuttle service;
- Disturbance of nesting and foraging activities by increased visitor use at specific locations within the Fort Pickens Area, particularly the beach at Battery 234; and
- Incremental, long term degradation of habitat adjacent to areas of increased public use.

Least terns are spring and summer residents of the Fort Pickens Area using beaches and dunes for nesting and near shore waters for hunting. Where construction would occur adjacent to dunes or beaches, construction noise and personnel may startle tern nesting colonies causing flushing from nesting areas. Potential impacts include disturbance during foraging, flushing from nesting areas, and abandonment of nests. It is anticipated terns would move away from the disturbance to other suitable areas with similar habitat. The construction schedule has not been determined at this time, and construction activities near potential least tern nesting habitat may be scheduled for times of the year outside nesting season. Additionally, the National Park Service closes shorebird nesting areas from March 1 to September 30 of each year to protect birds from disturbance during courtship, nesting, and fledging of young. Any proposed construction within these areas would be delayed until nestlings are fledged, usually by mid-August.

A small amount of potential least tern habitat would be affected by new construction and utility installation including temporary impacts caused by heavy equipment. Although most of these habitats had been previously disturbed, they may be used for foraging by least tern. Additionally, least terns nest on open sand and may use sandy patches near roads, parking lots, and other areas close to human activity. Therefore, some nesting habitat for these species may be affected by the proposed new construction. All areas of new construction would be surveyed for protected species prior to the commencement of proposed activities. Where feasible, construction mats would be utilized to protect soils from disturbance caused by construction machinery. Habitat disturbed by machinery would be restored after construction is completed (see Section 11).

Shuttle operation may affect least tern hatchlings, but it is unlikely to be adverse. The shuttle service would be limited to a maximum speed of 15 miles per hour, and shuttle operators would be formally trained to recognize small, cryptic species and avoid impacts. Due to the relatively low speed of the shuttles and special training of shuttle operators, it is unlikely least tern mortality from shuttle vehicle

strikes would occur. However, vehicle collisions with least tern have been recorded along Fort Pickens Road (Cohen and Durkin 2013).

An increase in public use near the ferry pier and on the beach at Battery 234 may also cause indirect impacts to least tern and least tern nesting habitat. Although they may be habituated to some human activity, it is anticipated that public use of these areas would increase and that unintended impacts on habitat, and therefore least tern, would likely occur over many years. Potential impacts include flushing from nesting areas, degradation of nesting habitat, and abandonment of nests. During shorebird nesting season, least tern nesting colony locations are marked with flagging and/or signs to prevent beachgoers from unintentionally disturbing birds or damaging nests. The National Park Service also provides information on least terns and other nesting species to the public including signs and educational displays. These protective measures significantly reduce the potential for park visitors to impact least terns or their nests although some flushing may occur.

With mitigation (see Section 11), the proposed action **may affect, but is not likely to adversely affect** the least tern.

Snowy Plover

Under the proposed action, snowy plover could be affected in the following ways:

- Disturbance of nesting and foraging activities by construction noise and machinery;
- Disturbance or removal of small areas of degraded habitat by construction;
- Potential disturbance by shuttle service;
- Disturbance of nesting and foraging activities by increased visitor use at specific locations within the Fort Pickens Area, particularly the beach at Battery 234; and
- Incremental, long term degradation of habitat adjacent to areas of increased public use.

Snowy plovers are year-round residents of the Fort Pickens area, they nest between February and August. Under the proposed action, potential impacts to snowy plover are similar to those for least terns, except snowy plovers do not nest in colonies and thus are not protected by a large nesting colony.

Where construction would occur adjacent to dunes or beaches, construction noise and personnel may startle snowy plover causing flushing from nesting areas. Potential impacts include flushing from foraging habitat, flushing from nesting areas, and abandonment of nests. It is anticipated plovers would move away from the disturbance during foraging to other suitable areas with similar habitat. The construction schedule has not been determined at this time, and construction activities near potential snowy plover nesting habitat may be scheduled for times of the year outside nesting season. Additionally, the National Park Service closes shorebird nesting areas from March 1 to September 30 of each year to protect birds from disturbance during courtship, nesting, and fledging of young. Any proposed construction within or adjacent to these areas would be delayed until nestlings are fledged, usually by mid-August.

A small amount of potential snowy plover habitat would be affected by new construction and utility installation including temporary impacts caused by heavy equipment. Most of the habitats have been

previously disturbed, but snowy plovers nest on open sand and may use sandy patches near roads, parking lots, and other areas close to human activity. Therefore, some nesting habitat for these species may be affected by the proposed new construction. All areas of new construction would be surveyed for protected species prior to the commencement of construction. Where feasible, construction mats would be utilized to protect soils from disturbance caused by construction machinery. Habitat disturbed by machinery would be restored after construction is completed (see Section 11).

Shuttle operation may affect snowy plover hatchlings, but it is unlikely to be adverse. The shuttle service would be limited to a maximum speed of 15 miles per hour, and shuttle operators would be formally trained to recognize small, cryptic species and avoid impacts. Due to the relatively low speed of the shuttles and special training of shuttle operators, it is unlikely snowy plover mortality from shuttle vehicle strikes would occur. However, vehicle collisions with snowy plover, have been recorded along Fort Pickens Road (Cohen and Durkin 2013).

An increase in public use near the ferry pier and on the beach at Battery 234 may also cause indirect impacts to snowy plover and snowy plover nesting habitat. Although they may be habituated to some human activity, it is anticipated that public use of these areas would increase and that unintended impacts on habitat, and therefore snowy plover, would likely occur over many years. Potential impacts include flushing from nesting areas, degradation of nesting habitat, and abandonment of nests. During shorebird nesting season, snowy plover nesting locations are marked with signs and closed to the public to prevent beachgoers from unintentionally disturbing birds or damaging nests which are well camouflaged. The National Park Service also provides information on snowy plover and other nesting species to the public including signs and educational displays. These protective measures significantly reduce the potential for park visitors to impact snowy plovers or their nests although some flushing may occur.

With mitigation (see Section 11), the proposed action **may affect, but is not likely to adversely affect** the snowy plover.

Southeastern American Kestrel

Under the proposed action, southeastern American kestrels could be affected in the following ways:

- Disturbance of foraging activities by construction noise and machinery.

The increased noise and machinery may cause southeastern American kestrels to vacate certain hunting or perching locations. Kestrels are highly mobile and have large foraging territories, so it is anticipated disturbed kestrels will move to another location while construction is occurring. There is an abundance of suitable foraging and roosting habitat within GUIS and within range of the construction areas to which kestrels would be expected to move.

Due to these factors, the proposed action **may affect, but is not likely to adversely affect** the southeastern American kestrel.

Plants:

Under the proposed action, Godfrey's goldenaster, Cruise's goldenaster, and largeleaf jointweed could be affected in the following ways:

- Direct impacts to individual plants or small areas of degraded habitat by construction; and
- Incremental, long term degradation of habitat adjacent to areas of increased public use.

Godfrey's goldenaster, Cruise's goldenaster, and largeleaf jointweed inhabit coastal upland areas including beach dunes and coastal scrub, and the potential impacts to these species are similar. A small amount of degraded habitat would be impacted by new construction and utility installation including temporary impacts caused by heavy equipment. Most of these habitats had been previously disturbed; however, the dune and scrub habitats in which these plant species are found, experience regular disturbances from wind, storms, and overwash during storm surges or particularly high tides. All areas of new construction would be surveyed for protected species prior to the commencement of proposed activities, and individual plants found within construction areas would be transplanted to appropriate habitats outside the construction zone.

An increase in public use of the beach near Battery 234 may disturb natural dune and scrub habitat of Godfrey's goldenaster, Cruise's goldenaster, and largeleaf jointweed. It is anticipated that public use of these areas would increase and that unintended impacts on natural habitat, and therefore potentially protected species, would likely occur over many years.

With mitigation (see Section 11), the proposed action **may affect, but is not likely to adversely affect** Godfrey's goldenaster, Cruise's goldenaster, and largeleaf jointweed.

Species of Special Concern:

Florida species of special concern which occur within the study area include the American oystercatcher, black skimmer, and brown pelican. All three species are year-round residents of the Fort Pickens Area. Species of special concern would be impacted by the proposed action similarly to other bird species within the project area.

Impacts to brown pelicans consist primarily of disturbance of hunting activities by construction noise and increased visitor use of areas near the ferry pier and the beach and Battery 234. Pelicans generally nest in trees and are less susceptible to disturbance from visitors than ground nesters, although noise from construction machinery may disturb them.

Black skimmers and American oystercatchers nest on the ground on sand dunes or on the open beach. Impacts to these species would consist of the following:

- Disturbance of nesting activities by construction noise and machinery;
- Disturbance or removal of small areas of degraded nesting habitat by construction;
- Disturbance of nesting and foraging activities by increased visitor use at specific locations within the Fort Pickens Area, particularly the beach at Battery 234; and
- Incremental, long term degradation of nesting habitat adjacent to areas of increased public use.

Where construction would occur adjacent to dunes or beaches, construction noise and personnel may startle skimmers and oystercatchers causing flushing from nesting areas. Potential impacts include flushing from nesting areas and abandonment of nests. Skimmers forage in near shore waters, and oystercatchers in shallow wetlands. Impacts to foraging behaviors or habitats are not anticipated for either species. The National Park Service closes shorebird nesting areas from March 1 to September 30 of each year to protect birds from disturbance during courtship, nesting, and fledging of young. Any proposed construction within or adjacent to these areas would be delayed until nestlings are fledged, usually by mid-August.

An increase in public use near the ferry pier and on the beach at Battery 234 may also cause indirect impacts to skimmer and oystercatcher nesting habitat. Although they may be habituated to some human activity, it is anticipated that public use of these areas would increase and that unintended impacts on habitat would likely occur over many years. Potential impacts include flushing from nesting areas, degradation of nesting habitat, and abandonment of nests. During shorebird nesting season, the locations of nesting colonies are marked with signs and flagging and are closed to the public to prevent beachgoers from unintentionally disturbing birds or damaging nests which are well camouflaged. The National Park Service also provides information on nesting species to the public including signs and educational displays. These protective measures significantly reduce the potential for park visitors to impact least terns or their nests although some flushing may occur.

With mitigation (see Section 11), the proposed action **may affect, but is not likely to adversely affect** the brown pelican, black skimmer, and American oystercatcher.

Cumulative Effects

The National Park Service manages all activities within the Fort Pickens area of the national seashore; therefore there are no cumulative impacts to federally threatened or endangered species within the study area.

Effect Determinations

TABLE 4: STATE LISTED SPECIES EFFECT DETERMINATIONS

Listed Species/Critical Habitat	Determination of Effect
Birds	
American oystercatcher	Not likely to adversely affect
Black skimmer	Not likely to adversely affect
Brown pelican	Not likely to adversely affect
Least tern	Not likely to adversely affect
Snowy plover	Not likely to adversely affect
Southeastern American kestrel	Not likely to adversely affect
Plants	
Cruise's goldenaster	Not likely to adversely affect
Godfrey's goldenaster	Not likely to adversely affect
Largeleaf jointweed	Not likely to adversely affect

10.0 EFFECT DETERMINATION SUMMARY

TABLE 5. EFFECT DETERMINATIONS FOR SPECIES ADDRESSED

Common Name	Scientific Name	Status	Determinations of Effects ¹	
			Alternative 1 (No Action)	Alternative 2 (NPS Preferred)
Federal Species				
Bald eagle	<i>Haliaeetus leucocephalus</i>	DL	NLAA	NLAA
Piping plover	<i>Charadrius melodus</i>	T	NLAA	NLAA
Red knot	<i>Calidris canutus rufa</i>	T	NLAA	NLAA
Green sea turtle	<i>Chelonia mydas</i>	E	NLAA	NLAA
Hawksbill sea turtle	<i>Eremochelys imbricata</i>	E	NLAA	NLAA
Kemp's Ridley sea turtle	<i>Lepidochelys kempii</i>	E	NLAA	NLAA
Leatherback sea turtle	<i>Demochelys coriacea</i>	E	NLAA	NLAA
Loggerhead sea turtle	<i>Caretta caretta</i>	T	NLAA	NLAA
State Species				
American oyster catcher	<i>Haematopus palliatus</i>	SSC	NLAA	NLAA
Black skimmer	<i>Rynchops niger</i>	SSC	NLAA	NLAA
Brown pelican	<i>Pelecanus occidentalis</i>	SSC	NLAA	NLAA
Least tern	<i>Sterna antillarum</i>	T	NLAA	NLAA
Snowy plover	<i>Charadrius alexandrinus</i>	T	NLAA	NLAA
Southeastern American kestrel	<i>Falco sparverius</i>	T	NE	NLAA
Cruise's goldenaster	<i>Chrysopsis gossypina</i> subsp. <i>cruiseana</i>	E	NE	NLAA
Godfrey's goldenaster	<i>Chrysopsis godfreyi</i>	E	NE	NLAA
Largeleaf jointweed	<i>Polygonella macrophylla</i>	T	NE	NLAA

¹ **NE**=no effect; **NLAA**=may affect, not likely to adversely affect; **LAA**=may affect, likely to adversely affect; **BI**=beneficial impact

11.0 CONSERVATION AND MITIGATION MEASURES

The National Park Service would carry out mitigating measures to reduce or avoid adverse effects of the proposed action. The NPS project manager would ensure that the project remains confined within the parameters established in the compliance documents and that mitigation measures would be properly implemented. The following mitigation measures and any additional mitigation required by regulatory agencies would be refined and incorporated in all final design plans and documents. Additional mitigations may be added during the permitting and consultation processes.

GENERAL PROTECTED SPECIES MITIGATION MEASURES:

- In order to mitigate and minimize potential impacts on natural resources during construction, contractor employees would be instructed on the sensitivity of the general environment and their activities monitored by NPS staff. Corridors for construction vehicle movement would be established and defined on the ground. Staging of construction equipment would be restricted to the road corridor, parking lots, and other identified previously disturbed areas to avoid impacts on natural resources. Construction activities would occur during daylight hours only. No nighttime construction activities would be conducted.
- Prior to the initiation of project activities, all construction areas would be surveyed for the presence of wildlife and protected plant species which are at risk of impacts from construction related activities. Outside of shorebird nesting season, the survey areas would include all construction and mobilization areas, travel corridors, and a 50-foot buffer to prevent unintended impacts outside construction areas. If construction activities are conducted during shorebird nesting season, the buffer would be increased to 300 feet and the shorebird mitigation measures, provided below, would be followed. All wildlife and plant surveys would be conducted by a trained biologist familiar with the fauna and flora of northwest Florida and the habitats present within the project area. Upon the identification of at risk wildlife or protected plants, a mitigation plan would be developed. Depending upon the species, mitigation may involve relocation/transplanting, establishment of a buffer around the individual or nest, or delay of project activities until the individual has vacated the area.
- Construction mats would be utilized, if feasible, to protect soils from disturbance from construction machinery in areas where impacts to habitats are unavoidable. Habitats disturbed by machinery would be restored after construction is completed.

SEA TURTLE MITIGATION MEASURES:

- Construction activities would occur during daylight hours only. No nighttime construction activities would be conducted.
- All personnel associated with the construction and operational phases of the project would be trained and instructed in the potential presence of protected sea turtles. Furthermore, construction

site personnel and personnel associated with operating the ferry would be informed of the civil and criminal penalties for harming, harassing, or killing species that are protected.

- Artificial lighting in and on newly constructed buildings would be turned off or shielded during sea turtle nesting season to prevent impacts to nesting turtles or hatchlings. If lighting is required at night, wildlife-friendly LED lighting and fixtures would be used.

SHOREBIRD MITIGATION MEASURES:

- Construction will be conducted in accordance with the Florida Fish and Wildlife Conservation Commission's guidelines developed to protect against potential impacts to nesting shorebirds during the periods from February 15th through August 31st, as outlined below:
 1. Maintain at least a 300-foot distance from shorebird nesting areas during breeding season, or if birds appear agitated or take flight.
 2. Keep out of posted nesting areas.
 3. Never intentionally force birds to fly.
- Avoid running equipment or watercraft close to shore in potential nesting areas. Personnel associated with the construction and operational phases of the project will be instructed and trained regarding the protection of shorebirds, and personnel will be informed of the civil and criminal penalties for harming, harassing, or killing species that are protected.

LISTED PLANT SPECIES MITIGATION MEASURES:

- Prior to the commencement of construction activities, all construction areas will be surveyed for protected species by a professional biologist familiar within the flora of northwest Florida and the habitats present within the construction area.
- If listed plant species are found within construction areas, they will be transplanted to appropriate habitats outside the construction zone.

12.0 NEED FOR RE-ASSESSMENT BASED ON CHANGED CONDITIONS

This BA and findings above are based on the best current data and scientific information available. A new analysis and revised BA must be prepared if one or more of the following occurs: (1) new species information (including but not limited to a newly discovered activity area or other species information) reveals effects to threatened, endangered, proposed species, or designated/proposed critical habitat in a manner or to an extent not considered in this assessment; (2) the action is subsequently modified or it is not fully implemented as described herein which causes an effect that was not considered in this assessment; or (3) a new species is listed or critical habitat is designated which may be affected by the action that was not previously analyzed herein.

13.0 LITERATURE CITED

Cohen, Johnathan and Maureen Durkin

- 2013 Wildlife Mortality Estimation at Gulf Islands National Seashore: Field Season 2013 Final Report. SUNY College of Environmental Science and Forestry, Dept. of Environmental and Forest Biology. Syracuse.

Florida Fish and Wildlife Conservation Commission (FWC)

- 2015b *Imperiled Species*. <http://myfwc.com/wildlifehabitats/imperiled/>. Accessed January 19, 2015.
- 2015c *Imperiled Species*. Piping plover: *Charadrius melodus*. <http://myfwc.com/wildlifehabitats/imperiled/profiles/birds/piping-plover/>. Accessed January 19, 2015.
- 2015d *Imperiled Species*. Least tern: *Sternula antillarum*. <http://myfwc.com/wildlifehabitats/imperiled/profiles/birds/least-tern/>. Accessed January 19, 2015.
- 2015e *Imperiled Species*. Snowy plover: *Charadrius nivosus*. <http://myfwc.com/wildlifehabitats/imperiled/profiles/birds/snowy-plover/>. Accessed January 19, 2015.
- 2015f *Imperiled Species*. Southeastern American kestrel: *Falco sparverius paulus*. <http://myfwc.com/wildlifehabitats/imperiled/profiles/birds/southeastern-american-kestrel/>. Accessed January 19, 2015.

Florida Natural Area Inventory (FNAI)

- 2001a *Field Guide to the Rare Plants and Animals of Florida, Online. Piping Plover*. http://www.fnai.org/FieldGuide/search_001.cfm. Accessed January 19, 2015.
- 2001b *Field Guide to the Rare Plants and Animals of Florida, Online. Godfrey's Goldenaster*. http://www.fnai.org/FieldGuide/search_001.cfm. Accessed January 19, 2015.
- 2001c *Field Guide to the Rare Plants and Animals of Florida, Online. Cruise's Goldenaster*. http://www.fnai.org/FieldGuide/search_001.cfm. Accessed January 19, 2015.
- 2013 Florida Natural Areas Inventory. Biodiversity Matrix. <http://www.fnai.org/biointro.cfm>. Updated October 2013. Accessed January 16, 2015.

Granger, W. J.

- 2013 *Gulf Coast Network Breeding Bird Monitoring Annual Report: 2012 results for Gulf Islands National Seashore*. Natural Resource Data Series NPS/GUIS/NRDS—2013/485. National Park Service, Fort Collins, Colorado.

- 2015 *Gulf Coast Network Breeding Bird Monitoring Annual Report: 2014 Results from Gulf Islands National Seashore*. Natural Resource Data Series NPS/GUIS/NRDS—2015/755. National Park Service, Fort Collins, Colorado.

National Marine Fisheries Service (NMFS)

- 2014a Protected Resources. Green Turtle (*Chelonia mydas*).
<http://www.nmfs.noaa.gov/pr/species/turtles/green.htm>. Access January 19, 2015
- 2014b Protected Resources. Hawksbill Turtle (*Eretmochelys imbricata*).
<http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.htm>. Access January 19, 2015
- 2014c Protected Resources. Kemp's Ridley Turtle (*Lepidochelys kempii*).
<http://www.nmfs.noaa.gov/pr/species/turtles/kempsridley.htm>. Access January 19, 2015
- 2014d Protected Resources. Leatherback Turtle (*Dermochelys coriacea*).
<http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.htm>. Access January 19, 2015
- 2014e Protected Resources. Loggerhead Turtle (*Caretta caretta*).
<http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm>. Access January 19, 2015

National Parks Service (NPS)

- 2006a Environmental Assessment: Restore Visitor Access to Fort Pickens Area, Santa Rosa Island. Gulf Islands National Seashore. October 2006.
- 2006b *Management Policies 2006*.
- 2010 A Summary of Biological Inventory Data Collected at Gulf Islands National Seashore. Vertebrate and Vascular Plant Inventories. Natural Resource Technical Report NPS/GULN/NRTR-2010/398. US Department of the Interior. Fort Collins, Colorado.
- 2014a Final General Management Plan/Environmental Impact Statement. Gulf Islands National Seashore. July 2014.
- 2014b Pensacola Bay Ferry Service: Ferry and Shuttle Transportation Feasibility Study, 100% Draft Report. June 2014.
- 2014c Environmental Assessment for the Fort Pickens Road Realignment. Gulf Islands National Seashore. July 2014.

NatureServe

- 2014 NatureServe Explorer. *Polygonella macrophylla*.
http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=137605&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=137605&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=137605. Accessed January 19, 2015.

US Fish and Wildlife Service (USFWS)

- 2014a Environmental Conservation Online System. Piping Plover (*Charadrius melodus*).
<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B079>. Accessed
January 19, 2015.
- 2014b Environmental Conservation Online System. Red Knot (*Calidris canutus rufa*).
<http://ecos.fws.gov/speciesProfile/profile/speciesProfile?spcode=B0DM>. Accessed
January 19, 2015.