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12.71 Navarre Beach Park Coastal Access and Dune Restoration: Project Description

12.71.1 Project Summary

The proposed Navarre Beach Park Coastal Access project would improve access for the public seeking to access the beach and water of Santa Rosa Sound from the existing pavilion/parking lot areas. In addition, construction of a new canoe/kayak launch would increase access opportunities to the waters of the sound for recreational boaters. The enhancement of the recreational experience from these infrastructure improvements would also be complemented by the restoration of a roughly 1 acre parcel of degraded dune habitat in the project area. The estimated cost for this project is $614,630.

12.71.2 Background and Project Description

The Trustees propose to enhance the Navarre Beach Park in Santa Rosa County (See Figure 12-1for the project location and Figure 12-2 for a conceptual design of the proposed project highlighting the new access structures and the area for dune restoration). The objective of the Navarre Beach Park Coastal Access project is to enhance and/or increase recreational boating and beach use opportunitesby constructing new infrastructure for recreational opportunities. The restoration work proposed includes construction of two new beach access boardwalks from existing pavilion/parking lot areas to the Santa Rosa Sound. Additionally, a new kayak/canoe launch and boardwalk would be constructed to increase opportunities/access for recreational boating in the waters of the Sound. The project would also restore a roughly 1 acre area of degraded dune habitat to enhance the recreational experience by helping return the area to a more natural state. This restoration would involve planting gaps in the existing dune within the project area. All plants will be grown from seeds or cuttings from the Alabama or North Florida coast to ensure appropriate genetic stocks are used in the project.

12.71.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposed Navarre Beach Coastal Access project is intended to enhance and/or increase recreational boating and beach use opportunities by constructing new infrastructure for recreational opportunities. This project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill.Thus, the nexus to resources injured by the Spill is clear.See15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. Agencies have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.72, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.72 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Figure 12-1. Location of Florida Navarre Beach Park coastal access project.

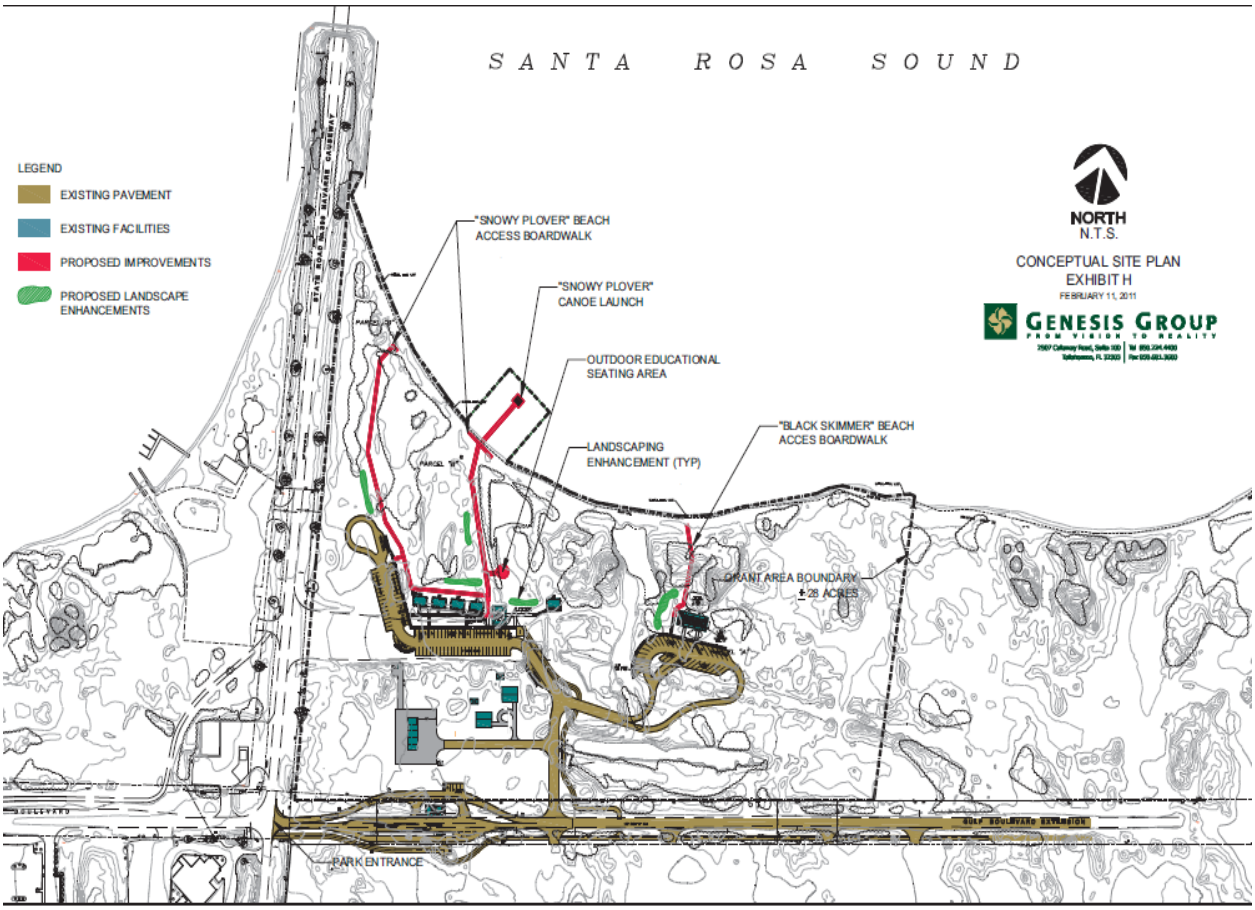


Figure 12-2. Conceptual plan for the proposed Navarre Beach Park coastal access project.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com). In addition to meeting the evaluation criteria for the Framework Agreement and OPA, the Florida Navarre Beach Park Coastal Access project also meets Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area that was impacted by SCAT and response activities, including boom deployment.

12.71.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. The project objective is to enhance and/or increase recreational boating and beach use opportunities by constructing new infrastructure for recreational opportunities. Performance monitoring will evaluate:1) the construction of the two new beach access boardwalk; 2) the construction of a new canoe/kayak boat launch facility and boardwalk; and 3) the restoration of approximately 1 acre of degraded beach dune habitat. Specific success criteria include: 1) the completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the new visitor use infrastructure is open and available.

Long-term monitoring and maintenance of the improved facilities will be completed by Santa Rosa County as part of their regular public facilities maintenance activities.Funding for this post-construction maintenance is not included in the previously provided value for the project cost and will be accomplished by Santa Rosa County.

During the one year construction performance period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users. Following the construction performance monitoring period, Santa Rosa County will monitor the recreational use activity of the site. Santa Rosa County will visit the site twice a year to count the number of users at the boardwalks and the canoe/kayak launching facility.The visitation numbers will then be provided to the Florida Department of Environmental Protection.

12.71.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $1,229,260 expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[1]

12.71.6 Costs

The total estimated cost to implement this project is $614,630. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[1] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.72 Navarre Beach Park Gulfside Walkover Complex: Project Description

12.72.1 Project Summary

The proposed Navarre Beach Park Gulfside Walkover Complex project would enhance access to the shoreline at Navarre Beach Park to enhance recreational use of the natural resources. The proposed improvements include constructing an entrance, driveway, and parking area; constructing a restroom facility; constructing pavilions with boardwalk connections; lifeguard tower; and constructing a dune walkover that will provide access to the beach. The total estimated cost of the project is $1,221,847.

12.72.2 Background and Project Description

The Trustees propose to improve public access to the beach and allow more visitors to enjoy access to the shoreline at Navarre Beach Park in Santa Rosa County (see Figure 12-3 for general project location). The objective of the Navarre Beach Park Gulfside Walkover Complex project is to enhance and/or increase recreational beach use opportunitiesby improving beach access. The restoration work proposed includes constructing an entrance, driveway, and parking area; constructing a restroom facility; constructing pavilions with boardwalk connections; lifeguard tower; and constructing a dune walkover that will provide access to the beach.

Figure 12-3. Location of Navarre Beach Park Gulfside Walkover Complex project.

12.72.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposed Navarre Beach Park Gulfside Walkover Complex project is intended to enhance and/or increase recreational beach use opportunities by improving beach access. This project would enhance and/or increaseopportunites for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill. Thus, the nexus to resources injured by the Spill is clear. See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. Florida counties have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.72, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.72 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com).In addition to meeting the criteria for the Framework Agreement and OPA, the Navarre Beach Park Gulfside Walkover Complex project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area in which boom was deployed and that was impacted by response and SCAT activities for the Spill.

12.72.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. Theproject objective is to enhance and/or increase recreational beach use opportunities by improving beach access. Performance monitoring will evaluate: 1) theconstruction of an entrance, driveway, and parking area; 2) the construction of a restroom facility; 3) the construction of pavilions with boardwalk connections; 4) construction of a lifeguard tower; and 5) the construction a dune walkover that will provide access to the beach. Specific success criteria include: 1) the completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources,

which will be determined by observation that the walkover complex and associated facilities are open and available.

Long term monitoring and maintenance of the improved facilities will be completed by Santa Rosa County as part of their regular public facilities maintenance activities. Funding for this post-construction maintenance is not included in the previously provided value for the project cost and will be assumed by Santa Rosa County.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users.Following the one year construction performance monitoring period, Santa Rosa County will monitor the recreational use activity at the site.Santa Rosa County staff will visit the site twice a year to count the number of users at the park walkover complex. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

12.72.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $2,443,694 expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[2]

12.72.6 Costs

The total estimated cost to implement this project is $1,221,847. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[2] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.73 Navarre Beach Park Gulfside Walkover Complex, Coastal Access and Dune Restoration: Environmental Review

The proposed Navarre Beach Marine Park projects would construct and restore infrastructure to increase and improve opportunities for the public to safely access coastal resources affected by the *Deepwater Horizon* oil spill.

12.73.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP) entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the *Deepwater Horizon* Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit, while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf Coast in advance of the completion of the injury assessment process. Early restoration is not intended to, and does not fully, address all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement, the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the *Federal Register* on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III ERP. This marine park project was submitted as an Early Restoration project on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the state of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and Oil Pollution Act (OPA), the project meets Florida criteria that Early Restoration projects occur in the eight-county panhandle area that deployed boom and was impacted by the Spill.

Because of the loss of recreational opportunities for both local residents and tourists as a result of the oil spill, the project in this proposal provides for enhancement of current public access to the gulf beach and sound by protecting dunes and improving infrastructure at Navarre Beach in Santa Rosa County, Florida.

This project has two components, as described below:

<u>Santa Rosa Sound Coastal Access and Dune Restoration Project</u>: The Santa Rosa Sound Coastal Access and Dune Restoration Project would improve infrastructure, restore dune habitat, and increase access to recreation opportunities in Navarre Beach Marine Park on the Santa Rosa Sound side of the park (north side). The project would includedesign, permitting, and construction of two new beach access boardwalks from existing pavilions and a new canoe and kayak launch and boardwalk on Santa Rosa Sound. This project would improve park infrastructure for visitors and increase access opportunities to the waters of the sound for recreational boaters. Lastly, the enhancement of the recreational experience would be complemented by the restoration of five patches of degraded dune habitat in the project area totaling approximately 1 acre.

Gulfside Walkover Complex Coastal Access Project: The Gulfside Walkover Complex Coastal Access Project would create new infrastructure and increase access to recreation areas in Navarre Beach Marine Park on the Gulf of Mexico side of the park (south side). The project would involve design, permitting, and construction of a dune walkover complex, which would include a driveway, parking area, restroom facility, lifeguard tower, andthree pavilions with boardwalk connections to a dune walkover with access to the shoreline of the Gulf of Mexico. The project would improve public access to the beach and allow more visitors to safely access the shoreline in a convenient location.

12.73.2 Project Location

The proposed project area is located in the state of Florida, on Navarre Beach Marine Park, Santa Rosa Island, Santa Rosa County (Figure 12-4). Navarre Beach Marine Park is a county-owned and operated park. Figure 12-5 shows an aerial view of Navarre Beach Marine Park, while Figure 12-6 shows existing facilities at the park and Figure 12-7 and Figure 12-5 show conceptual designs for the proposed improvement projects at Navarre Beach Marine Park.

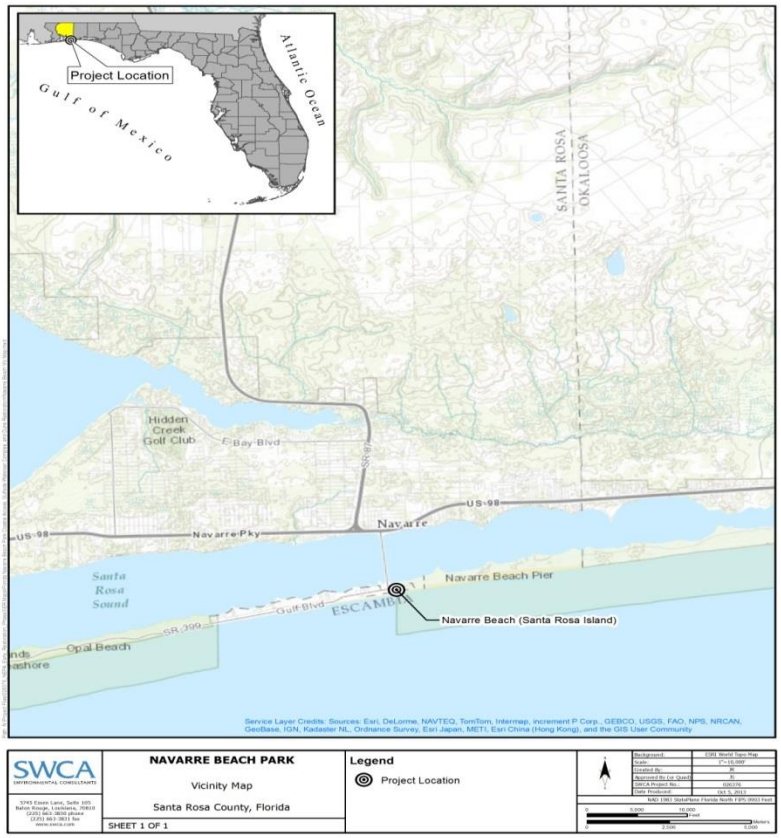
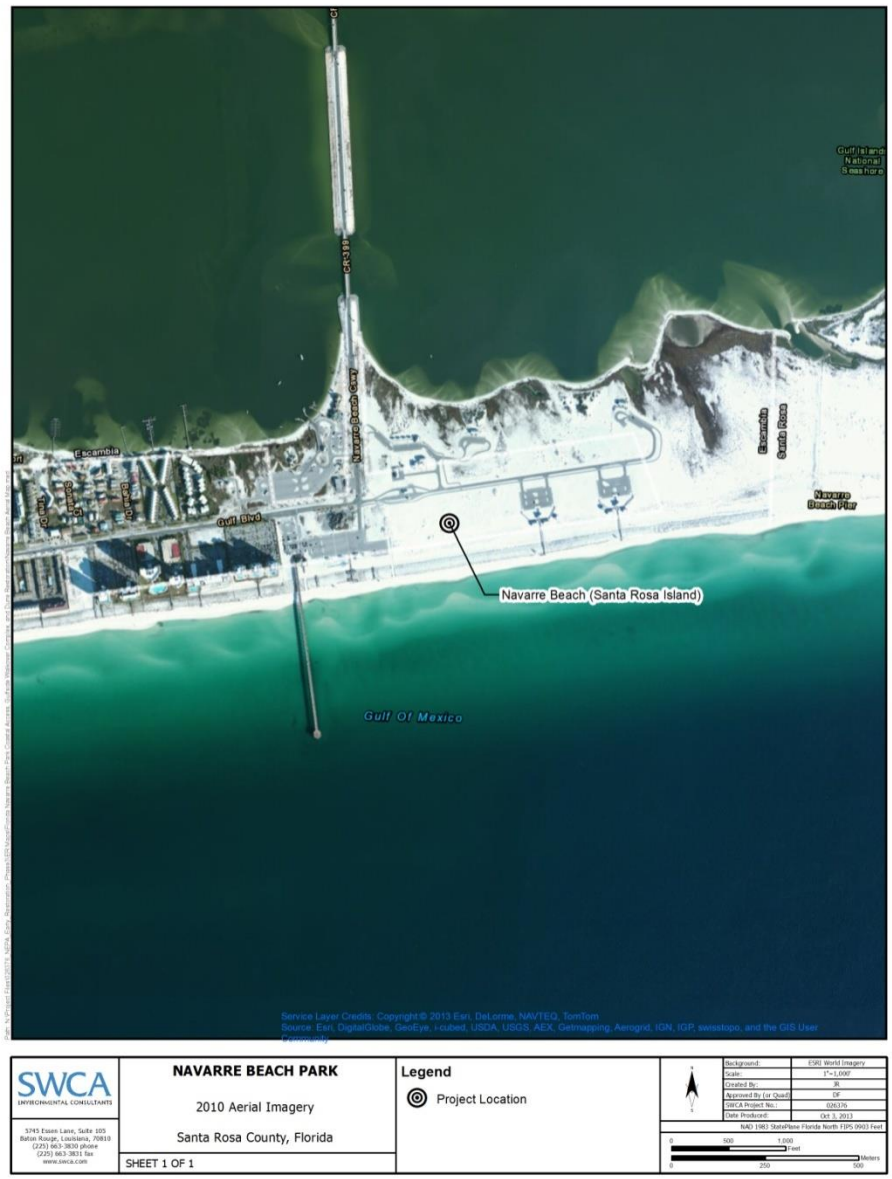


Figure 12-4. Navarre Beach Marine Park vicinity map.



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NAVARRE BEACH PARK

2010 Aerial Imagery

Santa Rosa County, Florida

SHEET 1 OF 1

Legend

Project Location

Background:	ESRI World Imagery
Scale:	1"=1,000'
Created By:	JR
Approved By (or Quad):	DF
SWCA Project No.:	026376
Date Produced:	Oct 3, 2013

NAD 1983 StatePlane Florida North FIPS 0903 Feet

0 500 1,000 Feet

0 250 500 Meters

Figure 12-5. Navarre Beach Marine Park aerial photo.

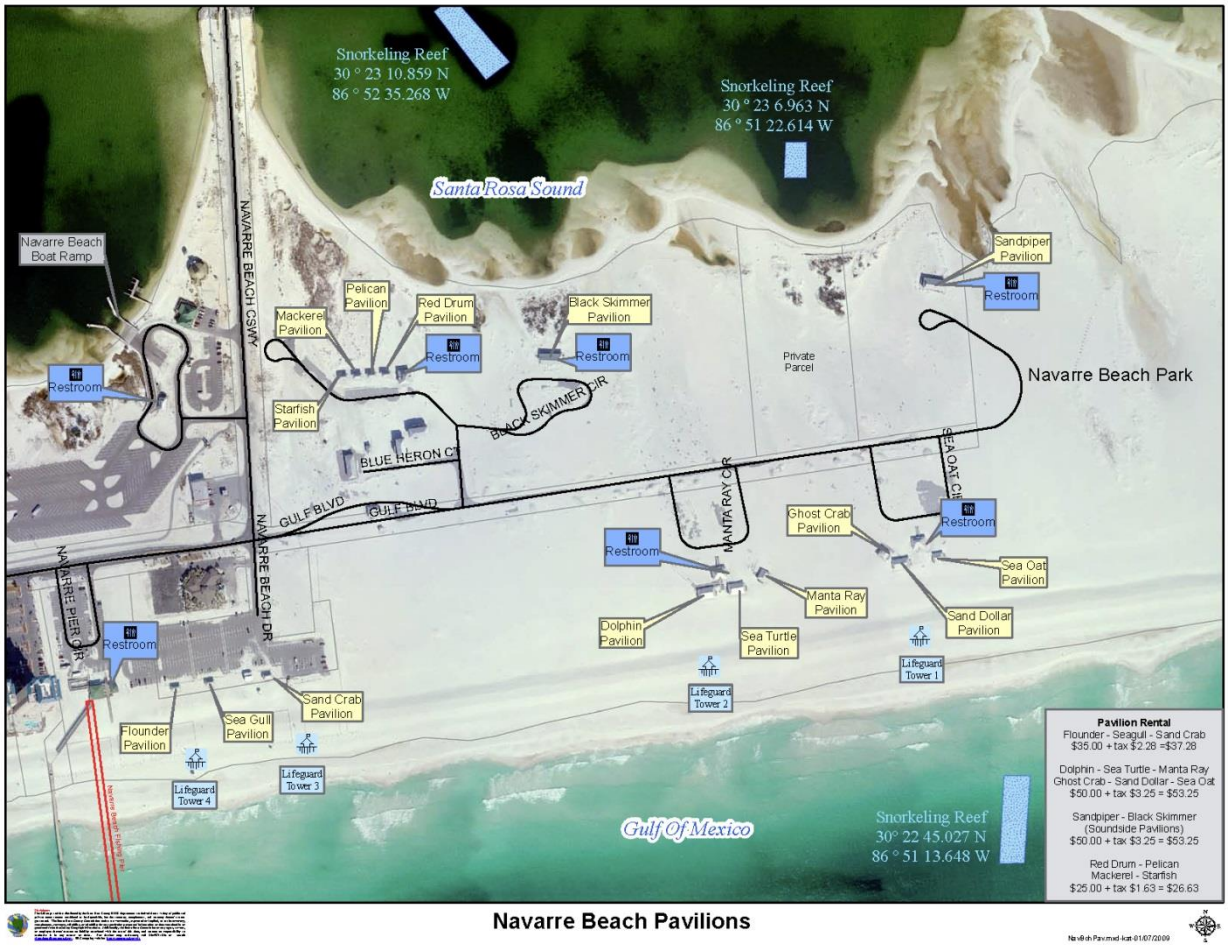

Figure 12-6. Navarre Beach Marine Park and existing facilities on Santa Rosa Island, Florida.

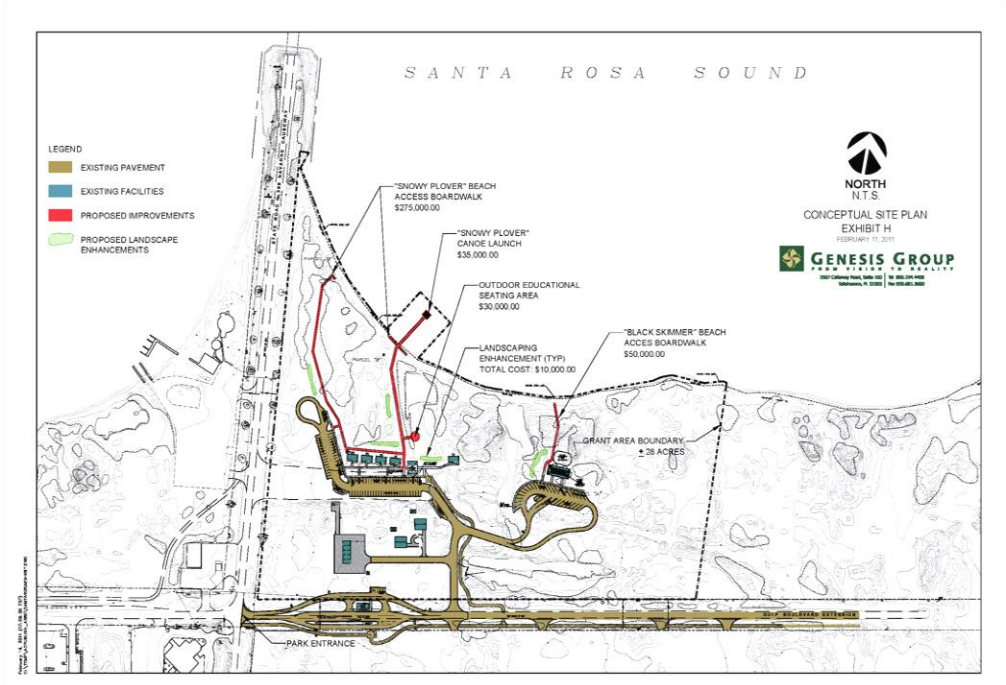

Figure 12-7. Conceptual plan for proposed soundside access improvements at Navarre Beach Marine Park on the Santa Rosa Sound.

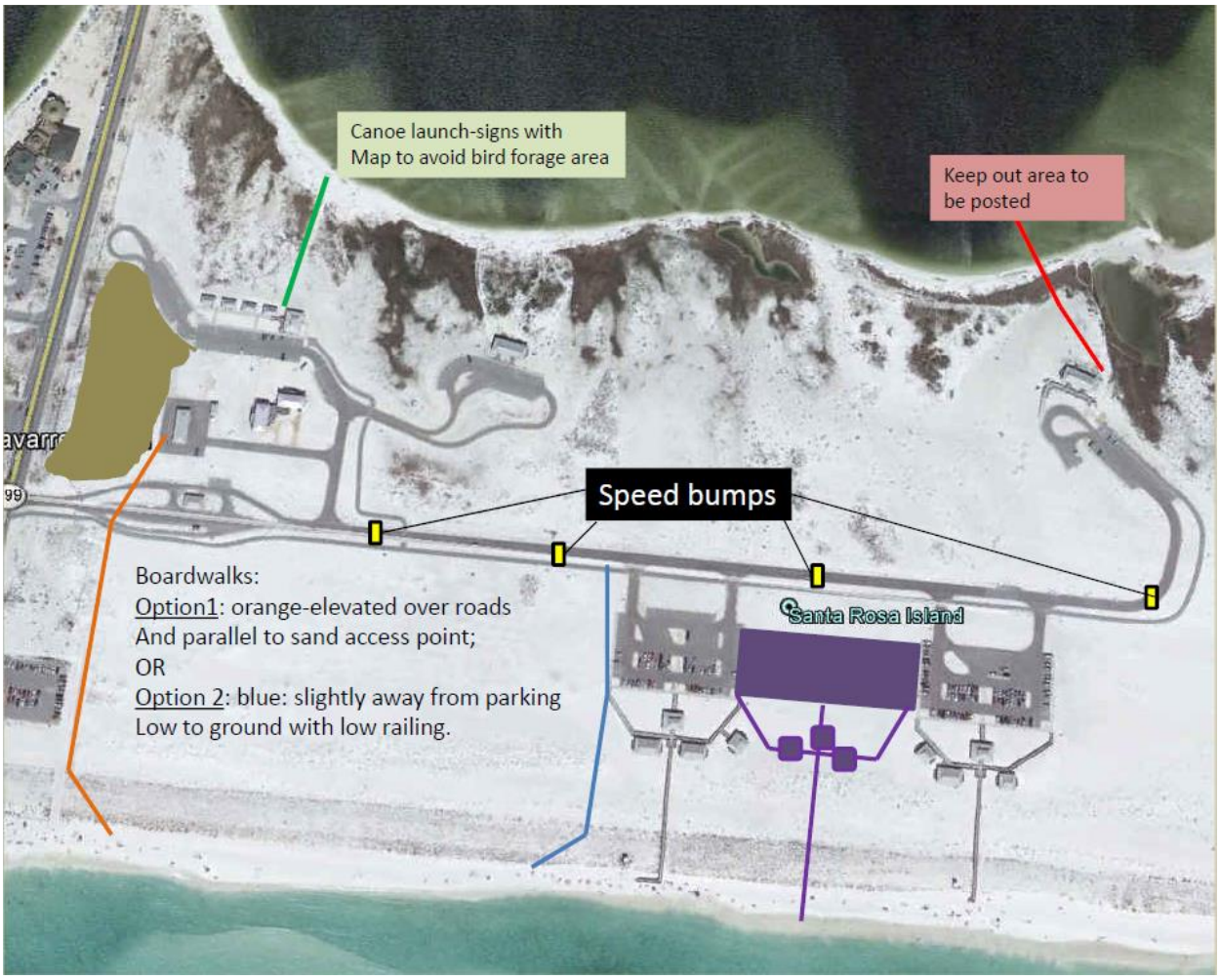

Figure 12-8. Conceptual plan for the proposed gulfside walkover complex structures at Navarre Beach Marine Park on the Gulf of Mexico side.

12.73.3 Construction and Installation

Conceptual plans have been developed for the construction of and improvements to infrastructure described below for each project elements.

Santa Rosa Sound Coastal Access and Dune Restoration Project

Santa Rosa Sound Coastal Access and Dune Restoration Project would improve infrastructure, restore dune habitat, and increase access to recreation opportunities in Navarre Beach Marine Park on the Santa Rosa Sound side of the park (north side). The project would include design, permitting, and construction of two new beach access boardwalks from existing pavilions and a new canoe and kayak launch and boardwalk on Santa Rosa Sound. This project would improve park infrastructure for visitors and increase access opportunities to the waters of the sound for recreational boaters. Lastly, the enhancement of the recreational experience would be complemented by the restoration of five patches of degraded dune habitat in the project area totaling approximately 1 acre (see Figure 12-8 above for the conceptual plan for the work to be addressed as part of this action).

As part of this effort, signage will be posted at the Santa Rosa sound side information kiosks and the canoe/kayak launch and the adjacent piping plover critical habitat that describes how visitors should avoid impacts to piping plovers and their critical habitat. If USFWSor FWC determines visitors are impacting piping plovers areas of high use will need to be roped and posted to prevent visitor access. Further, in areas identified in surveys where piping plovers and red knots congregate from August through May an exclusion zone will be placed around the birds and no work can occur within 150 feet of the exclusion zone until the birds move on their own.

The proposed dune restoration component of this action would involve planting native dune vegetation where there are gaps in the existing vegetation in the project area. Current estimates are that approximately 4,000 plants would be planted. Among the species to be planted are: *Uniola paniculata* (sea oats), *Panicum amarum* (panic grass), *Iva imbricata* (Dune elder), *Scoparium littorale* (blue steam), and potentially others. All plants would be grown from seeds or cuttings from the Alabama or North Florida coasts to ensure appropriate genetic stocks are used in the project. The planting of dune vegetation over approximately one acre would require some soil/sand removal to place the plants (e.g., following use of a hand auger) but excavated material would be incorporated on site to help support the plantings. Equipment associated with planting may be placed temporarily on sand near the dunes but not within the dunes. No movement of sand is envisioned for the planting project, but sand fencing may be installed to protect the plants for dune restoration purposes. Appropriate signs to designate and indicate the purpose of the conservation area may be used if necessary. If dunes are impacted during the proposed project, they shall be restored by planting the appropriate vegetation or installing sand fence. All dune vegetation to be used in dune restoration shall be native to the specific County dunes and grown from northwest Florida plant stock. If seedlings are to be planted, they shall be at least 1 inch by 1 inch with a 2.5-inch pot. Vegetation shall be planted with an appropriate amount of fertilizer and anti-desiccant material, as appropriate, for the plant size. Planting must be on 18-inch centers throughout the dune; however, 24-inch centers may be acceptable depending on the area to be planted. No irrigation lines or pipes shall be installed.

The extent of the in-water work with this component of the project is limited to the construction of the new canoe-kayak launch. Final project plans, including plans for this launch have not been developed. However, the conceptual designs in Figure 12-7 indicate this launch could be 120 feet long based on the relative length of the pier to structures that are already in place and measurable (e.g., the parking lot). A maximum of 30 piles would be required to construct this dock. These piles, which would be a maximum 8” diameter and made of wood, would be placed using water jetting or mechanical auguring. Final design and location of the pier would reflect, among other things, the results of a submerged aquatic vegetation (SAV) survey in the potential placement areas. This survey typically involves an initial review of aerial photos and existing seagrass maps. Initial results are then confirmed with an onsite visual survey typically conducted from a boat. In areas with visibility issues the assessment may involve attaching a small rake head to a line and dragging it through the area of interest to see if seagrasses are present. Snorkel assessments would then be used to verify results. Should SAV be identified in the potential project area where pilings would need to be placed, the conditions in the *Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat* (U.S. Army Corps of Engineers/National Marine Fisheries

Service, 2001) would be implemented. Among other elements this would require pilings for the canoe/kayak launch be placed a minimum of 10 feet apart.

During all in-water construction activity, the conditions and guidelines of the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006) would be implemented and adhered to. Significant aspects of these provisions include stopping operation of any equipment if sea turtles or smalltooth sawfish come within 50 feet of the equipment until the time when animals leave the project area of their own volition. In-water work would be completed using shallow draft workboats – generally skiffs less than 20 feet long. The maximum in-water period of work to place the pilings and initial cross members for the dock would be 3 months.

Gulfside Walkover Complex Coastal Access Project

The Gulfside Walkover Complex Coastal Access Project would create new infrastructure and increase access to recreation areas in Navarre Beach Marine Park on the Gulf of Mexico side of the park (south side). The project would involve design, permitting, and construction of a dune walkover complex, which would include a driveway, parking area, restroom facility, lifeguard tower, and a new pavilion.There are two dune walkover complexes already on site, with boardwalk connections to a dune walkover with access to the shoreline of the Gulf of Mexico. The project would improve public access to the beach and allowvisitors to safely access the shoreline in a convenient location. Figure 12-8 provides a revised conceptual plan for this action based on a site visit conducted in mid-February 2014 to review different options for providing the desired increase in Gulfside access facilities while minimizing impacts to wildlife.

Construction of the dune walkover complex would require the disturbance of several feet of soil depth. Pilings would need to be placed to support the new boardwalks, dune walkover, and kayak/canoe launch. Pilings would most likely be placed by mechanically auguring holes (using a bobcat-mounted auger) to place pre-formed pilings or place forms that would be filled with pumped concrete to produce new pilings. The depth of ground disturbance for this activity could be several feet for pilings and other structures placed to support the access boardwalk and kayak/canoe launch. The footprint of the disturbed area would depend on final design. Crossover construction would also follow and comply with the guidance in *Conservation Measures for Dune Walkover Construction* (USFWS, 2013).

The Florida Department of Environmental Protection (FDEP) and Santa Rosa County would build on experience with similar efforts, both in the state and at neighboring sites within Navarre Beach Marine Park, to ensure successful design and construction of the project. The proposed project would employ accepted protocols and BMPs in construction of a dune walkover complex, a driveway, parking area, restroom facility, lifeguard tower, pavilions, kayak/canoe launch, and beach access boardwalks. See Table 12-1 for the proposed construction footprint and lengths of boardwalks adapted from the conceptual designs shown in Figure 12-7 and Figure 12-8.

Table 12-1. Proposed Navarre Beach Marine Park construction footprint detail.

PROJECT AREA	INFRASTRUCTURE TYPE	LENGTH (FEET)	AREA (ACRES)	AREA (SQUARE FEET)
Santa Rosa Sound Side	Boardwalk	673	0.19	8,403
Santa Rosa Sound Side	Canoe Launch		0.01	542
Santa Rosa Sound Side	Educational Area		0.02	864
Santa Rosa Sound Side	Dune Restoration		1.0	43,560
Gulf Coast Side	Roadway and Parking		1.37	59,781
Gulf Coast Side	Dune Walkover and Boardwalk	848	0.16	6,949
Gulf Coast Side	Restroom		0.04	1,957
Gulf Coast Side	Pavilion		0.05	2,167
Gulf Coast Side	Pavilion		0.05	2,185
Gulf Coast Side	Pavilion		0.03	1,254
Gulf Coast Side	Lifeguard Tower		0.00	107
	Total	1,521	2.93	127,769

A range of hand tools and mechanized equipment would likely be used to complete construction of the access boardwalks and kayak/canoe launch areas. New pilings would need to be placed for the boardwalk and kayak/canoe launch. Plants would be placed at the dune restoration sites; methods used would likely be standard planting methods and would likely not involve significant disturbance or placement of permanent structures. Heavier equipment such as backhoes, graders, or other earth-moving equipment may be required for construction of access roads, a parking lot, pavilions, and dune walkover structures.

Assumed equipment usage and manpower requirements are detailed in Table 12-2.

Table 12-2. Assumed equipment usage and worker needs.

EQUIPMENT	NO. OF DAYS USED	NO. OF WORKER DAYS	ASSUMPTIONS
Dump truck	10	10	One week excavation; one week paving
Flatbed truck	52	52	One trip per week for 12 months
Concrete truck	5	5	One week use
Pickup truck	792	792	Three pickups per day for 12 months
Bobcat	20	20	One week excavation; one week paving; one week boardwalk work, one week dune work
Grader	5	5	One week grading
Paving machine	5	5	One week paving
Roller	5	5	One week paving
Trackhoe	5	5	One week excavation
Dozer	10	10	One week excavation; one week grading
Forklift	52	52	One delivery per week for 12 months

At least 10 small tools (e.g., nail guns, saws, drills) would be needed and would be operated approximately 8 hours per day, 5 days per week, for up to 12 months. A generator would be needed to power the small tools, which would operate for about 8 hours per day, 5 days per week, for up to 12 months.

Construction materials would be staged for building the boardwalk and boat launch. Construction materials will be staged in nearby developed/paved areas (e.g., existing parking lots to minimize habitat disturbance). As construction work proceeds, project areas may be isolated by construction fencing to prevent incidental access. This fencing material would be placed by hand-driving (e.g., with a sledge hammer or post driver) stakes as necessary. This fencing would be removed as soon as access controls are no longer required for an area.

12.73.3.1 Best Management Practices and Conservation Measures

The following conservation measures for dune walkover construction would be implemented at each site:

- Boardwalks. Dune walkover shall be constructed at a height (minimum 3 feet above grade) that will accommodate natural dune growth and associated vegetation.
- Equipment storage. No storage of equipment or materials shall occur on the beach or dunes throughout the entire year.
- Sand fence. Minimal use of sand fences is encouraged. When used, the fence must be used for restoration of dune blowouts. Post and rope are preferred for beach visitor access, pedestrian traffic control, and wildlife exclusion zones (i.e., bird wintering areas). If used for dune restoration, any fence shall be placed in a sea turtle–compatible design and be made of biodegradable material.
- Dune protection. No activity, except as needed to repair the walkover, shall occur on existing healthy dunes during any time of the year. Limit activities in this area to maintenance and restoration of the habitat. Use appropriate signs to designate and indicate the purpose of the conservation area, if necessary. If dunes are impacted, they should be restored by planting the appropriate vegetation or installing a sand fence.
- Native landscaping. Maximize the habitat quality of all non-developed areas and connect the habitats by landscaping with native dune plants. The landscaping plan should be reviewed and approved by the US Fish and Wildlife Service. A native plant list and a nursery supplier list have been provided.
- Dune vegetation. All dune vegetation to be used in dune restoration shall be native to the specific county dunes and grown from northwest Florida plant stock. Vegetation shall be planted with an appropriate amount of fertilizer (if needed) and anti-desiccant material, as appropriate, for the plant size. Planting must be on 18-inch centers throughout the created dune; however, 24-inch centers may be acceptable depending on the area to be planted. No irrigation lines or pipes shall be installed.
- Refuse. Install and maintain sturdy animal-proof garbage containers to prevent the invasion of house mice and predators (such as cats, raccoons, fox, and coyotes).
- Lighting. No lighting shall be used on the dune walkover.

In addition, Florida Administrative Rule 62B-41.007, “Design, Siting and Other Requirements,” requires additional measures to protect beaches and dunes, as described below:

To protect the environmental functions of Florida’s beaches, only beach compatible fill shall be placed on the beach or in any associated dune system. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and

coastal system. Such material shall be predominately of carbonate, quartz or similar material with a particle size distribution ranging between 0.062mm (4.0^{ϕ}) and 4.76mm (-2.25^{ϕ}) (classified as sand by either the Unified Soils or the Wentworth classification), shall be similar in color and grain size distribution (sand grain frequency, mean and median grain size and sorting coefficient) to the material in the existing coastal system at the disposal site and shall not contain:

1) Greater than 5 percent, by weight, silt, clay or colloids passing the #230 sieve (4.0^{ϕ});
2) Greater than 5 percent, by weight, fine gravel retained on the #4 sieve (2.25^{ϕ});
3) Coarse gravel, cobbles or material retained on the 3/4 inch sieve in a percentage or size greater than found on the native beach;
4) Construction debris, toxic material or other foreign matter; and
5) Not result in cementation of the beach.

If rocks or other non-specified materials appear on the surface of the filled beach in excess of 50% of background in any 10,000 square foot area, then surface rock should be removed from those areas. These areas shall also be tested for subsurface rock percentage and remediated as required. If the natural beach exceeds any of the limiting parameters listed above, then the fill material shall not exceed the naturally occurring level for that parameter.

In addition to construction BMPs and dune walkover conservation measures, the proposed sites are located within the “Coastal Construction Control Line” (CCCL). An essential part of Florida’s coastal management program, the CCCL program is designed to protect the coastal system from improperly sited and designed structures, which can erode, destabilize, or destroy the beach and dune system, with the overall goal of balancing development and the health of these natural systems (FDEP 2013a). The CCCL is defined as “that portion of the beach-dune system subject to severe fluctuations based on a 100-year storm surge, storm waves, or other forces such as wind, wave, or water level changes” (FDEP 2012b).The following environmental-related permit obligations/BMPs would be followed for the above referenced projects:

1) The contractor would use extreme care to prevent any adverse impacts to the beach and dune system, marine turtles, their nests, and habitat, or adjacent property and structures.
2) The construction would not result in removal or destruction of native vegetation that would either destabilize a frontal, primary, or significant dune or cause a significant adverse impact to the beach and dune system due to increased erosion by wind or water.
3) The construction would not direct discharges of water or other fluids in a seaward direction and in a manner that would result in significant adverse impacts. For the purposes of this rule section, construction shall be designed so as to minimize erosion-induced surface water runoff within the beach and dune system and to prevent additional seaward or off-site discharges associated with a coastal storm event.
4) Construction traffic shall not occur, and building materials shall not be stored on vegetated areas seaward of the control line unless specifically authorized by the permit.
5) The contractor shall not disturb existing beach and dune topography and vegetation except as expressly authorized in the permit, and would restore any disturbed topography or vegetation prior to completing the project.
6) All fill material placed seaward of the control line shall be sand that is similar in both coloration

and grain size to material already existing on the site.

7) The construction would not result in removal or disturbance of in situ sandy soils of the beach and dune system to such a degree that a significant adverse impact to the beach and dune system would result from either reducing the existing ability of the system to resist erosion during a storm or lowering existing levels of storm protection to upland properties and structures.
8) If not specifically authorized elsewhere in the permit, no operation, transportation, or storage of equipment or materials is authorized seaward of the dune crest or rigid coastal structure during the marine turtle nesting season. The marine turtle nesting season is May 1 through October 31 (FDEP 2012b).

12.73.3.2 Construction Time Frame

Preliminary design has been completed for the dune walkovers and canoe/kayak launch. Final design, permitting, and construction ofthe dune walkovers and canoe launch would take approximately 1 year. Implementation of the dune plantings could occur within 6 months. The following schedule is currently planned:

- Design Complete:Summer 2015
- Permitting Complete:FDEPCCCLand any local permits would be obtained once funding is secured
- Contract Bid:Summer 2015
- Construction Start:Summer/Fall 2015
- Construction Compete: Summer/Fall 2016

12.73.4 Operations and Maintenance

Long-term monitoring and maintenance of the improved facilities would be completed by Santa Rosa County as part of their regular public facilities maintenance activities. Funding for this post-construction maintenance is not included in the project cost and would be provided by Santa Rosa County.

As part of the project cost, monitoring would be conducted to ensure project plans and designs have been correctly implemented. Performance monitoring would evaluate the construction of the dune walkover complex, boardwalks, boat ramp, and dune revegetation to ensure successful completion as designed and permitted. Post-construction performance monitoring in the restored dunes would initially focus on plant survival. Plants that do not survive to 90 days post-planting would be replaced. At least 80% of plants must survive after 6 months or replanting would occur.

Following the construction performance monitoring period, human use and activity at the site would be monitored through the local government's regular maintenance activities. This assessment would not be directly undertaken by the Florida Trustees.

12.73.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts of their actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected environment and environmental consequences of the project.

12.73.5.1 No Action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.73.5.2 Physical Environment

12.73.5.2.1 Geology and Substrates

Affected Resources

The proposed project area is located on a barrier island with a gently sloping sandy beach and dune system, between the Gulf of Mexico and the Santa Rosa Sound. Santa Rosa Sound is a waterway in the Pensacola Bay system connecting Pensacola Bay and Choctawhatchee Bay in Florida. The project area has a gently sloping sandy beach and dune system along the Gulf of Mexico side of Navarre Beach Marine Park, and a gently sloping sandy beach and dune system on the Santa Rosa Sound side.

According to the Geologic Map of Florida, Navarre Beach Marine Park is located on the Quaternary system, Holocene series, Holocene sediments stratigraphic unit. This stratigraphic unit consists of quartz sands, carbonate sands and muds, and organics. These sediments occur near the present coastline, typically at an elevation 5 feet above mean sea level (MSL) or lower. General soil map units show that the entire site is characterized as medium fine sand and silt (FDEP 2013b, 2013c).

The FDEP Bureau of Beaches and Coastal Systems identifiesand manages beaches of the state that are critically eroding. Navarre Beach Marine Park is identified as a state-designated critically eroded beach. Acritically eroded area is a “segment of the shoreline where natural processes or human activity have caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreational interests, wildlife habitat, or important cultural resources are threatened or lost” (FDEP 2012a). Navarre Beach is the only critically eroded area in Santa Rosa County, and its erosion threatens both development and recreational interests, prompting dune restoration projects following hurricanes in 1995 and 1998. A beach restoration project was completed in 2006 (FDEP 2012a).

Environmental Consequences

Mechanized equipment and hand tools would be used to complete the construction of thedune walkover complex, boardwalks, pavilions, kayak/canoe launch, driveway, parking area, plantings, and lifeguard tower. Permit-required erosion control measures would be implemented at all of the proposed sites, and contractors would use BMPs to control erosion, turbidity, and minimize compaction.

Some excavation of soils would occur; however, adverse impacts to geology and substrates in the form of erosion and/or compaction would be minor, as disturbance would be detectable but short-term and localized because of the limited construction period and footprint and due to adherence to the construction BMPs outlined in the Construction and Installation section above. Erosion and/or

compaction may occur in localized areas, but would be minimized by the erosion control BMPs specified above.

12.73.5.3 Hydrology and Water Quality

Affected Resources

Watersheds

Northwest Florida has seven major watersheds, all of which have been identified as priorities under the Surface Water Management and Improvement (SWIM) program. Water quality protection is the underlying goal of SWIM, along with the preservation and restoration of natural systems and associated public uses and benefits (Northwest Florida Water Management District[NFWMD] 2011). According to the Northwest Florida Water Management District Plan, the project area is part of the Pensacola Bay watershed system.

The Pensacola Bay watershed system includes three major river systems (Escambia, Blackwater, and Yellow Rivers), which discharge into the watershed's major estuaries, which include Escambia Bay, Blackwater Bay, Pensacola Bay, Blackwater Bay, East Bay, and Santa Rosa Sound. The watershed encompasses approximately 450,000 acres, 30% of which are in the state of Florida. The system discharges to the Gulf of Mexico, primarily via Pensacola Bay. The watershed system has a rich history and supports an array of aquatic species, productive fisheries, aesthetic scenery, and considerable recreational opportunities over diverse ecological systems. It also provides important resources to commercial shipping and military activities. Broad issues for the Pensacola Bay watershed system include many years of point and nonpoint source pollution and habitat destruction. Cumulatively, these impacts have degraded the health and productivity of much of the Pensacola Bay system and have diminished the benefits it provides (NFWMD 2002).

Impaired Waters

Impaired waters are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. In 2002, 32% of Florida's lakes and 84% of its bays were impaired. The Santa Rosa Sound is listed as impaired by the Environmental Protection Agency (EPA) for mercury in fish tissue. A total maximum daily load (TMDL) has not yet been adopted for the Santa Rosa Sound and is listed as being needed by the EPA (EPA 2010; FDEP 2013e).

Wetlands

According to the National Wetlands Inventory, the proposed construction and development sites do not appear to overlap any wetlands, but are bordered by various types of multiple small wetlands to the east (Santa Rosa County 2013b). Figure 12-9 shows wetlands near the project site.

Floodplains

According to Federal Emergency Management Agency(FEMA) flood information, the project site is located in flood zones AE and VE (FEMA 2013a). Based on FEMA flood insurance rate maps (Panel 12113C0588G), the project appears to be located primarily in Zone AE on the Santa Rosa Sound side, with the Gulfside located in Zone VE. Zone AE is categorized as a high-risk area, defined as areas with a 1% annual chance of flooding over the life of a 30-year mortgage. Zone VE is categorized as a high-risk

coastal area, with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage (FEMA 2013b).

Environmental Consequences

With required mitigation in place, anticipated impacts to water quality, such as erosion caused by construction, would be minimal and short in duration at the proposed site. This project would use the construction BMPs outlined in the Construction and Installation section above to minimize erosion-related construction impacts as well as impacts to surface water, groundwater, and wetlands. Contractors would take special precautions when working within the CCCL and around coastal dune lake habitats. Floodplain status would not be affected. Adverse impacts to hydrology and water quality would therefore be minor and shortterm.

The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with the Navarre Beach Coastal Access and Dune Restoriaton project is currently being coordinated with the U.S. Army Corps of Engineers (USACE) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). Coordination with the USACE and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

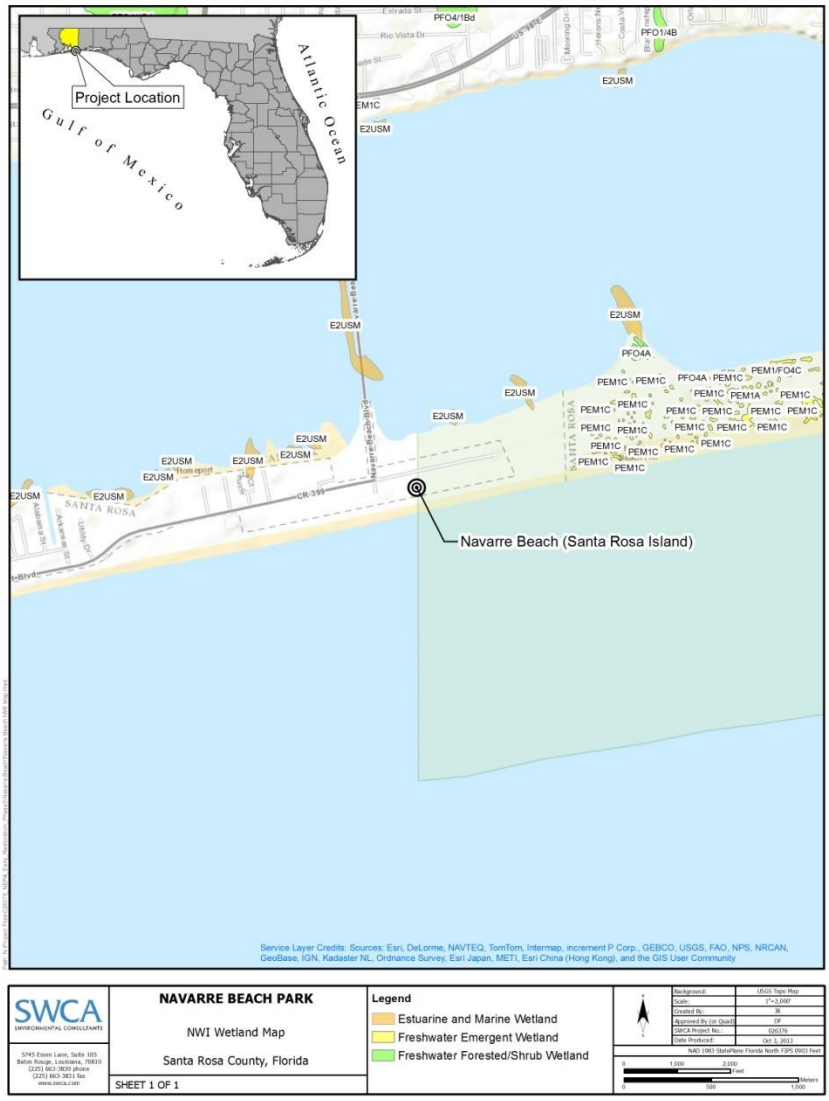

Figure 12-9. Wetlands near the Navarre Beach project site.

12.73.5.4 Air Quality and Greenhouse Gas Emissions

Affected Resources

The Clean Air Act (CAA) requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS have been set for six common air pollutants (also known as criteria pollutants)—particle pollution or particulate matter, ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead. Particulate matter is defined as fine particulates with a diameter of 10 micrometers or less (PM_{10}), and fine particulates with a diameter of 2.5 micrometers or less ($PM_{2.5}$). When a designated air quality area or airshed in a state exceeds a NAAQS, that area may be designated as a "nonattainment" area. Areas with levels of pollutants below the health-based standard are designated as "attainment" areas. To determine whether an area meets the NAAQS, air monitoring networks have been established and are used to measure ambient air

quality. The EPA also regulates 187 hazardous air pollutants (HAPs) that are known or suspected to cause cancer or other serious health effects.

Air quality in the Florida panhandle is in attainment with the NAAQS (EPA 2013).

Greenhouse Gases

Gases that trap heat in the air are called greenhouse gases (GHGs). The primary GHGs are carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases. Over the past century, human activities have released large amounts of GHGs into the atmosphere, which are contributing to global warming. Global warming is defined as the ongoing rise in global average temperature near the Earth's surface. Global warming is causing climate patterns to change.

According to the EPA, the average annual temperature in the southeast portion of the United States has increased by approximately 2.0 degrees Fahrenheit(°F) since 1970. Winters, in particular, are getting warmer, and the average number of freezing days has decreased by 4 to 7 days per year since the mid-1970s. Most areas are getting wetter; autumn precipitation has increased by 30% since 1901 (EPA 2013). In many parts of the region, the number of heavy downpours has increased. Despite the increases in fall precipitation, the area affected by moderate and severe drought has increased since the mid-1970s (EPA 2013).

Average annual temperatures in the region are projected to increase from 4 to 9°F by 2080. Hurricane-related rainfall is projected to continue to increase. Models suggest that rainfall would arrive in heavier downpours, with increased dry periods between storms. These changes would increase the risk of both flooding and drought. The coasts would likely experience stronger hurricanes and sea level rise. Storm surge could present problems for coastal communities and ecosystems (EPA 2013).

Total GHG emissions in the state of Florida from 1990 to 2007 have increased at an average rate of 2.1% per year. Total GHG emissions in 2007 were 290 million metric tons of CO_2 equivalent ($MMTCO_2E$). In 2007, 91 percent of GHG emissions in Florida were CO_2 emissions (FDEP 2010).

Environmental Consequences

Project implementation would require the use of heavy mechanized equipment, which would lead to temporary air pollution (e.g., criteria pollutants, HAPs, GHGs) due to emissions from the operation of construction vehicles and equipment. Any air quality impacts (such as the release of ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, or particulate matter) that would occur would be measurable but minor as they would not exceed the NAAQS due their localized nature, short-term duration, and the small size of the project. Available BMPs would be employed to prevent, mitigate, and control potential air pollutants during project implementation. No air quality–related permits would be required.

The major pieces of construction equipment that would contribute to GHG emissions for this project are listed in Table 12-3, below, along with their estimated emissions. GHG emissions from the remaining (hand) equipment would be negligible. The emissions estimates are based on the operating assumptions in Table 12-2.

Based on the assumptions detailed in Table 12-3, the project would generate approximately 479 metric tons of GHGs over the duration of all phases. The following mitigation measures have been identified to reduce or eliminate GHG emissions from the project.

- Shut down idling construction equipment, if feasible.
- Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.
- Encourage the use of the proper size of equipment for the job to maximize energy efficiency.
- Encourage the use of alternative fuels for generators at construction sites, such as propane or solar, or use electrical power where practicable.

The project would have short-term, minor impacts but no long-term impacts on GHG emissions. Mitigation measures would minimize GHG emissions.

At the completion of the project, visitor use (and therefore vehicle use) could increase due to the improved access and facilities. Increased exhaust emissions could affect air quality over the long term. However, adverse impacts to air quality are expected to be minor because management actions could be taken if necessary to limit park visits, and because they would be negligible in the context of the total number of miles travelled in the regional airshed. In addition, park visitors would likely be parked for the duration of their visit, therefore only producing emissions when coming and going from the site.

Table 12-3. Greenhouse Gas impacts of the proposed project for major construction equipment.

EQUIPMENT DESCRIPTION	TOTAL HOURS USED	CO_2 FACTOR-MT*/100 HRS	CO_2 (METRIC TONS)	CH_4** FACTOR-MT/100 HRS	CH_4 (MT)	N_2O*** FACTOR-MT/100 HRS	N_2O (MT)	TOTAL CO_2 (MT)
Dump Trucks/ Flatbed Truck	496	1.7	8.4	0.5	2.5	7.2	35.7	46.6
Concrete Trucks	40	1.7	0.7	0.5	0.2	7.2	2.9	3.8
Line Truck	-	1.25	0.0	0.4	0.0	5.5	0.0	0.0
Pickup Trucks	6,336	1.1	69.7	0.35	22.2	4.4	278.8	370.7
Bobcat (bare and with auger mount)	160	2.65	4.2	0.9	1.4	10.6	17.0	22.6
Moto Grader	40	2.25	0.9	0.65	0.3	1.08	0.4	1.6
Milling Machine	-	2.55	0.0	0.85	0.0	10.2	0.0	0.0
Paving Machine	40	2	0.8	0.5	0.2	8	3.2	4.2
Rollers	40	2	0.8	0.5	0.2	8	3.2	4.2
Trackhoe (with bucket/thumb or vibratory attachments)	40	2.55	1.0	0.85	0.3	10.2	4.1	5.4
Dozer	80	2.25	1.8	0.65	0.5	1.08	0.9	3.2
Forklift	416	2.25	9.4	0.65	2.7	1.08	4.5	16.6
Ditchwitch	-	0.75	0.0	0.35	0.0	4	0.0	0.0
Crane (bare and with clamshell attachment)	-	2.55	0.0	0.85	0.0	10.2	0.0	0.0
Tug Boat (8 trips)	-	65	0.0	20	0.0	260	0.0	0.0
Georgia Buggies	-	1.35	0.0	0.4	0	5.75	0.0	0.0
Total	**7,688**							**479**

*mt = metric tons
**Ch_4 = methane
***N_2O = nitrogen dioxide

12.73.5.5 Noise

Affected Resources

Noise can be defined as unwanted or nuisance sound. The Noise Control Act of 1972 (42 USC 4901 to 4918) was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. Amplitude is the magnitude of a sound and is usually expressed in decibels (dB), a dimensionless ratio of sound pressure to a reference pressure. The A-weighted decibel (dBA) is the adjusted unit of sound used to describe the human response to noise from industrial and transportation sources. The threshold of hearing is 0 dB. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear. Table 12-4 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the project. Noise-sensitive receptors in the project area include tourists staying at hotels near the site, recreational users, and wildlife. Noise levels in the project area vary depending on the season, time of day, number and types of noise sources, and the distance of the receptor from noise sources. Existing ambient noise levels in Navarre Beach Marine Park are generally low and primarily result from vehicle traffic, tourism, and recreational boating. The proposed project location is not adjacent to any residential neighborhoods. The project area is located approximately 0.25 mile away from the closest hotels, vacation rental homes, and condominiums in the resort community that extends approximately 4 miles to the west. Open space constitutes Santa Rosa Island to the east for approximately 20 miles until reaching the town of Destin. Existing sources of noise in the project area are from recreational activities, nearby hotels and vacation rentals (lawn care, etc.), boats and other watercraft on the Gulf of Mexico and in Santa Rosa Sound, traffic on nearby roads and highways, overhead aircraft, and ambient natural sounds such as wind, waves, and wildlife.

Table 12-4. Typical noise levels for common sources.

NOISE SOURCE OR EFFECT	SOUND LEVEL (DBA)
Jet take-off (at 25 meters)	150
Rock-and-roll band	110
Jet flyover at 1,000 feet	100
Truck at 50 feet	80
Gas lawnmower at 100 feet	70
Normal conversation indoors	60
Moderate rainfall on foliage	50
Refrigerator	40
Bedroom at night	25

Source: Adapted from Purdue 2013; U.S. Department of Energy (1986).

Environmental Consequences

Instances of increased noise would occur during project and construction activities at the site. Construction activities, including use of heavy equipment such as graders and backhoes and smaller handheld tools such as saws and nail guns, would cause an increase in noise during the day for the duration of construction and would be heard at noise-sensitive receptors near the site. Construction equipment noise is known to disturb fish, marine mammals, and nesting shorebirds. Construction noisewould also negatively affect tourists in areas near project construction activities.

Standard state contract provisions include restricting work to weekdays, normally from 7am to 7pm unless in a hospital or strictly residential area. Contractors are normally not allowed to work outside these limits unless it is for safety, traffic, or highly restricted schedules. In addition, state contracts require that all equipment used on-site must be properly muffled and in good repair. As a result, noise impacts are expected to be minor. The noise impacts would be short term, since the construction period is anticipated to last 12 months, but would be mitigated due to adherence to state-required construction BMPs. Negative impacts to the soundscape would be of a level that is likely to attract visitor attention but not cause changes in visitor or tourist activities.

After completion of the project, the soundscape would return to pre-project levels. The potential for increased vehicle traffic exists due to the improved access and facilities at the site, which would result in a slight increasein noise levels in the vicinity. Overall, long-term noise impacts from traffic, beach use, boating, picnicking, and other recreational activities would remain minor.

12.73.5.6 Biological Environment

The Gulf of Mexicois one of the nation's most valuable ecosystems. Florida's barrier islands, estuaries, coral reefs, beaches, seagrass meadows, coastal wetlands, and mangrove forests are world-renowned natural resources and attractions. These habitats provide a range of ecosystem services including fisheries, wildlife-related activities, food production, energy production, infrastructure protection, and recreational opportunities (Gulf Coast Ecosystem Restoration Task Force [GCERTF] 2011). In Santa Rosa County,beaches are an integral part of the coastal system and represent one of the most valuable natural resources in the county, providing protection to adjacent upland properties, recreational areas, and habitat for wildlife.

12.73.5.7 Living Coastal and Marine Resources

Vegetation

Affected Resources

The Florida Gap Project uses the recently enacted United States National Vegetation Classification System (NVCS) to classify its vegetation map of the state of Florida. The land cover mapping technique developed by the Florida Fish and Wildlife Cooperative Unit synergizes existing geospatial information with current Landsat imagery and ground-truthed data (Florida Cooperative Fish and Wildlife Research Unit [FCFWRC] 2000). Currently, the park hosts little vegetation and is primarily made up of sand and dune environment. The only protected species of vegetation that could occur in the project area is the Gulf Coast lupine (*Lupinus westianus*), which is listed as "threatened" in the state of Florida. The Gulf

Coast lupine is a terrestrial plant whose habitat consists of beach dunes, scrub disturbed areas, roadsides, and blowouts in dunes.

Environmental Consequences

The proposed infrastructure improvements would have minor adverse impacts to vegetation because the park hosts little vegetation and is primarily made up of a sand and dune environment. Impacts on existing vegetation would be detectable but would not alter overall natural conditions and would be limited to localized areas. Infrequent disturbance and destruction of some individual plants would be expected, but would not affect local or range-wide population stability. The opportunity for the increased spread of non-native species would be temporary and localized, and is not expected to displace native species populations and distributions. Infrequent or one-time disturbance to locally suitable habitat could occur, but sufficient habitat would remain functional at both the local and regional scales to maintain the viability of the species. If Gulf Coast lupine were to occur in the project area, measures would be taken in coordination with the USFWS to adequately manage the species in the context of the proposed project.

The proposed dune restoration project would have major beneficial impacts to vegetation on the Santa Rosa Sound side as a result of planting 4,000 native dune plant species where there are gaps in the existing vegetation in the project area.

Wildlife and Wildlife Habitat

Affected Resources

The project is located at existing coastal access sites in an existing county marine park in a Gulf Coast beach, dune, and urban environment. Santa Rosa Sound and its prolongation, The Narrows, form a 37.5-mile-long inland waterway connecting Pensacola Bay with Choctawhatchee Bay. It is separated from the Gulf of Mexico by the 40-mile-long, narrow barrier island, Santa Rosa Island, on which Navarre Beach Marine Park sits. The non-ESA protected Santa Rosa beach mouse (*Peromyscus polionotus leucocephalus*) occurs within the project area. Santa Rosa beach mouse (P.p. leucocephalus), like other beach mice, is a small, white and buff colored mouse that occupies coastal dune habitat during all life stages of its life cycle. The range of the Santa Rosa beach mouse is limited to Santa Rosa Island, Florida including: areas near East Pass, Fort Walton Beach, Navarre Beach, Fort Pickens, Eglin Air Force Base, and east of Pensacola Beach. Currently, this species is not afforded protection under the ESA, like other beach mice subspecies, because of landowner implementation of voluntary conservation measures, and protected areas of habitat.

Environmental Consequences

The project would be located at existing coastal access sites in an existing county marine park in an urban environment. Although common wildlife may be disturbed by construction activities, these species live in an urban environment where ambient noise levels are high. Habitat conditions after construction would be similar to existing conditions, and no long-termimpacts to common wildlife would be anticipated. Construction and operations would cause only minimal alteration and/or damage to habitats, and therefore a minor, short-term impact. The dune habitat in the project area would be moderately improved over the longterm as a result of dune restoration.

The impacts to the Santa Rosa beach mouse would be short-term and minor because of the implementation of the following conservation measures described in Chapter 12 Appendix A: Dune Walkovers, Construction, and Other Measures for Beach Mice. FDEP Wetland and Environmental Resource field permits would require BMPs for turbidity and erosion control to be implemented. This would help minimize the damage and loss of habitats through the same mitigation measures mentioned in the Construction and Installation section above.

Marine and Estuarine Fauna

Affected Resources

The Santa Rosa Sound and Gulf of Mexicoprovide habitat for numerous fish and other marine species. The value of marine habitats at the project site has been affected by population growth, development, and wastewater disposal. Increased coastal development,in particular, has contributed to displaced habitats, loss of wetlands, and greater amounts of stormwater runoff entering the sound and its tributaries (NFWMD 2011). Nonetheless, the marine environment at the project site provides habitat to an array of aquatic species including spotted seatrout(*Cynoscion nebulosus*), sheepshead (*Archosargus probatocephalus*), and southern flounder(*Paralichthys lethostigma*). The sound supports populations of Spanish mackerel (*Scomberomorus maculates*), crevalle jack (*Caranx hippos*), king mackerel (*Scomberomorus cavalla*), and gag grouper (*Mycteroperca microlepi*s). Red drum (*Sciaenops ocellatus*) can be found in inshore inlets and channels. King mackerel, cobia (*Rachycentron canadum*), amberjacks (*Seriola* spp.), grouper, and red snapper (*Lutjanus campechanus*) are present in artificial reefs, ledges, and offshore high areas (Santa Rosa Sound 2013). Benthic organisms such as bivalves, gastropods and other mollusks, anemones, amphipods, annelids, crustaceans, and echinoderms are also abundant in these waters (Florida Fish and Wildlife Conservation Commission [FWC] 2001).

Environmental Consequences

Fish and benthic organisms are not expected to be impacted by the Gulf side project because construction would take place only in upland areas and because of the BMPs listed in the Construction and Installation section above. Construction on the Santa Rosa Sound side, however, includes building a dock onto the water. Construction activities are expected to have a minor, short-term impact on fish due to the small project footprint and short (2-month) temporal time scale, in addition to adherence to BMPs listed above. Over the long term, increases in recreational swimming, canoeing, and kayaking are expected to occur due to the improved access and facilities at the site. These recreational activities are generally of low impact for fish and are expected to have a negligible impact on fish populations.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

Affected Resources

The Gulf Coastbeaches host a wide variety of resident and migratory birds, especially during spring and fall migrations. Gulf sturgeon (*Acipenser oxyrinchus desotoi*), West Indian manatees (*Trichechus manatus latirostris*), smalltooth sawfish (*Pristis pectinata*), sea turtles (Kemp's ridley [*Lepidochelys kempii*], loggerhead [*Caretta caretta*], leatherback [*Dermochelys coriacea*], green [*Chelonia mydas*]),and Hawksbill [*Eretmochelys imbricata*], piping plover [*Charadrius melodus*], and red knot [*Calidris canutus rufa]*may occur within or near the project location. The project is located near designated piping plover and Gulf sturgeon critical habitat (see Figure 12-10).

There are no wading bird rookeries and bald eagles are not present at the site; however, solitary nesting birds and other migratory birds ocurr in the project area. Additional state-listed species may also occur in the area. Nearby wetlands may attract some avian species, and the small hammock communities would receive some periodic use by birds. No bird rookeries or other nests are known to be present at the site.

The Trustees have reviewed the proposed projects for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Santa Rosa County, Florida3. **Table 12-5** presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from the projects' implementation.

[3] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

Table 12-5. Potential Impacts to Species/Critical Habitats Managed by DOI

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle, Hawksbill turtle, Kemp's ridley turtle; Leatherback turtle, Loggerhead turtle	Consultation has been initiated with NMFS, the agency that has jurisdiction to review impacts to sea turtles in the estuarine and marine environments. Sea turtles are not known to nest on the sounds side of Navarre beach but can nest on the Gulf side. A large berm that cannot be navigated by sea turtles separates the majority of the action area from sea turtle habitat. Walkovers are the only proposed construction that could occur in sea turtle habitat. Increased visitor use is not expected to change sea turtle nesting behaviors at this project location. Nesting at the project site is currently very limited, if it occurs at all, because the beach is very narrow and currently there is little habitat between the high water mark and the berm which is where turtles need to nest to be successful (nests below high water are inundated frequently and not expected to survive). No lighting is proposed. Due to the sea turtle existing behaviors at the site and the proposed conservation measures, the Trustees expect any potential impacts to be minimized such that they are insignificant and discountable. No designated or proposed critical habitat for sea turtles occurs within the action area; therefore, none will be adversely affected or modified.
West Indian manatee	The county in the project area are not part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the project waters (i.e., during kayak/canoe launch construction). The main risk to manatees during implementation of this project would come from debris and noise during construction of the canoe/kayak launch on the sound side of the action area. Based upon the implementation of conservation measures, the Trustees expect any impacts to be minimized to an insignificant or discountable level.
Piping plover Piping plover critical habitat	The main risk to Piping plovers is from human disturbance while resting or foraging in habitats adjacent to work areas. The proposed project could result in short term increases in noise which could startle individuals, though the Trustees would expect normal activity to resume within minutes or cause the plovers to move to a nearby area. Increased visitor use in the project area could cause disturbance to piping plovers as just described or via increased predation. Because other foraging/resting habitats are nearby (less than two miles, critical habitat within 400 meters) the Trustees would expect this temporary displacement to be within normal movement patterns. Conservation measures will further minimize impacts to this species such that they are insignificant and discountable. Piping plover critical habitat is within 400 meters of the action area though it is not directly adjacent to or within the action area. PCE's for critical habitat include: 1) Intertidal flats with sand or mud flats (or both) with no or sparse emergent vegetation. 2) Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting piping plovers. Such sites may have debris, detritus, or microtopographic relief (less than 50 cm above substrate surface) offering refuge from high winds and cold weather. 3) Important components of the beach/dune ecosystem include surf-cast algae, sparsely vegetated back beach and salterns, spits, and washover areas. 4) Washover areas are broad, unvegetated zones, with little or no topographic relief, that are formed and maintained by the action of hurricanes, storm surge, or other extreme wave action. The proposed project will not alter any PCE's within the critical habitat as activities will not extend into critical habitat or influence the way PCE's are formed or maintained. Signage will be posted to advise visitors to avoid the critical habitat area. Therefore no destruction or adverse modification of piping plover critical habitat is anticipated.
Red knot	The main risk to Red knots is from human disturbance while resting and foraging in habitats adjacent to work areas. The proposed project could result in short term increases in noise which could startle individuals, though the Trustees would expect normal activity to resume within

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
	minutes or cause the red knots to move to a nearby area. Increased visitor use in the project area could cause disturbance to piping plovers as just described or via increased predation. Because other foraging/resting habitats are nearby (less than two miles) the Trustees would expect this temporary displacement to be within normal movement patterns. Conservation measures will further minimize impacts to this species such that they are insignificant and discountable.
Gulf sturgeon	NMFS was consulted on Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon was not considered in the consultation with the USFWS.
Santa Rosa beach mouse	The Santa Rosa beach mouse is not a federally listed species but its consideration is encouraged by the Panama City Field Office and the State of Florida when relevant as is the case for this project. The main risk to the Santa Rosa beach mouse would be the collapsing of existing burrows during construction of dune walkovers and increase in predators due to increased visitor use.

In addition to the protected species managed by USFWS, the Trustees reviewed the proposed projects and associated actions for potential impacts to protected species managed by NOAA.

Based on the Trustees' reviews of project materials (Spring 2013) in coordination with representatives from NOAA's Protected Resource Division (PRD) in the South East Regional Office (SERO), the NOAA Restoration Center determined that the Gulfside Walkover Complex Coastal Access project falls outside of NMFS Endangered Species Act (ESA) jurisdiction, as it does not contain suitable habitat for species managed by NMFS. As a result, the project did not require further ESA evaluation from NOAA.

For the Santa Rosa Sound Coastal Access and Dune Restoration Project, which does involve in-water work, the following protected species (status indicated) and their associated critical habitat, if appropriate, managed by NMFS were considered:

- Gulf Sturgeon, *Acipenser oxyrinchus desotoi*, Threatened
- Smalltooth Sawfish, *Pristis pectinata,* Endangered
- Green Sea Turtle, *Chelonia mydas*, Endangered
- Loggerhead Sea Turtle, *Caretta caretta*, Threatened
- Hawksbill Sea Turtle, *Eretmochelys imbricata*, Endangered
- Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
- Kemp's Ridley Sea Turtle, *Lepidochelys kempii*, Endangered

Additional discussion of some of these species managed by USFWSand NMFS follows.

Sea Turtles and Marine Mammals

There are five species of endangered or threatened sea turtles that may occur or have potential to occur in the project area. These are the green turtle, hawksbill turtle, Kemp's ridley turtle, leatherback turtle, and loggerhead turtle. Sea turtles forage in the waters of the coastal Florida panhandle region and have the potential to occur in the waters where in-water work is proposed. Although the beach is in a fairly developed area, potentially suitable sea turtle nesting habitat along the sandy beach is present.

Twenty-two marine mammals are native to the Gulf of Mexico: 21 pelagic species of whales and dolphins, and the West Indian manatee.The endangered West Indian manatee has the potential to occur in the project area waters. Manatees typically seek out shallow seagrass areas as preferred feeding

habitat. Additionally, bottlenose dolphins (*Tursiops*) populations are known to migrate into bays, estuaries, and river mouths, and could be located in the proposed project area (NMFS 2013). Bottlenose dolphins have been observed entering and leaving nearshore coastal waters (NMFS 2012).

Gulf Sturgeon

Both the Gulf Coast near the project site and the Santa Rosa Sound are considered critical habitat for the Gulf sturgeon (see Figure 12-10). Gulf sturgeons are restricted to the Gulf of Mexico and its drainages, occurring primarily from the PearlRiver, Louisiana to the Suwannee River, Florida (NMFS 2009). Adult fish reside in rivers for 8 to 9 months each year and in estuarine or Gulf of Mexico waters during the 3 to 4 cooler months of each year (NMFS 2009). Important marine habitats include seagrass beds with sand and mud substrates (Mason and Clugston 1993).

Gulf sturgeon critical habitat was jointly designated by the NMFS and USFWS on April 18, 2003 (50 Code of Federal Regulations [C.F.R.] 226.214). The proposed project site is located adjacent to Critical Habitat for Gulf sturgeon. Critical habitat was designated based on seven primary constituent elements (PCEs) essential for its conservation, as defined in the 2003 *Federal Register*and listed below. PCE's 1, 5, 6, and 7 are present in the project area. The PCE's are:

1. Abundant food items, such as detritus, aquatic insects, worms, and/or mollusks, within riverine habitats for larval and juvenile life stages; and abundant prey items, such as amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks, and/or crustaceans, within estuarine and marine habitats and substrates for subadult and adult life stages;
2. Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone, or hard clay;
3. Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths; these are believed necessary for minimizing energy expenditure during freshwater residency and possibly for osmoregulatory functions;
4. A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larval staging;
5. Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages;
6. Sediment quality, including texture and chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and
7. Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g., an unobstructed river or a dammed river that still allows for passage).

Piping Plover

Piping plovers are federally threatened, but considered endangered by the state of Florida. Piping plovers do not breed in Florida but winter along the Gulf Coast and can be found on open, sandy beaches and on tidal mudflats and sandflats along the Gulf Coast. Their diet consists of insects, crustaceans, and marine worms. The main threat to piping plovers is habitat loss, and beach development has reduced its available wintering habitat. Protection from disturbance of high-use wintering habitat is critical due to the rarity of the species and fragile nature of its habitat. Disturbance by humans and domestic animals during wintering and migration can cause the birds to increase their energy expenditure needed for migration, nesting, and brood reading. Florida protects piping plover wintering grounds by posting signs in known wintering grounds (FWC 2012). The project is located near designated piping plover critical habitat (see Figure 12-10). PCE's for piping plover critical habitat include:1) Intertidal flats with sand or mud flats (or both) with no or sparse emergent vegetation. 2) Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting piping plovers. Such sites may have debris, detritus, or microtopographic relief (less than 50 cm above substrate surface) offering refuge from high winds and cold weather. 3) Important components of the beach/dune ecosystem include surf-cast algae, sparsely vegetated back beach and salterns, spits, and washover areas. 4) Washover areas are broad, unvegetated zones, with little or no topographic relief, that are formed and maintained by the action of hurricanes, storm surge, or other extreme wave action.

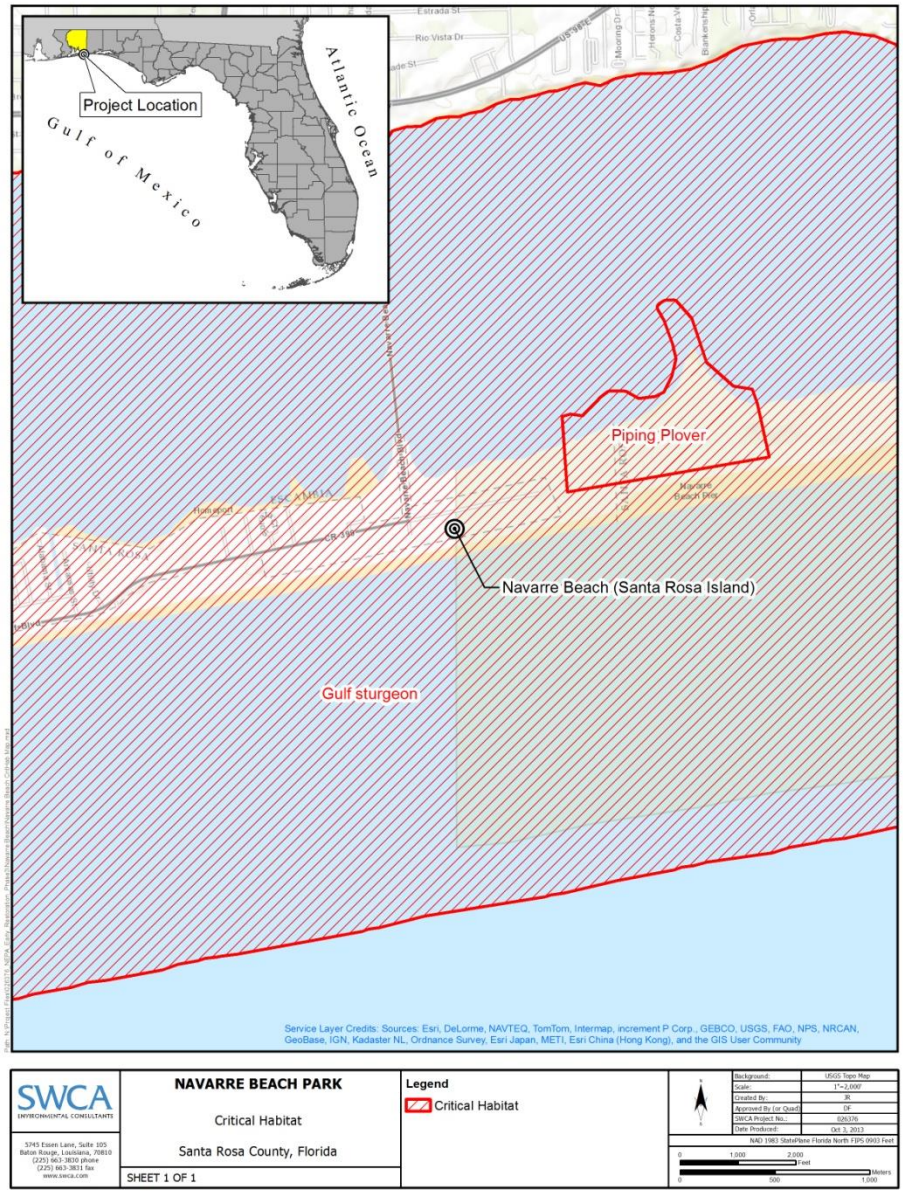

Figure 12-10. Project area Gulf sturgeon and piping plover critical habitat.

Red Knot

The red knot, a federal proposed species, uses the state of Florida both for wintering habitat and migration stopover habitat for those that continue to migrate down to specific wintering locations in South America (Niles et al. 2008). Wintering and migrating red knots forage along sandy beaches, tidal mudflats, saltmarshes, and peat banks (Harrington 2001). Observations indicate that red knots also forage on oyster reef and exposed bay bottoms, and roost on high sand flats, reefs, and other sites protected from high tides (Niles et al. 2008). In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans. Threats to wintering and stopover habitat in Florida include shoreline development, hardening, dredging, deposition, and beach raking (Niles et al. 2008).

Essential Fish Habitat

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column.

Based on the Trustees' reviews of project materials (Spring 2013) in coordination with representatives from NOAA's Habitat Conservation Division (HCD) in the South East Regional Office (SERO), the NOAA Restoration Center determined that the Gulfside Walkover Complex Coastal Access Project will not affect EFH because there is no EFH in the project area. As a result, the project did not require further EFH evaluation.

Information on designated EFH in the Gulf of Mexico was obtained in September, 2013 from the NMFS' EFH web site at *http://www.habitat.noaa.gov/protection/efh/newInv/index.html*. **Table12-6** provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the the Santa Rosa Sound Coastal Access and Dune Restoration Project.

Table12-6. Federally managed fisheries with designated Essential Fish Habitat (EFH) in the proposed project area.

EFH CATEGORY	SPECIES
Atlantic Highly Migratory Species	
	Atlantic Sharpnose Shark-Neonate
	Bull Shark-Adult
	Bull Shark-Juvenile
	Sandbar Shark-Adult
	Scalloped Hammerhead Shark-Neonate
	Silky Shark-All
	Spinner Shark-Adult
	Spinner Shark-Juvenile
	Tiger Shark-Juvenile
Coastal Migratory Pelagics of the Gulf of Mexico AND South Atlantic	
	Spanish Mackerel
	Cobia
	King Mackerel
Gulf of Mexico Red Drum	
	Red Drum
Gulf of Mexico Shrimp	
	Pink Shrimp
	White Shrimp
	Brown Shrimp
Reef Fish Resources of the Gulf of Mexico	
	Lane Snapper
	Lesser Amberjack
	Mutton Snapper
	Nassau Grouper
	Queen Snapper

EFH CATEGORY	SPECIES
	Red Grouper
	Red Snapper
	Scamp
	Silk Snapper
	Snowy Grouper
	Speckled Hind
	Tilefish
	Vermilion Snapper
	Warsaw Grouper
	Wenchman
	Yellowedge Grouper
	Yellowfin Grouper
	Yellowmouth Grouper
	Almaco Jack
	Banded Rudderfish
	Black Grouper
	Blackfin Snapper
	Blueline Tilefish
	Cubera Snapper
	Gag
	Goldface Tilefish
	Gray (Mangrove) Snapper
	Gray Triggerfish
	Greater Amberjack
	Hogfish

Migratory Birds and Bald Eagles

There are numerous state of Florida–listed bird species with potential for occurrence in and around the project site. These include Arctic peregrine falcon (*Falcoperegrinus tundrius*), least tern, southeastern American kestrel (*Falco sparverius paulus*), Florida sandhill crane (*Grus canadensispratensis*), American oystercatcher, and southeastern/Cuban snowy plover (*Charadrius alexandrinus tenuirostris*).Migratory bird species are protected under the MBTA. The nesting season in Florida is from February 15 to August 31. General precautions would be implemented to avoid feeding and resting birds while operating equipment to minimize overall disturbance. Special precautions would also be taken to avoid piping plover habitat in the winter. If nesting migratory birds are encountered at any time of year, construction would be halted and further coordination with USFWS would occur subject to MBTA requirements.

The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008).

The proposed projects were also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-7 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of these projects.

Table 12-7. Potential project impacts to different migratory bird groups

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Least tern	Foraging, feeding, resting, nesting	This species forages, rests, and nests in the proposed action area.
Shorebirds	Foraging, feeding, resting, nesting	Shorebirds nest, forage, feed, and rest, and in the types of habitats consistent with some of the shoreline areas near the proposed project. As such, they may be impacted locally and temporarily by the project.
Seabirds	Resting, roosting	Seabirds forage in water and rest/roost in terrestrial habitats including dunes. As such, they may be impacted locally and temporarily by the project.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized in Table 12-8.

Table 12-8. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Least tern	The Trustees expect foraging and resting adult birds may be able to move to another nearby location to continue foraging and resting though other habitats may not be as optimal and could result in inter-species competition. To protect nesting birds, eggs, chicks, fledglings and their habitats the following measures will be implemented: • There are two acceptable options to minimize impacts to least tern nesting areas for new boardwalks: the western option (orange on map in Figure 12-8) can be elevated so that visitors do not have to walk through traffic or bird nesting areas and birds can move freely underneath; or the eastern option (blue on map in Figure 12-8) which would be built on the ground (to prevent fledglings from entering the adjacent parking area). • Consider purchasing a tram to transport kids if either boardwalk option is determined to be too long for children to walk. • Install speed bumps at locations along the road accessing the park facilities (see examples and generally recommended locations on map in Figure 12-8) to reduce mortality of chicks and fledglings. • All vehicles (e.g., sea turtle surveyors, life guards) will be required to use western park boundary access in non-emergency cases (exceptions can be made for emergencies). • No use of fireworks from February 15 - September 1 within the Park boundaries. • Annually till the southern 3/4 of the Causeway adjacent to the park to support bird nesting along the highway. • Place reader boards and signs as needed along Causeway to warn motorsts to drive ith caution as chicks and fledglings may be on road. Information for boards will be determined in coordination with Panama City Ecological Services Field

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
	Office and Florida Fish and Wildlife Conservation Commission. • If parking areas are necessary, place parking in the brown or purple areas (Figure 12-8, preferably the brown area as it is the least habitat impacting). • Use remaining contingency funds or consider requesting additional funds to purchase wood decoys and place decoys east of the bathhouses to encourage birds to move from the areas of high visitor use to low visitor use.
Shorebirds	The Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting, though other habitats may not be as optimal and inter-species competition could occur. Therefore, care will be taken to minimize noise and physical distruptins near areas where foraging or resting birds are encountered. If project activities occur during shorebird nesting season (February 15 to August 31), the FWC will be contacted to obtain the most recent guidance to protect nesting shorebirds or rookeries and their recommendations will be implemented. The Panama City Field Office will be contacted regarding dune plantings to balance habitat for listed and migratory birds and beach mouse.
Seabirds	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity, which they will have. Roosting should not be impacted because the project will occur during daylight hours only. Nesting should not be impacted because the project will not occur near general nesting habitats.

Environmental Consequences

The proposed project has been evaluated for potential short- and long-term impacts to state and federally listed threatened and endangered species that may occur in and adjacent to the project area based on available suitable habitat and restoration goals. Descriptions of these evaluations are provided below.

Protected Species

On May 1, 2014 USFWS concurred with the Trustees' review of potential impacts to species managed by USFWS, agreeing the Navarre Beach Park Coastal Access and Dune Restoration project may affect, but is not likely to adversely affect five species of sea turtles in terrestrial habitats (green, hawksbill, Kemp's ridley, leatherback, and loggerhead), piping plover, red knot (if listed), and West Indian manatee (McClain, 2014).

Consultation of potential impacts on protected species managed by NMFS from the Navarre Beach Park Coastal Access and Dune Restoration project was initiated on February 19, 2014.The Trustees' review of the potential impacts of the project for protected species managed by NMFS determined the proposed action "may affect, but is not likely to adversely affect" the following species and associated critical habitats in the project implementation area:

- Gulf Sturgeon Critical Habitat- The proposed project footprint falls within an identified Gulf sturgeon critical habitat unit (Critical Habitat Unit 10 – Santa Rosa Sound); however, it has been determined that the construction activities associated with this project will not adversely affect the PCE's associated with this habitat or modify designated Gulf sturgeon critical habitat.

- Gulf Sturgeon - The proposed may project affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Smalltooth Sawfish – The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Green Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Loggerhead Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Hawksbill Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Leatherback Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Kemp's Ridley Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.

Concurrence from NMFS with the Trustees' conclusions for these species and associated critical habitats is still pending.

For the Navarre Beach Park Coastal Access and Dune Restoration project, the Trustees also evaluated the potential for take of Marine Mammals under the MMPA and due to these species' mobility and the implementation of NMFS' *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS, 2006), *Standard Manatee Conditions for In-Water Work* (USFWS 2011), and USFWS recommended conservation measures for listed species and other trust resources, take of marine mammals under the MMPA is not anticipated.

Essential Fish Habitat

The EFH review of the Santa Rosa Sound Coastal Access and Dune Restoration Project was completed on April 24, 2014 and concurred with the Trustees' conclusion that the Navarre Beach Park Coastal Access and Dune Restoration projectconstruction is not likely to adversely affect EFH and any disturbance to species will be minor and brief (Fay, 2014).

State-Listed Birds,MBTA, and BGEPA

No bald eagles are known or are likely to use the project area, due to the lack of wooded areas surrounding most of the site. According to FWC, the closest eagle's nest to the proposed project is approximately 4 miles north of the project area. Accuracy of locations is estimated to be within 0.1 mile of the true location.At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project areas, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and

economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project sites or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the projects will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.73.5.8 Human Uses and Socioeconomics

12.73.5.8.1 Socioeconomics and Environmental Justice

Affected Resources

The proposed project would be located in Santa Rosa County, Florida. Data and characteristics on the population of Santa Rosa County are summarized and compared to those same measures for the population of the state as a whole (Table 12-9).

Environmental Consequences

The proposed project would create approximately 961 worker days of employment during construction (Table 12-2). The improved beach access and facilities at the various sites would result in a minor increase in visitation to the sites, which could benefit the local economy for multiple years. The project would not create a benefit for any specific group or individual, but rather would produce benefits realized by the local community and visitors. There are no indications that the public improvements would be contrary to the goals of Executive Order 12898 or would create disproportionate, adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Therefore no environmental justice issues would be anticipated in the short term or long term.

Table 12-9. Population characteristics of Santa Rosa County compared with State of Florida data.

PEOPLE QUICKFACTS	SANTA ROSA COUNTY	FLORIDA
Population, 2012 estimate	158,512	19,317,568
Population, 2010 (April 1) estimate base	151,372	18,802,690
Population, percent change, April 1, 2010, to July 1, 2012	4.7%	2.7%
Population, 2010	151,372	18,801,310
Persons under 5 years, percent, 2012	5.7%	5.5%
Persons under 18 years, percent, 2012	22.9%	20.7%

PEOPLE QUICKFACTS	SANTA ROSA COUNTY	FLORIDA
Persons 65 years and over, percent, 2012	13.6%	18.2%
Female persons, percent, 2012	49.0%	51.1%
White alone, percent, 2012 (a)	87.5%	78.3%
Black or African American alone, percent, 2012 (a)	6.5%	16.6%
American Indian and Alaska Native alone, percent, 2012 (a)	0.9%	0.5%
Asian alone, percent, 2012 (a)	2.0%	2.7%
Native Hawaiian and Other Pacific Islander alone, percent, 2012 (a)	0.2%	0.1%
Two or more races, percent, 2012	2.9%	1.9%
Hispanic or Latino, percent, 2012 (b)	4.9%	23.2%
White alone, not Hispanic or Latino, percent, 2012	83.4%	57.0%
Homeownership rate, 2007–2011	76.3%	69.0%
Median household income, 2007–2011	$55,913	$47,827
Persons below poverty level, percent, 2007–2011	10.8%	14.7%
Manufacturer's shipments, 2007 ($1,000)	74,894	104,832,907
Merchant wholesaler sales, 2007 ($1,000)	148,932	221,641,518
Retail sales, 2007 ($1,000)	1,107,974	262,341,127

Source: U.S. Census Bureau State & County QuickFacts (U.S. Census Bureau 2013)
(a) Includes persons reporting only one race.
(b) Hispanics may be of any race, so also are included in applicable race categories.

12.73.5.8.2 Cultural Resources

Affected Resources

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project has not identified the presence of a historic property within the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.73.5.8.3 Infrastructure

Affected Resources

The Santa Rosa Sound side of the park is located in a bayside dune environment with current access to six pavilions, three restrooms, and several parking facilities but no boardwalks. There is an existing boat ramp and restroom with a large parking area west of the proposed project area (on the other side of the Navarre Beach Causeway). The Gulf side of the park is located in a coastal beach and dune environment with current access to nine pavilions, three restrooms, two boardwalks with dune walkovers, two

lifeguard towers, and two main parking facilities, and is currently connected to utilities and public services (see figure above).

Environmental Consequences

New infrastructure would be added at both sides of Navarre Beach Marine Park. The project would not have an adverse impact on infrastructure in the area because the project activities would be either added or improved as a result of the proposed projects, and it is anticipated that existing utility and services have the capacity to provide for the improvements.

12.73.5.8.4 Land and Marine Management

Affected Resources

The surrounding land use characteristics at the Gulf side site consist of public beaches along the Gulf shorelines surrounded by commercial areas. The Santa Rosa Sound side site is located in a bayside dune environment with the major land use being public recreation. The Gulf side project would be located in a coastal area, on a beach, with the major land use being public recreation.This areais regulated by the federal Coastal Zone Management Act (CZMA) of 1972 and the Florida Coastal Management Act of 1978.

Environmental Consequences

The project would be consistent with current land use and would have no adverse impact on land use or marine management in the area.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS (Federal Trustees 2013). The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process (Milligan 2014).

12.73.5.8.5 Aesthetics and Visual Resources

Affected Resources

Existing aesthetics and visual resources are views of developed sandy shorelines, residential areas, hotels, and beachside towns. Navarre Beach is home to the longest pier in Florida and the Gulf of Mexico. Navarre Beach Pier is located within 0.5 mile of the proposed construction areas on the Gulfside site. The pier, at 1,545 feet long and 30 feet above the water, offers spectacular views of the ocean and the coastline. When pier viewers look in the direction of Navarre Beach Marine Park, they currently see several pavilions, parking areas, boardwalks, and lifeguard towers.

Environmental Consequences

Aesthetics would be reduced in the project area during constructiondue to the presence of equipment and materials. In addition, Navarre Beach Pier visitors looking in the direction of Navarre Beach Marine Park would see the construction site and thus be negatively impacted. However, this impact would be aminor, temporary change to visual resources because only a small part of a 360-degree viewshed would be impacted, and only for 1 year. In addition, those looking from the pier at the site following

construction would see three dune walkover complexes instead of the previous two, but this view would be aesthetically consistent because the new complex is designed to look like the existing two complexes. Following construction, projects would provide moderate, long-term beneficial aesthetic impacts to the beach and dune habitat and visitor access areas because they would be consistent with dune access and recreation facilities in the area.

12.73.5.8.6 Tourism and Recreational Use

Affected Resources

Santa Rosa County's beaches are visited by tourists each year to fish, dive, swim, and view wildlife. Recreation at these sites includes swimming, beach-going, picnicking, wildlife viewing, fishing, hiking, canoeing, kayaking, and bicycling.

On the Santa Rosa Sound side of Navarre Beach Marine Park there are two snorkeling reefs, with one snorkeling reef on the Gulfside (seeFigure 12-2). Tourists to the park can rent the pavilions for private use and pay a small entrance fee for day use.

Navarre Beach is home to the longest pier in Florida and the Gulf of Mexico. Navarre Beach Pier is located within walking distance of the park, and only 0.5 mile away from the proposed Gulfside site. The pier, at 1,545 feet long and 30 feet above the water, offers spectacular views and recreational fishing opportunities for pompano, flounder, cobia, and king and Spanish mackerel. In the 2003–2004 fiscal year, approximately 80,000 people visited the pier, with ticket sales averaging $265,900 per year from 2001 to 2004. After various rounds of destruction from Hurricanes Opal, Ivan, and Dennis, the pier was completely rebuilt in 2010 (Santa Rosa County 2013a).

Environmental Consequences

During the construction period, the visitor recreational experience at the park would be negatively impacted by noise and visual disturbances associated with the use of construction equipment. The construction process would also limit recreational activities near construction areas for a short time to protect public safety.

The impact would be shortterm and minor because there are numerous other boardwalks, pavilions, parking areas, and restrooms at Navarre Beach Marine Park for visitors to obtain the same or similar recreational experiences. The beach access and parking locations on the Gulfside may experience a spike in use during construction on the Santa Rosa Sound side of the park. Construction of new facilities on the Gulfside of the park are not expected to divert visitors to the Santa Rosa Sound side, however, because existing facilities on the Gulfside would be open.

The boat ramp located to the west of the proposed project site currently caters to motorized water crafts, while the proposed canoe and kayak launch would cater to non-motorized water craft users. Therefore, it is not expected that the existing boat ramp would be negatively affected, in terms of a reduction in use (collection of fees), because the proposed launch represents a different water craft use type (non-motorized).

Over the longterm, minor beneficial impacts to tourism and recreational use would be expected due to the enhancement of recreational opportunities associated with improved facilities and accessibility.

12.73.5.8.7 Public Health and Safety and Shoreline Protection

Affected Resources

There are no known hazardous waste generation or disposal sites in the vicinity of the project. Erosion at the proposed project site is typical of a barrier island shoreline, but would be mitigated through construction BMPs discussed in the Construction and Installation section above.

Environmental Consequences

The proposed dune walkovers and boardwalks would increase public safety conditions at the park, as well as protect the dunes from trampling by foot traffic. Overall, the project would have a moderate beneficial impact on public health and safety and shoreline protection because the project would provide organized public access to the beach, concentrating shoreline access impacts and providing public infrastructure, and would have no negative impacts on these resources.

12.73.6 Summary and Next Steps

The Navarre Beach Park Coastal Access project would improve access for the public seeking to access the beach and water of Santa Rosa Sound from the existing pavilion/parking lot areas. In addition, construction of a new canoe/kayak launch would increase access opportunities to the waters of the sound for recreational boaters. The enhancement of the recreational experience from these infrastructure improvements would also be complemented by the restoration of a roughly 1 acre parcel of degraded dune habitat in the project area. The Navarre Beach Park Gulfside Walkover Complex project would enhance access to the shoreline at Navarre Beach Park to enhance recreational use of the natural resources. The proposed improvements include constructing an entrance, driveway, and parking area; constructing a restroom facility; constructing pavilions with boardwalk connections; lifeguard tower; and constructing a dune walkover that will provide access to the beach. These projects are consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. These projects would enhance and/or increase recreational boating and beach use opportunities by constructing new infrastructure for recreational opportunities and by improving beach access. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

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12.74 Gulf Breeze Wayside Park Boat Ramp: Project Description

12.74.1 Project Summary

The proposed Gulf Breeze Wayside Park Boat Ramp Improvements project would improve the existing boat ramp at Wayside Park in the City of Gulf Breeze, Santa Rosa County, FL. The proposed improvements include repairing the existing boat ramp and seawall cap, constructing a public restroom facility, and repairing and enhancing the parking area to improve access. The total estimated cost of the project is $309,669.

12.74.2 Background and Project Description

The Trustees propose to repair and improve an existing boat ramp in the City of Gulf Breeze (Figure 12-11 for general project location). The objective of the Gulf Breeze Wayside Park Boat Ramp Improvement project is to enhance and/or increase recreational boating and fishing opportunitiesby improving the boat ramp area. The restoration work proposed includesrepairing the existing boat ramp and seawall cap, constructing a public restroom facility, and repairing and enhancing the parking area to improve access. The parking areas and bathrooms are needed to enhance and/or increase access to the boat ramp, which will make the public's recreational boating and fishing opportunities more accessible, functional or fully utilized.

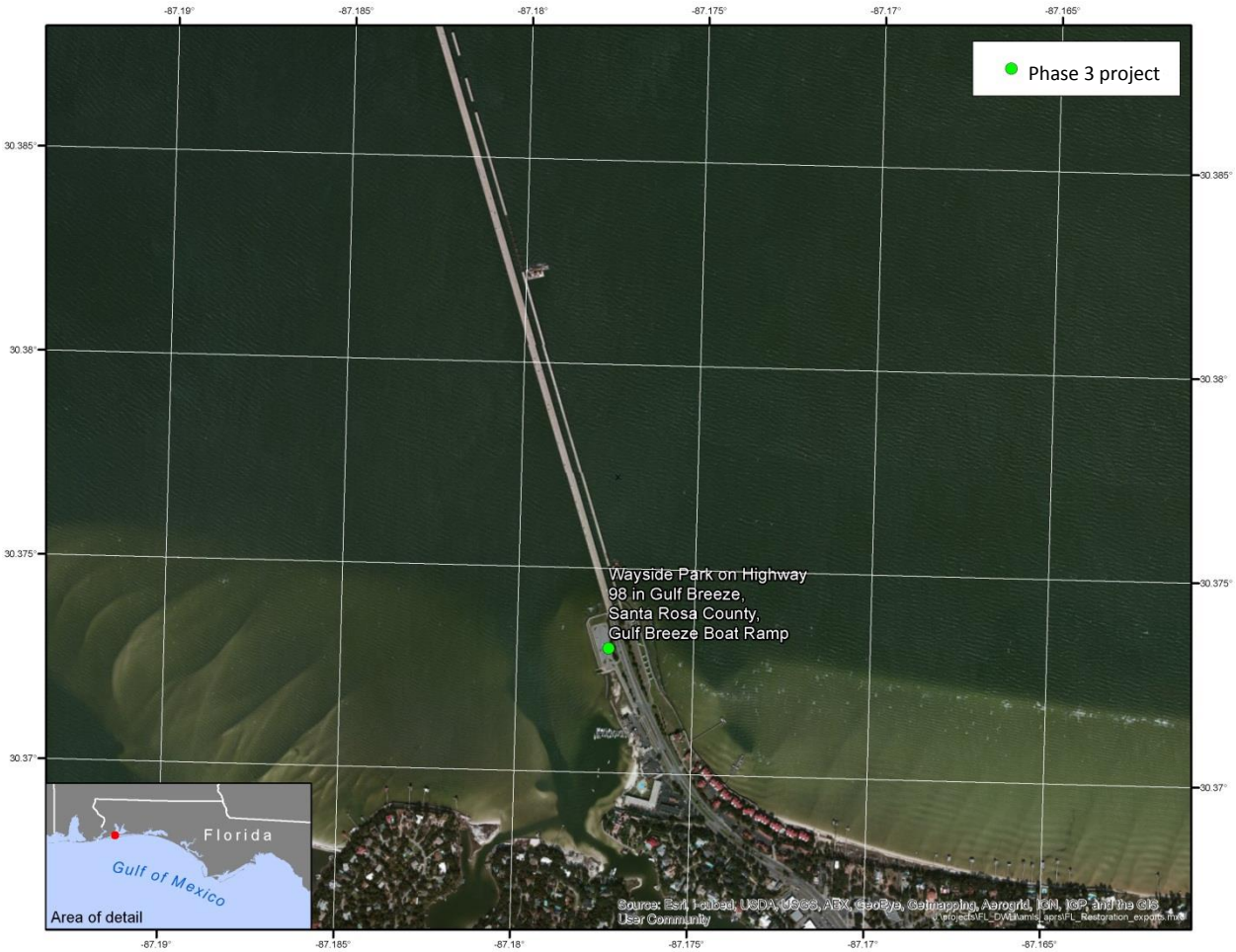

Figure 12-11. Location of Gulf Breeze Wayside Park boat ramp improvements project.

12.74.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposed Gulf Breeze Wayside Park Boat Ramp Improvements project is intended to enhance and/or increase recreational boating and fishing opportunities by improving the boat ramp area. This project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill. Thus, the nexus to resources injured by the Spill is clear. See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. Agencies have successfully completed projects of similar scope throughout Florida over many years, including similar types of actions in earlier phases of the Deepwater Horizon Early Restoration. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.74, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.74 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4). Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com). In addition to meeting the criteria for the Framework Agreement and OPA, the Florida Gulf Breeze Wayside Park Boat Ramp Improvements project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area in which boom was deployed and that was impacted by response and SCAT activities for the Spill.

12.74.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. The project objective is to enhance and/or increase recreational boating and fishing opportunities by improving the boat ramp area.Performance monitoring will evaluate:1) the repair of an existing boat ramp and seawall cap; 2)the construction of a public restroom facility; and 3) the repair and enhancement of the parking area to improve access. Specific performance criteria include: 1) the

completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the boat ramp facility is open and available.

Long-term monitoring and maintenance of the improved facilities will be completed by the City of Gulf Breeze as part of their regular public facilities maintenance activities. Funding for this post-construction maintenance is not included in the previously provided value for the project cost and will be accomplished by the City of Gulf Breeze.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users.Following the one year construction performance monitoring period, the City of Gulf Breeze will monitor the recreational use activity at the site. The City of Gulf Breezestaff will visit the site twice a year to count the number of users at the boat ramp. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

12.74.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $619,338expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[4]

12.74.6 Costs

The total estimated cost to implement this project is $309,669. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[4] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.75 Gulf Breeze Wayside Park Boat Ramp: Environmental Review

12.75.1 Introduction and Background

The City of Gulf Breeze, Florida Wayside Park Public Boat Ramp provides local boaters with access to public waterways, and boating access provides the primary infrastructure upon which many types of secondary activities may be enjoyed in this area, such as fishing, SCUBA diving, water-skiing, and other local activities.

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP), entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the *Deepwater Horizon* Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is under way. The Framework Agreement is intended to expedite the start of restoration in the Gulf of Mexico, in advance of the completion of the injury assessment process. Early restoration is not intended to, and does not fully address, all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement, the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the *Federal Register* on behalf of the Trustees, announcing the development of additional future Early Restoration projects for a Draft Phase III Early Restoration Plan (ERP). This project, in Pensacola Bay in Santa Rosa County, was submitted as an Early Restoration project on the NOAA website and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and the Oil Pollution Act (OPA), the project meets Florida's criteria that Early Restoration projects occur in the 8-county panhandle area that was impacted by the Spill.

This facility was used as a primary staging and launching location for cleanup operations in response to the *Deepwater Horizon* oil spill. The public facility suffered loss of use and the boat ramp and parking area were used to stage and deploy oil spill response resources during the *Deepwater Horizon* incident. The proposed project would implement needed repairs and enhancements to the approximately 2-acre site, including the boat ramp, seawall, parking area, and construction of new restroom facilities.

12.75.2 Project Location

The proposed project is located in the state of Florida, in the city of Gulf Breeze, Santa Rosa County. The proposed project would be located on the existing Wayside Park Public Boat Ramp (30° 22' 23 N; 87° 10' 39 W) on the west side of Gulf Breeze Highway (U.S. Highway 98) (

Figure **12-12** and

Figure 12-13). The total project area is approximately 2 acres, including the seawall, boat ramp, and parking area.

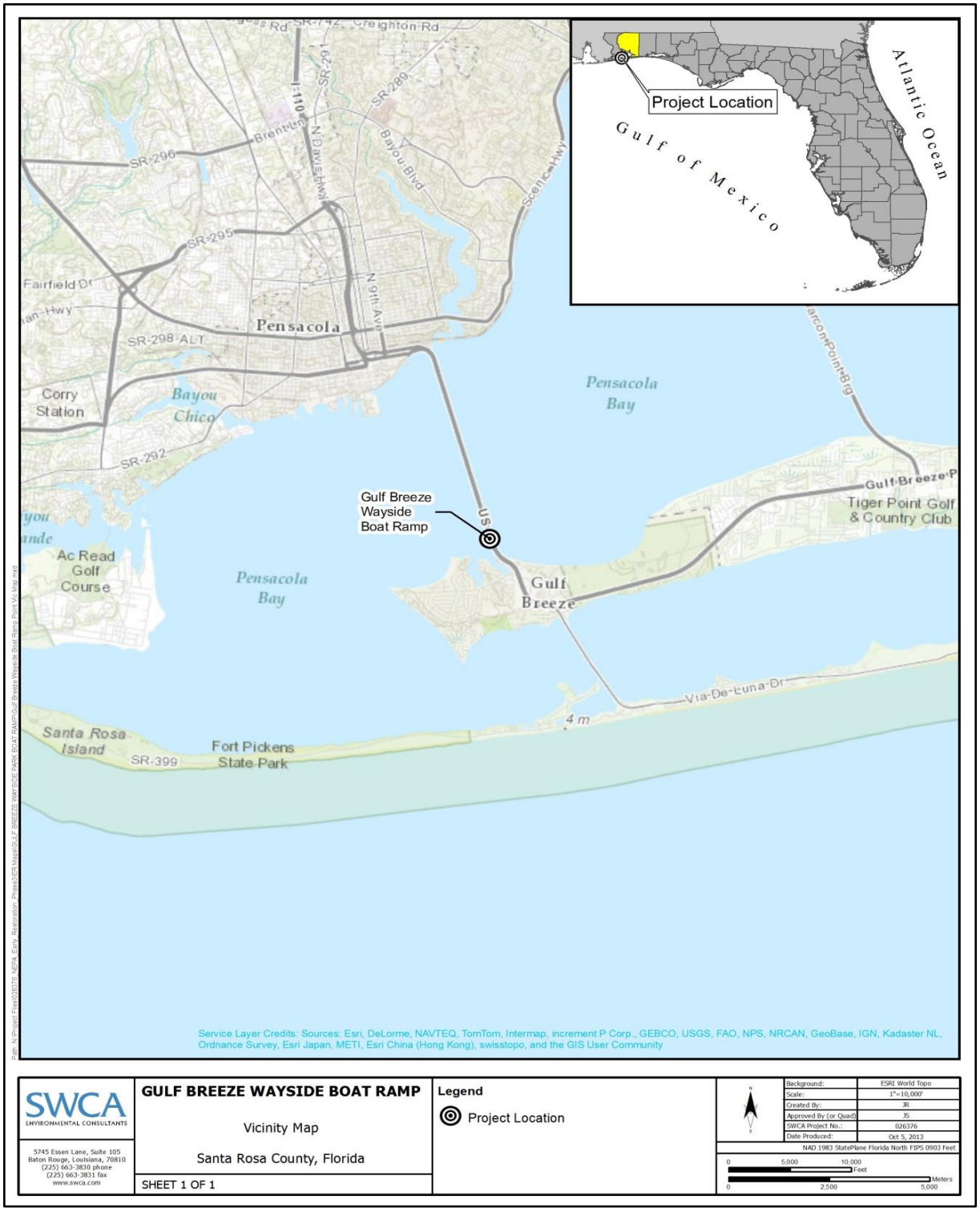

Figure 12-12. Wayside Park public boat ramp on U.S. Highway 98 in Gulf Breeze, Santa Rosa County, Florida.

Figure 12-13. Wayside Park public boat ramp aerial map with proposed project area.

12.75.3 Construction and Installation

The proposed Gulf Breeze Wayside Park Boat Ramp project would improve the existing boat ramp at Wayside Park in the City of Gulf Breeze, Santa Rosa County, FL. The proposed improvements include repairing cracks and damage to the existing boat ramp and seawall cap, constructing a public restroom facility, and repairing and enhancing the parking area to improve access. Figure 12-13 identifies the project area.

While final plans have not been developed for this project, the construction work associated with repairs/replacement of a boat ramp can be summarized in terms of executing a number of specific tasks and subtasks including:

Task 1. Site Preparation

a. Prior to beginning any waterward work at the boat ramp site the project area needs to be surveyed and marked. Turbidity curtains are then installed to encapsulate the work area and other erosion control methods are put in place on the landward side of the project (e.g., placement of hay bales) to prevent erosion into the water from equipment movement and any work being performed on the upland areas.

Task 2. Ramp Repairs/Construction

a. The area for the ramp is surveyed in and marked by stake or pole (typically small diameter 2" or less PVC).
b. A coffer or bladder dam is installed and the water within the dam, between the waterward extent of the ramp and the land, is pumped out to upland storage ponds or run through a filter system to remove any sediment in the water before returning it to the receiving waterbody. The work area is kept dry by use of dewater pumps (ground water to be pumped is first sampled and tested for water quality) and disposed of in the same manner as the pumped surface water. This dewatering operation is run continuously throughout the construction of the ramps. Once the ramps are completed the dewatering pumps are shut down and the dams are removed.
c. Construction of the ramps begins once the area is sufficiently dry to remove unsuitable soils, if necessary, and replaced with suitable soil. This soil is then compacted to specification. Then the base material for the ramp is placed, usually a rock material. After placement and compaction of the base the ramp is formed, reinforcing steel placed and then the concrete poured and finished. Once curing of the concrete is complete the forms are removed and the coffer or bladder dams are removed.

Task 3. Monitoring

a. Every day, before the start of construction activities, the turbidity screen is checked and repaired if necessary.
b. The foreman or other designated individual checks the area inside the screen and the screen itself to see if any protected species (manatees, dolphins, small tooth sawfish etc.) have gotten trapped within the work area or in the screen. If so then appropriate (FWC) personnel are notified to request removal. No work is begun until the animal, fish or bird is removed.
c. During the work day the work area and area adjacent to the work are is monitored to make sure protected species have not ventured into the area. If so then work is stopped until the animal moves out of the area.
d. At the end of the day the area is checked for debris, sediment and possible spillage and these are properly removed and disposed of before shutting down the site.
e. If a storm is anticipated that might damage the turbidity screen it is removed and stored until the storm event has passed and seas have resided.

Similarly, plans for the seawall cap work have not been finalized but are likely to involve some combination of removing parts of the existing, failing, concrete structure and then rebuilding the seawall to the final design specifications. Neither the boat ramp nor sea wall cap repairs would involve the placing of pilings. Figure 12-14 provides a view of existing boat ramp and seawall conditions.

Critically, during any in-water construction activity, the conditions and guidelines of the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006) would be implemented and adhered to. These provisions include stopping operation of any equipment if sea turtles or smalltooth sawfish come within 50 feet of the equipment until the time when animals leave the project area of their own volition.

All other activities, including equipment and materials staging, would take place within the footprint of the existing parking area and boat ramp. Repair to the existing seawall would not change the seawall's overall footprint and there would be no expansion of the developed footprint outside of the existing 2-acre site.

In addition to repairs of the boat ramp and seawall, other activities would include repairs and enhancements to the existing parking lot and construction of a new public restroom facility. Work on these site amenities would also take place completely within the footprint of the existing 2-acre developed site (See Figure 12-15 for a photograph of current parking area conditions). Florida Department of Environmental Protection (FDEP) permit conditions for the construction at the site will require erosion and turbidity mitigation measures, including installing floating turbidity barriers, installing erosion-control measures along the perimeter of all work areas, and stabilizing all filled areas with sod, mats, barriers, or a combination.

Total construction time would be between 4 and 6 months.

Source: Florida Fish and Wildlife Conservation Commission (2013a).

Figure 12-14. Existing boat ramp and seawall.

Source: Florida Fish and Wildlife Conservation Commission (2013a).

Figure 12-15. Boat ramp parking area.

12.75.4 Operations and Maintenance

Operation and maintenance of the improved facilities would continue under the existing maintenance performed by the City of Gulf Breeze. Maintenance would include tasks such as checking and cleaning of the restroom facility, removing debris and trash from the boat ramp and boat trailer parking areas, and striping parking areas in the parking area. Monitoring would include construction monitoring and tracking visitor use.

12.75.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected environment and environmental consequences of the project.

12.75.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.74.5.2.

Physical Environment

12.75.5.1.1 Geology and Substrates

Affected Resources

Geology

The Pensacola Bay system is generally shallow, with a total surface area greater than 144 square miles. The system is comprised of several smaller bays, of which Pensacola Bay is the largest followed by East Bay, Escambia Bay, Santa Rosa Sound, Blackwater Bay, and Big Lagoon. The estuarine embayments are within the Gulf Coastal Lowlands subdivision. The lowlands are a series of parallel terraces rising from the coast in successively higher levels. They formed during the Pleistocene Epoch (Great Ice Age) when fluctuating sea levels were associated with the growth and melting of ice caps. Dunes, barrier islands, beach ridges, and other topographical features were stranded inland as seas receded. Land surfaces of the lowlands are generally level and less than 100 feet above sea level. Substantial areas are less than 30 feet above sea level and are characterized by extensive wetlands. Higher elevations are present in the general area of Pensacola, on the west side of Pensacola and Escambia Bays (USACE 2009).

Soils

The Pensacola Bay area has been sculpted from an alluvial plain underlain by sand, gravel, silt, and clay. The soil survey for Santa Rosa County (Natural Resources Conservation Service [NRCS] 2013) identifies the project area as Kureb sand, 0 to 8 percent slopes with part of the boat ramp extending into "Waters of the Gulf of Mexico." Kureb sands are classified as excessively drained, nearly level to sloping soils found on broad uplands on the coastal plain. Typically, the surface layer is gray sand with a salt-and-pepper appearance of about 3 inches thick with underlying layers of different sands to a depth of more than 80 inches. This soil has a very low available water capacity, very rapid permeability, and very low natural fertility and organic matter content. The natural bay shoreline adjacent to the project area is fringed by wide, shallow sand flats between 3 and 5 feet deep (NRCS 2013).

Environmental Consequences

The geological and substrate resource in the area would not be significantly affected as a result of repairs and improvements associated with the proposed project. The footprint of disturbance would be focused on the area of the existing boat ramp and parking area. The ground would be disturbed to a depth of several feet for repairs, and deeper excavation may be required for restroom construction because of sewer line or septic tank installation and some surface area would be permanently converted as a result of building placement. However, adverse impacts to geology and substrates would be direct and minor. Soil, debris, vegetation, and old parking lot material would be removed from the site as a part of construction and repair activities. After completion of the project, soil surfaces would not be exposed, and planting of additional vegetation in the project area is not planned. There would be no long-term changes to local geological features or soil characteristics. Some erosion and/or compaction may occur in localized areas.

12.75.5.1.2 Hydrology and Water Quality

Affected Resources

The Pensacola Bay system watershed covers nearly 7,000 square miles in northwest Florida and southern Alabama. The entire system discharges into the Gulf of Mexico south of Pensacola, Florida. Sources of water to the bay include the system's rivers through adjacent bays, the Gulf of Mexico, and several bayou basins (Olinger et al. 1975). Pensacola Bay is in an urbanized watershed and receives nonpoint source pollution via surface runoff and discharges from the cities of Gulf Breeze and Pensacola, the associated Naval Air Station, Bayou Grande, Bayou Chico, and Bayou Texar. The most significant point source discharges are the Main Street and Naval Air Station Sewage Treatment Plants, which discharge via an outfall into the bay. Pensacola Bay is identified as an impaired waterbody by the FDEP. Total maximum daily loads have been developed for coliform, identified as the primary source of impairment. Component bayous, formerly centers of productivity in the system, are now among the most anthropogenically stressed.

The CWA requires that the surface waters of each state be classified according to designated uses. Florida has six classes with associated designated uses, which are arranged in order of degree of protection required. According to 62.302.400, Florida Administrative Code, most of the project occurs within Class III waters. Therefore, standards to meet the following uses apply to the project area: Fish Consumption, Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife. The surface waters of the state are Class III unless described in Florida rule. The Pensacola Bay watershed is also identified as a priority waterbody under the Surface Water Improvement and Management (SWIM) Program. Florida created the SWIM Program to develop comprehensive plans for at-risk waterbodies and direct the work needed to restore damaged ecosystems, prevent pollution from stormwater runoff and other sources, and educate the public.

There are no waters that are designated as Outstanding Florida Waters, wild and scenic rivers, or aquatic preserves located in or adjacent to the project area. Two aquatic preserves are located in the general area. Fort Pickens Aquatic Preserve is approximately 3 miles south of the project area, and the Yellow River Marsh Aquatic Preserve is located approximately 8 miles to the northwest. Waters in aquatic preserves and state parks require additional water quality considerations; the State would be consulted to determine any concerns due to proposed project activities.

Floodplain

The project is located in Federal Emergency Management Agency (FEMA) designated Flood Zones according to the Flood Insurance Rate Maps (FIRMs) for Santa Rosa County (FIRM No. 12113C0606G Santa Rosa County, Effective Date December 19, 2006). The project is located in Zone AE with base flood elevation of 6 feet. Zone AE has defined base flood elevations with a 1% annual chance of flood and is an area of special flood hazard (FEMA 2006).

Wetlands

Most of the project area would be located in upland areas with some in-water work anticipated. No wetlands occur within the boundaries of the proposed project area. However, the *Pensacola Bay Bridge Project Development and Environmental Study* prepared for the Florida Department of Transportation

(FDOT) identified an emergent estuarine wetland dominated by saltmarsh cordgrass (*Spartina altemiflora*) within 10 feet of the southern edge of the existing Wayside Park boat ramp (FDOT 2012).

Environmental Consequences

Due to the small footprint and location of the proposed project, no impacts to tides or currents would be expected as a result of the implementation of the proposed project. The project would have minor short-term impacts to water quality in the area due to turbidity and contaminants anticipated during construction; however, no significant elevation of turbidity is expected. The state of Florida's waters would not be significantly affected. No long-term impacts and only minor short-term impacts to water quality would be expected to result from repairing the boat ramp and parking area. The project area would not be located in or directly adjacent to areas designated as Outstanding Florida Waters, and no impacts would be anticipated. These impacts would quickly become undetectable and state water quality standards as required by the CWA would not be exceeded.

The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (Corps) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). Coordination with the Corps and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

Floodplains

Most of the project is located above the mean high water level, but construction activities would remain within the approximately 2-acre site of existing facilities and are unlikely to have any impact on the floodplain in and around the project area.

Wetlands

During construction, care would be needed near the southern edge of the project area to avoid adverse impacts to wetlands south of the project area. Short-term, minor, direct impacts could result from project implementation; however, no long-term adverse impacts would be anticipated.

12.75.5.1.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

The Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS have been set for six common air pollutants (also known as criteria pollutants), consisting of particle pollution or particulate matter, ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead. Particulate matter is defined as fine particulates with a diameter of 10 micrometers or less (PM_{10}), and fine particulates with a diameter of 2.5 micrometers or less ($PM_{2.5}$). When a designated air quality area or airshed in a state exceeds an NAAQS, that area may be designated as a “nonattainment” area. Areas with levels of pollutants below the health-based standard are designated as “attainment” areas. To determine whether an area meets the NAAQS, air monitoring networks have been established and are used to measure ambient air quality. The EPA also regulates 187 hazardous air pollutants (HAPs) that are known or suspected to cause cancer or other serious health effects.

Air quality in the Florida panhandle is in attainment with the NAAQS (EPA 2013a). The FDEP Northwest District currently operates only one air monitor in Santa Rosa County. The Woodlawn Beach Middle School monitor in Gulf Breeze records ozone and $PM_{2.5}$ concentrations. Readings at this monitor for the last 3 years show attainment with the NAAQS for ozone and $PM_{2.5}$ (FDEP 2013a). Sulfur dioxide attainment data were not available (EPA 2013b).

Greenhouse Gases

Gases that trap heat in the air are called greenhouse gases (GHGs). The primary GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO_x), and fluorinated gases. Over the past century, human activities have released large amounts of GHGs into the atmosphere, which are contributing to global warming. Global warming is defined as the ongoing rise in global average temperature near the Earth's surface and is known to cause changes in climate patterns.

According to the EPA, the average annual temperature in the southeastern portion of the United States has increased by approximately 2.0 degrees Fahrenheit (°F) since 1970. Winters, in particular, are getting warmer, and the average number of freezing days has decreased by 4 to 7 days per year since the mid-1970s. Most areas are getting wetter; autumn precipitation has increased by 30% since 1901 (EPA 2013c). In many parts of the region, the number of heavy downpours has increased. Despite the increases in fall precipitation, the area affected by moderate and severe drought has increased since the mid-1970s (EPA 2013c).

Average annual temperatures in the region are projected to increase from 4°F to 9°F by 2080. Hurricane-related rainfall is projected to continue to increase. Models suggest that rainfall will arrive in heavier downpours, with increased dry periods between storms. These changes would increase the risk of both flooding and drought. The coasts will likely experience stronger hurricanes and sea level rise. Storm surges could present problems for coastal communities and ecosystems (EPA 2013c).

Total GHG emissions in the state of Florida from 1990 to 2007 have increased at an average rate of 2.1% per year. Total GHG emissions in 2007 were 290 million metric tons of CO_2 equivalent (CO_2e). In 2007, 91% of GHG emissions in Florida were CO_2 emissions (FDEP 2010).

Environmental Consequences

Project implementation would require the use of heavy mechanized equipment, which would lead to temporary air pollution (e.g., criteria pollutants, HAPs, GHGs) due to emissions from the operation of construction vehicles and equipment. Any air quality impacts that occur would be minor due to their localized nature, short-term duration, and the small size of the proposed project. Available BMPs would be employed to prevent, mitigate, and control potential air pollutants during project implementation. No air quality–related permits would be required.

Because specific construction plans have not been finalized, needed equipment for construction was assumed based on a most-likely scenario and evaluated below (Table 12-10). In terms of construction equipment, the tractor-trailers and barge/crane would likely contribute most of the GHG emissions; GHG emissions from the remaining equipment would be negligible. GHG emissions from the tractor-trailers and barge/crane have been estimated using the operating assumption of 8 hours per day and 5

days per week for 1 month for boat ramp and seawall cap repairs, and 8 hours per day and 5 days a week for 6 months for restroom facility construction.

At the completion of the project, visitor use (and therefore vehicle and boat use) is not likely to significantly increase due to the fact that no expansions are planned as a part of this project. Therefore, long-term adverse impacts to air quality are not expected.

12.75.5.1.4 Noise

Affected Resources

Noise can be defined as unwanted or nuisance sound. The Noise Control Act of 1972 (42 USC 4901–4918) was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. Amplitude is the magnitude of a sound and is usually expressed in decibels (dB), a dimensionless ratio of sound pressure to that of a reference pressure. The A-weighted decibel (dBA) is the adjusted unit of sound used to describe the human response to noise from industrial and transportation sources. The threshold of hearing is 0 dB. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear.

Table 12-11 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-10. Greenhouse gas impacts of the proposed project for major construction equipment.

CONSTRUCTION EQUIPMENT	NO. OF DAYS OPERATED[1]	CO_2 (METRIC TONS)[2]	CH_4 (CO_2E) (METRIC TONS)[3]	NO_X (CO_2E) (METRIC TONS)	TOTAL CO_2E (METRIC TONS)
Barge/crane (1)	20	5.8	0.002	0.02	5.82
Tractor trailer (3)	29	10.15	0.0058	0.058	10.21
Grader	5	1.95	0.0015	0.015	1.97
Bulldozer	5	1.9	0.001	0.01	1.91
Rollers	5	0.8	0.2	3.2	4.2

CONSTRUCTION EQUIPMENT	NO. OF DAYS OPERATED[1]	CO_2 (METRIC TONS)[2]	CH_4 (CO_2E) (METRIC TONS)[3]	NO_X (CO_2E) (METRIC TONS)	TOTAL CO_2E (METRIC TONS)
Total					**24.11**

[1] Emissions assumptions for all equipment based on 8-hour days of operation per piece of equipment, 5 days per week, over a 6-month construction period.
[2] CO2 emissions assumptions for diesel and gasoline engines based on EPA (2009).
[3] CH_4 and NOx emissions assumptions and CO_2e calculations based on EPA (2011).

Table 12-11. Typical noise levels for common sources.

NOISE SOURCE OR EFFECT	SOUND LEVEL (DBA)
Rock-and-roll band	110
Truck at 50 feet	80
Gas lawn mower at 100 feet	70
Normal conversation indoors	60
Moderate rainfall on foliage	50
Refrigerator	40
Bedroom at night	25

Source: Adapted from U.S. Department of Energy and Bonneville Power Administration (1986).

Ambient noise levels in the project area are moderate. The major noise-producing source of the area year-round is related to urbanized areas, roads, and boats associated with use of the existing boat ramp and adjacent highway next to the project area. No residential properties are directly adjacent to the project area.

Environmental Consequences

Noise from the construction equipment and other associated support equipment would be evident in the project area. While this noise would be evident to those workers on the job and any users of the adjacent highway, it would be short-term and insignificant. Normal noise levels would be achieved at the end of each workday and after completion of the job. Short-term impacts associated with construction would be minor, and no long-term adverse impacts would occur.

12.75.5.2 Biological Environment

12.75.5.2.1 Living Coastal and Marine Resources

Vegetation

Affected Resources

Vegetation in and around the proposed project area includes urban landscaped upland areas with sparse grasses and planted trees along the edge of the proposed project area. No natural vegetation exists within the boundaries of the project area. Submerged aquatic vegetation may be present in the areas directly south of the existing boat ramp and proposed project site.

A review of Florida's Efficient Transportation Decision Making tool (FDOT 2013) indicates that while submerged aquatic vegetation (corals, seagrasses) are present off the coastline and south of the boat ramp, they are not present within the boundaries of the project area (FDOT 2013).

Environmental Consequences

There would be a small construction footprint associated with the proposed project, occurring mainly in upland areas. During the construction of the restroom facility and vehicle parking area, minimal vegetation would be disturbed due to the lack of vegetation in the existing infrastructure of the project area. The occurrence of seagrasses at the project site is unlikely due to the water quality and other past disturbance to the project area. Saltmarsh vegetation, dominated by saltmarsh cordgrass, exists adjacent to the southern border of the project area and may be affected by the proposed project. Short-term, minor direct impacts to saltmarshes could result from project implementation; however, no long-term adverse impacts would be anticipated.

Wildlife Habitat

Affected Resources

The project site would be surrounded by an urban environment. Common wildlife that could occur at the project site includes squirrels, raccoons, birds, etc. The proposed project area would be on existing urban facilities with little to no natural vegetation.

Environmental Consequences

Although common wildlife may be disturbed from construction activities, these species live in an urban environment where ambient noise levels are high and vegetation communities are not natural. Habitat conditions after construction would be similar to the existing conditions and no impacts to common wildlife would be anticipated.

Marine and Estuarine Fauna (fish, shell beds, and benthic organisms)

Affected Resources

Pensacola Bay provides habitat for numerous fish and other marine species. The value of marine habitats at the proposed project area has been affected by population growth, urban development, and water contamination from runoff and wastewater disposal. Increased coastal development, in particular, has contributed to displaced habitats, loss of wetlands, and greater amounts of stormwater runoff entering the river, bay, and their tributaries (Northwest Florida Water Management District 2011). Nonetheless, the marine environment at the project site provides habitat to an array of aquatic species including: ladyfish (*Elops saurus*), hardhead catfish (*Arius felis*), gafftopsail catfish (*Bagre marinus*) and pigfish (*Orthopristis chrysoptera*), among others. Benthic organisms, such as bivalves, gastropods and other mollusks, anemones, amphipods, annelids, crustaceans, and echinoderms, can also be abundant in these waters (FWC 2001).

Environmental Consequences

The proposed project would likely result in short-term, minor adverse impacts to fish that may be present during the in-water construction as a result of turbidity and noise disturbance during repairs to the boat ramp and seawall. Benthic organisms that may be present in the substrate may also be adversely affected during in-water construction. However, these impacts would be short-term and minor and would not result in a measurable impact to these species. The habitat areas around the boat ramp and seawall structures would not likely provide additional habitat for sessile organisms.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

Affected Resources

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Santa Rosa County, Florida5. Table 12-12 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

Table 12-12. Potential Impacts to Species/Critical Habitats managed by USFWS in the project area

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle[a], Hawksbill turtle[a], Kemp's ridley turtle; Leatherback turtle[a], Loggerhead turtle	The project is located in waters within Pensacola Bay. Sea turtles are not known to nest at or near the project location; therefore no impacts to sea turtles using terrestrial habitats are expected. No designated or proposed critical habitat for sea turtles occurs within the action area; therefore, none will be adversely affected or modified. The main risk to sea turtles from this project is from collision with equipment and materials during periods of in-water work which could result in harm or mortality. Consultation has been initiated with NMFS the agency that has the jurisdiction to review impacts to sea turtles in the estuarine and marine environments.
West Indian manatee	Santa Rosa County is not part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the project waters. The main risk to manatees during implementation of this project would come from boat collisions during construction or from visitor use which could result in harm or mortality. Implementation of the conservation measures will reduce the risk of potential impacts to any manatees that could be present to a level that is insignificant and discountable.
Gulf sturgeon	NMFS was consulted on Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon was not considered in the consultation with the USFWS.

[5] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

In addition to the protected species managed by USFWS, the Trustees reviewed the proposed projects and associated actions for potential impacts to the following protected species (status indicated) and their associated critical habitat, if appropriate, managed by NMFS:

- Gulf Sturgeon, *Acipenser oxyrinchus desotoi*, Threatened
- Smalltooth Sawfish, *Pristis pectinata,* Endangered
- Green Sea Turtle, *Chelonia mydas*, Endangered
- Loggerhead Sea Turtle, *Caretta caretta*, Threatened
- Hawksbill Sea Turtle, *Eretmochelys imbricata*, Endangered
- Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
- Kemp's Ridley Sea Turtle, *Lepidochelys kempii*, Endangered

Additional information on some of these speciesand associated critical habitat areas is presented below.

Sea Turtles and Marine Mammals

There are five species of endangered or threatened sea turtles that may occur or have potential to occur in the project area. These include green turtle, hawksbill turtle, Kemp's Ridley turtle, leatherback turtle, and loggerhead turtle. Sea turtles forage in the waters of the coastal Florida panhandle region and have potential to occur in the waters where in-water work is proposed. The project site does not contain suitable sea turtle nesting habitat.

Twenty-two marine mammals are native to the Gulf of Mexico: 21 pelagic species of whales and dolphins, and the West Indian manatee. The endangered West Indian manatee has the potential to occur in the project area waters. Manatees typically seek out shallow seagrass areas as preferred feeding habitat. Additionally, bottlenose dolphins (*Tursiops*) populations are known to migrate into bays, estuaries, and river mouths and could be located in the proposed project area (NMFS 2013a).Bottlenose dolphins have been observed entering and leaving nearshore coastal waters (NMFS 2012).

Smalltooth Sawfish, Gulf Sturgeon, and Gulf Sturgeon Critical Habitat

Smalltooth sawfish (*Pristis pectinata*) do not typically utilize northern Gulf waters (NMFS 2013b). Gulf sturgeons are restricted to the Gulf of Mexico and its drainages, occurring primarily from the PearlRiver, Louisiana to the Suwannee River, Florida (NMFS 2009). Adult fish reside in rivers 8 to 9 months each year and in estuarine or Gulf waters during the 3 to 4 cooler months of each year (NMFS 2009). Important marine habitats include seagrass beds with sand and mud substrates (Mason and Clugston 1993).

Gulf sturgeon critical habitat was jointly designated by the NMFS and USFWS on April 18, 2003 (50 Code of Federal Regulations [C.F.R.] 226.214). The proposed project site is located Critical Habitat for Gulf sturgeon (Critical Habitat Unit 9). Critical habitat was designated based on seven primary constituent elements essential for its conservation, as defined in the 2003 *Federal Register* and listed below. PCE's 1, 5, 6, and 7 are present in the project area. The PCE's are:

1. Abundant food items, such as detritus, aquatic insects, worms, and/or mollusks, within riverine habitats for larval and juvenile life stages; and abundant prey items, such as amphipods,

lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks, and/or crustaceans, within estuarine and marine habitats and substrates for subadult and adult life stages;

2. Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone, or hard clay;
3. Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths; these are believed necessary for minimizing energy expenditure during freshwater residency and possibly for osmoregulatory functions;
4. A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larval staging;
5. Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages;
6. Sediment quality, including texture and chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and
7. Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g., an unobstructed river or a dammed river that still allows for passage).

Essential Fish Habitat

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. The EFH within the project area include emergent wetlands, mud substrate, and estuarine water columns for species of fish, such as red drum, brown shrimp, pink shrimp, and white shrimp. There are no marine components of EFH in the vicinity of the project site.

Table 12-13 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the Gulf Breeze Park Boat Ramp site and Pensacola Bay.

Table 12-13. Federally managed fisheries with designated Essential Fish Habitat (EFH) in the proposed project area.

EFH Category	Species
Atlantic Highly Migratory Species	
	Atlantic Sharpnose Shark-Neonate
	Sandbar Shark-Adult
	Sandbar Shark-Neonate

EFH Category	Species
	Scalloped Hammerhead Shark-Neonate
	Spinner Shark-Adult
	Tiger Shark-Juvenile
	Tiger Shark-Neonate
Coastal Migratory Pelagics of the Gulf of Mexico AND South Atlantic	
	Cobia
	King Mackerel
	Spanish Mackerel
Gulf of Mexico Red Drum	
	Red Drum
Gulf of Mexico Shrimp	
	Brown Shrimp
	Pink Shrimp
	White Shrimp
Reef Fish Resources of the Gulf of Mexico	
	Almaco Jack
	Banded Rudderfish
	Black Grouper
	Blackfin Snapper
	Blueline Tilefish
	Cubera Snapper
	Gag
	Goldface Tilefish
	Gray (Mangrove) Snapper
	Gray Triggerfish
	Greater Amberjack
	Hogfish
	Lane Snapper
	Lesser Amberjack
	Mutton Snapper
	Nassau Grouper
	Queen Snapper
	Red Grouper
	Red Snapper
	Scamp
	Silk Snapper
	Snowy Grouper
	Speckled Hind
	Tilefish
	Vermilion Snapper
	Warsaw Grouper
	Wenchman
	Yellowedge Grouper
	Yellowfin Grouper
	Yellowmouth Grouper

State-listed Birds, MBTA, and BGEPA

All migratory bird species are protected under the MBTA. There are a few State of Florida–listed bird species with potential for occurrence in and around the proposed project location. These include least tern (*Sterna antillarum*), and southeastern/Cuban snowy plover (*Charadrius alexandrinus tenuirostris*). The nesting season in Florida is from February 15 to August 31.

The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008). According to the FWC Bald Eagle Nest Locater, there is only one bald eagle nest within 10 miles of the project site, and it is located approximately 8 miles away from the proposed project area (FWC 2013b).

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-14 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-14. Potential project impacts to different migratory bird group

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Shorebirds/seabirds	Resting, foraging	Construction may disturb resting or foraging birds; however, these species if disturbed would disperse to nearby suitable habitat and resume normal activities. State-listed birds are unlikely to nest in or near the project area due to the lack of beaches, dunes, or mudflats in the vicinity of the project area. If construction activities occur during the nesting season (February 15 to August 31), any nesting birds could be disturbed by noise generated by terrestrial and in-water activities.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized in Table 12-15.

Table 12-15. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Shorebirds/seabirds	The Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting. If construction and planting occurs during shorebird nesting season, the most recent version of the FWC Nesting seabirds and shorebird protection conditions will be followed.

Environmental Consequences

The proposed project has been evaluated for potential short- and long-term impacts to state-listed and federally listed threatened and endangered species that may occur in and adjacent to the project area, based on available suitable habitat and restoration goals. Descriptions of these evaluations are provided below.

Protected Species

On February 6, 2014, the review of potential impacts to species managed by USFWS was completed for the Gulf Breeze Wayside Park Boat Ramp project (McClain, 2014). This review determined the proposed project may affect, but is not likely to adversely affect the West Indian manatee and would have no effect on five species of sea turtles in terrestrial habitats (green, hawksbill, Kemp's ridley, leatherback, and loggerhead).

Consultation of potential impacts on protected species managed by NMFS from this project was initiated on February 11, 2014.The Trustees' review of the potential impacts of the project for protected species managed by NMFS determined the proposed action "may affect, but is not likely to adversely affect" the following species and associated critical habitats in the project implementation area:

- Gulf Sturgeon Critical Habitat- The proposed project footprint falls within an identified Gulf sturgeon critical habitat unit (Critical Habitat Unit 9 – Pensacola Bay); however, it has been determined that the construction activities associated with this project will not adversely affect the PCE's associated with this habitat or modify designated Gulf sturgeon critical habitat.
- Gulf Sturgeon - The proposed may project affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Smalltooth Sawfish – The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Green Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Loggerhead Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Hawksbill Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Leatherback Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Kemp's Ridley Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.

Concurrence from NMFS with the Trustees' conclusions for these species and associated critical habitats is still pending.

The Trustees also evaluated the potential for take of Marine Mammals under the MMPA and due to these species' mobility and the implementation of NMFS' *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS, 2006), *Standard Manatee Conditions for In-Water Work* (USFWS 2011), and USFWS recommended conservation measures for listed species and other trust resources, take of marine mammals under the MMPA is not anticipated.

Essential Fish Habitat

The restoration actions at the Gulf Breeze Wayside Park boat ramp are expected to have no to minor impacts on EFH. The proposed project would utilize standard construction methods to repair the existing Wayside Park public boat ramp and seawall cap that were previously damaged from the *Deepwater Horizon* oil spill cleanup efforts. Some demolition and debris removal may be required during repairs and enhancements to the existing structures. A portion of the boat ramp and seawall repair work would likely take place in-water; however, all other activities, including installing a restroom facility and repairing and enhancing the parking area, would take place above mean high water and are not expected to affect EFH. Repair to the existing seawall would not change the seawall's overall footprint. There would be no expansion outside of the existing 2-acre site. Total construction time would be between 4 and 6 months, and total duration of work in-water would be a fraction of the total construction time. Because all planned work would take place within the footprint of the existing structures, no habitat conversion is expected to result from this project work.

Construction activities will likely have a temporary negative impact on habitat. Disturbance caused by the use of heavy equipment, sediment disturbance, potential increase of debris in the water, and increased noise associated with repairing the boat ramp and seawall cap may affect any species using the habitat near the boat ramp. During construction, all appropriate BMPs will be followed to minimize the potential impacts of construction activities on EFH and species in the area. During construction, adjacent areas with equivalent or better habitat will be available and undisturbed and organisms could move away from disturbed areas.

As a result the Trustees conclude he project is not likely to adversely affect EFH. The proposed boat ramp and seawall cap repairs will take place within the footprint of the existing structures. No habitat conversion is anticipated as part of this project. Disturbance to species will be minor and brief.

On March 27, 2014, NOAA concurred that the project is not likely to adversely affect EFH and any disturbances to species will be minor and brief (Fay, 2014).

State-listed Birds, MBTA, and BGEPA

Bald eagles are not known to be present in the project area so will not be affected. At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.75.5.3 Human Uses and Socioeconomics

12.75.5.3.1 Socioeconomics and Environmental Justice

Affected Resources

The population of Santa Rosa County is 151,372 (U.S. Census Bureau 2010). The proposed project is contained within Census Tract 109 in Santa Rosa County. Table 12-16 shows population/minority data for Census Tract 109, Santa Rosa County, and Florida.

Environmental Consequences

The proposed project would have a short-term, minor, direct adverse impact through disruption of localized recreational fishing and boating during construction. Direct, short-term, moderate benefits through local job creation would result from construction activities. Approximately 10 temporary construction jobs would be created for up to 4 months for boat ramp and seawall cap repairs, and about 11 temporary construction jobs would be created for up to 6 months for restroom facility construction. Long-term, direct, moderate benefits would result from increasing the quality of the boat ramp, parking area, and restroom facilities in the project area, and would likely increase recreational use of this area.

Table 12-16. Populations of Florida Santa Rosa County, Census Tract 109.

TOPIC	FLORIDA		SANTA ROSA COUNTY		CENSUS TRACT 109	
2010 Total Population	**18,801,310**		**151,372**		**5,763**	
White alone	14,109,162	75.0%	132,920	87.8%	5,518	95.8%
Black or African American alone	2,999,862	16.0%	8,205	5.4%	20	0.4%
American Indian and Alaska Native alone	71,458	0.4%	1,306	0.9%	34	0.6%
Asian alone	454,821	2.4%	2,759	1.8%	82	1.4%
Native Hawaiian and Other Pacific Islander alone	12,286	0.1%	217	0.1%	1	<0.1%
Some Other Race alone	681,144	3.6%	1,463	1.0%	31	0.5%
Two or More Races:	472,577	2.5%	4,502	3.0%	77	1.3%

This project is not designed to create a benefit for any one group or individual, but rather would provide benefits to all local groups. There are no indications that the proposed Gulf Breeze Wayside Park Boat Ramp project would be contrary to the goals of Executive Order 12898, or would create disproportionate, adverse human health or environmental impacts on minority or low-income populations of the surrounding community.

12.75.5.3.2 Cultural Resources

Affected Resources

A review of the Florida Master Site File's online data (State of Florida Division of Historical Resources 2013) indicates that there are at least 13 previously recorded archaeological sites within 1 mile of the current project area. Most of these are shipwrecks of historic age that have been identified in and around Old Navy Cove. Additionally, there is the Pensacola Bay Bridge (8SR2165/8ES3721), the Gulf Breeze Fishing Bridge (8SR2162), and the Gulf Breeze Ballast Pile/Shipwreck (8SR2176). None of the 11 shipwrecks in Old Navy Cove are in the immediate vicinity of the project area. The Pensacola Bay Bridge (8SR2165/8ES3721) is considered infrastructure not eligible for the National Register of Historic Places (NRHP). The Gulf Breeze Fishing Bridge (8SR2162) was reported as completely destroyed, and although the eligibility of this resource has not been determined, it is not likely eligible for the NRHP. Finally, the Gulf Breeze Ballast Pile/Shipwreck (8SR2176) is just across U.S. Highway 98 from the proposed boat ramp location. This site's eligibility for listing on the NRHP has also yet to be determined.

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project [has not identified the presence of a historic property within the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.75.5.3.3 Infrastructure

Affected Resources

The following infrastructure currently exists as part of the Wayside Park Public Boat Ramp, Gulf Breeze Wayside Park East across Gulf Breeze Parkway:

- Two-lane lighted boat ramp with deep water access
- Parking area for 36 vehicles and trailers
- Sidewalk
- Concrete seawall and riprap
- Picnic tables

Park water is acquired from Santa Rosa County municipal water supply. The landward side of the proposed project area is largely developed with a variety of infrastructure that includes roads and commercial and residential development.

Environmental Consequences

Construction of the new restroom would require connection to the South Santa Rosa Utility System. The impact to the regional system would be long-term but minor, because it is localized and would be within operational capacity. Visitor experience at the park would be improved with the provision of a new restroom. A sanitary sewer collection system permit would be obtained from the FDEP.

Additional improvements would be made to infrastructure by improving accessibility for ADA compliance. These infrastructure improvements would have moderate, beneficial, long-term impacts because they would improve the visitor experience and allow for a greater participation in the existing facilities. The proposed project would not impact other infrastructure in surrounding areas.

12.75.5.3.4 Land and Marine Management

Affected Resources

The land use surrounding the boat ramp area to the south, southwest, and southeast is primarily zoned as city, including residential neighborhoods and commercial businesses. Wayside Park is to the east of the project area and is a linear park zoned as city. The boat ramp area and adjacent Wayside Park are managed by the Parks and Recreation Department of City of Gulf Breeze.

The project would be located in a coastal area that is regulated by the federal Coastal Zone Management Act of 1972 and the Florida Coastal Management Act of 1978.

Environmental Consequences

Although the proposed project would require several permits for the short-term construction period, it would not require a variance, zoning change, or amendment to a land-use area or comprehensive management plan, as the existing use would be continued. There would be no impacts to land use or management and the project would be consistent with current land use.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS (Federal Trustees 2013). The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process (Milligan 2014).

12.75.5.3.5 Aesthetics and Visual Resources

Affected Resources

The landward side of the proposed project area has a variety of land uses that provide access for residents, visitors, and commuters, including Wayside Park.

Environmental Consequences

Aesthetics would be reduced in the project area during the construction operations, due to the physical presence of the equipment used to transport the material as well as the presence of other land-based support equipment. However, these impacts would be minor, direct, temporary impacts. Following construction, the repairs and enhancements to the existing boat ramp, parking lot, and restroom facilities would provide for minor, direct benefits through improved aesthetics to the local area.

12.75.5.4 Tourism and Recreational Use

Affected Resources

The proposed project site is currently used and operated as a public boat ramp with primitive restrooms and a semi-improved parking area. No data on current use are available; however, it is located on the west side of Gulf Breeze Highway (U.S. Highway 98) in the city of Gulf Breeze and is easily accessible to the public.

Environmental Consequences

During the construction period, recreational visitors would have very limited access to the boat ramp and parking lot areas and would experience negative impacts from noise and visual disturbances associated with the use of construction equipment. These limitations would be a minor inconvenience to visitors. Construction would have a short-term, minor, direct adverse impact on tourism and recreational use of the project area. A small amount of revenue would be lost through the inability to collect ramp fees during the time of construction. However, once completed, the project would result in a long-term, direct, positive impact on tourism and recreational use by providing needed improvements and repairs to the boat ramp, parking lot, and restroom facilities that would likely enhance recreational opportunities. Because work would include repairs to existing facilities without any expansion of the site

or number of boat ramps, no significant change to vessel traffic is expected regarding impacts to natural resources.

12.75.5.4.1 Public Health and Safety and Shoreline Protection

Affected Resources

The management of hazardous materials is regulated under various federal and state environmental and transportation laws and regulations, including the Resource Conservation and Recovery Act; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Emergency Planning and Community Right-to-Know Act; and the Hazardous Materials Transportation Act. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment, transport, and disposal) of these materials. Some of these laws provide for the investigation and cleanup of sites that have already been contaminated by releases of hazardous materials, wastes, or substances.

A review of the EPA's EnviroMapper revealed that there are no CERCLA sites on or immediately adjacent to the proposed project area. There are several nearby facilities that produce hazardous waste, including an automotive facility, a pharmacy, a supermarket, and a laundry facility (EPA 2013b). In addition, there are no known hazardous waste generation or disposal sites in the project area. According to the FDEP Bureau of Petroleum Storage Systems (FDEP 2013b), three storage tank and/or contaminated facilities exist within 0.5 mile of the proposed project area, the closest being approximately 675 feet from the edge of the project area. This site has been marked as having completed cleanup, and the facility is closed. Additionally, the shorelines are stabilized with existing human-made structures. Minimal erosion rates have been observed for this shoreline.

Environmental Consequences

Project construction would require mechanical equipment that uses oil, lubricants, and fuels. The contractor would be required to take appropriate actions to prevent, minimize, and control the spill of construction-related hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids, and to avoid releases and spills. As a result, no impacts associated with construction-related hazardous materials would be anticipated. The period of time during which a release could occur from construction activities would be short term, and any release would be expected to be minor. Additionally, there would be no significant impacts to shoreline stability as a result of this project due to the lack of expansion beyond the footprint of the existing structures, and BMPs to reduce erosion.

12.75.6 Summary and Next Steps

The Gulf Breeze Wayside Park Boat Ramp Improvements project would improve the existing boat ramp at Wayside Park in the City of Gulf Breeze, Santa Rosa County, FL. The proposed improvements include repairing the existing boat ramp and seawall cap, constructing a public restroom facility, and repairing and enhancing the parking area to improve access. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase recreational boating and fishing opportunities by improving the boat ramp area. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

12.75.7 References

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12.76 Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area: Project Description

12.76.1 Project Summary

The proposed Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area project would improve public access and enjoyment of natural resources at the Escribano Point portion of the Yellow River Wildlife Management Area. The proposed improvements include a one-time assessment and mapping activities necessary for developing the site for outdoor recreation purposes, hurricane debris removal and road repair,constructing an entrance kiosk, information facilities, parking facilities, interpretive facilities, fishing facilities, picnicking facilities, primitive camping sites, wildlife viewing areas, and bear-proof containers for trash and food storage. The total estimated cost of the project is $2,576,365.

12.76.2 Background and Project Description

The Trustees propose to improve and enhance Escribano Point (see Figure 12-16 for project location). Escribano Point is uniquely situated to provide recreational opportunities in saltwater, freshwater and upland ecosystem environments. In particular it provides scenic water views and a wide range of recreational uses such as paddling, camping, fishing, wildlife viewing and nature study. Escribano Point is key to providing military base buffers to Eglin Air Force Base and the Navy's Choctaw Outlying Field immediately adjacent to the wildlife management area (WMA). FWC's management of this property includes providing public access and enjoyment of these coastal resources.

The objective of the Escribano Point project is to enhance and/or increase recreational use and wildlife viewing opportunities by improving the recreational use of the land. The restoration work proposed would include 1)an entrance Kiosk, information, parking and facilities; 2) north beach hammock parking, interpretive, fishing and picnicking facilities; 3) primitive camping sites; 4) wildlife viewing facilities; 5) Escribano Point parking, interpretive, fishing and picnicking facilities; and 6) bear-proof containers for trash and storing food at campsites. Additionally there would be one-time assessment and mapping activities necessary for developing the site for outdoor recreation purposes (natural communities mapping, rare and exotic plan inventories, development of a hydrological assessment and water control plans for road access improvements, and herpetofauna survey). Funding for hurricane debris removal and road repair with hydrologic restoration would also be included.

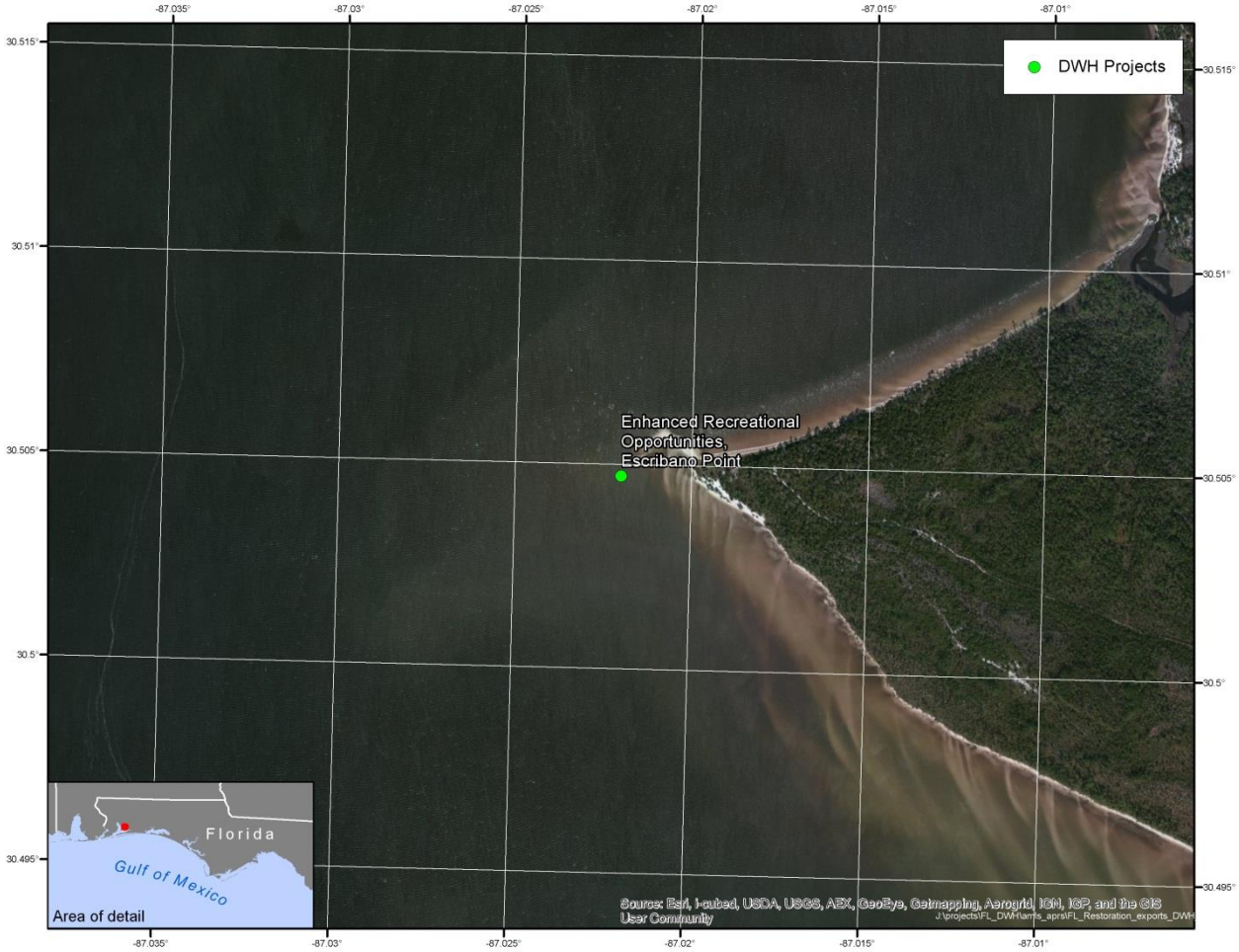

Figure 12-16. Location of developing enhanced recreational opportunities on the Escribano Point portion of the Yellow River Wildlife management area project.

12.76.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposed Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area project is intended to enhance and/or increase recreational use and wildlife viewing opportunities by improving the recreational use of the land.This project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill. Thus, the nexus to resources injured by the Spill is clear. See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay.Florida State Wildlife Management Areas have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and

Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.76, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration with the exception of noise and living coastal and marine resources which would be minor, localized and long term. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.76 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com).In addition to meeting the criteria for the Framework Agreement and OPA, the Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area in which boom was deployed and that was impacted by response and SCAT activities for the Spill.

12.76.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. The project objective is to enhance and/or increase recreational use and wildlife viewing opportunities by improving the recreational use of the Escribano Point portion of the Yellow River Wildlife Management Area.Performance monitoring will evaluate: 1) the hurricane debris removal and road repair; 2) the constructionof an entrance kiosk, information, parking and facilities; 3) the improvements of the north beach hammock parking;4) the construction of the interpretive, fishing and picnicking facilities; 5) the construction of the primitive camping sites; 6) the construction of the wildlife viewing facilities; 7) the construction of the Escribano Point parking, interpretive, fishing and picnicking facilities; and 8) the installation of the bear-proof containers for trash and storing food at campsites. Specific success criteria include: 1) the completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the visitor area of the wildlife management area is open and available.

Long-term monitoring and maintenance of the improved facilities will be completed by FWC as part of its regular public facilities maintenance activities. The proposed project cost includes $500,000 for five years of management costs.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users.Following the one year construction performance monitoring period, FWC will monitor the recreational use activity at the site. FWC staff will visit the site twice a year to count the number of users at the wildlife management area. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

12.76.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $5,152,730expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[6]

12.76.6 Costs

The total estimated cost to implement this project is $2,576,365. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[6] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.77 Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area: Environmental Review

The proposed Escribano Point project would improve public access and enjoyment of natural resources at the Escribano Point portion of the Yellow River Wildlife Management Area. Improvements include a one-time assessment and mapping activities necessary for developing the site for outdoor recreation purposes, hurricane debris removal and road repair,constructing an entrance kiosk, and interpretive facilities, parking facilities, fishing facilities, picnickingfacilities, primitive camping sites, wildlife viewing areas, and bear-proof containers for trash and food storage.

12.77.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP) entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf in advance of the completion of the injury assessment process. Early restoration is not intended to, and does not fully address all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill (Framework Agreement), the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the Federal Register on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III Early Restoration Plan (ERP). This project was submitted as an Early Restoration project on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and the Oil Pollution Act (OPA), the project meets Florida's criteria that Early Restoration projects occur in the eight-county Florida panhandle area that deployed boom and was impacted by the Spill.

The Trustees propose to improve and enhance Escribano Point (Figure 12-17). Escribano Point is uniquely situated to provide recreational opportunities in saltwater, freshwater and upland ecosystem environments. In particular it provides scenic water views and a wide range of recreational uses such as paddling, camping, fishing, wildlife viewing and nature study. Escribano Point is key to providing military base buffers to Eglin Air Force Base and the Navy's Choctaw Outlying Field immediately adjacent to the WMA. FWC's management of this property includes providing public access and enjoyment of these coastal resources.

Elements of the project would include construction of public access facilities on site including:

- Entrance kiosk, information station and parking lot and facilities;
- Parking lot, interpretive signs and fishing and picnicking facilities at the North Beach Hammock;
- Primitive campsites and placement of bear-proof containers;
- Parking lot, interpretive signs, and fishing and picnicking facilities at Escribano Point;
- Wildlife viewing areas; and
- Support shop facility.

In addition to construction, the proposed project includes a one-time assessment and mapping activities necessary for developing the site for outdoor recreation purposes as well as removal of debris placed on the point from previous hurricanes and storms. These assessments include natural communities mapping, rare and exotic plant inventories, development of a hydrological assessment and water control plans for road access improvements, and a herpetofauna survey. The total estimated cost of the project is $2,576,365.

12.77.2 Project Location

The proposed project is located in the State of Florida, Santa Rosa County. Escribano Point is along the East and Blackwater Bays, of which East Bay connects to Pensacola Bay to the southwest. Figure 12-17 and

Figure 12-18 show the general and more specific project location.

Figure 12-17. General project location map for Escribano Point.

Figure 12-18. Detailed project location map for Escribano Point.

12.77.3 Construction and Installation

The proposed Escribano Point project will begin with surveying and mapping of the project site that will, among other things, include natural communities mapping, developing inventories of rare and exotic plants, and conducting a herpetofauna survey. At the same time, initial pre-construction work will include developing a hydrological assessment and water control plans for the area that incorporate possible improvements to unpaved access roads.

Based on the results of these mapping and surveying efforts and the results of the hydrological assessment, a final land management plan detailing restoration and access-related activities will be developed for the area. Generally, the land management plan will seek to restore natural hydrologic systems in the area and attempt to reintroduce critical elements that help shape these types of natural systems, for example the use of prescribed fire. Additional elements of this envisioned plan include: hurricane debris removal along the shore near Escribano Point; completing repairs/renovations to existing roads, but not paving them; constructing an entrance kiosk, information facilities, parking facilities, an interpretive fishing facility, interpretive picnicking facilities, primitive camping sites, wildlife viewing trails, a site-support workshop, and a wildlife viewing structure. The surveying and mapping area will help inform placement of the kiosk, facilities, camping sites, wildlife viewing areas, and hydrologic restoration.

Additional details with respect to the proposed construction activities include the following:

- Constructing an entrance kiosk, information station, and parking lot with support facilities. While, the design and exact location for each of these elements is not yet known, the maximum footprint needed for the sum of all the projects is expected to be approximately 1 to 1.5 acres. The preference is to construct these elements on an existing disturbed site adjacent to an existing silviculture road. Figure 12-18 shows a prototypical design of a typical entrance package including a kiosk and sign. Signage in this kiosk could include information on interacting with sensitive species as well as guidelines for activities such as driving in the area (e.g., stay on formal roads). The proposed parking lot would be unpaved.
- Constructing a picnic area with unpaved parking lot. While the exact location for these features is not known it is expected they would be located in a previously disturbed coastal oak hammock area that would be accessible by an existing silviculture road and a new unpaved road developed as part of this project. The total footprint of all disturbances associated with this work is expected to be less than 1 acre. Figure 12-20 shows the design of a prototypical picnicking facility, and Figure 12-21 shows a typical interpretive sign as seen at other Florida Wildlife Management Areas.
- Constructing five primitive campsites with bear-proof trash containers in existing clearings. Each campsite is expected to be approximately 400 square feet with a fire ring and bear-proof container. Figure 12-22 shows an example of a typical bear-proof container used. Campsites would be maintained by underbrushing and mowing but would not require ground disturbance.
- Constructing wildlife viewing trails and an elevated wildlife viewing structure. The final location for these structures would be determined based upon a wildlife viewing analysis of the site and

the location of the other public access facilities. The proposed structure and trails are expected to disturb approximately 0.2 acre with the proposed trails being worked into the habitat connecting the site to one of the proposed parking areas. Figure 12-23 shows an example of a wildlife viewing trail.

- Constructing a shop support facility consisting of a compound with a metal building and fencing. Utilities would be provided by an on-site power generator since no existing utilities serve the site. Total project footprint for this facility is expected to be less than 2 acres. Figure 12-24 shows a typical shop.

This proposed work will be limited to the area above mean high water in the project parcel. Long-term monitoring and maintenance of the improved facilities will be completed by Florida Fish and Wildlife Conservation Commission (FWC) as part of their regular public facilities maintenance activities.

Figure 12-19. Entrance package example.

Figure 12-20. Picnicking facility example.

Figure 12-21. Interpretive signs example.

Figure 12-22. Bear-proof container example.

Figure 12-23. Wildlife viewing trail example.

Figure 12-24. Support shop facility example.

Project construction would be expected to begin 4 to 6 months after funding is received. A detailed timeline of the proposed construction scheduled can be seen below in Table 12-17.

Table 12-17. Proposed project timeline.

ACTIVITY	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Debris Removal	X			
Survey	X			
Hydrological Assessment	X	X		
Plant and Animal Survey	X	X		
Primitive Campsites	X	X		
Entrance Package	X	X	X	
Shop Support Facility	X	X	X	
Road Restoration/Construction		X	X	X
North Beach Picnic Area		X	X	X
Escribano Point Picnic and Interpretation		X	X	X
Wildlife Viewing Facility		X	X	X

Note: "X" delineates when activities for the proposed projects would occur and does not represent the construction period alone.

12.77.4 Operations and Maintenance

Long-term operations and maintenance would be completed by the Florida Fish and Wildlife Conservation Commission (FWC) as part of their regular public facilities maintenance activities. Funding

for this post-construction maintenance is not included in the previously provided value for the project cost and will be accomplished by the FWC. Following construction FWC will monitor the recreational use activity of the site. FWC staff will visit the site twice a year to count the number of users at the wildlife management area.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users. Following the one year construction performance monitoring period, FWC will monitor the recreational use activity at the site. FWC staff will visit the site twice a year to count the number of users at the wildlife management area. The visitation numbers will then be provided to the Florida Department of Environmental Protection

12.77.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well asnatural resources. The following sections describe the affected environment and environmental consequences of the project.

12.77.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.77.5.2 Physical Environment

12.77.5.2.1 Geology and Substrates

Affected Resources

Escribano Point is located in Santa Rosa County, Florida, in between Blackwater Bay and East Bay, just west of the Navy's Choctaw Outlying Field Airport. The coastal portion of the project area is relatively flat to gently sloping with elevations ranging from sea level to 75-feet above sea level. The majority of the proposed project area and soils has been previously disturbed, while much of the surrounding areas are void of development and are undisturbed. Soils in the project area have been classified by Department of Agriculture Natural Resources Conservation Services (USDA NRCS) as Leon, Ortega, Pactolus, and Rutledge soils types. Each of these soil groups are primarily composed of sandy with some portions of clay, range from flat to gradual slopes, are moderately well drained with a low erosion potential (USDA NRCS 1980; FWC 2006).

Environmental Consequences

Construction and construction activities associated with the development of enhanced recreational activities would disturb, modify, and expose soils in the direct footprint of the project sites, approximately 6 acres. Construction activities would likely include the use of a backhoe, grader, skid steer, and tractors. Construction equipment and materials staging have not been identified but would

be located on previously disturbed sites or sites that would be disturbed as a result of construction. Impacts to soils would occur primarily through the clearing and grading of sites, the removal of existing vegetation, and the placement of structures including pilings and foundations. Soils in the direct footprint of structures, parking areas, and trails would lose all productivity; however, based on the relatively small amount of soils impacted and previous disturbances to the soils, impacts would be long-term, minor and adverse. Specific mitigation measures would be implemented during construction to minimize erosion and overall soil impacts. These would include following established best management practices (BMPs) such as the implementation of an erosion control and stormwater management plan, the installation of sediment traps prior to commencement of construction activities, and on-going construction monitoring to ensure compliance.

Given that there would likely be increased visitation to the area as a result of the proposed project soils in the footprints of the project areas would see continued impacts; however, based on the nature of impacts (vehicle and foot traffic) and the relatively small area impacted, impacts would be long-term and negligible as a result of site use.

12.77.5.2.2 Hydrology and Water Quality

Affected Resources

The principal water bodies associated with the project area are East and Blackwater Bay. Both bodies of water have been designated as outstanding Florida waters (OFWs), indicating these bodies of water are worthy ofspecial protection due to natural attributes. An OFW is designated by the Florida Department of Environmental Protection after approval of theEnvironmentalRegulation Commission (ERC), once it is determined that the environmental, social, and economicbenefits of the Special Water status outweigh the environmental, social, and economic costs (Rule 62-302.700(5), FAC). The Florida Department of Environmental Protection (FDEP) is granted the authority by Section 403.061(27), FS, to establish rules forOFWs. The purpose of the designation as an OFW is to protect existing water quality and to preserve the exceptional ecological and recreational significance of the waterbody. FDEP willnot issue permits for direct pollutant discharges to OFWs, which would lower ambient (existing) waterquality, or for indirect discharge, which would significantly degrade the OFW.

The site is located on the shoreline in between Blackwater and East Bay. Both bays and the waters surrounding the project area have beenimpacted by numerous non-point and point source pollution sources resulting in a reduction of natural biodiversity and productivity. In addition to surface waters the proposed project area comprises three aquifers, the surficial aquifer system, intermediate aquifer system, and the Floridan aquifer system, listed from shallowest to deepest. The surficial aquifer system is the primary source of groundwater for the project area and Santa Rosa County. The entire project area is located within the 100-year floodplain.

Environmental Consequences

Project activities are not anticipated to require construction in water or in wetlands; however, based on construction activities on-land it is possible that some impacts via turbidity and the potential for increased sediment released into water could occur. It is anticipated that all potential impacts would be short-term in nature occurring only during construction resulting in short-term, negligible, adverse impacts to water quality. BMPs along with other avoidance and mitigation measures required by state

and federal regulatory agencies would be employed to minimize any water quality and sedimentation impacts. It is not anticipated that based on the construction requirements of the proposed project that impacts to groundwater would occur.

Long-term, the planned enhancement of recreational opportunities could result in some in-water recreation, increasing turbidity of water in the project area, resulting in long-term, negligible adverse impacts. The planned removal of debris would have a long-term, negligible impact on water quality as a result for the decreased potential for water contamination as a result. Based on the details and construction requirements of the proposed project, impacts to floodplains and groundwater are not anticipated.

The proposed project is not anticipated to require authorization by the U.S. Army Corps of Engineers (Corps) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA).

12.77.5.2.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

The U.S. Environmental Protection Agency (USEPA) defines ambient air in 40 C.F.R. Part 50 as “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Clean Air Act Amendments (CAAA), the USEPA has promulgated National Ambient Air Quality Standards (NAAQS). The NAAQS include primary standards which set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. To date, the USEPA has issued NAAQS for seven criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO2), particles with a diameter less than or equal to a nominal 10 micrometers (PM10), particles with a diameter less than or equal to a nominal 2.5 micrometers (PM2.5), ozone (O3), nitrogen dioxide (NO2), and lead (Pb). Individual states may promulgate their own ambient air quality standards for these “criteria” pollutants, provided that they are at least as stringent as the federal standards. In Table 12-18, below, both State of Florida and federal primary ambient air quality standards for criteria air pollutants are presented.

The project is located in a primarily undeveloped area with few sources of emissions. In 2013, Santa Rosa County was in attainment of the NAAQS for all criteria pollutants as designated by the USEPA.

Greenhouse gases (GHGs) are chemical compounds found in the Earth’s atmosphere that absorb and trap infrared radiation as heat. Global atmospheric GHG concentrations are a product of continuous emission (release) and removal (storage) of GHGs over time. In the natural environment, this release and storage is largely cyclical. For instance, through the process of photosynthesis, plants capture atmospheric carbon as they grow and store it in the form of sugars. Human activities such as deforestation, soil disturbance, and burning of fossil fuels disrupt the natural cycle by increasing the GHG emission rate over the storage rate, which results in a net increase of GHGs in the atmosphere.The principal GHGs emitted into the atmosphere through human activities are CO2, methane, nitrous oxide, and fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. CO2 is the major GHG emitted, and the burning of fossil fuels accounts for 81 percent of all U.S. GHG emissions (USEPA 2010).

Table 12-18. State and Federal ambient standards for criteria air pollutants.

POLLUTANT	AVERAGING PERIOD	FEDERAL PRIMARY STANDARD	STATE OF FLORIDA STANDARD
Ozone	8-hour	0.075 ppm	Same as Federal
	1-hour (daily max.)	0.12 ppm	Same as Federal
PM2.5	Annual (arithmetic mean)	15.0 $\mu g/m^3$	Same as Federal
	24-hour	35 $\mu g/m^3$	Same as Federal
PM10	Annual (arithmetic mean)	NA	50 $\mu g/m^3$
	24-hour	150 $\mu g/m^3$	150 $\mu g/m^3$
Carbon Monoxide	8-hour	9 ppm	9 ppm
	1-hour	35 ppm	35 ppm
Nitrogen Dioxide	Annual (arithmetic mean)	0.053 ppm	0.05 ppm
	1-hour	0.100 ppm	Same as Federal
Sulfur Dioxide	Annual (arithmetic mean)	0.03 ppm	0.02 ppm
	24-hour	0.14 ppm	0.10 ppm
	1-hour (per annum)	NA	0.40 ppm
	1-hour (per 7 days)	NA	0.25 ppm
	5-minute	NA	0.80 ppm
Lead	Rolling 3-month average	0.15 $\mu g/m^3$	Same as Federal
	Quarterly average	1.5 $\mu g/m^3$	Same as Federal
Total Suspended Particulate	Annual (geometric mean)	NA	60 $\mu g/m^3$
	24-hour	NA	150 $\mu g/m^3$

Implementation of the proposed project would include transportation and heavy construction equipment which may include a backhoe, grader, skid steer, dump trucks, and tractors.

Environmental Consequences

Project implementation would require the use of heavy equipment which would temporarily affect air quality in the project vicinity due to construction vehicle emissions. Excavation activities associated with the construction portions of the project may produce fine particulate matter. Available BMPs would be employed to prevent, mitigate, and control potential air pollutants during project implementation. Any air quality impacts that would occur would be localized, short in duration, and minimal based on the small scale of construction with overall impacts to air quality would be short-term and minor. Long-term, the site may experience some increase in use by the public potentially resulting in increased emissions and impacts to air quality from visitors passenger vehicles; however, the increase in visitor use is not expected to be substantial enough to cause any evident impacts to air quality or GHG, with impacts being long-term, minor and adverse.

The use of gasoline and diesel-powered construction vehicles and equipment, including cars, trucks, bulldozers, dump trucks, and backhoes, would contribute to an increase in GHG emissions. describes the high end of a potential likely GHG emission scenario for the implementation of this project.

Based on the assumptions described in Table 12-19, and the small scale and short duration of the construction portion of the proposed project, predicted GHG emissions would be short-term and minor and would not exceed 25,000 metric tons of CO2e per year. Available BMPs would be employed to reduce the release of GHGs during implementation. Based on the small scale and short duration of the

project, GHG emissions in the project staging and deployment areas would be minimal. Therefore, any increase in GHG emissions would be short-term and minor.

12.77.5.2.4 Noise

Affected Resources

Noise can be defined as unwanted sound and noise levels, and impacts are interpreted in relationship to its impacts on nearby residents.Noise associated with visitors and recreational land uses, such as boating, can be of concern to surrounding communities.Noise also emanates from vehicular traffic associated with new facilities and from project sites during construction. Ambient noise (the existing background noise environment) can be generated by a number of noise sources, including mobile sources, such as airplanes, automobiles, trucks, and trains; and stationary sources such as construction sites, machinery, or industrial operations.

The Noise Control Act of 1972 (42 U.S.C. 4901 to 4918) was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale which approaches the sensitivity of the human ear across the frequency spectrum. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear. Table 12-20 presents some familiar sounds and their decibel levels.

Table 12-19. Projected project GHG emissions.

VESSEL/CONSTRUCTION EQUIPMENT7	NO. OF HOURS OPERATED8	CO_2(METRIC TONS)9	CH_4 (CO_2E)(METRIC TONS)10	NOX (CO_2E)(METRIC TONS)	TOTAL CO_2E(METRIC TONS)
Trackhoe11	2,640	924	.26	.26	924.52
Crane	720	209	.07	.07	209.14
Grader	720	281	.22	.22	281.44
Dumptruck (2)1213	2,640	1,795	1.06	1.06	1,797.12
TOTAL					**3,212.22**

[7] Construction estimates from an email from the Florida Fish and Wildlife Conservation Commission on 9/30/2013.

[8] Emissions assumptions for all equipment based on 240 10-hour days of operation per piece of equipment over a 12-month construction period.

[9] CO_2 emissions assumptions for diesel and gasoline engines based on USEPA 2009.

[10] CH_4 and NOx emissions assumptions and CO_2e calculations based on USEPA 2011.

[11] GHG emission estimates were not available for skid steers. In order to present the highest estimate, GHG emissions for a backhoe were used.

[12] GHG emission estimates were not available for a tractor trailer. In order to present the highest estimate, GHG estimates for a dumptruck were used.

[13] Construction equipment emission factors based on USEPA NONROAD emission factors for 250hp pieces of equipment. Data was accessed through the California Environmental Quality Act Roadway Construction Emissions Model.

Table 12-20. Familiar sounds and their decibel levels (dB).

SOUND	DECIBEL LEVEL (DB)
Whisper	30
Normal Conversation	50-65
Vacuum cleaner at 10 feet	70
Midtown Manhattan Traffic Noise	70-85
Lawnmower	85-90
Train	100
Nearby Jet Takeoff	130

Source: Occupational Health and Safety Administration 2012

The project area is primarily void of development with the primary sources of ambient (background) noise in the project area coming from the operation of vehicles, commercial and recreational vessels, the Navy's nearby Choctaw Outlying Field Airport and natural sounds such as wind and wildlife. The levels of noise in the project area varies, depending on the season, and/or the time of day, the number and types of sources of noise, and distance from the sources of noise.Noise levels fluctuate with highest levels usually occurring during the spring and summer months due to the increased boating and coastal beach activities.

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the project. Noise-sensitive land uses in the project area include visitors and wildlife to the area.

Environmental Consequences

Project area visitors and wildlife may be sensitive to changes in noise sources or levels due to the project.Instances of increased noise are expected during construction of the project. The proposed project would generate construction noise associated with equipment during the construction period. Construction noise can also be a nuisance to those visitors and wildlife in the area.

Mitigation measures that serve to limit noise during construction include: limiting activity at project sites to daytime hours; limiting truck traffic ingress/egress to the site to daytime hours; promoting awareness that producing prominent discrete tones and periodic noises (e.g., excessive dump truck gate banging) should be avoided as much as possible; and requiring that work crews seek pre-approval for any weekend activities, or activities outside of daytime hours. Because construction noise is temporary, any negative impacts to the human environment during construction activities would be short-term and minor.

Once project components are constructed, noise can be generated from operations, the vehicles associated with site use and visitor use of the site. This would add a noticeable amount of noise and notably change the noise environment of the area. However, it is not anticipated that noise levels would be bothersome for visitors or wildlife in the area, with overall impacts being long-term, minor and adverse.

12.77.5.3 Biological Environment

12.77.5.3.1 Living Coastal and Marine Resources

Affected Resource

Coastal and marine resources at the site include open water habitat in the Blackwater and East Bay as well as the existing coastline.

Terrestrial vegetation occurring in the project area is typical of a coastal environment with a dense canopy and a diverse population of shrubs and herbs. Wetlands exist in the project area along the Pensacola Bay and include estuarine and marine deepwater, estuarine and marine wetland, freshwater emergent wetland, freshwater forested/shrub wetland and riverine (FWC 2006, USFWS 2013).

Environmental Consequences

Impacts to living coastal and marine resources are expected to be long-term and minor. The proposed project is not anticipated to require any in-water work and the project area already sees some recreational used. All appropriate conditions permit requirements, and BMPswould be followedto prevent impacts to aquatic environments. The development of the site would result in some short-term noise increased and increases in the human presence of the area. This could result in the displacement of some wildlife and the removal of existing vegetation. However, based on the relatively small areas to be developed and the abundance of suitable habitat and vegetation in the vicinity of the project area, impacts are not expected to be substantial and would likely be longterm and minor. The continued use of the site by visitor as a result of construction could result in some long-term disturbances. However, it is expected that with the types of activities likely to occur at the site, previous interactions of wildlife with humans in the area and the relatively small area impacted, impacts are likely to be longterm and minor. Consultation to determine potential impacts to listed, proposed, and candidate species will be initiated with the USFWS. Any potential adverse impacts to protected species would be avoided or minimized through the implementation of conservation measures that would be developed through the Endangered Species Act consultation process with the USFWS.

Protected Species

Affected Resources

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Santa Rosa County, Florida14. Table 12-21 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

[14] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

Table 12-21. Potential Impacts to Species/Critical Habitats managed by USFWS

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Red-cockaded woodpecker	The site has supported recent logging activity and while the project site contains planted pine, no mature long leaf or loblolly pine stands are expected to be present. Therefore, red-cockaded woodpeckers are not expected to be present on site. The Trustees have included conservation measures in the event that suitable habitat for this species is discovered during site surveys. Because of the low likelihood of presence and the additional conservation measures if individuals are present, the Trustees anticipate that any potential impacts can be minimized such that they are insignificant or discountable.
Eastern indigo snake	Eastern indigo snake may be present on site and could be startled, harassed, or potentially killed through construction and management activities. The conservation measures will minimize any potential impacts to the Eastern indigo snake such that impacts are insignificant and discountable.
Reticulated flatwoods salamander	The on-site wetland areas will be identified in the initial mapping and surveying and specifically avoided during construction activity (for kiosks, camp sites, trails, etc). However, hydrologic restoration may occur to connect wetlands. Hydrologic restoration would ultimately be expected to benefit any salamanders on site; however, during restoration salamanders could be startled, harassed, or potentially killed. The conservation measures will minimize any potential impacts to the reticulated flatwoods salamander such that impacts are insignificant and discountable.
Gopher tortoise	Gopher tortoise is a candidate species and may be present on site. If present the individuals could be startled, harassed, or potentially killed through construction and management activities. The conservation measures should avoid or minimize potential impacts to the tortoise to an insignificant and discountable level (if listed).
Panhandle lily and Gulf sweet pitcherplant	These species are not listed under the ESA; however, the U.S. Fish and Wildlife Service has been petitioned to list these species. Both are known to occur in the general project vicinity and could be destroyed by heavy equipment use or land management techniques, if present on site. Conservation measures are expected to minimize impacts to these species if found on site.
Other Species	There are a variety of at-risk species (amphibians, reptiles, birds, Florida black bear, and many plant species) that could be within the project area. The project goal is to improve habitat and support minor recreational activities. Short-term impacts to species and their habitats from construction and management could occur. Conservation measures described as part of the project construction above are expected to minimize impacts to any of the species found on site.

Based on the Trustees' reviews of project materials (Spring 2013) in coordination with representatives from NOAA's Protected Resource Division (PRD) in the South East Regional Office (SERO), the NOAA Restoration Center determined that this project falls outside of NMFS Endangered Species Act (ESA) jurisdiction, as it does not contain suitable habitat for species managed by NMFS. As a result, the project did not require further ESA evaluation from NOAA.

Environmental Consequences

On April 4, 2014 the review of potential impacts to species managed by USFWSwas completedfor this project (McClain, 2014). This reviewconcluded the proposed project may affect, but is not likely to adversely affect the following species managed by USFWS, red-cockaded woodpecker, eastern indigo snake, and reticulated flatwoods salamander. The review also concluded that a suite of candidate species (gopher tortoise) and at-risk species (specifically, panhandle lily and Gulf sweet pitcherplant) are not likely to be adversely affected by this project, if listed.

Essential Fish Habitat

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column.

Based on the Trustees' reviews of project materials (Spring 2013) in coordination with representatives from NOAA's Habitat Conservation Division (HCD) in the South East Regional Office (SERO), the NOAA Restoration Center determined that this project will not affect EFH because there is no EFH in the project area. As a result, the project did not require further EFH evaluation.

State-listed Birds, MBTA, and BGEPA

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-22 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-22. Potential project impacts to different migratory bird groups

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Passerines and near-passerines	Nesting, foraging, resting	A variety of birds likely use the project site to complete routine activities and as such these species behaviors could be interrupted during construction, hydrologic restoration, and visitor use.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized inTable 12-23.

Table 12-23. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Passerines and near-passerines	The Trustees expect noise from construction and restoration to be short-term during implementation and noise from visitor use should be short-term and sporadic. The Trustees expect any birds that are disturbed during feeding or resting behaviors to move to nearby areas on the project site as only a small portion of the site will be affected at any given time. If trees or shrubbery must be removed, these areas will be cleared outside of nesting season or inspected for active nests. If no active nests are found, vegetation may be removed. If active nests are found, vegetation can be removed after the nest successfully fledges.

Environmental Consequences

Bald eagles are not present at the project location so will not be affected. At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.77.5.4 Human Uses and Socioeconomics

12.77.5.4.1 Socioeconomics and Environmental Justice

Affected Resources

The population of Santa Rosa County was 155,390 in 2012 and accounted for 0.8 percent of the state's total population. In 2013, median household income in Escambia Countywas $55,913, which was approximately 14 percent higher than median household income in the State of Florida. Santa Rosa County contains both minority and low-income populations; however, no communities of environmental justice concern are located adjacent to the project area.

Environmental Consequences

Based on the relatively small scale of construction activities, it is not anticipated that the proposed project would create jobs nor would it have substantial impacts to the socioeconomic environment as a result of construction. It is likely that there would be direct beneficial impacts to the local economy as a result for increased recreational and tourist activity in response to the project components. These economic benefits would be concentrated to the local economy as well as in the service and retail industry sectors. Beneficial economic impacts would accrue to local recreational supply retailers,

restaurants, and hospitality providers. The proposed project would not adversely affect any low income or minority populations. Overall, no adverse impacts would occur to socioeconomics and environmental justice as a result of the proposed project.

12.77.5.4.2 Cultural Resources

Affected Resources

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, one archaeological site, named Shell Hammock, occurs within the boundary of Escribano Point. The site is a prehistoric shell midden with various components, dated as 450-1,000 AD (FWC 2006).

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources. At this time, the Trustees are planning to conduct a Phase I cultural survey of the project area as an initial implementation activity.

12.77.5.4.3 Infrastructure

Affected Resources

Infrastructure for the purpose of this analysis includes both transportation and utility networks. Vehicle use (for both transportation and maintenance) constitutes the primary source of energyconsumption in the vicinity of the proposed project area.The proposed project would not prevent access to any known energy resourcesin the project vicinity, such as coal, oil, or natural gas. The project would have no such impacts on theavailability of these resources.

Environmental Consequences

Construction of parking lots, roads, and trails would lead to long-term beneficial impacts to existing transportation infrastructure. Based on the nature of proposed improvements there would be no additional public utility requirements because all proposed power would be provided via a generator. A construction phase solid waste management plan would be implemented to manage the collection, recycling, and disposal all construction and demolition waste and non-construction related waste generated during construction activities.

12.77.5.5 Land and Marine Management

Affected Resources

The area surround the proposed project site is primarily void of development and consists of forests and shoreline. The proposed project area is currently used for recreational activities.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The

Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS (Federal Trustees 2013). The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process (Milligan 2014).

Environmental Consequences

Improvements to the Escribano Point would alter existing land management because the site would change from undeveloped to developed. However, the development of the site would not affect land and marine management because the site is already developed for recreational use; project plans would not change the nature of land use or management but would improve the function of the existing site, resulting in no impacts.

12.77.5.5.1 Aesthetics and Visual Resources

Affected Resources

The project area can be described as undeveloped and primarily consists of white sands, beach, and existing vegetation. The topography of the area is flat to gently sloping and the existing landscape in the vicinity of the proposed project areas is characterized by a mosaic of marsh wetlands with patches of mature coastal forest. There are no designated protected viewsheds in the vicinity of the project site.

Environmental Consequences

Temporary impacts to visual resources would result from construction of the proposed project components. Large construction equipment such as backhoesremovalwould temporarily obstruct the views for visitors and recreational users at the site. These short-term construction-related impacts to visual resources would be minor.

12.77.5.5.2 Tourism and Recreational Use

Affected Resources

The proposed project area is a public site that provides opportunities for recreation, including use of the recreational path and fishing. While the site is currently accessed by the public, exact visitation is not known because visitor counts and monitoring is not conducted (FWC 2006).

Environmental Consequences

During the construction period, recreational experience would be impacted from noise and visual disturbances associated with the use of heavy equipment. While these temporary inconveniences would result in minor short-term impacts on tourism and recreational use of the project area during the construction at the project areas, it is not anticipated that these impacts would be substantial because visitor use of the site as it currently exists is not substantive. Over the long-term, it is expected that the development of enhanced recreation activities would result in a long-term beneficial impact to overall visitor experience as a result of improved access to the sites, improved viewsheds, and an overall improved recreational experience.

12.77.5.5.3 Public Health and Safety and Shoreline Protection

Affected Resources

No hazardous materials currently exist at the project site where the potential for human exposure to natural or man-made hazards does not present a substantial risk. The project area is situated along an area of stable coastline not prone to significant shoreline erosion under normal conditions. Other natural hazards do not occur in any great abundance within the boundaries of the park. Some debris from previous storms and hurricanes does exist along the southwest portion of the project area as seen in Figure 12-25 and Figure 12-26. Debris in the project area varies greatly from fishing nets to building materials including 2x4s.

Figure 12-25. Project area existing debris.

Figure 12-26. Project area existing debris.

Environmental Consequences

No hazardous wastes would be created during restoration and construction activities. All hazardous materials handled during construction including paints, solvents, chemicals and petroleum products would be contained and appropriate barriers would be in place to ensure the protection of adjacent water resources from potential spills and leaks. In the event of a discharge of oil or release of hazardous substances all spills would be reported to the FDEP and all federal and state regulations would be followed during the cleanup. BMPs in accordance with the Occupational Safety and Health Administration (OSHA) and state and local requirements would be incorporated into construction activities to ensure proper handling, storage, transport and disposal of all hazardous materials. All waste generated during construction would be disposed of in the appropriate waste or recycling receptacles on-site would be taken off-site and disproved in an approved waste disposal site by the construction contractor. All occupational and safety regulations would be followed to ensure safety of all workers and the public. Construction and construction related activities would lead to the development of areas that are currently maintained as natural habitat. During construction soil and sediment stabilization measures would be incorporated into project design as needed in areas where the potential for erosion exists in order to protect resources and public health and safety. As a result of construction no adverse impacts to public health and safety are anticipated as a result of this project. Project improvements including the removal of existing debris are designed to improve public safety, resulting in long-term beneficial impacts.

12.77.6 Summary and Next Steps

The Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area project would improve public access and enjoyment of natural resources at the Escribano Point portion of the Yellow River Wildlife Management Area. The proposed improvements include a one-time assessment and mapping activities necessary for developing the site for outdoor recreation purposes, hurricane debris removal and road repair,constructing an entrance kiosk, information facilities, parking facilities, interpretive facilities, fishing facilities, picnicking facilities, primitive camping sites, wildlife viewing areas, and bear-proof containers for trash and food storage. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase the recreational use and wildlife viewing opportunities by improving the recreational use of the land. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

12.77.7 References

Federal Trustees, 2013. Letter to Kelly Samek, Coastal Program Administrator, State of Florida, December 12. Letter submitting determination for State review of consistency of Phase III early restoration actions for the Deepwater Horizon oil spill with Florida's approved Coastal Management Program.

Florida Fish and Wildlife Conservation Commission (FWC)

2006 A Conceptual Management Plan for the Escribano Point Parcels in Yellow River Wildlife Management Area 2006-2016.

McClain, D. 2014. Memorandum to Field Supervisor, Panama City Ecological Services Office, Subject Informal Consultation and ConferenceRequest for the Proposed Project Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area, Florida. Sent March 26. Concurrence signed April 4, 2014.

Milligan, L. 2014. Letter to Harriet Deal, U.S. Department of the Interior, February 28, 2014, Re: Florida Coastal Management Program Consistency for Draft Phase III ERP/PEIS projects.

Occupational Health and Safety Administration (OSHA)

2012 Occupational Noise Exposure. http://www.osha.gov/SLTC/noisehearingconservation/.

U.S. Department of Agriculture – Natural Resources Conservation Service (USDA NRCS)

1980 Soil Survey of Santa Rosa County, Florida.

U.S. Environmental Protection Agency (USEPA)

2009 Emission Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel. http://www1.eere.energy.gov/vehiclesandfuels/facts/2009_fotw576.html.

2010 Green Book: Currently Designated Nonattainment Areas for All Criteria Pollutants. http://www.epa.gov/air/oaqps/greenbk/phistory.html.

2011 Emission Factors for Greenhouse Gas Inventories. www.epa.gov/climateleaders/documents/emission-factors.pdf.

U.S. Fish and Wildlife Service (USFWS)

2013 Natural Resources of Concern – Escribano Point, Florida. September 27, 2013.

12.78 Norriego Point Restoration and Recreation Project: Project Description

12.78.1 Project Summary

The proposed Norriego Point Restoration and Recreation project would involve stabilizing, enhancing and re-establishing recreational activities available at Norriego Point. Improvements would include constructing erosion control structures and new park amenities including a picnic pavilion with restrooms, showers, and drinking fountains; educational signage; a multi-use trail; bike racks; and vehicle parking along the access road adjacent to the park land. The total estimated cost of the project is $10,228,130.

12.78.2 Background and Project Description

The Trustees propose to protect, stabilize, and re-establish the recreational opportunities of Norriego Point, an impressive, well-known landmark and boaters' beach. Norriego Point is a natural sand feature in the inlet of East Pass, Destin, Florida (see Figure 12-27 for project location). It serves as the protective barrier for the boat channel entering Destin Harbor. Most significantly, it is the hub and focal point for Destin's water-based recreational opportunities and is what creates Destin's unique character.

The objective of the Norriego Point Restoration and Recreation project is to enhance and/or increase recreational baoting and beach use opportunitiesby stabilizing and re-establishing Norriego Point. The stabilization of Norriego Point is critical for the expansion and maintenance of its recreational use and the continued integrity of Destin Harbor. Construction of park amenities will enhance the use of Norriego Point for the public. The restoration workproposed involves the construction of several erosion control structures to dissipate wave energy and protect the dredged fill placed landward of the revetment.Two new embayments will provide additional swimming areas as well as more space for boat and kayak to pull-ins. Additionally, facilities will include a picnic pavilion with restrooms, showers, and drinking fountains; educational signage to encourage appreciation of this natural environment; a multi-use trail, bike racks, and vehicle parking along the access road adjacent to the park land. This road is to be built by a private property owner as part of the owner's development order.

12.78.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted.The proposedNorriego Point Restoration and Recreation project is intended to enhance and/or increase recreational boating and beach use opportunities by stabilizing and re-establishing Norriego Point.The project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill.Thus, the nexus to resources injured by the Spill is clear.See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

Figure 12-27. Location of Norriego Point restoration and recreation project.

The project is technically feasible and utilizes proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. Agencies have successfully completed projects of similar scope throughout Florida over many years.For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmentallaws and regulations, as described in section 12.78, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.78 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including this and other similar projects, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida (http://www.deepwaterhorizonflorida.com). In addition to meeting the evaluation criteria for the Framework Agreement and OPA, the Norriego Point Restoration and Recreation project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area that deployed boom and was impacted by response and SCAT activities for the Spill.

12.78.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. The project objective is to enhance and/or increase recreational boating and beach use opportunities by improving by stabilizing and re-establishing Norriego Point. Performance monitoring will evaluate: 1) the construction of erosion control structures; 2) the construction of a picnic pavilion with restrooms, showers, and drinking fountains; 3) the construction of educational signage and a multi-use trail; 4) the construction of bike racks; and 5) the addition of vehicle parking areas along the access road the construction. Specific performance criteria include: 1) the completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the point is open and available.

Long-term monitoring and maintenance will be completed by the City of Destin as part of their regular public facilities maintenance activities. Funding for this post construction maintenance is not included in the previously provided value for the project cost and will be accomplished by the City of Destin.

During the construction performance monitoring period, the Florida Trustees' Project Manager will go out twice a year to the site to record the number of users. Following the construction performance monitoring period, the City of Destin will monitor the recreational use activity at the site. The City of Destin will visit the site twice a year to count the number of users. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

12.78.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $20,456,260expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[15]

[15] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.78.6 Costs

The total estimated cost to implement this project is $10,228,130. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

12.79 Norriego Point Restoration and Recreation Project: Environmental Review

The purpose of this project is to protect, stabilize, and reestablish the recreational opportunities of Norriego Point.

12.79.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP) entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the *Deepwater Horizon* Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf Coast in advance of the completion of the injury assessment process. Early restoration is not intended to, and does not, fully address all injuries caused by the spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the spill.

Pursuant to the process articulated in the Framework Agreement, the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the *Federal Register* on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III Early Restoration Plan (ERP). This restoration project in Okaloosa County was submitted as an Early Restoration project on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and the requirements of the Oil Pollution Act (OPA), the project meets Florida criteria that Early Restoration projects occur in the eight-county panhandle area that deployed boom and was impacted by the Spill.

The purpose of this project is to protect, stabilize, enhance and reestablish the vast recreational opportunities of Norriego Point, an impressive, well-known landmark and boaters' beach.Norriego Point is a natural sand feature in the inlet of East Pass, Destin, Florida. It serves as the protective barrier for the boat channel entering Destin Harbor. Most significantly, it is the hub and focal point for Destin's water-based recreational opportunities and is what creates Destin's unique character.

The restoration of Norriego Point is critical for the expansion and maintenance of its recreational use and the continued integrity of Destin Harbor. Construction of park amenities would enhance the use of Norriego Point for the public.

Norriego Point served as a staging area and deployment area for setting booms across the Destin East Pass throughout the summer of 2010. The presence of the response equipment and the oil resulted in a loss of use for recreation and fishing.

12.79.2 Project Location

The proposed restoration project is located on Norriego Point in Destin, Okaloosa County, Florida. Norriego Point is a natural sand split in the inlet of East Pass to Choctawhatchee Bay.

Figure 12-28 and Figure 12-29 illustrate the project area.

12.79.3 Construction and Installation

The restoration and protection of Norriego Point involves the construction of several erosion control structures to dissipate wave energy and protect the dredged fill that will be placed landward of the revetment to restore and expand the land area lost over time, approximately 8 acres. Two new embayments formed by the placement of the erosion control structures would provide additional swimming areas as well as more space for boats and kayaks to pull in. See Figure 12-30Figure 12-30 for the layout of these improvements.

Additionally, the project would construct new facilities including a picnic pavilion with restrooms, showers, and drinking fountains; educational signage to encourage appreciation of this natural environment; and a multi-use trail, bike racks, and vehicle parking along the access road to the Point.

The dredged sand fill material that would be placed behind the renovated and new erosion control structures would be obtained during maintenance dredging of the navigation channels in the area. This dredging activity has already been reviewed and an active permit for this activity is held by the City of

Destin (permit number SAJ-2012-007-02 (SP-TPH). Standard construction methods would be used for all aspects of the project. All permits and best management practices (BMPs) would be followed to minimize any adverse impacts of the construction. An area on top of the existing dredge spoil "dun" will also be evaluated for posting and roping to prevent direct human access in an attempt to foster least tern nesting.

During construction of the erosion control structures, material from the old structures would be removed and sediment would be excavated from the old and new sites to prepare the area for the new structures. For upland construction, material planned for removal includes soil, rubble, and vegetation in the area where facilities, trails, and roads would be built.

Much or all of the erosion control structure work and embayment construction would be completed in-water. during any in-water construction activity, the conditions and guidelines of the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006) and the *Standard Manatee Conditions for In-Water Work* (USFWS, 2011)would be implemented and adhered to. These provisions include stopping operation of any equipment if sea turtles or smalltooth sawfish come within 50 feet of the equipment until the time when animals leave the project area of their own volition.Other work would be done from uplands, possibly using the existing parking lot as a staging ground.

Sheet piling would be installed as part of the erosion control structures. Jetting methods may be used within 2 feet of the required elevation; the final 2 feet would be driven without the use of jetting. The final pile-driving method would be approved before the selected contractor mobilizes to begin work. The size and number of sheet pilings would be finalized with final engineering designs, based on the size of material available and the amount required. Current plans indicate approximately 680 27' wide Z-shaped sheet piles would need to be placed as part of the construction effort. Sheet pilings would be made of rolled steel. Coal Tar Epoxy would be applied to all steel sheet piles in a controlled production facility before installation. The installed steel sheet pile would be covered with a concrete cap.

The project also includes repair of existing erosion control (groin) structures and construction of several new erosion control (groin) structures to expand the protected area to include the eastern portion of Norriego Point. Existing erosion control groins placed along the southern side of Norriego Point include two that are approximately 200 linear feet and one that is approximately 500 linear feet. The existing erosion control groins would be excavated and reconstructed. The old material would be reused and reinforced with new sheet pilings and armoring rock. The new erosion control groins would be built by excavating the area where the groins would be built, and placing a marine mattress constructed of geogrid materials and filled with material dredged from the site. Stone fill would be placed on top of the marine mattress; armor stone would be placed over the foundation to create a structure approximately 4 feet above North American Vertical Datum (NAVD) at the highest point and would be in the shape of a trapezoid. The finished erosion control groins would vary in size depending on the location; together, the five erosion control groins would be approximately 1,000 linear feet.

Detailed construction methods and plans have not yet been developed for the construction of the park amenities and would be subject to the final design and contractor approach. The remainder of the project would occur in uplands. Standard BMPs for this type of construction with limited in-water work

would be used to minimize impacts (e.g., using silt fencing, staging and refueling vehicles away from waterways).

A range of heavy construction equipment and tools would be required for construction of this project. Equipment would include bulldozers, graders, backhoes, bobcats, and so on. Dredge equipment would be required to remove material and create new land areas to support groin structures. The specific equipment used would vary with the different phases of the project.

Up to several feet of ground would be disturbed during construction. In the area where land would be added, sediment and other material would be placed. The area to be covered would be determined by final design and includes the planned facilities, trails, bike racks, parking areas, and access road. Ground would need to be graded and in some cases removed as part of the construction activities. Material planned for removal includes soil, rubble, and vegetation in the area where facilities, trails, and roads would be built.

Figure 12-28. Illustration of the area where restoration actions would occur.

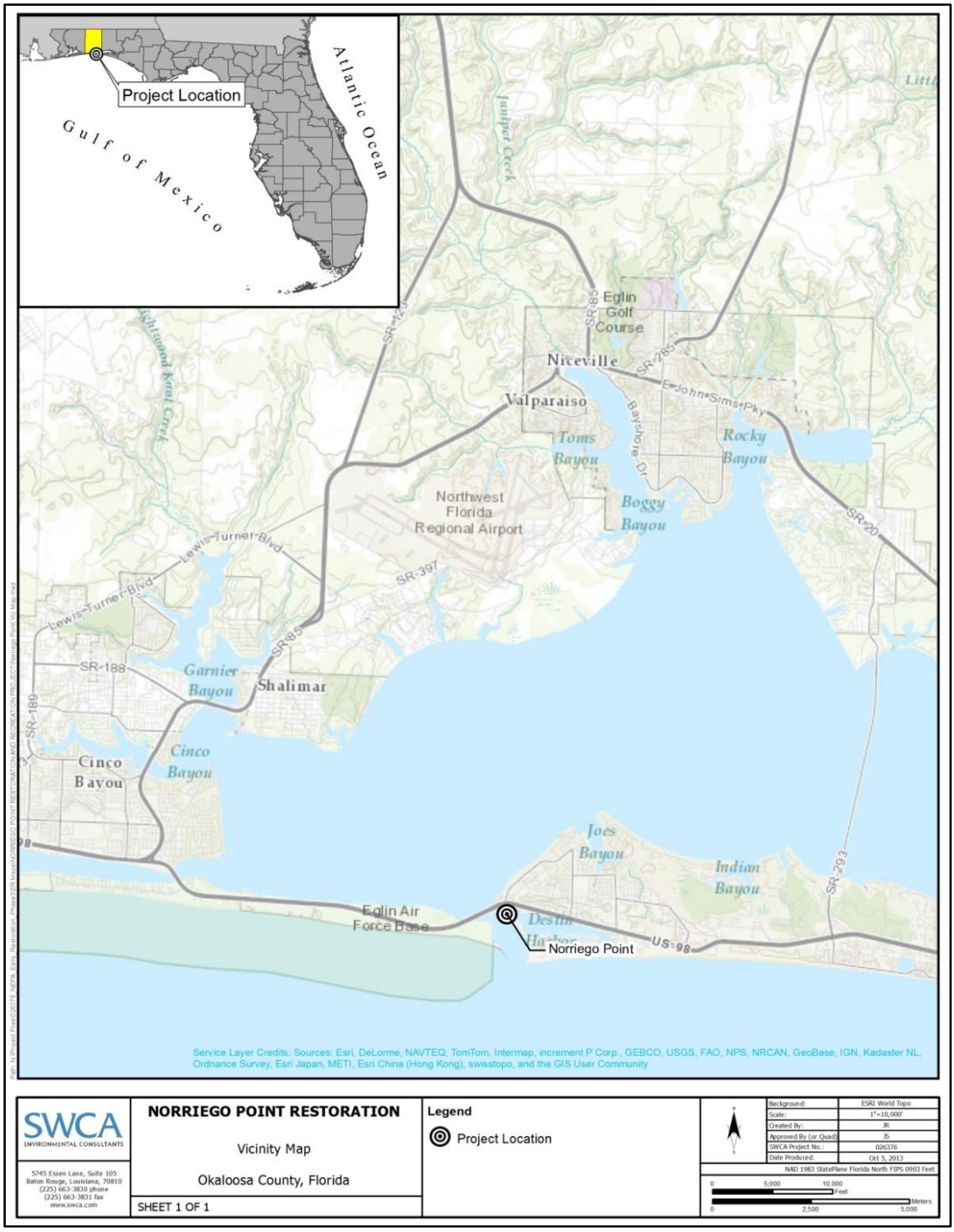

Figure 12-29. Project vicinity map.

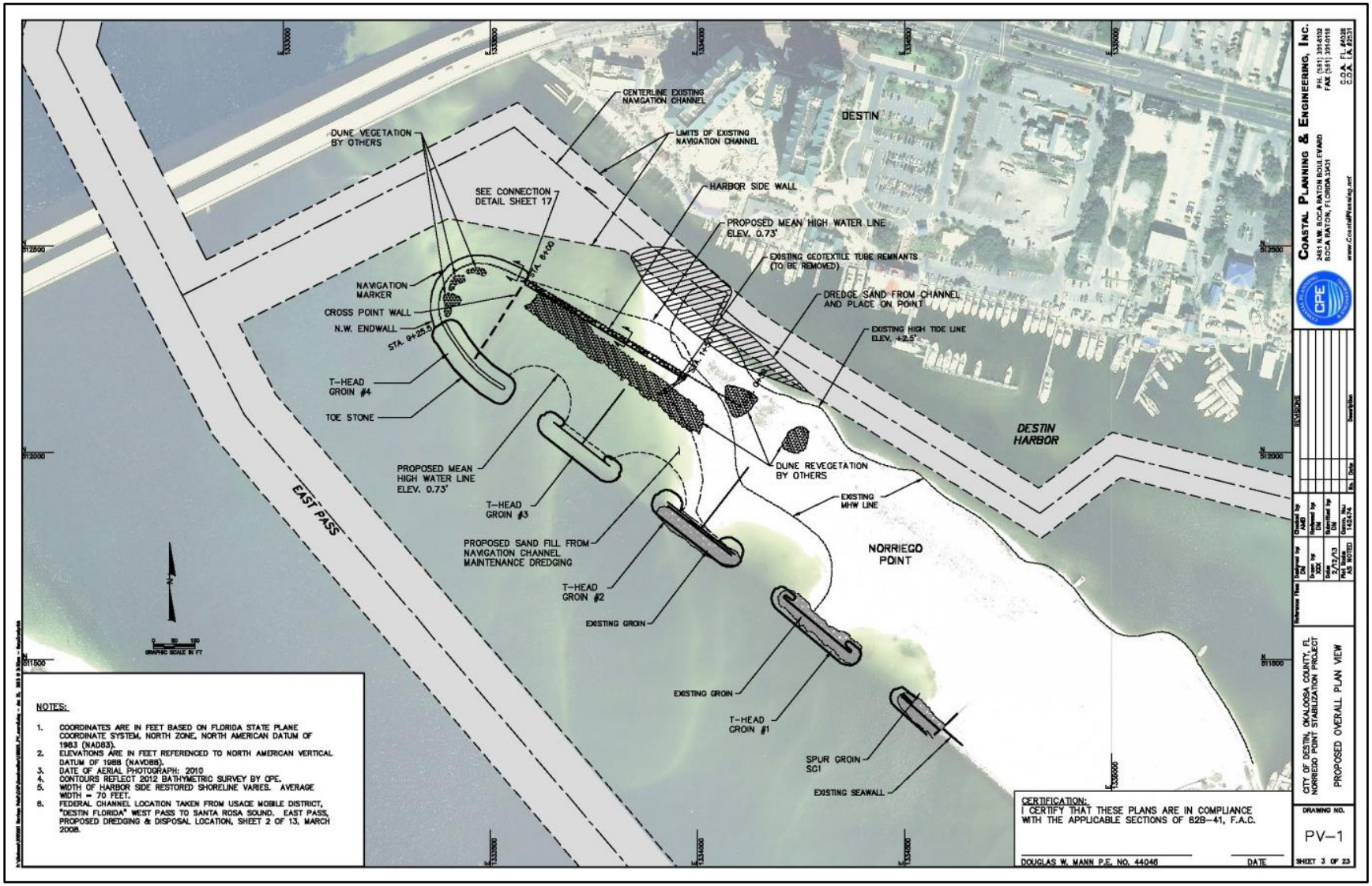

Figure 12-30. Layout of existing and proposed erosion control structures.

12.79.4 Operations and Maintenance

City of Destin Parks and Recreation Department staff would operate and maintain the new and expanded facilities under the existing management plan.Maintenance would include tasks such as checking and cleaning restrooms, removing debris and trash from the parking areas, and striping parking areas.Monitoring would include construction monitoring and tracking visitor use.

12.79.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected environment and environmental consequences of the project.

12.79.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.79.5.2 Physical Environment

12.79.5.2.1 Geology and Substrates

Affected Resources

According to the Geologic Map of Florida, the project is likely located on the Quaternary system, Holocene series stratigraphic unit. This stratigraphic unit consists of quartz sands, carbonate sands, muds, and organics occurring near the present coastline at elevations generally less than 5 feet (1.5 meters) (Scott 2001).

The project site occurs on the Newhan-Corolla complex, rolling soil map unit, which is found on marine terraces and dunes. This complex is nearly level to steep, excessively drained, and moderately well drained or somewhat poorly drained soils located in areas of undulating dunes near the Gulf Coast (Natural Resources Conservation Service [NRCS] 2004).

A sinkhole is a closed depression in the land surface that is formed by surficial solution or by subsidence or collapse of surficial materials due to the solution of near-surface limestone or other soluble rocks. Sinkholes are a natural and common geologic feature in areas underlain by limestone and other rock types soluble in natural water; they are one of the predominant land form features of Florida. The state has been classified into four areas of sinkhole occurrence. Okaloosa County is categorized as Area IV, with a carbonate rock cover more than 200 feet thick. Area IV consists of cohesive sediments interlayered with discontinuous carbonate beds. Sinkholes are very few in number, but several large-diameter, deep sinkholes occur. Cover-collapse sinkholes dominate in Area IV, which occur when a solution cavity develops in limestone to such a size that the overlying cover material can no longer support its own weight (FDEP 2013).

Environmental Consequences

Mechanized equipment and hand tools would be used to complete the construction of the project. Some excavation of soils would occur; however, adverse impacts to geology and substrates would be minor. Disturbance would be detectable, but would be short term, small, and localized. There would be no long-term changes to local geologic features or soil characteristics. Erosion and/or compaction may occur in localized areas.

12.79.5.2.2 Hydrology and Water Quality

Affected Resources

Northwest Florida has seven major watersheds, all of which have been identified as priorities under the Surface Water Management and Improvement (SWIM) program. Water quality protection is the underlying goal of SWIM, along with the preservation and restoration of natural systems and associated public uses and benefits (Northwest Florida Water Management District [NWFWMD] 2011). Norriego Point is part of the Choctawhatchee River and Bay watershed system. The total drainage area covers nearly 5,350 square miles, approximately 42% of which is in Florida. East Pass, located immediately west of Destin, provides the only direct opening to the Gulf of Mexico. The bay also opens up to Santa Rosa Sound in the west and the Intracoastal Waterway in the east. The Choctawhatchee River and Bay system has long been known for its rich, diverse ecology, economic benefits, and numerous recreational opportunities. Over recent decades, however, many of the area's water resources have been impacted by population growth, development, and wastewater disposal. Increased coastal development, in particular, has contributed to displaced habitats, loss of wetlands, and greater amounts of stormwater runoff entering the river, bay, and their tributaries. Stormwater carries contaminants such as dirt, heavy metals, bacteria, nutrients from fertilizer and other sources, and various chemicals.

There is no Outstanding Florida Water (OFW) designated by the State of Florida (Rule 62-302.700, Fla. Admin. Code)in the project area, which only cover waters that have exceptional characteristics. Surface waters in the project areaare classified as Class III waters by the FDEP (FDEP 2006). Class III waters have the designated uses of fish consumption, recreation, and propagation and maintenance of a healthy, well-balanced population of fish and wildlife.

Impaired waters are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. Choctawhatchee Bay has been listed as an impaired waterbody for mercury in fish tissue and fecal coliform; however, total maximum daily loads (TMDLs) have not yet been adopted (Environmental Protection Agency [EPA] 2010).

Wetlands

Based on the National Wetland Inventory data, Norriego Point is designated as an estuarine wetland (USFWS 2013a).

Floodplains

Based on Federal Emergency Management Agency (FEMA) flood insurance rate maps (Panel 12091C0469H), the project appears to be in Zone VE. Zone VE is defined as coastal flood with velocity hazard (wave action) based on flood elevations determined (FEMA 2002).

Environmental Consequences

Hydrology is expected to be affected only if water is channeled or otherwise controlled around the erosion control structures during construction. Water quality would be potentially impacted during construction from equipment leaks or spills or disturbance of sediments that results in siltation, turbidity, and the release of chemicals from sediments. If the disturbed sediments are anoxic, the biological oxygen demand in the water column would increase.With required mitigation in place, the effect on hydrology and water quality would be measurable or detectable but it would be small, short term, and localized. Water quality impacts would quickly become undetectable, and the area's hydrology would be only temporarily altered during construction.

The dredged sand fill material that would be placed behind the renovated and new erosion control structures would be obtained during maintenance dredging of the navigation channels in the area. This dredging activity has already been reviewed and an active permit for this activity is held by the City of Destin (permit number SAJ-2012-007-02 (SP-TPH).

All permit conditions would be strictly adhered to, including mitigation measures for siltation, erosion, turbidity, and release of chemicals.During construction, BMPs and boom placement along with other avoidance and mitigation measures required by state and federal regulatory agencies would be employed to minimize any water quality and sedimentation impacts.FDEP permit conditions require erosion and turbidity mitigation measures, which include the following:

- Installation of floating turbidity barriers;
- Installation of erosion control measures along the perimeter of all work areas;
- Stabilization of all filled areas with sod, mats, barriers, or a combination; and
- Stoppage of work if turbidity thresholds are exceeded. The soils would then be stabilized, work procedures would be modified, and the FDEP would be notified.

The FDEP permit also constitutes a Certification of Compliance with State Water Quality Standards under Section 401 of the CWA, which indicates that the project would comply with state water quality standards and other aquatic resource protection requirements.

Impacts from chemicals that could be released from sources such as construction equipment and boats are expected to be negligible.Required spill containment measures would be implemented for applicable construction activities.FDEP permit conditions require spill containment protection and mitigation measures as follows:

- Boat repair or fueling facilities over the water would be prohibited.
- Prohibiting vessels from being removed from the water for the purposes of maintenance or repair.

- Prohibited activities include hull cleaning and painting, and discharges or release of oils, greases, and related metal-based bottom paints associated with hull scraping, cleaning, and painting.

This project would not impact groundwater. A wetlands permit is required for the project and would stipulate appropriate BMPs and mitigation requirements.

The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (USACE) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). Coordination with the USACE and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

12.79.5.2.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

The Clean Air Act (CAA) requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS have been set for six common air pollutants (also known as criteria pollutants)—particle pollution or particulate matter, ozone, carbon monoxide, sulfur dioxide (SO_2), nitrogen dioxide, and lead. Particulate matter is defined as fine particulates with a diameter of 10 micrometers or less (PM_{10}) and fine particulates with a diameter of 2.5 micrometers or less ($PM_{2.5}$). When a designated air quality area or airshed in a state exceeds a NAAQS, that area may be designated as a "nonattainment" area. Areas with levels of pollutants below the health-based standard are designated as "attainment" areas. To determine whether an area meets the NAAQS, air monitoring networks have been established and are used to measure ambient air quality. The EPA also regulates 187 hazardous air pollutants (HAPs) that are known or suspected to cause cancer or have other serious health effects. Air quality in the Florida panhandle is in attainment with the NAAQs (EPA 2013a).

Greenhouse Gases

Gases that trap heat in the air are called greenhouse gases (GHGs). The primary GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO_x), and fluorinated gases. Over the past century, human activities have released large amounts of GHGs into the atmosphere, which are contributing to global warming. Global warming is defined as the ongoing rise in global average temperatures near the Earth's surface and is known to cause changes in climate patterns.

According to the EPA, the average annual temperature in the southeast portion of the United States has increased by approximately 2.0°F(degrees Fahrenheit) since 1970. Winters, in particular, are getting warmer, and the average number of freezing days has decreased by 4 to 7 days per year since the mid-1970s. Most areas are getting wetter; autumn precipitation has increased by 30% since 1901 (EPA 2013b). In many parts of the region, the number of heavy downpours has increased. Despite the increases in fall precipitation, the area affected by moderate and severe drought has increased since the mid-1970s (EPA 2013b).

Average annual temperatures in the region are projected to increase from 4°F to 9°F by 2080. Hurricane-related rainfall is projected to continue to increase. Models suggest that rainfall would arrive in heavier downpours, with increased dry periods between storms. These changes would increase the risk of both

flooding and drought. The coasts would likely experience stronger hurricanes and sea level rise. Storm surge could present problems for coastal communities and ecosystems (EPA 2013b).

Total GHG emissions in the state of Florida from 1990 to 2007 have increased at an average rate of 2.1% per year. Total GHG emissions in 2007 were 290 million metric tons of CO_2 equivalent ($MMTCO_2E$). In 2007, 91% of GHG emissions in Florida were CO_2 emissions (FDEP 2010).

Environmental Consequences

Project implementation would require the use of heavy mechanized equipment, which would lead to temporary air pollution (e.g., criteria pollutants, HAPs, GHGs) due to emissions from the operation of construction vehicles and equipment. Any air quality impacts that occur would be minor due to their localized nature, short-term duration, and the small size of the project. Available BMPs would be employed to prevent, mitigate, and control potential air pollutants during project implementation. No air quality–related permits would be required. The project area is currently in attainment with NAAQS. The proposed action would not affect the attainment status of the project area or region. A State Implementation Plan conformity determination (42 USC 7506 (c)) is not required since the project area is in attainment for all criteria pollutants.

Project plans have not been finalized for this project. As such, it is unclear what equipment would be used and the duration of use for that equipment. The following table provides GHG emissions estimates for a variety of construction and transportation equipment that may be used for park improvements. Each of these emissions estimates is based on use of the heavy equipment for an 8-hour day (Table 12-24).

Table 12-24. Greenhouse gas emissions for various mechanized equipment.

Equipment Description[1]	Total Hours Used	CO_2 Factor-mt/100 hrs*	CO_2 (mt)[2]	CH_4 Factor-mt/100 hrs	CH_4 (mt)	N_2O Factor-mt/100 hrs	N_2O (mt)	Total CO_2 (mt)
Dump Trucks/Flatbed Truck	216	1.7	3.706	0.5	1.08	7.2	15.55	20.336
Concrete Trucks	24	1.7	0.408	0.5	0.12	7.2	1.72	2.248
Pickup Truck[4]	2,304	1.1	25.34	0.35	8.06	4.4	10.13	43.53
Bobcat (bare and with auger mount)	480	2.65	12.72	0.9	4.32	10.6	50.88	67.92
Trackhoe (with bucket/ thumb or vibratory attachments)	24	2.55	0.612	0.85	0.2	10.2	2.44	3.252
Dozer	24	2.25	0.54	0.65	0.16	1.08	0.26	0.96
Total	**4,131**							**138.24**

*mt = metric tons

[1] Emissions assumptions for all equipment based on 8 hours of operation

[2] CO_2 emissions assumptions for diesel and gasoline engines based on EPA 2009

[3] CH_4 and NOx emissions assumptions and CO_2e calculations based on EPA 2011

[4] Emissions assumptions for an 8-cylinder, 6.2-liter gasoline engine Ford F150 pickup based on Department of Energy 2013 and 18 gallon (half-tank) daily fuel consumption.

Based on the assumptions described in Table 12-24 above, GHG emissions would not exceed 25,000 metric tons per year. Given the projected construction-phase GHG emissions, the small scale and short duration of the project, and increased park use, predicted impacts on air quality from GHG emissions would be anticipated to be minor in both the short term and the long term.

At the completion of the project, visitor use (and therefore vehicle and boat use) could increase due to improved access. Increased exhaust emissions could affect air quality over the long term. However, adverse impacts to air quality would be expected to be minor because management actions could be taken to limit boat use.

12.79.5.2.4 Noise

Affected Resources

Noise can be defined as unwanted sound and noise levels, and its impacts are interpreted in relation to impacts on nearby visitors to the recreational areas and wildlife in the project vicinity. The Noise Control Act of 1972 (42 USC 4901–4918) was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale that approaches the sensitivity of the human ear across the frequency spectrum. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear. Table 12-25 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-25. Common noise levels.

Noise Source or Effect	Sound Level (dBA)
Rock-and-roll band	110
Truck at 50 feet	80
Gas lawnmower at 100 feet	70
Normal conversation indoors	60
Moderate rainfall on foliage	50
Refrigerator	40
Bedroom at night	25

Source: Adapted from U.S. Department of Energy and Bonneville Power Administration (1986).

Noise levels in the project area vary depending on the season, time of day, number and types of noise sources, and distance from noise sources. Existing noise in the project area is mainly from recreational boating, with occasional overhead aircraft or commercial traffic. Ambient natural sounds such as wind, waves, and wildlife also contribute to existing noise levels. Existing ambient noise levels in the project area would be generally low and predominantly result from daily boating activities.

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the proposed project. Noise-sensitive receptors in the project vicinity include beach and park recreational use and wildlife. The project area is, for the most part, consistent with a developed urban environment. The shoreline of the project area supports a variety of residential and industrial developed areas, and the Gulf of Mexico supports commercial and recreational boat traffic.

Environmental Consequences

Instances of increased noise would occur during the project. Equipment and vehicles used during the construction of the project would generate noise. Construction equipment noise is known to disturb fish, marine mammals, and nesting shorebirds. The noise would be temporary, and the construction period is not anticipated to last more than 12 months. Because of the temporary nature of the construction noise, negative impacts to the soundscape would be short term and of a level likely to affect current user activities.

After completion of the project, the soundscape would return to pre-project levels. The potential for increased vehicle and boat traffic exists due to the improved access to Norriego Point, which would result in a slight increasein noise levels in the vicinity. Overall, long-term noise impacts from boating and other recreational activities would remain minor.

12.79.5.3 Biological Environment

12.79.5.3.1 Living Coastal and Marine Resources

Vegetation

Affected Resources

According to the Natural Vegetation of Florida the project area is located on sand pine (*Pinus clausa*) scrub forest. This vegetation type is mostly on excessively drained deep sandy soils and occurs on dunes of coastal strand and old dunes or dry sands in the interior (Davis 1967). Based on aerial reviews, the project site appears to contain mainly unvegetated sandy beach areas. Submerged aquatic vegetation may be present in the areas where groin placement is proposed.

A review of Florida's Efficient Transportation Decision Making Web Application indicates that while submerged aquatic vegetation (corals, seagrasses) are present off the coastline, they are not present in the project area (Florida Department of Transportation [FDOT] 2013). Only one state-listed plant species has the potential to occur in the project area, Gulf Coast lupine (*Lupinus westinous*).

Environmental Consequences

There would be multiple, small construction events associated with this project, mainly in upland area. During the construction of the picnic pavilion, restrooms, multi-use trail, bike racks, and vehicle parking, any vegetation that may be present would be disturbed, and placement of facilities would result in the permanent removal of vegetation within the facility footprint. The use of equipment and disturbance of soil and existing vegetation would also potentially increase the risk of noxious weed or invasive vegetation species introduction. Overall, impacts on native vegetation would not be expected.

Wildlife Habitat

Affected Resources

The project site is surrounded by an urban environment, and common wildlife that potentially occur at the project site include raccoons, opossums, and migratory birds.

Environmental Consequences

Although common wildlife may be disturbed from construction activities, these species live in an urban environment where ambient noise levels are high. Habitat conditions after construction would be similar to existing conditions, and no impacts to common wildlife would be anticipated.

Marine and Estuarine Fauna (fish, shell beds, and benthic organisms)

Affected Resources

Choctawhatchee Bay provides habitat for numerous fish and other marine species. The value of marine habitats at the project site has been affected by population growth, development, and wastewater disposal. Increased coastal development, in particular, has contributed to displaced habitats, loss of wetlands, and greater amounts of stormwater runoff entering the river, bay, and their tributaries (NWFWMD 2011). Nonetheless, the marine environment at the project site provides habitat to an array of aquatic species, including ladyfish (*Elops saurus*), hardhead catfish (*Arius felis*), gafftopsail catfish (*Bagre marinus*), and pigfish (*Orthopristis chrysoptera*), among others. Benthic organisms such as bivalves, gastropods, and other mollusks, anemones, amphipods, annelids, crustaceans, and

echinoderms are also abundant in these waters (Florida Fish and Wildlife Conservation Commission[FWC] 2001).

Environmental Consequences

The proposed project would likely result in short-term, minor adverse impacts to fish that may be present during the in-water construction as a result of turbidity and noise disturbance during placement of groin structures. Benthic organisms that may be present in the substrate may also be adversely affected during groin structure placement. However, these impacts would be short term and minor and would not result in a measurable impact to these species. The habitat areas around the groin structures may provide surface for attachment of sessile organisms, which would indirectly benefit the ecosystem around the structures.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

Affected Resources

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Okaloosa County, Florida16. Table 12-26 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

Table 12-26. Potential Impacts to Species/Critical Habitats managed by USFWS

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle[a], Hawksbill turtle[a], Kemp's ridley turtle; Leatherback turtle[a], Loggerhead turtle	Norriego Point is not expected to be suitable nesting habitat for sea turtles due to the slope of the shore above the high tide line. No impacts to sea turtles in terrestrial habitats are anticipated. Consultation has been initiated with NMFS the agency that has jurisdiction to review impacts to sea in the esuarine and marine environments.
West Indian manatee	Okaloosa County is not one of the 36 Florida counties identified where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the project waters.The main risk to manatees during implementation of this project include noise and construction activities or boat collisions, all of which which could harm or kill a manatee. The Trustees anticipate conservation measures will minimize adverse effect to manatees from the proposed project.

[16] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Piping plover and Red knot	Though there is sandy shoreline with prey suitable for both species, Norriego Point does not currently serve as habitat for piping plover or red knot due to substantial recreational use and hardened shoreline is already in place around entire spit that historically was optimal habitat. Because these species are highly unlikely to be present, no impacts to these species are anticipated.
Gulf sturgeon	NMFS was consulted on Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon was not considered in the consultation with the USFWS.

In addition to the protected species managed by USFWS, the Trustees reviewed the proposed projects and associated actions for potential impacts to the following protected species (status indicated) and their associated critical habitat, if appropriate, managed by NMFS:

- Gulf Sturgeon, *Acipenser oxyrinchus desotoi*, Threatened
- Smalltooth Sawfish, *Pristis pectinata,* Endangered
- Green Sea Turtle, *Chelonia mydas*, Endangered
- Loggerhead Sea Turtle, *Caretta caretta*, Threatened
- Hawksbill Sea Turtle, *Eretmochelys imbricata*, Endangered
- Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
- Kemp's Ridley Sea Turtle, *Lepidochelys kempii*, Endangered

Additional information on some of these species is provided below.

Sea Turtles and Marine Mammals

There are five species of endangered or threatened sea turtles that may occur or have potential to occur in the project area. These include green turtle (*Chelonia mydas)*, hawksbill turtle (*Eretmochelys imbricata)*, Kemp's ridley turtle (*Lepidochelys kempii)*, leatherback turtle (*Dermochelys coriacea)*, and loggerhead turtle (*Caretta caretta)*. Sea turtles forage in the waters of the coastal Florida panhandle region and have potential to occur in the waters where in-water work is proposed. The project site contains potentially suitable sea turtle nesting habitat along the sandy beach, but the area is low and washes over, which may affect its suitability.

Twenty-two marine mammals are native to the Gulf of Mexico: 21 pelagic species of whales and dolphins, and the West Indian manatee. The endangered West Indian manatee has the potential to occur in the project area waters. Manatees typically seek out shallow seagrass areas as preferred feeding habitat. Additionally, bottlenose dolphin (*Tursiops*) populations are known to migrate into bays, estuaries, and river mouths and could be located in the proposed project area (NMFS 2013a). Bottlenose dolphins have been observed entering and leaving Choctawhatchee Bay and in nearshore coastal waters (NMFS 2012).

Smalltooth Sawfish, Gulf Sturgeon, and Gulf Sturgeon Critical Habitat

Smalltooth sawfish (*Pristis pectinata*)do not typically use northern Gulf of Mexico waters (NMFS 2013b). Gulf sturgeons are restricted to the Gulf of Mexico and its drainages, occurring primarily from the Pearl River, Louisiana to the Suwannee River, Florida (USFWS 2007). Adult fish reside in rivers for 8 to 9 months each year and in estuarine or Gulf of Mexico waters during the 3 to 4 cooler months of each

year (NMFS 2009). Important marine habitats include seagrass beds with sand and mud substrates (Mason and Clugston 1993).

Gulf sturgeon critical habitat was jointly designated by the NMFS and USFWS on April 18, 2003 (50 Code of Federal Regulations [C.F.R.] 226.214). The proposed project site is located within Critical Habitat for Gulf sturgeon (Critical Habitat Unit 12 – Choctawhatchee Bay). See Figure 12-31 for a map of critical habitat in the project area. Critical habitat was designated based on seven primary constituent elements (PCEs) essential for the species' conservation, as defined in the 2003 *Federal Register*and listed below. PCE's 1, 5, 6, and 7 are present in the project area. The PCE's are:

1. Abundant food items, such as detritus, aquatic insects, worms, and/or mollusks, within riverine habitats for larval and juvenile life stages, and abundant prey items, such as amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks, and/or crustaceans, within estuarine and marine habitats and substrates for subadult and adult life stages;
2. Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone, or hard clay;
3. Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths; these are believed necessary for minimizing energy expenditure during freshwater residency and possibly for osmoregulatory functions;
4. A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larval staging;
5. Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages;
6. Sediment quality, including texture and chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and
7. Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g., an unobstructed river or a dammed river that still allows for passage).

Figure 12-31. Critical habitat map.

Piping Plover

The sandy beaches and shorelines adjacent to the project area offer suitable foraging and resting habitat for the piping plover during the winter migratory season, and piping plover may forage in the shallow waters of the project area. Natural shorelines in the proposed project vicinity provide suitable winter migration resting habitat for the piping plover. Piping plover wintering habitat includes beaches, mudflats, and sandflats, as well as barrier island beaches and spoil islands (Haig 1992, as cited by USFWS 2013c). On the Gulf Coast, preferred foraging areas are associated with wider beaches, mudflats, and small inlets (USFWS 2013c).

Red Knot

The red knot, a federal proposed species, uses the state of Florida both for wintering habitat and as migration stopover habitat for those that continue to migrate down to specific wintering locations in South America (Niles et al. 2008). Wintering and migrating red knots forage along sandy beaches, tidal mudflats, salt marshes, and peat banks (Harrington 2001). Observations indicate that red knots also forage on oyster reef and exposed bay bottoms, and roost on high sandflats, reefs, and other sites protected from high tides (Niles et al. 2008). In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans. Threats to wintering and stopover habitat in Florida include shoreline development, hardening, dredging, deposition, and beach raking (Niles et al. 2008).

Essential Fish Habitat (EFH)

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. The EFH within the project area include emergent wetlands, mud substrate, and estuarine water columns for species of fish, such as red drum, brown shrimp, pink shrimp, and white shrimp. There are no marine components of EFH in the vicinity of the project site.

Table 12-27 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the Norriego Point Restoration and Recreation project site and Santa Rosa Sound.

Table 12-27. **Federally managed fisheries with designated Essential Fish Habitat (EFH) in the proposed project area**

EFH - Category	Species
Coastal Migratory Pelagics of the Gulf of Mexico and South Atlantic	
	Cobia
	King Mackerel
	Spanish Mackerel
Gulf of Mexico Red Drum	
	Red Drum
Gulf of Mexico Shrimp	
	Brown Shrimp
	Pink Shrimp
	White Shrimp
Reef Fish Resources of the Gulf of Mexico	
	Almaco Jack
	Banded Rudderfish
	Black Grouper
	Blackfin Snapper
	Blueline Tilefish
	Cubera Snapper
	Gag
	Goldface Tilefish
	Gray (Mangrove) Snapper
	Gray Triggerfish
	Greater Amberjack
	Hogfish
	Lane Snapper
	Lesser Amberjack
	Mutton Snapper
	Nassau Grouper
	Queen Snapper
	Red Grouper
	Red Snapper
	Scamp
	Silk Snapper
	Snowy Grouper
	Speckled Hind
	Tilefish
	Vermilion Snapper
	Warsaw Grouper
	Wenchman

EFH - Category	Species
	Yellowedge Grouper
	Yellowfin Grouper
	Yellowmouth Grouper

State-Listed Birds, MBTA, and BGEPA

There are numerous state of Florida–listed bird species with potential for occurrence in and around the Norriego Point restoration site. These include Arctic peregrine falcon (*Falcoperegrinus tundrius*), least tern (*Sterna antillarum*), southeastern American kestrel (*Falco sparverius paulus*), Florida sandhill crane (*Grus canadensispratensis*), American oystercatcher (*Haematopus palliates*), and southeastern/Cuban snowy plover (*Charadrius alexandrinus tenuirostris*). All migratory bird species are protected under MBTA. The nesting season in Florida is from February 15 to August 31.

According to the FWC Bald Eagle Nest Locater, there is one bald eagle nest within 5 miles of the project site. It is approximately 4.7 miles away from the project site (FWC 2012).The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008).

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-28 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-28. Potential project impacts to different migratory bird groups

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Shorebirds	Foraging, feeding, resting,	Shorebirdsforage, feed, and rest on Norriego Point. As such, they may be impacted locally and temporarily by the project. Norriego Point is not currently used as nesting habitat because of the frequency and level of human use.
Seabirds	Resting, roosting, nesting	Seabirds forage in water and rest in terrestrial habitats at Norriego Point. As such, they may be impacted locally and temporarily by the project.Norriego Point is not currently used as nesting habitat because of the frequency and level of human use.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized in Table 12-29.

Table 12-29. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Shorebirds and Seabirds	The Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting. Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity, which they will have.

Environmental Consequences

The proposed project has been evaluated for potential short- and long-term impacts to state and federally listed threatened and endangered species that may occur in and adjacent to the project area based on available suitable habitat and restoration goals. Descriptions of these evaluations are provided below.

Protected Species

The USFWS reviewed the proposedNorriego Point project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA. On March 24, 2014 the review of potential impacts to species managed by USFWS was completed (McClain, 2014). The USFWS concurred with the Trustees' determination that the proposed project may affect, but is not likely to adversely affectWest Indian manatee and would have no effect on five species of sea turtles in terrestrial habitats (green, hawksbill, Kemp's ridley, leatherback, and loggerhead), piping plover, or red knot (if listed).

Consultation of potential impacts on protected species managed by NMFS from this project was initiated on February 4, 2014.The Trustees' review of the potential impacts of the project for protected species managed by NMFS determined the proposed action "may affect, but is not likely to adversely affect" the following species and associated critical habitats in the project implementation area:

- Gulf Sturgeon - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Gulf Sturgeon Critical Habitat – The project footprint does fall within Gulf sturgeon critical habitat; however, it has been determined that the construction activities associated with this project will not adversely modify designated Gulf sturgeon critical habitat.
- Green Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Loggerhead Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Hawksbill Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.

- Leatherback Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Kemp's Ridley Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.

Concurrence from NMFS with the Trustees' conclusions for these species and associated critical habitats is still pending.

The Trustees also evaluated the potential for take of Marine Mammals under the MMPA and due to these species' mobility and the implementation of NMFS' *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS, 2006), *Standard Manatee Conditions for In-Water Work* (USFWS 2011), and USFWS recommended conservation measures for listed species and other trust resources, take of marine mammals under the MMPA is not anticipated.

Essential Fish Habitat

The Trustees' review of potential impacts to EFH concluded the conversion of subtidal habitat to upland habitat is relatively small, at 8 acres, compared to the size of the project area. The Trustees also concluded conversion of the subtital habitat would have minimal impacts to EFH since the proposed conversion would occur in an area where land had previously existed but had eroded away. The Trustees also concluded it is likely that the subtital habitat in proposed conversion area is low quality due to beach erosion and the high current levels of recreational use of the existing area at Norriego Point and the associated commercial and recreational boat traffic in the area.

Werde

On April 24, 2014 NMFS completed its evaluation of potential EFH impacts and concluded that the project construction restoring eight acres of upland habitat would result in an adverse impact to eight acres of estuarine sand substrate and water column (Fay, 2004). However it was also concluded BMPs will be utilized during construction to minimize impacts to adjacent habitats and these impacts should be minor and brief.

State-Listed Birds, MBTA, BGEPA

State-listed birds such as oystercatchers (*Haematopus Sp.)*or least terns may nest on beaches or mudflats in the vicinity of the project area, and all migratory birds are protected under the MBTA. If restoration activities occur during the nesting season (February 15 to August 31), these birds could be disturbed by noise generated by in-water activities. These impacts would be short term and moderate. In such circumstances, FWC nesting shorebird avoidance measures will be followed. These measures generally call for surveys within 300 feet and an avoidance buffer of 300 feet for nesting birds. Increased visitor use may discourage foraging, loafing, and nesting of migratory birds in the project area. Therefore, long-term moderate impacts may occur.

There is one known bald eagle nest within 5 miles of the project site. Based on the distance from proposed project activities, nesting of the known occurrence of bald eagle would not be impacted. At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.79.5.4 Human Uses and Socioeconomics

12.79.5.4.1 Socioeconomics and Environmental Justice

Affected Resources

The population of Okaloosa County is 180,822. The following table (Table 12-30) contains population/minority data for Okaloosa County and Florida (U.S. Bureau of the Census 2010).

Table 12-30. Populations of Florida and Okaloosa County.

Topic	Florida		Okaloosa County	
2010 Total Population	18,688,787		180,822	
White alone	14,270,053	76.4%	146,582	81.1%
Black or African American alone	2,946,899	15.8%	16,797	9.3%
American Indian and Alaska Native alone	58,192	0.3%	1,068	0.6%
Asian alone	455,403	2.4%	5,328	2.9%
Native Hawaiian and Other Pacific Islander alone	11,005	0.1%	354	0.2%
Some other race alone	564,351	3.0%	3,592	2.0%
Two or More Races	382,884	2.0%	7,101	3.9%
Median household income, 2007–2011	$47,827		$54,140	
Persons below poverty level, percent, 2007–2011	14.7%		11.7%	

Environmental Consequences

Improvements to Norriego Point would have a direct, beneficial effect for people who live near the area. Improvements would encourage more people to visit Norriego Point and participate in outdoor activities. This might have benefit the health and well-being of the local population. The proposed improvements to Norriego Point would draw more visitors to the county. Long-term, indirect, moderate benefits would result from increasing the recreational and fishing value of the area. Greater fishing success may increase the number of fishing trips in the area, which could generate ancillary purchases such as license fees, fuel, equipment, or other ancillary purchases.

Direct, short-term, moderate benefits through local job creation would result from construction activities. The proposed improvement would create approximately 10 to 20 temporary construction jobs. This project is not designed to create a benefit for any group or individual, but rather would provide benefits on a local and regional basis. Because the project occurs in an area that is not disproportionately minority or low income (see Table 12-30), there are no indications that the proposed project would be contrary to the goals of Executive Order 12898, or would create disproportionate, adverse human health or environmental impacts on minority or low-income populations of the surrounding community.

12.79.5.4.2 Cultural Resources

Affected Resources

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project has not identified the presence of a historic property within the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.79.5.5 Land and Marine Management

Affected Resources

The land use surrounding Norriego Point is primarily mixed use conservation and residential (City of Destin 2010). Norriego Point is surrounded by water on three sides. The project would be located in a coastal area that is regulated by the federal CZMA and the Florida Coastal Management Act of 1978.

Environmental Consequences

Although the project would require several permits for the short-term construction period, it would not require a variance, zoning change, or amendment to a land-use area or comprehensive management plan. The long-term impact of the project would be minor because it would not affect overall use and management beyond the local project area. It would be consistent with current land use.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS. The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process.

12.79.5.5.1 Tourism and Recreational Use

Affected Resources

Tourism and recreation are common activities throughout the Florida panhandle region. Norriego Point provides public beach access for tourism and recreation use. Recreational activities on and around Norriego Point include fishing, boating, beach going, and swimming.

Environmental Consequences

During the construction period, the visitor recreational experience would be adversely impacted by noise and visual disturbances associated with the use of construction equipment. The impact would be short term and minor because it would only occur during the construction period, which is anticipated to take 9 to 12 months. The construction process would also limit recreational activities near construction areas for a short time to protect public safety. These limitations would be a minor inconvenience to visitors. Over the long term, minor beneficial impacts to tourism and recreational use would be expected due to the enhancement of recreational opportunities associated with improved facilities and accessibility.

12.79.5.5.2 Aesthetics and Visual Resources

Affected Resources

Existing aesthetic and visual resources from the project site are views of a developed area and openwater.

Environmental Consequences

Short-term impacts would occur to visual resources during construction activities due to the presence of equipment and materials. These impacts would be minor because they would only be visible from a small portion of the project area and would not dominate the viewshed or detract from current visitor activities. Long-term changes to visual resources would occur from the addition of a picnic pavilion and the parking area. These changes would be readily apparent but minor because they are consistent with other facilities in the surrounding areas and would not attract attention, dominate the view, or detract from visitor experiences.

12.79.5.5.3 Infrastructure

Affected Resources

Currently, Norriego Point has limited infrastructure. Norriego Point can be accessed by Gulf Shore Drive.

Environmental Consequences

As there is limited infrastructure at Norriego Point, adding to the facilities by construction of a picnic pavilion, with restrooms, showers, and drinking fountains, a multi-use trail, bike racks, and vehicle

parking would have a long-term, beneficial effect to the park,. The improvements would have a beneficial, long-term impact because they would improve the visitor experience.

12.79.5.5.4 Public Health and Safety and Shoreline Protection

Affected Resources

The management of hazardous materials is regulated under various federal and state environmental and transportation laws and regulations, including the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Emergency Planning and Community Right-to-Know Act; and the Hazardous Materials Transportation Act. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment, transport, and disposal) of hazardous materials. Some of these laws provide for the investigation and cleanup of sites that have already been contaminated by releases of hazardous materials, wastes, or substances.

A review of the EPA's EnviroMapper revealed that there are no CERCLA or RCRA sites on or immediately adjacent to Norriego Point (EPA 2013c). There are two Permit Compliance System(PCS) sites located across Destin Harbor from Norriego Point.

Environmental Consequences

Project construction would require mechanical equipment that uses oil, lubricants, and fuels. The contractor would be required to take appropriate actions to prevent, minimize, and control the spill of construction-related hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids, and to avoid releases and spills.

12.79.6 Summary and Next Steps

The Norriego Point Restoration and Recreation project would involve stabilizing, enhancing and re-establishing recreational activities available at Norriego Point. Improvements would include constructing erosion control structures and new park amenities including a picnic pavilion with restrooms, showers, and drinking fountains; educational signage; a multi-use trail; bike racks; and vehicle parking along the access road adjacent to the park land. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase the recreational boating and beach use opportunities by stabilizing and re-establishing Norriego Point. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

12.79.7 References

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12.80 Deer Lake State Park Development: Project Description

12.80.1 Project Summary

The proposed Deer Lake State Park Recreation Areas project would improve the existing visitor areas at Deer Lake State Park in Walton County. The proposed improvements would include adding a paved access road, parking, picnic shelters, restroom facilities, plantings (trees, grass, shrubs), and necessary utilities (water, sewer, and electrical). The total estimated cost of the project is $588,500.

12.80.2 Background and Project Description

The Trustees propose to improve and enhance visitor use areas at Deer Lake State Park in Walton County (See Figure 12-32 for general project location).The objective of the Deer Lake State Park Development project is to enhance and/or increaserecreational beach use opportunities by improving the park's visitor area. The restoration work proposed includes adding a paved access road, parking, picnic shelters, restroom facilities, plantings (trees, grass, shrubs), and necessary utilities (water, sewer, and electrical).

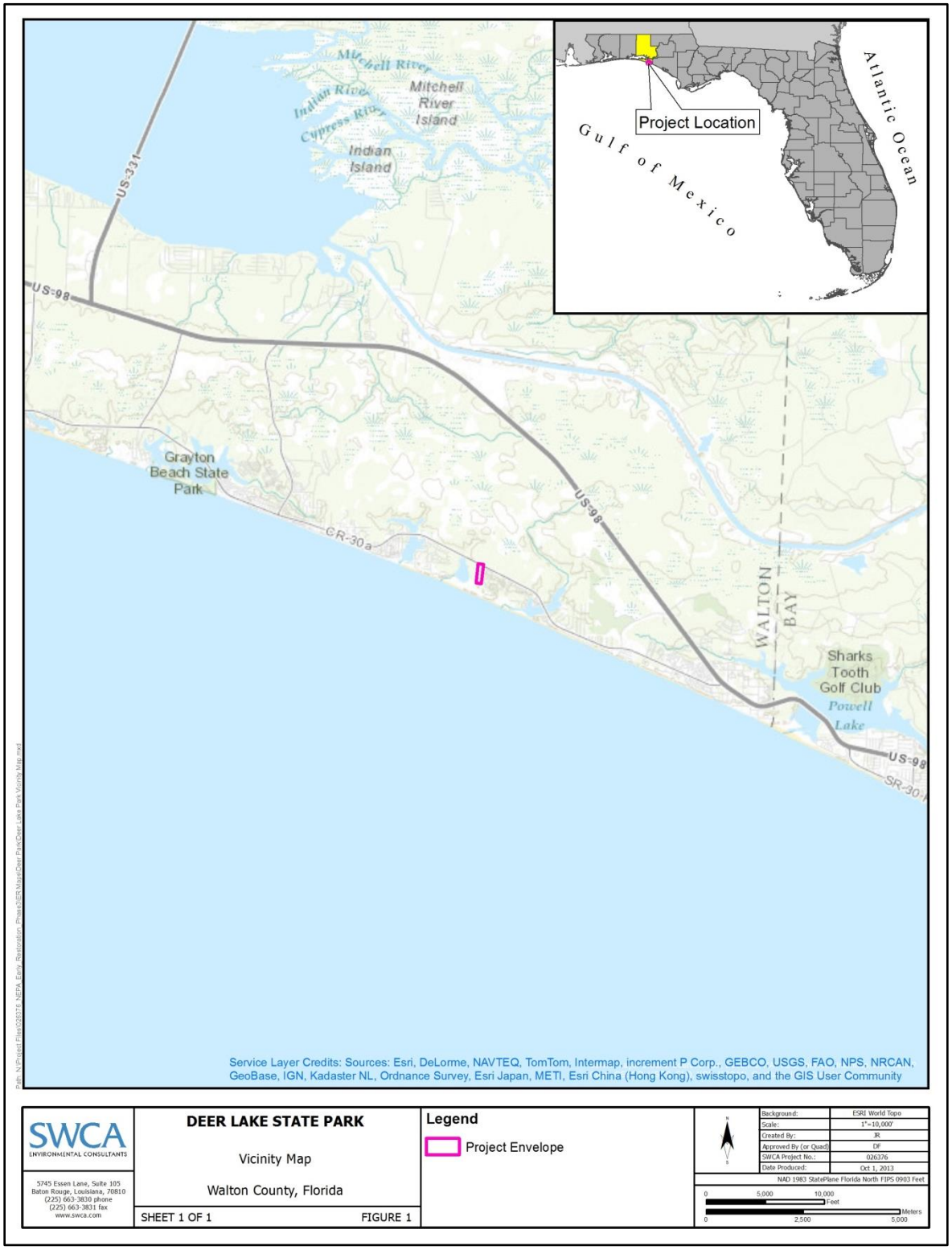

Figure 12-32. Location of Deer Lake State Park development project.

12.80.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposedDeer Lake State Park Recreation Areas project is intended to enhance and/or increase recreational beach use opportunities by improving the park's visitor area.The project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill.Thus, the nexus to resources injured by the Spill is clear. See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay.Florida agencies have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.80, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.80 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4). Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov)and to the State of Florida (http://www.deepwaterhorizonflorida.com). In addition to meeting the evaluation criteria for the Framework Agreement and OPA, theDeer Lake State Park Development project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle areathat was impacted by SCAT and response activities, including boom deployment.

12.80.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives.The project objective is toenhance and/or increaserecreational beach use opportunities by improving the visitor use areas at Dear Lake State Park. The proposed improvements would include adding a paved access road, parking, picnic shelters, restroom facilities, plantings (trees, grass, shrubs), and necessary utilities (water, sewer, and electrical). Performance monitoring will evaluate: 1) the addition ofa paved access road and parking; 2) construction of picnic shelters; 3) construction of restroom facilities; and 4) installation of planting and necessary utilities. Specific success criteria include: 1) the completion of the

construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the visitor use area is open and available.

Long term maintenance of the improved facilities will be completed by Deer Lake State Park staff as part of their regular public facilities maintenance activities. Corrective actions necessary after completion and signoff of the project will also be undertaken by park staff. Funding for this post-construction maintenance is not included in the project cost estimate and will be assumed by Deer Lake State Park.

During and following the post construction performance monitoring period, the State of Florida park staff will monitor the recreational use activity at the site. Park staff keeps track of visitation and usage at the park and will provide visitation numbers by the month. This use information is kept by the Florida Department of Environmental Protection.

12.80.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $1,177,000expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[17]

12.80.6 Costs

The total estimated cost to implement this project is $588,500. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[17] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.81 Deer Lake State Park Development: Environmental Review

The Deer Lake State Park improvement project is intended to enhance the quantity and quality of recreation in Florida's State Park system by improving infrastructure and access tothe coastal areas of Deer Lake State Park.

12.81.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BPExploration and Production, Inc. (BP) entered into the *Framework Agreement for Early Restoration Addressing Injuries Resulting from the* Deepwater Horizon *Oil Spill* (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf of Mexico in advance of the completion of the injury assessment process. Early restoration is not intended to, and does not, fully address all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement, the Trustees released a Phase I Early Restoration Plan (ERP) in April 2012, after public review of a draft. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the *Federal Register* on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III ERP. This park improvement project was submitted as an ERP on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and Oil Pollution Act (OPA), the project meets Florida's criteria that ERPs occur in the eight-county Florida panhandle area that deployed boom and was impacted by the Spill.

The Florida State Parkssystem offers residents and visitors recreation opportunities and scenic beauty.Improved access and facilities at these parks would promote increased visitation and park use, inspiring a sense of community, improving outdoor experience and education, and contributing to local economies. Roads, parking areas, trails, picnic facilities, and restrooms compose the main infrastructure through which the general public is able to enjoy state parks.

Created in 1996, Deer Lake State Park (referred to hereafter as "the Park")contains a freshwater coastal dune lake (Deer Lake). A small portion of Camp Creek Lake, also a freshwater coastal dune lake, is located in the southeast portion of the Park. Extensive wetlands are located in the flatwoods near the two lakes, as are intermittent and perennial blackwater streams. Coastal dune lakes are extremely rare and only occur along the Gulf Coast in the United States. Deer Lake has an outflow that empties into the Gulf of Mexico and harbors habitat for rare plants, migratory birds, and sensitive species. (Camp Creek Lake also empties into the Gulf of Mexico.) Park trails provide access to a dune ecosystem and a beach along the Gulf of Mexico south of Deer Lake.One of Florida's largest populations of the rare plant Curtiss' sand grass (*Calamovilfa curtissii*) can be found in the Park. The dune ecosystem is of particular

importance because it provides habitat for the federally endangered Choctawhatchee beach mouse (*Peromyscus polionotus allophyrs*) (Florida State Parks 2013b).

In 2004, Hurricane Ivan destroyed the Park's beach boardwalk, and after the hurricane season, a temporary stairway was put in place for beach access. In 2009, a new beach boardwalk compliant with the Americans with Disabilities Act (ADA) was opened and a paved ADA-compliant trail to the boardwalk was constructed to provide all visitors with beach access and dune views. Currently, the Park has two interpretive trails and the 1/4-mile dune boardwalk thatprovides beach accessso visitors can picnic, swim, and fish. The Park also provides access to Walton County's 10-mile walking and biking trail that winds along the coast through seaside communities.

The proposed infrastructure project would involve adding new roads, parking lots, sidewalks, picnic and restroom facilities, plantings (trees, grass, shrubs), and necessary utilities (water, sewer, and electrical). This project would improve Park access and expand and enhance its use by the public.

The Park improvement project is part of an ongoing plan by the Florida State Parkssystem to enhance and improve the ability of the public to utilize its resources.

12.81.2 Project Location

The Park is located at 6350 East County Road 30A in the city of Santa Rosa Beach in Walton County, Florida, in Sections 19 and 20, Township 03 South, Range 18 West (Figure 12-33). The1,995-acre Park is situated adjacent to a beach along the Gulf of Mexico, and County Road 30A bisects the Park. The area to the south of the county road provides the primary recreational attraction:Deer Lake and the Gulf of Mexico beach.North of the county road is an extensive area of pinelands, scrub, and blackwater stream communities.Existing facilities include the 1-mile Interpretive Forest Loop trail, the 1/2-mile Lake trail with a scenic overlook of Deer Lake, a picnic shelter on the nature trail located on the north side of County Road 30A across from the Park entrance, and an unimproved access road and parking area with approximately 0.69 acre of impervious surface intersecting County Road 30A.

The proposed Park improvements would take place south of County Road 30A on approximately 8 acres located 1,000–1,500 feet east of Deer Lake and about 1,700 feet from the coastline. Figure 12-33 is a map of the project area, and Figure 12-34 shows the project area on an aerial image.

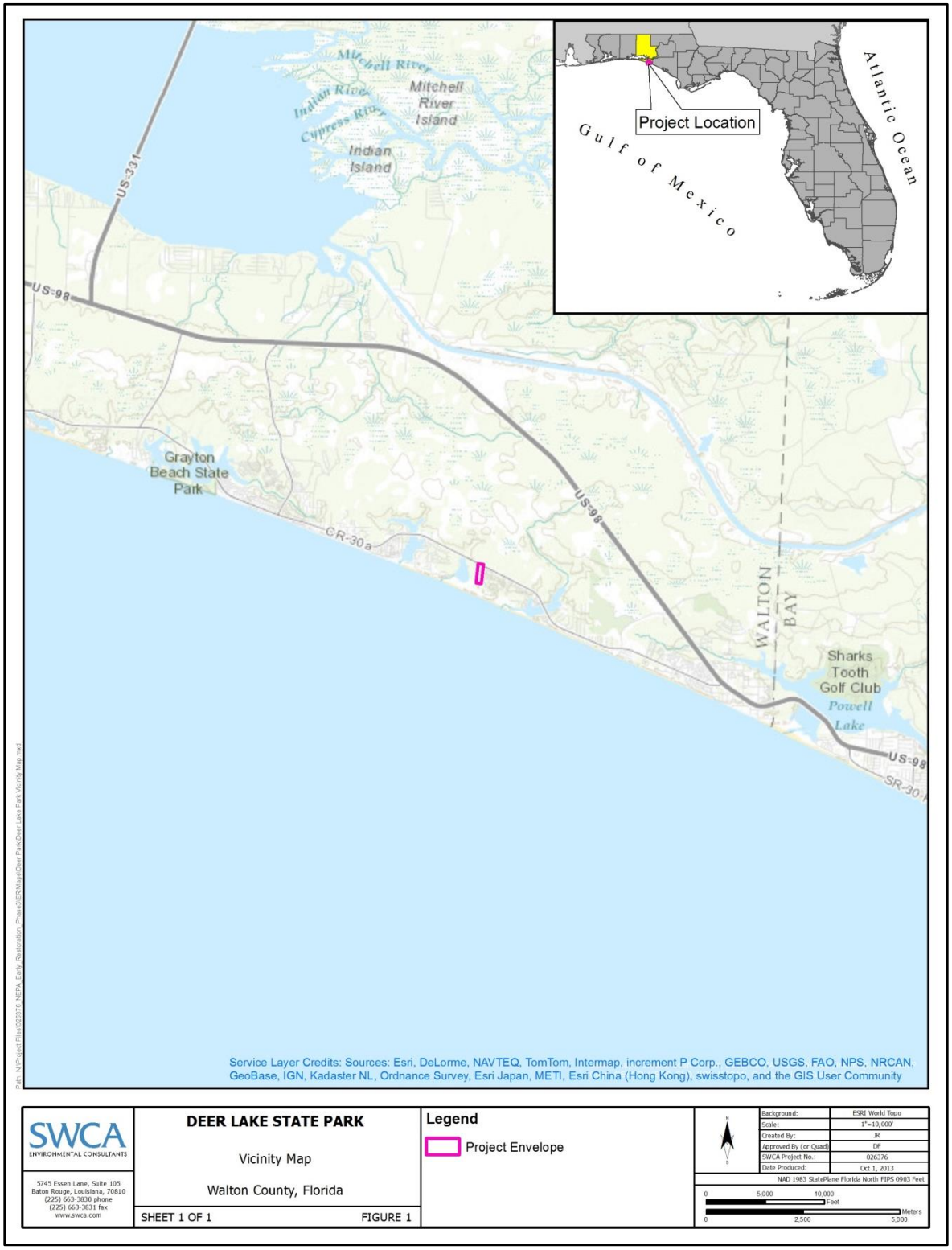

Figure 12-33. Vicinity map of Deer Lake State Park and the project area, Walton County, Florida.

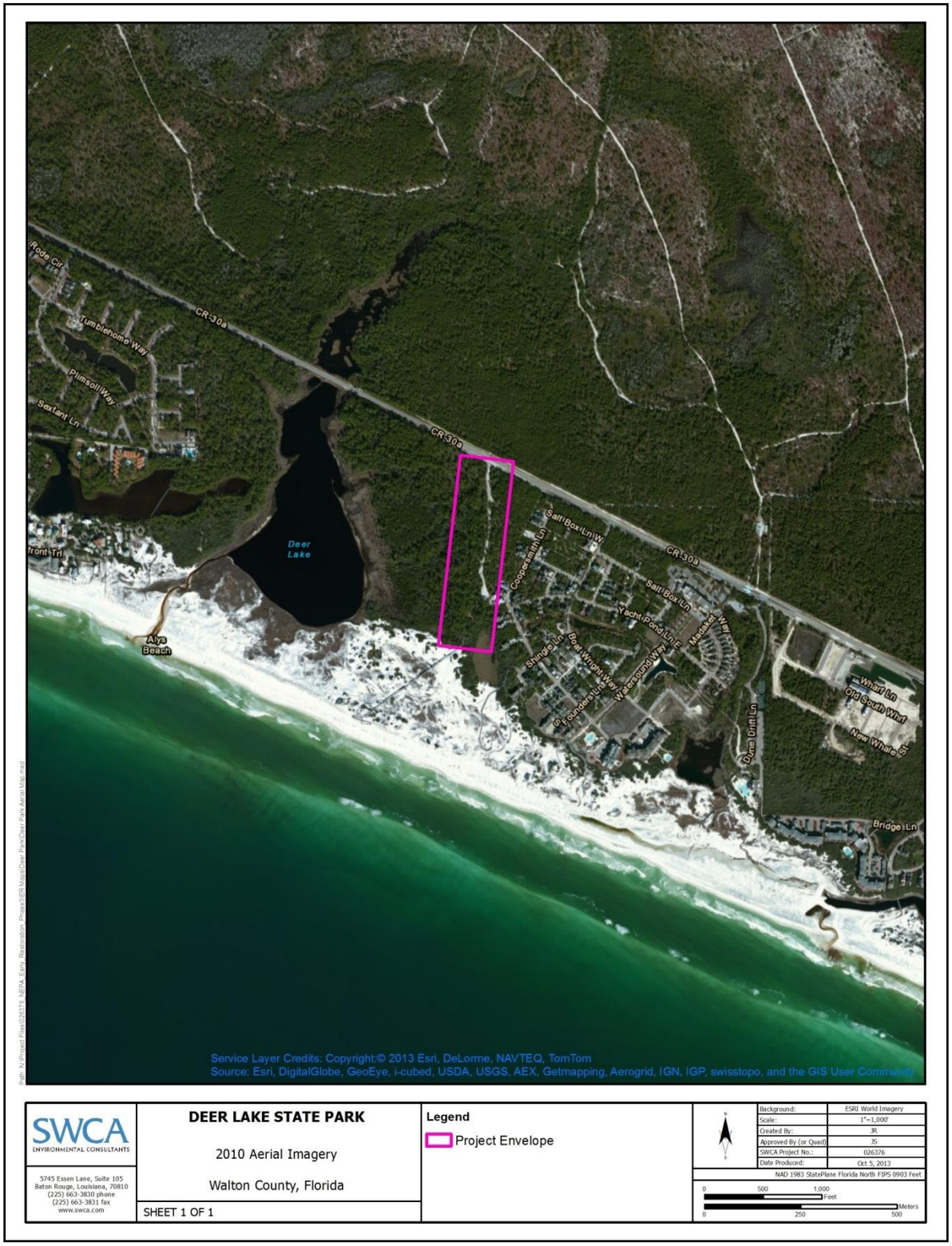

Figure 12-34. Aerial imagery of the project area in Deer Lake State Park.

12.81.3 Construction and Installation

12.81.3.1 Construction Design

The project scope includes developing two parking lots with approximately 100 total spaces, paved access roads, various sidewalks, an entry ranger station with associated utilities (water, sewer, power), an entrance sign with fully shielded wildlife friendly lighting, a day-use bathroom and pump station with associated utilities (water, sewer, power), an elevated picnic shelter, wildlife-friendly parking lot lighting, and underground power. Construction would require connecting the new restroom and entry ranger station to the regional sanitary sewer collection system operated by the Regional Utilities of Walton County. Water and power would also be connected to the site.

Figure 12-35 shows the proposed work overview for the Park.

Materials planned for removal may include soil, sand, rubble, trees, and asphalt.The demolition plan includes the removal of approximately 1,500 square feet (0.03 acre) of existing concrete, 650 square feet (0.01 acre) of an existing bike trail, the existing park entry sign, and between 40 and 60 existing trees.

In addition to the parking lots, access roads, and structures, construction plans specify the addition of approximately 2.6 acres of "vegetative buffer," which would consist of to-be-determined grasses. A mix of trees and shrubs are planned for parking areas and various beds throughout the 8-acre site as detailed in Table 12-31 below. Tree protection would include, but not be limited to root protection, water-holding soil additive, drainage outside of the root ball, aboveground poles or protective fencing, and trunk ropes to stabilize trees during the initial growth period.

12.81.3.2 Construction Methods and Materials

A mix of heavy equipment and specific mechanized equipment or hand tools for various activities would be used.Activities would include grading and paving; mechanical and manual excavation would also occur for roads, sidewalks, buildings, and parking areas.Excavation and construction may involve equipment such as excavators or track hoes, bulldozers, backhoes, graders, compacting equipment (roller), dump trucks, bobcats, a paving machine, forklifts, ditchwitches, and pickup trucks; some additional hand digging may also occur. Assumed equipment usage and manpower requirements are detailed in Table 12-32.

At least 10 small tools (e.g., nail guns, saws, drills) would be needed and would be operated approximately 8 hours per day, 5 days per week for 6 months.A generator would be needed to power the small tools, and it, too, would operate for about 8 hours per day, 5 days per week for 6 months.

Road and parking lot construction would entail the removal of 0.65 acre of the 0.69-acre existing impervious surface and the addition of 1.71 acres of new impervious surface for the road and parking area, plus 0.07 acre for 5-foot-wide sidewalks.The total new impervious surface would be 1.82 acres. Building footprints would cover 0.04 acre.

Figure 12-35. Proposed work overview in the project area in Deer Lake State Park.

Table 12-31. Number and type of plants to be planted.

Number	Type
35	Sand live oak (*Quercus virginiana*)
5	Sand pine (*Pinus clausa*)
5	Slash pine (*Pinus ewotti*)
13	Tree wax myrtle (*Myrica cerifera*)
47	Inkberry (*Ilex glabra*)
56	Saw palmetto (*Serenoa repens*)
5	Chapman oak (*Quercus chapmanii*)
3	Myrtle oak (*Quercus myrtifoua*)
44*	Golden aster (*Chrysopisis*)
44*	Apalachicola rosemary (*Conradina glabra*)
44*	False rosemary (*Conradina*)

*Mixture of the following per planting bed

Table 12-32. Assumed equipment usage and worker needs.

Equipment	Number of Days Used	Number of Worker Days	Assumption
Dump truck	10	10	1 week excavation; 1 week paving
Flatbed truck	25	25	1 trip per week for six months
Concrete truck	5	5	1 week use
Pickup truck	396	396	Three pickups per day for 6 months
Bobcat	15	15	1 week excavation; 1 week paving; 1 week utilities work
Grader	5	5	1 week grading
Paving machine	5	5	1 week paving
Roller	5	5	1 week paving
Trackhoe	5	5	1 week excavation
Bulldozer	10	10	1 week excavation, 1 week grading
Forklift	26	26	One delivery per week for 6 months
Ditchwitch	10	10	2 weeks utilities work

The depth of ground disturbance would be determined with the final design and would vary throughout the construction site. The access road and parking lot would likely require disturbance up to several feet deep, and the footprint placement would depend on final design and desired parking capacity. The picnic shelters would also require ground disturbance of up to several feet to construct the base and may require pilings to be placed to support roofs.Restroom facilities would require deeper ground disturbance to install sewer lines or septic tanks, and footprint placement would also depend on final design.

Posts may be temporarily placed as part of the construction effort (e.g., to secure concrete forms). If posts are placed (most likely associated with picnic shelters), they would likely be placed by mechanically auguring holes to place pre-formed pilings or to place forms that would be filled with pumped concrete to create new pilings. The holes for the pilings would be approximately 1–2 inches in diameter (final sizes would depend on final design requirements). As work proceeds, the project area may be isolated by construction fencing to prevent incidental access.Fencing material would be

emplaced by hand driving stakes with a sledge hammer or post driver as necessary.Stakes would be less than 2 inches in diameter and driven to a depth of 1–2 feet to secure the fencing.

The water main would be ofpolyvinyl chloride (PVC)pipe and constructed 3 feet from edge of the pavement, unless otherwise noted, but in all cases no more than 5 feet from the pavement edge. The PVC pipe would be either 4 or 6 feet in diameter and installed in 20-foot lengths, with a minimum cover of 36 inches. The water main and sewer line would be installed in the same trench, but the water main would maintain a clearance of 18 vertical and 10 horizontal inches from the sanitary sewer line. All utility lines would tie in to existing main lines that run adjacent to County Road 30A.

Standard construction materials would be used for the entry station, picnic shelter, restroom facility, and pump house.The parking areas and access roads would likely be constructed of asphalt.Sidewalks and building foundations would be of poured concrete.Construction-related materials such as sand, gravel, and concrete forms may be placed on the surface of the site.These materials would be staged on existing paved areas to avoid additional surface disturbance.New lighting is proposed for outdoor facilities, including at the entry sign, entry station, restroom facility, and parking areas.

12.81.3.3 Best Management Practices

The following construction best management practices (BMPs) would be followed:

- All construction would be performed in accordance with all local, state, and federal requirements and all permit requirements to protect the surrounding vegetation and natural condition.
- The contractor would submit a plan for control of surface water runoff in accordance with all local, state, and federal requirements and all permit requirements to protect the surrounding vegetation and natural condition.
- All construction adjacent to open water would be separated and confined by appropriate siltation screens and turbidity barriers to protect the quality of such open water. However, for this project, no construction would occur adjacent to open water.
- Upon completion of construction, the site would be cleared of all construction materials and restored to its natural state as shown on the plan drawings.
- The contractor would be responsible for assuring compliance with all permit requirements.

In addition to construction BMPs, the contractor would implement BMPs for adequate erosion control. Erosion control is necessary to prevent damage to adjacent property, natural features, site property, and work in progress. Erosion control measures would be in place prior to any land alteration and would be used throughout the construction process until soils are stabilized. Erosion control BMPs are as follows:

To protect against wind and stormwater runoff erosion, the contactor would place, as appropriate, hay bales and silt fencing with wire fence reinforcement, with sediment to be removed when it reaches approximately one-half the height of the barrier (see Figure 12-35).

Silt fences would be of optimal design and materials for adequate sediment control.

Side slopes created during construction would be stabilized at the earliest possible date to avoid erosion with adequate use of compacted soil and staked hay bales.

Any disturbed area that would not be paved, sodded, or built upon would have a minimum vegetative cover of 80% and be mature enough to control soil erosion and survive severe weather conditions prior to final inspection.

Sod would be sufficiently grown and maintained to secure a dense stand of live grass.

The proposed road surface at the entrance would maintain a condition of slope that would prevent tracking or flow of mud onto the existing public roadway (County Road 30A).

12.81.3.4 Construction Permits and Schedule

The project would require a county building permit from Walton County, a wetlands permit from the U.S. Army Corps of Engineers (USACE) in consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) regarding endangered species, an environmental resource permit and sanitary sewer collection system permit from the Florida Department of Environmental Protection (FDEP), and authorization from the Regional Utilities of Walton County for a connection permit.

Construction could occur at any time but, to minimize impacts, would ideally take place during the time of year when recreation use is lowest.Construction work is expected to take 4–6 months to complete.The following schedule is currently planned:

Design complete:	Summer 2014
Permitting complete:	State permitting is completed; Walton County building permit to be finalized once funding is secured.
Contract bid:	Summer 2014
Construction start:	Fall 2014

12.81.4 Operations and Maintenance

Park staff would operate and maintain the new and expanded facilities under the existing management plan.Maintenance would include tasks such as checking and cleaning the restroom, removing debris and trash from the picnic and parking areas, and maintaining the parking areas and roads over time.Monitoring would include construction monitoring and tracking visitor use.

12.81.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well asnatural resources. The following sections describe the affected environment and environmental consequences of the project.

12.81.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.81.5.2 Physical Environment

12.81.5.2.1 Geology and Substrates

Affected Resources

According to the Geologic Map of Florida, the Park is located on the Quaternary system, Pleistocene series, Undifferentiated Quaternary Sediments stratigraphic unit, and the Holocene series, Holocene Sediments stratigraphic unit. The Undifferentiated Quaternary Sediments stratigraphic unit consists of siliciclastics, organics, and freshwater carbonates. The siliciclastics are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey, silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty clays. Gravel is occasionally present. Organics occur as plant debris, roots, disseminated organic matrix, and beds of peat. Freshwater carbonates, or marls, are buff-colored to tan, unconsolidated to poorly consolidated, fossiliferous carbonate muds. Sand, silt, and clay may be present in limited quantities, and these carbonates often contain organics. The dominant fossils in the freshwater carbonates are mollusks. The Holocene Sediments stratigraphic unit occurs near the present Florida coastline at elevations generally less than 5 feet and includes quartz sands, carbonate sands and muds, and organics (Scott et al. 2001).

The entire southern area of Walton County lies in the Gulf Coastal Lowlands of Puri and Vernon province, which includes beaches and sand dune ridges that extend inland up to approximately 15 miles into the flatwoods. A wedge-shaped terrace, defined by a 25-foot scarp, extends westward along the coast of the Florida panhandle, terminating as a scarp toe near Four Mile Village in Walton County. The deep Pleistocene and recent quartz sands that cover the lower part of the county are suspected to overlie this scarp feature in the Park area. Over time, these sands have been reworked by storms and hurricanes into the present landscape. In terms of the stratigraphy in the Park, a quartz sand veneer (soft, sandy limestone with abundant microfossils) is found above the Intracoastal Formation that begins at 50 feet, which overlies Bruce Creek Limestone at approximately 100 feet. Although limestone is present, the Park contains few obvious karst features (Florida Division of Recreation and Parks 2004).

Topographically, higher areas at the Park are deeply dissected by numerous streams and drainageways. Topography ranges from islands of xeric sandhills and sand pine scrub bluffs to sea level where lake outlets meet the Gulf of Mexico. The highest point in the Park is 46 feet on the northeastern side; the highest points of interior ridges reach 46 feet while knolls along the beach rise to 25 feet. In the basins of Deer Lake and Camp Creek Lake, elevations along drainageways increase gradually and then drop abruptly from 25 feet to sea level (Florida Division of Recreation and Parks 2004).

Sixteen soil types occur in the boundaries of the Park:

- Dorovan-Pamlico association, frequently flooded (mainly large hardwood swamps and floodplains of the major drainageways)
- Foxworth sand, 0%–5% slopes (uplands and in elevated areas of flatwoods)
- Kureb sand, 0%–8% slopes (broad, undulating ridges and short side slopes on upland sand hills and dune-like ridges)
- Lakeland sand, 0%–5% slopes (broad ridge tops on uplands)
- Lakeland sand, 5%–12% slopes (upland side slopes leading to drainageways and around depressions)
- Lakeland sand, 12%–30% slopes (upland side slopes leading to drainageways and depressions)
- Leon sand (flatwoods)
- Rutlege fine sand (shallow depressions, stream or creek floodplains and upland flats)
- Eglin sand, 0%–5% slopes (low uplands)
- Mandarin sand (slightly elevated areas of flatwoods)
- Newhan-Corolla sands, rolling (undulating dune-like areas adjacent to the Gulf of Mexico)
- Beaches (narrow strips of tide-washed sand along the Gulf of Mexico)
- Kureb sand, hilly (dune-like ridges)
- Hurricane sand, 0%–5% slopes (slightly elevated areas of flatwoods)
- Resota fine sand, 0%–5% slopes (moderately elevated ridges of flatwoods)
- Pamlico Muck (depressional areas of flatwoods) (Florida Division of Recreation and Parks 2004)

Limited soil erosion has occurred from unimproved roads and off-road vehicle impacts prior to acquisition of the land for the Park (Florida Division of Recreation and Parks 2004).

Environmental Consequences

Mechanized equipment and hand tools would be used to complete the construction of the paved access road, parking lots, sidewalks, entry station, picnic shelter, and restroom facility. Some excavation of soils would occur to construct the base and possibly place posts for the picnic shelter, to construct foundations for the entry station and restroom, to lay sewer lines and other utility lines, and to construct the access road and parking lots. Soil, rock, and vegetation would be removed from the area where facilities would be built. Long-term, permanent surface disturbance would occur on approximately 4.4 acres; temporary short-term surface disturbance during construction would occur on an additional area of up to 3.6 acres. Soil removal, compaction, and disturbance would be most common in Kureb sand (0%–8% slopes), Leon sand, and Newhan-Corolla sands.

Disturbance to geologic features or soils would be detectable but would be short term, small, and localized. There would be no long-term changes to local geologic features or soil characteristics. Erosion and/or compaction may occur in localized areas but would be minimized by the erosion control BMPs specified above. In addition, the Park's management plan requires the implementation of BMPs during the development of park roads to prevent erosion (Florida Division of Recreation and Parks 2004).

12.81.5.2.2 Hydrology and Water Quality

Affected Resources

Northwest Florida has seven major watersheds, all of which have been identified as priorities under the Surface Water Improvement and Management (SWIM) program.Water quality protection is the underlying goal of SWIM, along with the preservation and restoration of natural systems and associated public uses and benefits (Northwest Florida Water Management District 2011).The Park is located on the eastern side of the Choctawhatchee River and Bay system, which encompasses 3,422,154 acres.Approximately 42% of the system is in Florida and the remainder is in Alabama.Major tributaries of the Choctawhatchee River include the Pea River and Little Choctawhatchee River, as well as Holmes, Wrights, Bruce, and Pine Log Creeks.The Choctawhatchee Bay has one direct opening to the Gulf of Mexico at East Pass, near the city of Destin, and joins with Santa Rosa Sound to the west and the Intracoastal Waterway to the east.The Choctawhatchee River and Bay system supports a variety of environmental resources including aquatic and wetland habitats, vast forests, Floridian Aquifer springs, steephead streams, and many species of flora and fauna.It also supports human-related activities such as commercial and recreational fisheries, marine transportation, military uses, outdoor recreation, tourism, and activities related to the region's aesthetic qualities, contributing economic and other benefits to local communities. Broad issues for the Choctawhatchee River and Bay system include urban stormwater runoff and other nonpoint sources of pollution, widespread sedimentation, domestic and industrial wastewater discharges, and habitat loss and degradation (Thorpe et al. 2002).

All waters in the Park have been classified as Outstanding Florida Waters (OFWs) by the State of Florida (Rule 62-302.700, Fla. Admin. Code) (Florida Division of Recreation and Parks 2004).An OFW is water designated worthy of special protection because of its natural attributes (e.g., excellent water quality or exceptional ecological, social, educational, or recreational value).OFWs are protected through more stringent requirements for activities requiring a permit from the FDEP or a water management district.Waters are designated OFW to prevent the lowering of existing water quality and to preserve the exceptional features of the waterbody.Surface waters in the Park are also classified as Class II waters by the FDEP (Florida Division of Recreation and Parks 2004).Class II waters have been designated for shellfish propagation and harvesting.

Impaired waters are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes.Neither Deer Lake nor Camp Creek Lake are listed as impaired waters (Environmental Protection Agency [EPA] 2010).

The watershed of the Park extends into adjacent Division of Forestry property where the water table is very close to the surface.The unit drainage is from north to south along drainage channels (blackwater streams) into the two coastal dune lakes, Camp Creek Lake and Deer Lake.Intermittent and perennial blackwater streams draw from an extensive wetland reservoir in nearby flatwoods.A series of shallow, sand-bottomed rivulets in the upper section of the Park eventually coalesce into deep, tannic-colored stream bodies as they wind down through the sandhills and sand pine-oak scrub communities.Water tends to settle in the swamps and cypress domes.Isolated wetlands are common (Florida Division of Recreation and Parks 2004).

Two major aquifers are found in Walton County:the sand and gravel aquifer and the Floridian Aquifer (the primary source of water for the county) (Florida Division of Recreation and Parks 2004).

Wetlands

The Park contains estuarine and marine wetlands, freshwater emergent wetlands, and freshwater forested/shrub wetlands (USFWS). As shown in Figure 12-36 below, the project area overlaps several wetlands.These wetlands can be described as palustrine emergent, persistent, seasonally flooded (PEM1C); palustrine forested, broad-leaved deciduous, seasonally flooded-tidal (PF01R); and palustrine forested, needle-leaved evergreen (PF04).

Floodplains

Based on Federal Emergency Management Agency (FEMA) flood insurance rate maps (Panel 12131C0712G), the proposed project features appears to be located in Zone X. Zone X is defined as other flood areas. This area is characterized as areas of 0.2% annual chance of flood; areas of 1% annual chance of flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance of flood.

Environmental Consequences

All project activity would take place in upland areas, away from both the Gulf of Mexico and the shores of Deer Lake and Camp Creek Lake.Because of the project area's distance from bodies of water and the proposed application of BMPs, surface water quality is not expected to be impacted during construction.

All permit conditions, including mitigation measures for erosion and release of chemicals, would be strictly adhered to.During construction, BMPs (listed above) along with other avoidance and mitigation measures required by state and federal regulatory agencies would be employed to minimize any water quality impacts. Permit conditions of the FDEP require erosion mitigation measures that include the installation of erosion control measures along the perimeter of all work areas and the stabilization of all filled areas with sod, mats, barriers, or a combination.The FDEP permit also constitutes a Certification of Compliance with State Water Quality Standards under Section 401 of the Clean Water Act, which indicates that the project would comply with state water quality standards and other aquatic resource protection requirements.

Impacts from chemicals to surface water or groundwater that could be released from sources such as construction equipment and vehicles are expected to be negligible.Required spill containment measures would be implemented for applicable construction activities. Permit conditions of the FDEPrequire spill containment protection and mitigation measures.

With required mitigation measures and erosion and construction BMPs in place, the effect on hydrology and water quality would likely be negligible.Any impacts would be small, short term, and localized.

Wetlands

A wetlands permit is required for the project and would stipulate appropriate BMPs and mitigation.Because all permit conditions would be strictly adhered to, the effect on wetlands would be minor and short term, and wetland function would be remain unimpaired or would be replaced through required mitigation.

Floodplains

No appreciable increased risk of flood loss, including impacts to human safety, health, and welfare, is expected to occur because the project would not impact vegetation, slopes, or coastal conditions in a substantial manner.

12.81.5.2.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment.NAAQS have been set for six common air pollutants (also known as criteria pollutants), consisting of particle pollution or particulate matter, ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead. Particulate matter is defined as fine particulates with a diameter of 10 micrometers or less (PM_{10}) and fine particulates with a diameter of 2.5 or less ($PM_{2.5}$).When a designated air quality area or airshed in a state exceeds a NAAQS, that area may be designated as a "nonattainment" area.Areas with levels of pollutants below the health-based standard are designated as "attainment" areas.To determine whether an area meets the NAAQS, air monitoring networks have been established and are used to measure ambient air quality.The EPA also regulates 187 hazardous air pollutants (HAPs) that are known or suspected to cause cancer or other serious health effects.

Air quality in the Florida panhandle is in attainment with the NAAQS (EPA 2013a).The FDEP, Northwest District Air Program, does not operate any air quality monitors in Walton County (FDEP 2013a).

Greenhouse Gases

Gases that trap heat in the air are called greenhouse gases (GHGs).The primary GHGs are carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases.Over the past century, human activities have released into the atmospherelarge amounts of GHGs, which are contributing to global warming.Global warming is defined as the ongoing rise in global average temperature near the Earth's surface.Global warming is causing climate patterns to change.

According to the EPA, the average annual temperature in the southeast portion of the United States has increased by approximately 2.0°F since 1970.Winters, in particular, are getting warmer, and the average number of freezing days has decreased by 4–7 days per year since the mid1970s.Most areas are getting wetter; autumn precipitation has increased by 30% since 1901.In many parts of the region, the number of heavy downpours has increased.Despite the increases in fall precipitation, the area affected by moderate and severe drought has increased since the mid1970s (EPA 2013b).

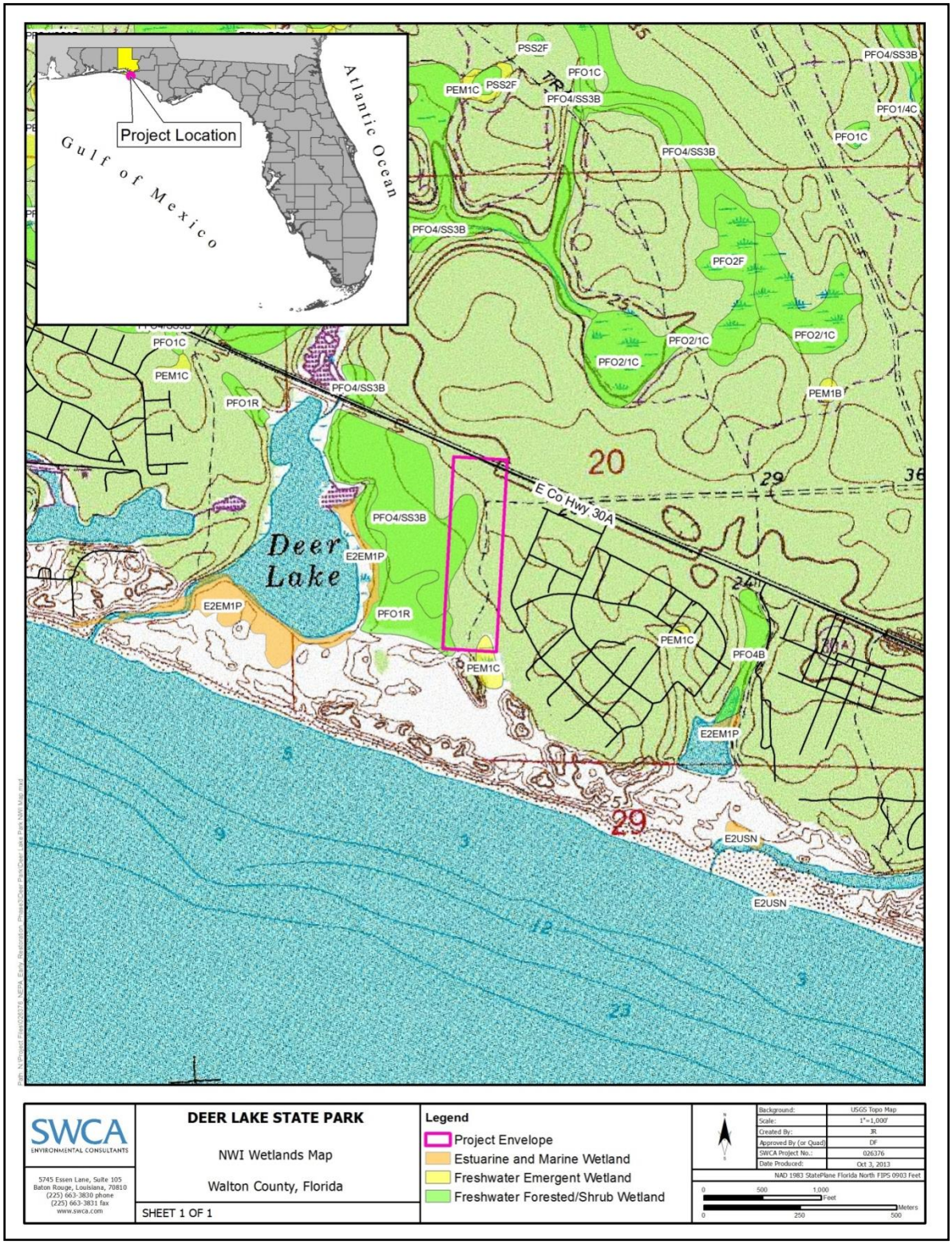

Figure 12-36. Wetlands in the projectarea and Deer Lake State Park.

Average annual temperatures in the region are projected to increase from 4°F to 9°F by 2080.Hurricane-related rainfall is projected to continue to increase.Models suggest that rainfall will arrive in heavier downpours with increased dry periods between storms.These changes would increase the risk of both

flooding and drought.The coasts will likely experience stronger hurricanes and sea level rise.Storm surge could present problems for coastal communities and ecosystems (EPA 2013b).

Total GHG emissions in the state of Florida from 1990 to 2007 have increased at an average rate of 2.1% per year.Total GHG emissions in 2007 were 290 million metric tons of CO_2 equivalent ($MMTCO_2E$).In 2007, 91% of GHG emissions in Florida were CO_2 emissions (FDEP 2010).

Environmental Consequences

Project implementation would require the use of heavy mechanized equipment which would lead to temporary emissions (e.g., criteria pollutants, HAPs, GHGs) from the operation of construction vehicles and equipment.Any air quality impacts that occur would be measurable but minor due their localized nature, short-term duration, and the small size of the project.BMPs would be employed to prevent, mitigate, and control potential air pollutants during project implementation, such as following speed limits and prohibiting idling unless necessary to run equipment.No air quality–related permits would be required because of the minimal levels of emissions.

Greenhouse Gases

The major pieces of construction equipment that would contribute to GHG emissions for this project are listed in Table 12-33, along with their estimated GHG emissions. GHG emissions from the remaining (hand) equipment would be negligible. The emissions estimates are based on the operating assumptions in Table 12-32.

Table 12-33. Greenhouse gas impacts of the proposed project for major construction equipment.

Equipment Description	Total Hours Used	CO_2 Factor-mt/100hrs*	CO_2 (mt)	CH_4 Factor-mt/100hrs	CH_4 (mt)	NO_2 Factor-mt/100hrs	NO_2 (mt)	Total CO_2 (mt)
Dump trucks/ flatbed truck	280	1.7	4.8	0.5	1.4	7.2	20.2	26.3
Concrete trucks	40	1.7	0.7	0.5	0.2	7.2	2.9	3.8
Pick up trucks	3,168	1.1	34.8	0.35	11.1	4.4	139.4	185.3
Bobcat (bare and w/auger mount)	120	2.65	3.2	0.9	1.1	10.6	12.7	17.0
Moto grader	40	2.25	0.9	0.65	0.3	1.08	0.4	1.6
Paving machine	40	2	0.8	0.5	0.2	8	3.2	4.2
Rollers	40	2	0.8	0.5	0.2	8	3.2	4.2
Trackhoe (w/bucket/ thumb or vibratory attachments)	40	2.55	1.0	0.85	0.3	10.2	4.1	5.4
Bulldozer	80	2.25	1.8	0.65	0.5	1.08	0.9	3.2
Forklift	208	2.25	4.7	0.65	1.4	1.08	2.2	8.3
Ditchwitch	80	0.75	0.6	0.35	0.3	4	3.2	4.1
Total	**4,136**							**263**

*mt = metric tons

Based on the assumptions detailed in Table 12-33, the project would generate approximately 263 metric tons of GHGs over the duration of all phases. The following mitigation measures have been identified to reduce or eliminate GHG emissions from the project:

- Shut down idling construction equipment, if feasible.
- Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.
- Encourage the use of the proper equipment size for the job to maximize energy efficiency.
- Encourage the use of alternative fuels for generators at construction sites, such as propane or solar, or use electrical power where practicable.

The project would have short-term minor impacts but no long-term impacts on GHG emissions. Mitigation measures would minimize GHG emissions.

At the completion of the project, visitor use (and therefore vehicle use) could increase due to the improved access and facilities.Increased exhaust emissions could affect air quality over the long term.However, adverse impacts to air quality are expected to be minor because management actions could be taken if necessary to limit Park visits and because they would be negligible in the context of the total number of miles travelled in the regional airshed.

12.81.5.2.4 Noise

Affected Resources

Noise can be defined as unwanted or nuisance sound. The Noise Control Act of 1972 (42 USC 4901 to 4918) was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. Amplitude is the magnitude of a sound and is usually expressed in decibels (dB), a dimensionless ratio of sound pressure to that of a reference pressure. The A-weighted decibel (dBA) is the adjusted unit of sound used to describe the human response to noise from industrial and transportation sources. The threshold of human hearing is 0 dBA. A 3-dBA increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear.

Table 12-34 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-34. Typical noise levels for common sources.

Noise Source or Effect	Sound Level (dBA)
Rock-and-roll band	110
Truck at 50 feet	80
Gas lawn mower at 100 feet	70
Normal conversation indoors	60
Moderate rainfall on foliage	50
Refrigerator	40
Bedroom at night	25

Source: Adapted from U.S. Department of Energy (1986)

Noise levels in the project area vary depending on the season, time of day, number and types of noise sources, and the distance of the receptor from noise sources. Existing sources of noise in the project area are from nearby residential activities (such as lawn care), traffic on nearby roads and highways, overhead aircraft, and ambient natural sounds such as wind, waves, and wildlife.

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the project. Noise-sensitive receptors in the project area include recreational users, residences located to the east and west of the Park, and wildlife. There are currently residences located in an 80-acre community that are immediately adjacent to (east of) the Park boundary. Approximately 10 of these residences are located within 500 feet of the proposed construction area, and some are as close as 25 feet.

Environmental Consequences

Instances of increased noise would occur during the project. Equipment, tools, and vehicles used during the construction of the paved access road, parking lots, sidewalks, entry station, picnic shelter, and restroom facility; paving of asphalt and pouring of concrete; planting and erosion control activities; and the laying of underground utility lines would generate noise.Construction equipment noise is known to disturb fish, marine mammals, and nesting shorebirds. Construction noise would also negatively affect the experience of Park visitors and local residents in areas near project activities. The noise impacts would be short term since the construction period is not anticipated to last more than 6 months. Because of the temporary nature of the construction noise, negative impacts to the soundscape would be short term and of a level that is likely to attract visitor and neighbor attention but not cause changes in visitor or resident activities.

After completion of the project, the soundscape would return to pre-project levels.The potential for increased vehicle traffic exists due to the improved access and facilities at the Park, which would result in a slight increase in noise levels in the vicinity.Overall, long-term noise impacts from hiking, picnicking, and other recreational activities would remain minor.

12.81.5.3 Biological Environment

12.81.5.3.1 Living Coastal and Marine Resources

Vegetation

Affected Resources

The Park contains rare coastal dune habitat, which hosts magnolias, golden asters, woody goldenrod, and scrub oaks, as well as rare plants such as Gulf Coast lupine, spoonflower, pitcher plants, and Curtiss' sand grass (Florida State Parks 2013a). The population of Curtiss' sand grass is one of the largest in Florida.

Fourteen distinct natural communities have been identified in the Park, in addition to 2 acres of developed areas (jeep trails, roads, and improvements on the beach side at Deer Lake). These communities are described in Table 12-35.

Table 12-35. Vegetation communities in the park.

Community	Acreage
Beach dune	46.6
Mesic flatwoods	589.7
Sandhill	602.6
Scrub	366.5
Seepage slope	unknown
Wet flatwoods	unknown
Wet prairie	unknown
Basin swamp	126.4
Depression marsh	unknown
Dome swamp	48.9
Coastal dune lake	53.1
Seepage stream	147.9
Estuarine tidal marsh	unknown
Marine unconsolidated substrate	12.3

Source: Florida Division of Recreation and Parks (2004)

The project site appears to be located in the scrub and mesic flatwoods communities.

In the Park, all wetlands, beach dune, sandhill, scrub, and coastal dune lake communities have been designated as protected zones, defined as areas of high sensitivity or outstanding character from which most types of development are excluded as a protective measure (Florida Division of Recreation and Parks 2004).

A list of federally designated threatened, endangered, candidate, and other plant species of concern likely to occur in Walton County and the Park can be found in Table 12-36. State-listed special status species reported to occur in the project area are also shown in the table.

Although Godfrey's golden aster (*Chrysopsis godfreyi*) was not reported as likely to occur in Walton County, it has been observed infrequently in the Park with sea oats on foredunes. According to Florida Natural Areas Inventory (FNAI) rankings, it is imperiled in Florida due to rarity or vulnerability to extinction from some natural or manmade factor. (The FNAI maintains a comprehensive database of the biological resources of Florida.) Spoonflower (*Peltandra saggitifolia*) is found along basin swamps at Camp Creek and, in Florida, is either very rare and local throughout its range or found locally in a restricted range or vulnerable to extinction or other factors (FNAI ranking). Rosebud orchid (*Cleistes divaricata*) and grass pinks (*Calopogon barbatus*) have been observed around ponded areas in flatwoods and around streams in the Park; these species have been listed as threatened plants (species in rapid decline in the state) by the Florida Department of Agriculture and Consumer Services.

Table 12-36. Protected plant species with potential to occur in the project area.

Resource Category	Common Name	Scientific Name	USFWS Status	State Status	Natural Communities
Plants	Cruise's golden-aster	*Chrysopsis gossypina cruiseana*	–	E	Terrestrial: Coastal dunes, coastal strand, coastal grassland; openings and blowouts Observed in the Park on taller dunes inland from beach dune
Plants	Curtiss' sandgrass	*Calamovilfa curtissii*	–	T	Palustrine: Mesic and wet flatwoods, wet prairie, depression marsh Terrestrial: Mesic flatwoods Observed in large populations in the Park around ponded areas in the flatwoods and along streams (dome swamp community)
Plants	Decumbant pitcher plant	*Sarracenia purpurea*	–	T	Palustrine: Bogs Observed in the Park
Plants	Florida anise	*Illicium floridanum*	–	T	Palustrine: Floodplain forest, baygall Riverine: Seepage stream bank Terrestrial: Slope forest, seepage slope Observed in the Park
Plants	Gulf Coast lupine	*Lupinus westianus*	–	T	Terrestrial: Beach dune, scrub, disturbed areas, roadsides, blowouts in dunes Observed in the Park in disturbances along paths in scrub and sandhills
Plants	Large-leaved jointweed	*Polygonella macrophylla*	–	T	Terrestrial: Scrub, sand pine/oak scrub ridges Observed frequently in the Park in oak scrub
Plants	Panhandle meadow-beauty	*Rhexia salicifolia*	–	–	None listed Observed in the Park
Plants	Parrot pitcher plant	*Sarracenia psittacina*	–	T	Palustrine: Wet flatwoods, wet prairie, seepage slope Observed in the Park
Plants	Southern milkweed	*Asclepias viridula*	–	T	Palustrine: Wet prairie, seepage slope edges Riverine: Seepage stream banks Terrestrial: Mesic flatwoods, drainage ditches Observed in the Park
Plants	Southern red lily or pine lily	*Lilium catesbaei*	–	T	Palustrine: Wet prairie, wet flatwoods, seepage slope Terrestrial: Mesic flatwoods, seepage slope; usually with grasses Observed in the Park
Plants	Spoon-leaved sundew or drosera	*Drosera intermedia*	–	T	Lacustrine: Sinkhole lake edges Palustrine: Seepage slope, wet flatwoods, depression marsh Riverine: Seepage stream banks, drainage ditches Observed in the Park
Plants	White-top pitcher plant	*Sarracenia leucophylla*	–	E	Palustrine: Wet prairie, seepage slope, baygall edges, ditches Observed around ponded areas in the flatwoods and around streams of the Park
Plants	Yellow butterwort	*Pinguicula lutea*	–	T	Palustrine: Flatwoods, bogs Observed in the Park

ce = consideration encouraged; E = endangered; T = threatened

Source: USFWS Panama City Ecological Services, Fish and Wildlife Conservation Office (2012); Florida Division of Recreation and Parks (2004)

Very few exotic species have been documented in the Park, although a few Chinese tallow (*Sapiumsebiferum*) have been identified and removed when found. Also, small areas of cogongrass (*Imperata cylindrica*) have been identified near the Park, primarily along road rights-of-way (Florida Division of Recreation and Parks 2004).

Environmental Consequences

Construction of the paved access road, parking lots, sidewalks, entry station, picnic shelter, restroom facility, and associated utilities would require the permanent removal of vegetation in the affected areas. This long-term, permanent surface disturbance would occur on approximately 4.4 acres; short-term surface disturbance during construction activities would occur on an additional area of up to 3.6 acres. The vegetation types most likely to be affected by project construction include scrub and mesic flatwoods.

In areas of short-term surface disturbance, infrequent, minimal disturbance to individual plants would be expected and local or range-wide population stability would not be affected.One-time disturbance to locally suitable habitat could occur, but sufficient habitat would remain functional at the local and regional scales to maintain the viability of the species.Where new structures, plantings, and facilities are placed, the loss of vegetation would be limited to the project footprint but would persist for the life of the facilities (i.e., indefinitely).

The use of equipment and disturbance of soil and existing vegetation would create a risk of noxious weed or invasive vegetative species introduction. Those undeveloped areas disturbed during construction would be monitored and invasive species removed.The opportunity for the increased spread of non-native species would be temporary and localized and is not anticipated to displace native species populations and distributions.

Due to the prevalence of rare plants in the Park, preconstruction vegetation surveys will likely be required. The presence of any special status species would be considered during the design phase of the project, and precautions would be taken to avoid them.

Improvements to the Park would likely attract additional visitors.Increased human presence could have a long-term, minor effect on vegetation in the Park because of the greater likelihood of trampling, picking, or other vegetative disturbance.This type of impact would probably occur in areas closest to Park facilities.

Wildlife Habitat

Affected Resources

A variety of wildlife can be found in the Park, including reptiles (snakes, turtles, skinks, lizards), amphibians (frogs, salamanders, newts, toads), coyote (*Canis latrans*), beaver (*Castor canadensis*), opossum (*Didelphis marsupialis*), river otter (*Lutra canadensis*), striped skunk (*Mephitis mephitis*), white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), Eastern gray squirrel (*Sciurus carolinensis*), foxes, and rabbits. The Park also hosts a wide variety of resident and migratory birds, especially during spring and fall migrations. Migratory butterflies are also present.

Environmental Consequences

Although common wildlife may be disturbed by the noise and activity of construction, the disturbance would be of a temporary and short-term nature (less than 6 months). Additional habitat is present in the Park, which would allow for the movement and dispersal of individual animals away from the construction area during this time. Permanent habitat loss would occur on approximately 4.4 acres of the 1,995-acre Park.

Marine and Estuarine Fauna

Affected Resources

The marine environment near the Park provides habitat to aquatic species such as turtles and fish. Benthic organisms, including bivalves, gastropods and other mollusks,annelids, and crustaceans, may also be present in the waters off the Park.

Environmental Consequences

The proposed project would not result in a measurable impact to the marine environment near the Park because all construction would occur in upland areas.

Impacts to sea turtles are discussed in **Tortoises and Sea Turtles** section.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

Affected Resources

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Walton County, Florida18. Table 12-37 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

[18] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

Table 12-37. Potential Impacts to Species/Critical Habitats managed by USFWS in the project area

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle, Hawksbill turtle[a], Kemp's ridley turtle; Leatherback turtle[a], Loggerhead turtle	The main risk to sea turtles during execution of this project would come should work be conducted during the turtles nesting season from approximately May to November when turtles, and to a greater extent their nests could be at risk of harassment, harm, and mortality from the use of heavy equipment on the beach. Construction equipment can crush individuals and nests, create ruts and other structures that may make it difficult to return to the sea, and compact substrates which may make nesting difficult. Due to the small footprint of any single project and the conservation measures, impacts to sea turtles and their nests will be minimized to an insignificant and discountable level. No proposed or designated critical habitat for sea turtles occurs within the action area; therefore, none will be adversely affected or modified.
West Indian manatee	The county in the project area is not part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the project waters (U.S. Department of the Interior, 2011) for the Bayside Ranchettes action area. The main risk to manatees during implementation of this project would come from in-water material collisions which could result in harm or mortality. Due to the conservation measures, the Trustees believe these impacts will be reduced such that they are either avoided or insignificant and discountable.
Piping plover	The main risk to Piping plovers is from human disturbance while resting and foraging in habitats adjacent to work areas. The proposed project could result in short term increases in noise which could startle individuals, though the Trustees would expect normal activity to resume within minutes or cause the plovers to move to a nearby area. Because other foraging/resting habitats surround the area the Trustees would expect this temporary displacement to be within normal movement patterns and consider this effect insignificant and discountable. Piping plover critical habitat is not designated in or near the action.
Red knot	The main risk to Red knots is from human disturbance while resting and foraging in habitats adjacent to work areas. The proposed project could result in short term increases in noise which could startle individuals, though the Trustees would expect normal activity to resume within minutes or cause the red knots to move to a nearby area. Because other foraging/resting habitats surround the area the Trustees would expect this temporary displacement to be within normal movement patterns and consider this effect insignificant and discountable.
Gulf sturgeon	NMFS is providing consultation for Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon will not be considered in the consultation with the USFWS.
Choctawhatchee beach mouse Critical habitat for Choctawhatchee beach mouse	The Choctawhatchee beach mouse could occupy any and all these sites except Bayside Ranchettes, though they are not expected in the Ed Walline and Gulfview Heights project areas. If working in or near habitat for the mouse (i.e., dune systems) burrows could collapse during walkover construction/replacement activities which can result in abandonment of the burrow by the adults; leading to potential harm or mortality and mortality of any young within the burrow, and increased risk of predation. Lighting added to parking areas could affect the nocturnal habitats of the mouse. Because of the conservation measures (including those for critical habitat), the Trustees believe impacts to beach mice are insignificant and discountable. Critical habitat is adjacent to the Deer Lake project site. Primary Constituent Elements for the mouse habitat are: 1) A contiguous mosaic of primary, secondary scrub vegetation, and dune structure, with a balanced level of competition and predation and few or no competitive or predaceous nonnative species present, that collectively provide foraging opportunities, cover, and burrow sites; 2) Primary and secondary dunes, generally dominated by sea oats that, despite occasional temporary impacts and reconfiguration from tropical storms and hurricanes, provide abundant

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
	food resources, burrow sites, and protection from predators; 3) Scrub dunes, generally dominated by scrub oaks, that provide food resources and burrow sites, and provide elevated refugia during and after intense flooding due to rainfall and/or hurricane induced storm surge; 4) Functional, unobstructed habitat connections that facilitate genetic exchange, dispersal, natural exploratory movements, and recolonization of locally extirpated areas; and 5) A natural light regime within the coastal dune ecosystem, compatible with the nocturnal activity of beach mice, necessary for normal behavior, growth and viability of all life stages. The proposed projects are not expected to negatively impact PCE's but rather may benefit PCE's. The existing boardwalks or lack of boardwalks could be limiting the amount of contiguous habitat, food resources, burrow sites, and the boardwalks may be causing obstructions due to their low height. Repairing boardwalks and constructing new ones including should allow for unobstructed movements by mice; help prevent dune erosion (pathway "fanning") from general visitor use thereby reducing changes to burrow sites, food resources, and susceptibility to hurricane/storm impacts. No lighting is planned for the walkovers. At Deer Lake any lighting will wildlife friendly, consistent with latest edition of FWC lighting technical manual. Due to the conservation measures and project design, no adverse modification or destruction of critical habitat is anticipated.

Based on the Trustees' reviews of project materials (Spring 2013) in coordination with representatives from NOAA's Protected Resource Division (PRD) in the South East Regional Office (SERO), the NOAA Restoration Center determined that this project falls outside of NMFS Endangered Species Act (ESA) jurisdiction, as it does not contain suitable habitat for species managed by NMFS. As a result, the project did not require further ESA evaluation from NOAA.

Additional information on some of these species is provided below.

Tortoises and Sea Turtles

The gopher tortoise, a candidate species, prefers high dry sandy habitats such as longleaf pine-xeric oak sandhills.It is also found in scrub, dry hammocks, pine flatwoods, dry prairies, coastal grasslands and dunes, mixed hardwood-pine communities, and a variety of disturbed habitats, such as pastures (FWC 2013a).It is known to occur in the Park, and has the potential to occur in the project area based on the presence of scrub and mesic flatwoods.

Although all listed sea turtles are known to utilize Gulf waters and have potential to occur in the marine environment around the Park,there are five species of endangered or threatened sea turtles that have the potential to occur near the project area on the beaches in the Park:green, hawksbill, Kemp's ridley, leatherback and loggerhead. Sea turtles are known to nest on the Park.

Walton County has adopted a Wildlife Lighting Ordinance (No. 2009-03) that provides guidelines for proper light management to minimize disturbances to nesting sea turtles, their hatchlings, and other coastal wildlife. All new construction in the Wildlife Conservation Zone (750 feet from the mean high water line of the Gulf of Mexico) must comply with the ordinance (Walton County 2013a). The south portion of the Park is located in the Wildlife Conservation Zone, but project activities would be outside the zone.

Choctawhatchee Beach Mouse

The endangered Choctawhatchee beach mouseis found only in a small portion of Florida. It forages at night, primarily on insects and the seeds and fruit of dune plants. It is thought that breeding peaks in the winter months but can occur year round with adequate food availability. The main threat facing the Choctawhatchee beach mouse is continued development along beaches, which destroys or degrades the sand dunes on which it depends. Increased human traffic on sand dunes is also a threat to the mouse because it can damage dune vegetation used for food and shelter. Other threats include habitat damage from hurricanes and increased predation from feral cats, foxes, raccoons, and coyotes (FWC 2013b).

This species was federally listed as endangered on June 6, 1985. Five units of critical habitat for the Choctawhatchee beach mouse (CBM-1 through CBM-5) were designated on October 12, 2006, totaling 2,404 acres. PCE's for beach mouse habitat include: 1) A contiguous mosaic of primary, secondary scrub vegetation, and dune structure, with a balanced level of competition and predation and few or no competitive or predaceous nonnative species present, that collectively provide foraging opportunities, cover, and burrow sites; 2) Primary and secondary dunes, generally dominated by sea oats that, despite occasional temporary impacts and reconfiguration from tropical storms and hurricanes, provide abundant food resources, burrow sites, and protection from predators; 3) Scrub dunes, generally dominated by scrub oaks, that provide food resources and burrow sites, and provide elevated refugia during and after intense flooding due to rainfall and/or hurricane induced storm surge; 4) Functional, unobstructed habitat connections that facilitate genetic exchange, dispersal, natural exploratory movements, and recolonization of locally extirpated areas; and 5) A natural light regime within the coastal dune ecosystem, compatible with the nocturnal activity of beach mice, necessary for normal behavior, growth and viability of all life stages. CBM-4 is the Deer Lake Unit, which consists of 49 acres (Figure 12-37). It encompasses essential features of beach mouse habitat within the boundary of the Park as well as adjacent private lands. This unit provides primary, secondary, and scrub dune habitat and habitat connectivity to adjacent lands; it is essential to the conservation of the species. Threats specific to CBM-4 that may require special management include artificial lighting, presence of feral cats and other predators at unnatural levels, and high recreation use that could result in soil compaction, damage to dunes, or other decrease in habitat quality (71 *Federal Register* 60238: 60238–60370).

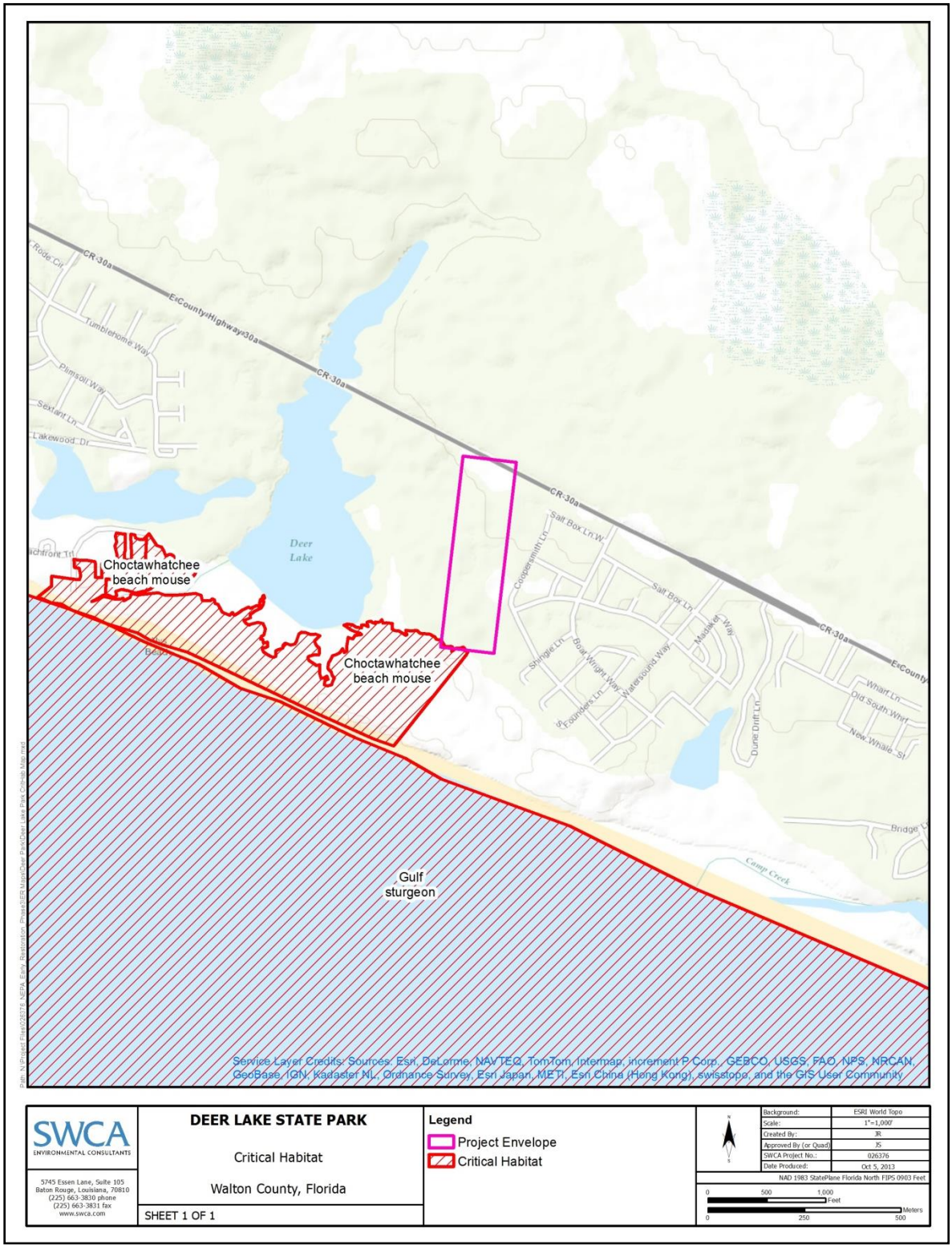

Figure 12-37. Choctawhatchee beach mouse and Gulf sturgeon critical habitat in and adjacent to Deer Lake State Park.

Piping Plover

The piping plover, federally designated as threatened, typically inhabits sandy beaches, sandflats, and mudflats along coastal areas (FWC 2013a). The Park's beach dunes provide suitable foraging and resting habitat for the piping plover during the winter season, and the plover may forage in the shallow waters near the Park's beaches. No piping plover designated critical habitat is located in or adjacent to Park boundaries.

Red Knot

The red knot, a federal proposed species, uses the state of Florida both for wintering habitat and migration stopover habitat for those that continue to migrate down to specific wintering locations in South America (Niles et al. 2008). Wintering and migrating red knots forage along sandy beaches, tidal mudflats, saltmarshes, and peat banks (Harrington 2001). Observations indicate that red knots also forage on oyster reef and exposed bay bottoms, and roost on high sand flats, reefs, and other sites protected from high tides (Niles et al. 2008). In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans. Threats to wintering and stopover habitat in Florida include shoreline development, hardening, dredging, deposition, and beach raking (Niles et al. 2008).

Essential Fish Habitat

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column.

Based on the Trustees' reviews of project materials (Spring 2013) in coordination with representatives from NOAA's Habitat Conservation Division (HCD) in the South East Regional Office (SERO), the NOAA Restoration Center determined that this project will not affect EFH because there is no EFH in the project area. As a result, the project did not require further EFH evaluation.

State-Listed Birds, MBTA, and BGEPA

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-38 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-38. Potential project impacts to different migratory bird groups

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Shorebirds	Foraging, feeding, resting, nesting	Shorebirds nest, forage, feed, and rest, and in the types of habitats consistent with some of the shoreline areas near the proposed project. As such, they may be impacted locally and temporarily by the project. Impacts to breeding/nesting birds will be avoided.
Seabirds (terns, gulls, skimmers, double-crested	Resting, roosting, nesting	Seabirds forage in water and rest/roost in terrestrial habitats including dunes. However, the level of project activity in open

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
cormorant, American white pelican, brown pelican)		water is unlikely to startle resting birds and because activities will occur during the day roosting should not be impacted. Impacts to breeding/nesting birds will be avoided.
Songbirds	Foraging, feeding, resting, nesting	Songbirds are likely to nest, feed, and rest in and around Grayton Beach. As such, they may be impacted locally and temporarily by the project. Impacts to breeding/nesting birds will be avoided.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized in Table 12-39.

Table 12-39. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Shorebirds	The Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting. If project activities occur during shorebird nesting season (February 15 to August 31), the FWC will be contacted to obtain the most recent guidance to protect nesting shorebirds or rookeries and their recommendations will be implemented.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity, which they will have. Roosting should not be impacted because the project will occur during daylight hours only. Nesting should not be impacted because the project will not occur near nesting habitats.
Songbirds	Trees will not be removed during songbird nesting season at Deer Lake.

Environmental Consequences

The proposed project has been evaluated for potential short- and long-term impacts to state and federally listed threatened and endangered species that may occur in and adjacent to the project areabased on available suitable habitat and construction plans. Descriptions of these evaluations are provided below.

Protected Species

The USFWS reviewed the proposedDeer Lake State Park project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA. On March 10, 2014 the review of potential impacts to species managed by USFWS was completed (McClain, 2014). The USFWS concurred with the Trustees' determination that the proposed project may affect, but is not likely to adversely affect, five species of sea turtles in terrestrial habitats (green, hawksbill, Kemp's ridley, leatherback, and loggerhead), Choctawhatchee beach mouse, West Indian manatee, piping plover, or red knot (if listed). The USFWS also concurred with the Trustees' determination that the project will not adversely modify or destroy critical habitat for the Choctawhatchee beach mouse.

To protect any gopher tortoise that may be found on site, the Florida Gopher Tortoise Management Plan (FWC, 2012) will be implemented.

State-Listed Birds, MBTA, and BGEPA

Bald eagles are not present at the project location so will not be affected. At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.81.5.4 Human Uses and Socioeconomics

12.81.5.4.1 Socioeconomics and Environmental Justice

Affected Resources

The proposed project would be located in Walton County, which is Florida's forty-first most populous county. Walton County contains 0.3% of Florida's population (Office of Economic & Demographic Research [OEDR] 2013a). According to census data,86.2% of the county's population have high school diplomas (or higher) and 24.9% have bachelor's degrees or higher (compared to 85.5% for high school graduates and 26.0% for bachelor's degrees in the state of Florida). The 2012 crime rate (index crimes per population of 100,000) is 2,880.7, which is lower than the state of Florida's 3,805.8 (OEDR 2013a).

Census data indicates that 31.0% of Walton County's residents are employed in the leisure and hospitality industry; 24.9% in the trade, transportation, and utilities industry;17.6% in government; 11.2% in education and health services;9.4% in professional and business services; 9.0% in construction;

and 6.5% in financial activities, with the remaining population employed in the natural resource and mining industry, manufacturing, information, and other services.The county unemployment rate in 2012 was 5.6% (8.6% in the state of Florida) with 74.8% of the population in the labor force (62.5% in the state of Florida) (OEDR 2013a).

Data and characteristics of the population of Walton County are summarized and compared to those for the population of the state as a whole in Table 12-40.Walton County is located in the Crestview-Fort Walton Beach-Destin Metropolitan Statistical Area (MSA).Population growth increased 3.6% from 2010 to 2012 and 11.7% from 2000 to 2010 in this MSA.Walton County is projected to grow to a population of 92,659 by 2040 (OEDR 2013b). As seen in the table, Walton County has similar racial and economic/income demographic characteristics as Florida as a whole.

Environmental Consequences

The proposed project would create approximately 517 worker days of employment during construction (see Table 12-32). The improved access to Deer Lake may result in a minor to moderate increase in visitation to the Park because of the substantial improvement of park facilities. As a result, the local economy could benefit over the long term through the economic activity generated through fees, new jobs, and the purchases from recreational visitors (food, fuel, food, equipment, etc.). This project would not create a benefit for any specific group or individual, but rather would produce benefits realized by the local community and visitors. Overall, only a few individuals, groups, and properties would be affected; therefore, the overall impact is expected to be minor and would not substantively alter socioeconomic conditions.

Walton County has similar racial and economic/income demographic characteristics as Florida as a whole. Thus, there are no indications that the Park improvements would be contrary to the goals of Executive Order 12898, or would create disproportionate, adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Therefore, no short-term or long-term environmental justice issues would be anticipated.

Table 12-40. Population characteristics of Walton County compared with the State of Florida.

People QuickFacts	Walton County	Florida
Population, 2012 estimate	57,582	19,317,568
Age		
Persons under 5 years, 2012	5.6%	5.5%
Persons under 18 years, 2012	20.1%	20.7%
Persons 65 years and over, 2012	17.5%	18.2%
Female persons, 2012	48.9%	51.1%

People QuickFacts	Walton County	Florida
Race		
White alone, 2012*	89.6%	78.3%
Black or African American alone, 2012*	6.0%	16.6%
American Indian and Alaska Native alone, 2012*	0.9%	0.5%
Asian alone, 2012*	1.0%	2.7%
Native Hawaiian and Other Pacific Islander alone, 2012*	0.2%	0.1%
Two or More Races, 2012	2.3%	1.9%
Hispanic or Latino, 2012† (b)	5.9%	23.2%
White alone, not Hispanic or Latino, 2012	84.4%	57.0%
Economic/Income		
Homeownership rate, 2007–2011	74.0%	69.0%
Median household income, 2007–2011	$46,926	$47,827
Persons below poverty level, 2007–2011	14.9%	14.7%
Sales		
Merchant wholesaler sales, 2007 ($1,000)	205,148	221,641,518
Retail sales, 2007 ($1,000)	705,008	262,341,127

* Includes persons reporting only one race.
† Hispanics may be of any race, so also are included in applicable race categories.
Source: U.S. Census Bureau State & County (2013)

12.81.5.5 Cultural Resources

Affected Resources

A review of the Florida Master Site Files indicates that there are at least six previously recorded archaeological sites located within 1 mile of the project location either in or just outside the Park. These sites include five prehistoric sites and a single modern-era shipwreck that is located on the beach. One of these sites (8WL878, a prehistoric lithic scatter) was recommended as potentially eligible for inclusion on the National Register of Historic Places; the remaining sites are of unknown eligibility at this time.

It does not appear that the area has been subjected to previous, formal cultural resources surveys.

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project has not identified the presence of a historic property within the project area.

Environmental Consequences

The proposed project area would be subjected to a Phase I cultural resources survey. Based on the results of the survey, project plans would be altered to avoid any historic properties that would be adversely affected by the project work (ground disturbance and construction).

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.81.5.6 Infrastructure

Affected Resources

Deer Lake State Park has existing improvements typical of a state park.Regional Utilities of Walton County is the operator of the water supply system and the sanitary sewer collection system for a large portion of South Walton County, including the Park.

Walton County indicates that the entire Park is in a Water Resource Caution Area (Walton County 1992).A water resource caution area is an area with critical water supply problems or projected to have critical water supply problems.Reuse of reclaimed water from domestic wastewater treatment facilities is required in these areas unless it is not economically, environmentally, or technically feasible (FDEP 2011).

Environmental Consequences

Construction of the new restroom and entry station would require connection to the regional sanitary sewer collection system. The impact to the regional system would be long term but minor because it is localized and would be within operational capacity. A sanitary sewer collection system permit would be obtained from the FDEP.

Visitor experience at the Park would be improved with the provision of a new restroom, reducing crowding. In addition, a new picnic structure, entry station, and parking areas would improve the Park's visitor experience, which would be a beneficial, long-term impact.A minor, long-term increase in the pace of the need for maintenance of existing facilities could occur if visitor use increases due to better infrastructure at the Park; minor increases in local daily traffic volumes could also occur, resulting in perceived inconveniences to drivers but no actual disruption to traffic.

12.81.5.7 Land and Marine Management

Affected Resources

County Road 30A is a two-lane rural collector highway that bisects the Park.Land use near the Park includes single- and multi-residential development and undeveloped land along the Gulf of Mexico and north of the county road, both east and west of the Park.North of the Park is Point Washington State Forest, which extends to U.S. Highway 98.Inlet and Seagrove Beaches are located a few miles east and west of the Park, respectively.No commercial land uses have been identified near the Park (Florida Division of Recreation and Parks 2004).

Public lands located in the vicinity of the Park include Camp Helen State Park, Grayton Beach State Park, Topsail Hill Preserve State Park, Eden Gardens State Park, Point Washington State Forest, Choctawhatchee River Water Management Area, and Elgin Wildlife Management Area (Florida Division of Recreation and Parks 2004).

The Park is managed by the FDEP Florida Division of Recreation and Parks under the 2004 Deer Lake State Park Unit Management Plan. Public outdoor recreation and conservation is the designated single use of the property.Under the plan, the Park is managed to conserve and protect natural and historical resources and to use the property for public outdoor recreation compatible with the conservation and protection of resources.The Park has designated all wetland communities, beach dune, sandhill, scrub,

and coastal dune lake communities as protected zones, defined as areas of high sensitivity or outstanding character from which most types of development are excluded.Generally, facilities requiring extensive land alteration or more intensive use such as parking lots and camping areas are not allowed in protected zones. Facilities with minimal resource impacts such as trails, interpretive signs, and boardwalks are generally allowed (Florida Division of Recreation and Parks 2004).

The project would be located in a coastal area that is regulated by the federal Coastal Zone Management Act (CZMA) of 1972 and the Florida Coastal Management Act of 1978.

The Park is a component of the Florida Greenways and Trails System, a statewide system of greenways and trails. According to the Ecological Greenways for South Walton map (Walton County 2007), the Park is considered a "critical linkage" (highest priority) to protect a statewide network of conservation land and connecting wildlife corridors, designed to maintain large landscape-scale ecological functions (FDEP 2013b).

Walton County has established a coastal dune lake protection zone, defined as all land beginning at the mean or ordinary high water line of coastal dune lakes and their tributaries and extending 300 feet landward. There is a 100-foot building setback from the mean or ordinary high water line of all coastal dune lakes, as well as other building restrictions within the protection zone (Walton County 2013b).

Environmental Consequences

Although the action would require several permits for the short-term construction period, it would not require a variance, zoning change, or amendment to a land use area or comprehensive management plan.The long-term impact of the project would be minor because it would not affect overall use and management beyond the local Park area.It would be consistent with current land use because construction would take place in an already developed area of the Park.It would also be consistent with and support the Deer Lake State Park Unit Management Plan, which has a recreational goal of developing a park entrance, parking lot, and picnic shelter (Florida Division of Recreation and Parks 2004). No construction or project activities would occur in the coastal dune lake protection zone of Deer Lake.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS (Federal Trustees 2013). The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process (Milligan 2014).

12.81.5.8 Aesthetics and Visual Resources

Affected Resources

Existing aesthetic and visual resources from the project area consist of views of a minimally developed area. Views include those of Park vegetation such as trees, glimpses of Deer Lake, an access road, and Park facilities (trails and a small picnic structure).

Environmental Consequences

Short-term introduction of unnatural elements to the existing visual landscape would occur during construction activities due to the presence of equipment and materials. These impacts would be minor because they would only be visible from a small portion of the Park, would not dominate the viewshed (being surrounded by trees), and would not detract from current visitor activities in the portion of the Park north of County Road 30A or on the beach. Long-term changes to visual resources would occur from the addition of a new entry station with two flagpoles (20 feet and 25 feet in height), a restroom, new sidewalks, a new entry sign, picnic shelter, expanded parking areas, and new plantings of shrubs, trees, and grass. These changes would be readily apparent but minor because they are consistent with other state Park facilities and would not attract attention, dominate the view, or detract from visitor experiences.

12.81.5.9 Tourism and Recreational Use

Affected Resources

Recreation at the Park includes swimming, beach-going, picnicking, wildlife viewing, fishing, hiking, canoeing, kayaking, and bicycling. The park is a day-use-only park, and no overnight camping is allowed.

Hours are from 8:00 a.m. to sunset, 365 days a year. A fee of $3.00 per vehicle (8 people per vehicle) and $2.00 for pedestrians, bicyclists, and extra passengers is charged.

Annual entrance passes allow park entrance in lieu of the daily entrance fee and are valid for 1 year. They are honored at all state parks (except for the Skyway Fishing Pier State Park).

Environmental Consequences

During the construction period, the visitor recreational experience would be adversely impacted by noise and visual disturbances associated with the use of construction equipment.The impact would be short term and minor because visitor use would be allowed in other parts of the park during construction, which would last 4–6 months.In addition, construction would occur in a relatively small area of the Park.The construction process would also limit recreational activities near construction areas for a short time to protect public safety, which would be a minor, short-term inconvenience to visitors.Over the long term, minor beneficial impacts to tourism and recreational use would be expected due to the enhancement of recreational opportunities associated with improved facilities and accessibility.

12.81.5.10 Public Health and Safety and Shoreline Protection

Affected Resources

The management of hazardous materials is regulated under various federal and state environmental and transportation laws and regulations, including the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Emergency Planning and Community Right-to-Know Act; and the Hazardous Materials Transportation Act. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment,

transport, and disposal) of these materials. Some of these laws provide for the investigation and cleanup of sites that have already been contaminated by releases of hazardous materials, wastes, or substances.

A review of the EPA's EnviroMapper revealed that there are no CERCLA sites located on or immediately adjacent to the Park.There are several nearby facilities that have had some type of discharge permits, including Camp Creek Park, Peninsula Pointe, Watersound Beach, and Prosperity Bank.The Park, itself, is listed under the RCRA hazardous waste program (EPA 2013c).

In order to protect and manage Florida's beaches and adjacent coastal system, the Legislature adopted the Florida Beach and Shore Preservation Act, contained in Parts I and II of Chapter 161, Florida Statutes. The Act provides three interrelated programs administered by the FDEP that work in concert to protect the coastal system from improperly sited and designed upland construction, provide for management of beach erosion and coastal sediment, and process permits to ensure that any potential adverse impacts are avoided or minimized (FDEP 2013).

The Park contains approximately 2,700 linear feet of beach shoreline. The depth of the beach dune community ranges from approximately 500 feet south of the lake to nearly 1,000 feet near the eastern boundary (Florida Division of Recreation and Parks 2004).

Environmental Consequences

Project construction would require mechanical equipment that uses oil, lubricants, hydraulic fluids, and fuels. The contractor would be required to take appropriate actions to prevent, minimize, and control the spill of construction-related hazardous materials and to avoid releases and spills. If a release should occur, it would be handled promptly in accordance with all applicable regulations.The period of time during which a release could occur from construction activities would be short term, and any release would be expected to be minor.

If hazardous materials are encountered in the project area during construction activities, appropriate measures for handling the materials would be used in accordance with applicable regulations.All occupational safety regulations and laws would be followed to ensure the safety of all workers and monitors. The project is not anticipated to affect the existing Park RCRA activities.

The project is not expected to impact shorelines because of its upland location and erosion control measures. Shoreline integrity would remain intact, and there would be no increased risk of potential hazards (e.g., increased likelihood of storm surge) to visitors or residents.

12.81.6 Summary and Next Steps

The Deer Lake State Park Development project would improve the existing visitor areas at Deer Lake State Park in Walton County. The proposed improvements would include adding a paved access road, parking, picnic shelters, and a restroom. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase recreational beach use opportunities by improving the park's visitor area. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

12.81.7 References

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12.82 City of Parker- Oak Shore Drive Pier: Project Description

12.82.1 Project Summary

The proposed City of Parker Oak Shore Drive Pier project would construct a fishing pier at Oak Shore Drive in the City of Parker, Bay County Florida. The proposed work includes construction of a 500 foot long fishing pier. The total estimated cost of the project is $993,649.

12.82.2 Background and Project Description

The Trustees propose to construct a 500-foot long fishing pier in the City of Parker in Bay County (See Figure 12-38 for general project location). The objective of the City of Parker Oak Shore Drive Pier project is to enhance and/or increase recreational fishing opportunitiesby constructing a fishing pier. The proposed pier is intended to serve the City of Parker and Tyndall Air Force Base; neither location currently has publically accessible fishing facilities. The restoration work proposed includes construction of a fishing pier that will provide access to St. Andrews Bay.

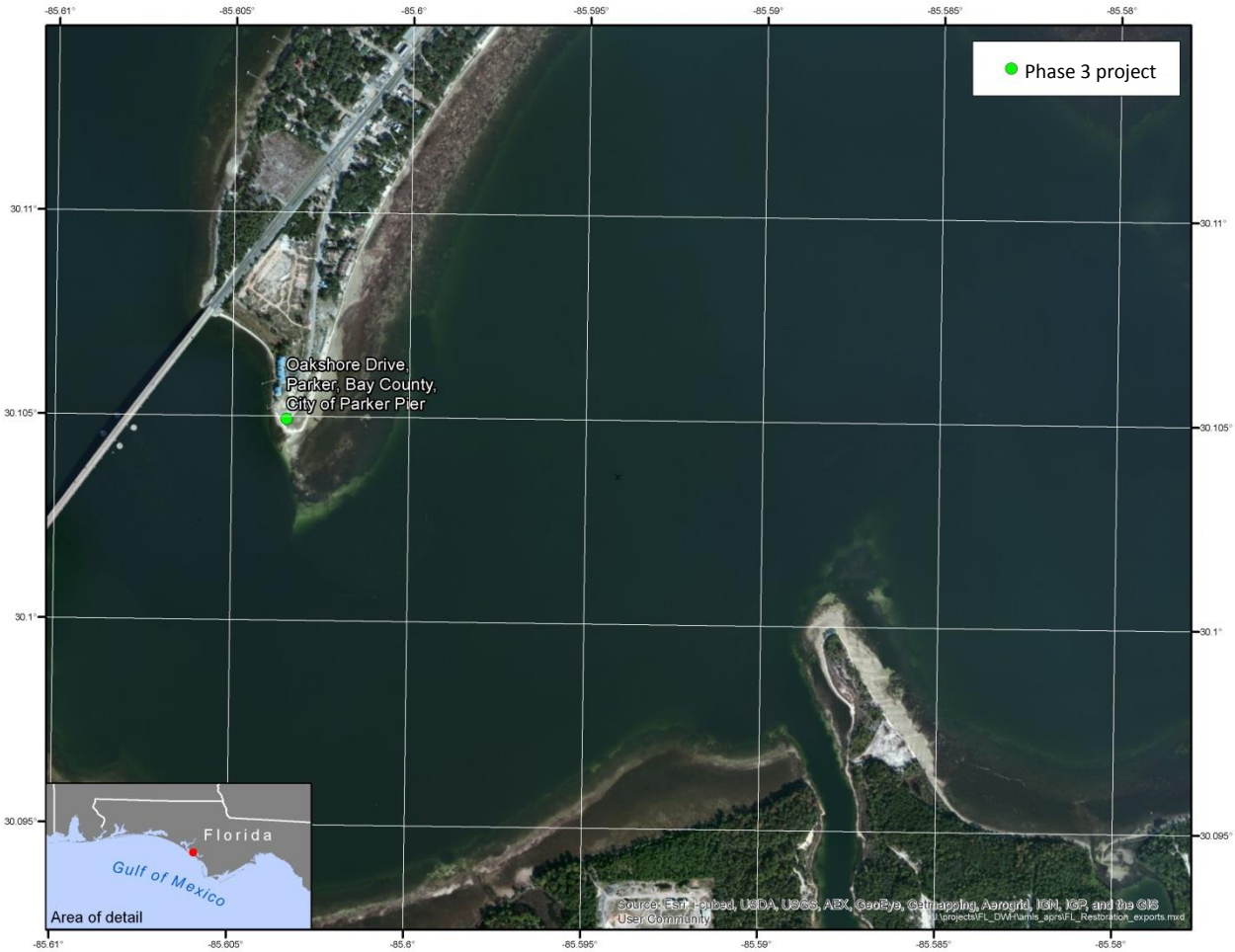

Figure 12-38. Location of City of Parker – Oakshore Drive Pier Project.

12.82.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposed City of Parker Oak Shore Drive Pier project is intended to enhance and/or increase recreational fishing opportunities by constructing a fishing pier. This project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill. Thus, the nexus to resources injured by the Spill is clear. See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. Florida counties have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.82, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration with the exception of hydrology and water resources which would be minor, localized and long term. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.82 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com). In addition to meeting the criteria for the Framework Agreement and OPA, the City of ParkerOakshore Drive Pier project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area in which boom was deployed and that was impacted by response and SCAT activities for the Spill.

12.82.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. The project objective is to enhance and/or increase recreational fishing opportunities by constructing a fishing pier at Oakshore Drive in the City of Parker.Performance monitoring will evaluate the construction of the fishing pier. Specific performance criteria include: 1) completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the fishing pier is open and available.

Long-term monitoring and maintenance of the improved facilities will be completed by the City of Parker as part of their regular public facilities maintenance activities. Funding for this post-construction maintenance is not included in the previously provided value for the project cost and will be accomplished by the City of Parker.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users.Following the one year construction performance monitoring period, the City of Parker will monitor the recreational use activity at the site. City of Parkerstaff will visit the site twice a year to count the number of users at the fishing pier. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

12.82.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $1,987,298expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[19]

12.82.6 Costs

The total estimated cost to implement this project is $993,649. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[19]For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.83 City of Parker- Oak Shore Drive Pier: Environmental Review

The proposed project in the City of Parker, Florida, would construct a new public fishing pier for the City of Parker and Tyndall Air Force Base residents. The proposed pier would provide fishing and recreational access to East Bay for the City of Parker and Tyndall Air Force Base. Neither the City of Parker nor Tyndall Air Force Base has public access to fishing facilities.

12.83.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP) entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf in advance of the completion of the injury assessment process. Early restoration is not intended to, and does not fully address all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill (Framework Agreement), the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the Federal Register on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III Early Restoration Plan (ERP). This boat ramp project was submitted as an Early Restoration project on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and the Oil Pollution Act (OPA), the project meets Florida's criteria that Early Restoration projects occur in the eight-county Florida panhandle area that deployed boom and was impacted by the Spill.

The proposed project would include a new public fishing pier for the City of Parker and Tyndall Air Force Base residents. The proposed pier would provide fishing and recreational access to East Bay for the City of Parker and Tyndall Air Force Base. Neither the City of Parker nor Tyndall Air Force Base has public access to fishing facilities. The project is intended to address this specific need.

At the project site there is an existing boat ramp, a small dock just to the north side of the boat ramp, and a nearby parking area (

Figure 12-39). The boat ramp is approximately 50 feet long by 15 feet wide, and the existing L-shaped dock is approximately 100 feet long by 5 feet wide. The parking area currently contains approximately 12 parking spaces for vehicles and trailers.

Figure 12-39. Location of the proposed Oak Shore Drive Pier in the City of Parker, Florida.

The new fishing pier would be approximately 500 feet long and 16 feet wide extending southwest from end of Oak Shore Drive adjacent to and on the south side of the existing boat ramp (**Error! Reference ource not found.**). At the end of the pier a small section would be oriented perpendicular to the rest of the pier and have dimensions of approximately 60 feet long by 16 feet wide, giving the pier an overall total area of approximately 8,960 square feet. However, the exact width and square footage of the pier will be ultimately determined during the final design for the project.

Fixed signs that are consistent with National Oceanic and Atmospheric Administration (NOAA) and State of Florida guidelines with instructions on what to do in the event of hooking a listed species (e.g., sea turtle) would be placed at the entrance to the fishing pier and strategically at fixed intervals along its length. Additionally, a kiosk/booth would be placed at the entrance to the pier with additional information for best practices on catch and release and other fishing practices (e.g., placing cut line and hooks for disposal in trash cans) designed to limit potential adverse impacts to species. Any facilities (e.g. trash cans) needed to help anglers comply with these recommendations would also be provided.The total estimated cost for the project is approximately $993,649.

12.83.2 Project Location

The proposed project is located at the end of Oak Shore Drive in the City of Parker, Florida (

Figure 12-39). The City of Parker is located in the Florida "panhandle" on East Bay, which is a connecting embayment to St. Andrews Bay in Bay County. The City of Parker is located to the southeast of Panama City and is approximately 170 miles east of Mobile, Alabama, 95 miles east of Pensacola, Florida, and 100 miles southwest of Tallahassee, Florida. Tyndall Air Force Base is located to the south across East Bay.

12.83.3 Construction and Installation

Final plans the proposed fishing pier have not been completed and the final size and orientation of the pier will also be evaluated as part of the effort to develop final plans although Figure 12-39 presents the current envisioned conceptual design for the pier.

As part of this engineering and orientation assessment, a survey of submerged aquatic vegetation (SAV) in the area would be completed. Existing information suggests SAV is in the area around the point where the pier will be constructed (see Figure 12-39). Should the site assessment for the project identify SAV in the proposed project area, the conditions in the *Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat* (U.S. Army Corps of Engineers/National Marine Fisheries Service, 2001) would be implemented. Among other elements this would require placing pilings for the dock expansion a minimum of 10 feet

apart. Orientation options for the fishing pier will also consider site specific features such as the generation of the shallow sand bars off the point (see Figure 12-39) and the Intracoastal Waterway which runs offshore of the point in Figure 12-39. As Figure 12-39 shows, the SAV coverage at the point is not complete as the combination of current and other conditions leave an area off of the South of the point going out into deeper water where there is effectively a "path" that is free of SAV.

As presented in Figure 12-39, the current plan is to construct the pier in this path to avoid impacts to SAV habitat at the site. Because of this SAV free path at the site, there is confidence the pier can be built without affecting the SAV habitat.

Based on conceptual plans for similar fishing piers it is assumed that the pier will be constructed using 8" diameter fiberglass pilings that are pre-filled with concrete. Based on the length and shape of the pier up to 150 pilings may be required. These pilings will be placed using a combination of water-jetting to initially set the piles to within 5 feet of their desired final depth. For the remaining five feet, the pilings will be set using a vibratory hammer. Final construction plans will also consider and account for options would minimize disruption to the aquatic environment including available BMPs (e.g., use of bubble curtains). All decking, cross members and railings for the pier will be made of timber. Following placement of the pilings the timber cross members will be placed from the water and then the rest of the pier will be built out from shore. When complete, all pier pilings will incorporate pointed covers to discourage/minimize birds (e.g., laughing gulls) having a convenient perch from which to predate on nearby nesting birds. This work will be accomplished primarily by crews in-water using a combination of workboat/skiffs and barges with heavy equipment to support the lifting and placement of materials and worker access to elevated positions (some nearshore work may use shore-based heavy equipment). The exact mix of equipment will be developed with the final construction plans and project bids but will take into account and be reviewed for critical considerations such as the depth of the site to avoid grounding in sensitive habitats (e.g., seagrass beds). The subsequent construction of the pedestrian walkway or decking will be done from the surface of the pier. In total, the in-water work associated with this project is expected to last no more than 6 months.

During all in-water construction activity, the conditions and guidelines of the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006) would be implemented and adhered to. Among the significant aspects of these provisions is the requirement to stop operation of any equipment if sea turtles or smalltooth sawfish come within 50 feet of the equipment until the time when animals leave the project area of their own volition.

During construction BMPs for erosion control would also be implemented and maintained at all times during upland activity to prevent siltation and turbid discharges into surface waters. Methods could include, but are not limited to, the use of staked hay bales, staked filter cloth, sodding, seeding, and mulching; staged construction; and installation of turbidity screens around the immediate project site. The direct goal of these actions is to limit sediment discharges into the water that would adversely affect turbidity. Staging of most construction materials would occur in the parking area. With the potential that some materials may be delivered by barge for installation (the Intracoastal Waterway is offshore at the project site).

Finally, prior to the opening of the pier to the public, fixed signs that are consistent with National Oceanic and Atmospheric Administration (NOAA) and State of Florida guidelines with instructions on what to do in the event of hooking a listed species (e.g., sea turtle) would be placed at the entrance to the fishing pier and strategically at fixed intervals along its length. Additionally, a kiosk/booth would be placed at the entrance to the pier with additional information for best practices on catch and release and other fishing practices (e.g., placing cut line and hooks for disposal in trash cans, not feeding dolphins) designed to limit potential adverse impacts to species. The signage in this kiosk would include the NMFS "Dolphin Friendly Fishing and Viewing Tips" sign with NMFS' "Protect Dolphin" signs along the pier and signage/notices not feed gulls. Monofilament recycling bins will be installed at regular intervals along the pier. These would be emptied regularly by city/county staff as part of the project maintenance activities, and fishing line recycled. Further, any lighting installed on the pier or addressed as part of the project will be wildlife friendly and comply with the guidance provided in the current edition of the FWC's *Lighting Technical Manual*. Finally, no fish cleaning stations will be included in the design and construction of these piers to help mitigate/avoid issues of species attraction to the pier.

Total construction time is estimated to take approximately 12 months.

12.83.4 Operations and Maintenance

Maintenance of the new facilities would be the responsibility of the City of Parker and would be conducted as part of its regular public facilities maintenance activities.

12.83.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected environment and environmental consequences of the project.

12.83.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.83.5.2 Physical Environment

12.83.5.2.1 Geology and Substrates

Affected Resources

The project area lies within the geological division known as the West Florida Coast Strip that extends from the mouth of the Ochlockonee River west to the Mississippi River. This strip consists primarily of coastal islands and narrow peninsulas along the coast. East Bay is an attached embayment to St. Andrews Bay and is a protected shallow embayment generally less than 49 feet (15 meters). Though land based construction would be confined to the immediate shoreline, soils at the project site are

classified as Arents, 0 to 5 percent slopes. The Soil Survey for Bay County identifies the estuarine waters of the project area as "East Bay" and no soils data is provided (USDA, 1984). A study at Tyndall Air Force Base indicates that sediments in East Bay range from fine sands to silts (NOAA, 1997).

Environmental Consequences

While pilings would be driven into the East Bay substrate, no changes to geology of the bay floor would occur. During installation of pier pilings sediments would be temporarily disturbed. The number of pilings and the depth to which they would be installed would be determined during the final design phase of the project. Best management practices, such as the use of sediment curtains, would be used to minimize the dispersal of sediments during the installation of the pilings. The USACE or Florida Department of Environmental Protection (FDEP) may also require other management practices to minimize potential adverse impacts through the permitting process for the project. Once the pilings are installed sediments would settle, resulting in short-term minor impacts. On land, if any soils are disturbed, erosion and sedimentation into the bay would be minimized through the use of erosion control measures resulting in short-term negligible impacts.

12.83.5.3 Hydrology and Water Quality

Affected Resources

St. Andrews Bay is the receiving waterbody for the largest drainage basin in Bay County. The area drained is from the Apalachicola River west to the Choctawhatchee River (FDEP 1991). There are nine major streams that flow into St. Andrews Bay. St. Andrews Bay is central in the St. Andrews Bay system. The bay opens directly to the Gulf of Mexico through East and West Passes. Connecting embayments include North, West, and East Bays, as well as Grand Lagoon and St. Andrews Sound. Tides in the estuary are typically diurnal with a mean range of 1.6 feet, with a longer ebb flow than flood flow (Murphy and Valle-Levinson, 2008).

The Clean Water Act requires that the surface waters of each state be classified according to designated uses. Florida has six classes with associated designated uses, which are arranged in order of degree of protection required. According to Rule 62-302.400, Florida Administrative Code, East Bay is designated as Class II waters. Therefore, standards to meet the following uses apply to the project area: Shellfish Propagation or Harvesting.

Environmental Consequences

Construction of the fishing pier would require in-water work. Installing the pilings for the fishing pier occur largely from a barge. Installing the piers would disturb and resuspend sediments, increasing turbidity levels in the vicinity of the project. Best management practices, such as the use of sediment curtains to contain resuspended sediments and erosion control measures would be employed to minimize impacts to the surrounding waters. Operating a barge(s) and mechanical equipment to install the pilings and construct the fishing pier could impact water quality through the leakage of hydraulic fluids, oil, gasoline etc. However, best management practices to avoid, minimize, and control spills would be employed to minimize the risk of adverse impacts. Additionally, appropriate permits would be obtained prior to beginning construction and all conditions set forth, such as erosion control measures and a spill, prevention, control, and countermeasure plan, would be followed. Once construction is

complete, no additional impacts to water quality would be expected. Overall, impacts to water quality would be short-term, minor and adverse.

The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (Corps) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). Coordination with the Corps and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

The fishing pier would extend out into East Bay. With this, once the fishing pier is complete the pilings would alter the currents in and around the immediate vicinity of the pier itself. However, these changes would be highly localized and relatively small. As a result, impacts to hydrology would be long-term, minor and adverse.

12.83.5.3.1 Air Quality and Greenhouse Gas Emissions

Affected Resources

Air quality and greenhouse gas (GHG) emissions at the site are affected by the development in the area such as Tyndall Air Force Base across East Bay and Panama City to the west as well as boat traffic in the Gulf of Mexico, St. Andrews Bay, and its connecting embayments. Bay County, Florida is in attainment for all criteria pollutants (USEPA 2013).

Environmental Consequences

During construction activities, use of construction equipment, including heavy machineryand handheld tools, would likely increase emissions at the project site. However, impacts from construction activities would be temporary, occurring over a 7-12 month period and emissions from the project would cease upon completion of construction activities.

The following table (Table 12-41) provides GHGemissions estimates for the heavy equipment expected to be used during the construction of the fishing pier, staging docks, and boat ramp. The barge and crane emission total is based on an estimated 1,040 hours of operation over the life of the project (8 hours a day, five days a week, for 6 months) for the fishing pier. The tractor trailer emission total is based on 32 hours of operation (based on the estimation that it would be used once per week, for 4 months) for the fishing pier. A "minor impact" on air quality can be determined if the contributions to GHGsof this project are measurable, but fall below 25,000 metric ton/year of CO^2 or its equivalent.

Table 12-41. Estimated greenhouse gas emissions for equipment to be used.

EQUIPMENT[20]	CO_2 (METRIC TONS)[21]	CH_4 (CO_2E) (METRIC TONS)[22]	NO_X (CO_2E) (METRIC TONS)	TOTAL CO_2E (METRIC TONS)
Barge with Crane				
Fishing Pier	37.700	0.104	1.040	38.844
Tractor Trailer23				
Fishing Pier	5.440	0.006	0.064	5.510
TOTAL	**43.140**	**0.110**	**1.104**	**44.354**

Based on Table 12-41, CO_2 emissions or its equivalent from the proposed project would be measureable, but would not exceed the USEPA 25,000 metric ton/year threshold. Therefore, the proposed project would have minor adverse impacts on air quality. However, these impacts would be short-term since emissions from the project would cease upon completion of construction activities.

12.83.5.3.2 Noise

Affected Resources

Noise levels at the project area are influenced by the natural ambient soundscape of wind and waves as well as noise generated by vehicles driving on local roads, recreation activities, local residences, as well boat traffic on East Bay and noise generated by Tyndall Air Force Base. According to the City of Parker map of the Adopted Community Redevelopment Area the project site falls between the 75 decibel and 70 decibel noise contour for Tyndall Air Force Base's **Air Installation Compatible Use Zone**(AICUZ) (City of Parker 2007).

1. 20 Emissions assumptions for all equipment based on 8 hours of operation.
2. 21 CO_2 emissions assumptions for diesel and gasoline engines based on USEPA 2009.
3. 22 CH_4 and NOx emissions assumptions and CO_2e calculations based on USEPA 2011.
4. 23 Construction equipment emission factors based on USEPA NONROAD emission factors for 250hp pieces of equipment. Data was accessed through the California Environmental Quality Act Roadway Construction Emissions Model.

Environmental Consequences

Construction activities associated with the project would increase the amount of noise at the site and would be noticeable. While noise would be evident to those workers on the job and users of the boat ramp and surrounding areas, it would be short-term and minor given the site exists in the 75 to 70 decibel contour level of the Tyndall Air Force Base AICUZ. Ambient noise levels would return each evening at the end of the work day. Some long term noise impacts would occur from the likely increase in use of the site due to the new fishing pier. Increases in noise would likely result from more vehicles entering and exiting the parking lot and human voices. Given the sources, the increase in noise level would likely be negligible, but it would be long-term.

12.83.5.4 Biological Environment

12.83.5.4.1 Living Coastal and Marine Resources

Affected Resources

The project is on a peninsula with small strips of sandy beach and a parking lot. To the landward side, the area is residential with landscaped yards with some open and wooded lots interspersed. The site is situated on East Bay, a connected embayment to St. Andrews Bay, and consists of open estuarine waters. Nearly 20,000 acres of seagrasses extend through St. Andrews Bay and St. Josephs Bay to the southeast, the most extensive and diverse seagrass habitat in the Florida Panhandle (NWFWMD n.d.). At the project site, there is a large area of continuous seagrass habitat to the east of the peninsula while a narrow strip of discontinuous seagrass exists along the southwest and west side of the peninsula (Figure 12-40).

Seagrasses, or submerged aquatic vegetation (SAV), are rooted vascular plants that grow in fresh, brackish, and brackish, and saltwater in areas dominated by soft substrates such as sand or mud. Marine species of seagrasses, grow in the littoral (intertidal) and sublittoral (subtidal) zones of oceans. Freshwater and brackish seagrass species are important components of estuary systems and inland waters. In the northern Gulf of Mexico six species of seagrasses are common (Table 12-42).

Figure 12-40. Seagrass in the vicinity of the proposed City of Parker Fishing Pier.

Table 12-42. Common Seagrass species in the Gulf of Mexico.

SPECIES COMMON NAME	SCIENTIFIC NAME
Manatee grass	Syringodium filiforme
Shoal grass	Halodule wrightii
Turtle grass	Thalassia testudinum
Widgeon grass	Ruppia maritima
Paddle grass	Halophila decipiens
Star grass	Halophila engelmannii

The presence and productivity of seagrasses in nearshore environments largely depends upon light availability. Although seagrasses have been recorded at 230-foot depths in clear waters, they are more generally restricted to shallow ocean or estuarine waters due to the rapid decline of light with depth.In addition to the availability of light, a number of other factors also affect seagrasses. These include water temperature, salinity, sediment and water nutrient content, wave fetch (length of open water over which the wind can blow unimpeded), turbidity, and water depth (FWS 1999a; Koch 2001; Merino et al. 2005).

Seagrasses, as well as freshwater and brackish SAV, provide essential food, shelter, and nursery habitats for commercial- and recreational-fishery species and for the many other organisms such as shrimp that live and feed in seagrass beds or shallow marshes. In addition, seagrass beds can serve as Essential Fish Habitat (EFH) for federally managed species. A single acre of seagrass can produce more than 10 tons of leaves per year and can support as many as 40,000 fish and 50,000,000 invertebrates (Dawes et al.

2004). More than 70 percent of recreationally and commercially important fish and invertebrates in the Gulf of Mexico spend some portion of their lives in seagrass systems. Besides offering habitat, food, and shelter for many species, seagrasses filter contaminants and sediments, improve water quality, produce and export organic matter, dampen wave energy and currents, and improve the overall ecosystem through landscape-level biodiversity (Dawes et al. 2004).

Estuaries are extremely diverse and complex systems and provide spawning, nursery, and forage grounds for many species of fish and invertebrates. Within East Bay resident fish species include species such as bay anchovy, code goby, sheepshead minnow, silversides, and silver perch (NOAA 1997). Other transient species include Atlantic croaker, blue runner, bluefish, Gulf flounder, Gulf Menhaden, pinfish, red drum, Spanish mackerel, spotted seatrout, striped mullet (FL DNR 1991; NOAA 1997). Some of the invertebrates found within the bay include bay scallop, bay squid, blue crab, brown shrimp, eastern oyster, grass shrimp, and pink shrimp, as well as various species of marine worms and amphipods etc. (FL DNR 1991; NOAA 1997). Within the bay "hard" habitats such as piers, docks, seawalls, and rock jetties also contain tropical species such as cocoa damsels, angelfishes, parrotfishes, spadefishes, and butterfly fishes. Wrasses, groupers, and snappers are also found along these hard substrates (FL DNR 1991).

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Bay County, Florida24. Table 12-43 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

[24] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

Table 12-43. Potential Impacts to Species/Critical Habitats managed by USFWS

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle, Hawksbill turtle, Kemp's ridley turtle; Leatherback turtle, Loggerhead turtle	No nesting habitat is present in any of the project areas; therefore no impacts from construction are anticipated. Sea turtles may nest in areas that boaters may access from these locations; therefore, visitors could disrupt nesting or hatching. The Trustees expect the conservation measures, including educational tools, will minimize impacts to sea turtles and their terrestrial habitats to an insignificant and discountable level. The main risk to sea turtles during execution of this project would come from boat collisions during in-water construction activity which could result in harm or mortality. Consultation has been initiated with NMFS the agency that has jurisdiction to review impacts to sea turtles in the estuarine and marine environments.
West Indian manatee	Bay county is not part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the action areas. The main risk to manatees during execution of this project would come from noise during construction and boat collisions during use of ramps which could result in harm or mortality.The Trustees expect conservation measures and educational tools to minimize impacts to manatees (including those from noise) to an insignificant and discountable level.
Piping plover and red knot	The main risk to piping plovers and red knot is from human disturbance while resting and foraging in habitats adjacent to marine work areas and from human disturbance if boaters choose to visit nearby islands. The proposed project could result in short term increases in noise which could startle individuals and direct disturbance. The proposed project will not result in any changes to shoreline habitats where either species is likely to forage or rest. Educational signage will be posted at all ramps reminding visitors of nearby trust resources and any protective measures that may be necessary when visiting nearby islands. This signage will be developed in coordination with FWC and the Panama City Ecological Services Field Office.
Gulf sturgeon	NMFS was consulted on Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon was not considered in the consultation with the USFWS.

In addition to the protected species managed by USFWS, the Trustees reviewed the proposed projects and associated actions for potential impacts to the following protected species (status indicated) and their associated critical habitat, if appropriate, managed by NMFS:

- Gulf Sturgeon, *Acipenser oxyrinchus desotoi*, Threatened
- Smalltooth Sawfish, *Pristis pectinata,* Endangered
- Green Sea Turtle, *Chelonia mydas*, Endangered
- Loggerhead Sea Turtle, *Caretta caretta*, Threatened
- Hawksbill Sea Turtle, *Eretmochelys imbricata*, Endangered
- Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
- Kemp's Ridley Sea Turtle, *Lepidochelys kempii*, Endangered

Additional information on some of these species is provided below.

Sea turtles:
There are five species of sea turtles that are found within the Gulf of Mexico: green sea turtle, hawksbill sea turtle, loggerhead sea turtle, Kemp's ridley sea turtle, and leatherback sea turtle. All five species of sea turtles found in the Gulf of Mexico are listed under the ESA. The Gulf populations of green (breeding populations in Florida), hawksbill, Kemp's ridley, and leatherback sea turtles are listed as endangered. Loggerhead (northwest Atlantic distinct population segment) and green (except the Florida breeding population) sea turtles are listed as threatened.

Sea turtles in the Gulf (with the exception of the leatherback turtle) have a life history cycle where hatchlings develop in open ocean areas (e.g., continental shelf) and juvenile and adult turtles move landward and inhabit coastal areas. Sea turtles nest on low and high energy ocean beaches and on sandy beaches in some estuarine areas. Immediately after hatchlings emerge from the nest, they begin a period of frenzied activity. During this active period, hatchlings move from their nest to the surf, swim, and are swept through the surf zone, and continue swimming away from land for up to several days (NOAA, 2009a). Once hatchling turtles reach the juvenile stage, they move to nearshore coastal areas to forage. As adults, they utilize many of the same nearshore habitats as during the juvenile developmental stage. Sea turtles utilize resources in coral reefs, shallow water habitat (including areas of seagrasses), and areas with rocky bottoms.

All five species of sea turtles are migratory and thus have a wide geographic range. The beaches at the site are not suitable for nesting as they are too narrow, however, the species could occur in the open waters of the bay near the site.

West Indian Manatee:
The West Indian Manatee is designated as endangered under the ESA and depleted under the Marine Mammal Protection Act (16 United States Code [U.S.C.] 1361 et seq.). In the Gulf Coast geographic area manatees are divided into two regional management units: the northwest and the southwest regional management units. Each regional unit is composed of individuals that tend to return to the same network of warmwater refuges each winter and have similar non-winter distribution patterns (FWC 2007). In addition, Florida enacted the Manatee Sanctuary Act in 1978 and declares the entire State of Florida to be a manatee "refuge and sanctuary" (FWC 2007).The FWC has developed a Florida Manatee Management Plan to provide a framework for conserving and managing manatees in Florida (FWC 2007). While Bay County is not one of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (USDOI 2011), they could be present in the open waters of East Bay.

The main threat to the manatee is increased boat traffic and other accidents associated with the expanding development in Florida. Manateesinhabitboth salt and fresh water and can be found in shallow (5 feet to usually <20 feet), slow-moving rivers, estuaries, saltwater bays, canals, and coastal areas throughout their range where they feed on seagrass and other aquatic vegetation such as hydrilla and water lettuce.

Gulf Sturgeon and its Critical Habitat:

The National Marine Fisheries Service (NMFS) and FWS listed the Gulf sturgeon as a threatened speciesonSeptember30,1991.The Gulf sturgeon, also known asthe Gulf of Mexico sturgeon, is a subspecies of the Atlantic sturgeon. Adults are 71-95 inches in length, with adult females larger than adult males. Adult fish are bottom feeders, eating primarily invertebrates, including brachiopods, insect larvae, mollusks, worms and crustaceans. The Gulf sturgeon is an anadromous fish that migrates froms alt water into coastal rivers during the warmer months to spawn. Historically, the Gulf sturgeon occurred from the PearlRiver to Charlotte Harbor, Florida. It still occurs, at least occasionally, throughout this range, but in greatly reduced numbers.River systems where the Gulf sturgeon are known to be viable today include the Mississippi, Pearl, Escambia, Yellow, Choctawhatchee, Apalachicola, and Suwannee Rivers, and possibly others. The Gulf sturgeon often stays in the Gulf of Mexico and its estuariesand bays in cooler months (NOAA 2013). Most adult feeding takes place in the Gulf of Mexico and its estuaries. Telemetry data in the Gulf of Mexico usually locate sturgeon in depths of 19.8 feet or less. The fish return to breed in the river systemin which they hatched. Spawning occurs in areas of deeper water with clean (rock and rubble) bottoms. The eggs are sticky and adhere in clumps to snags, outcroppings, or other clean surfaces. Sexual maturity is reached between the ages of 8 and 12 years for females and 7 and 10 years for males. The Gulf sturgeon historically was threatened because of over fishing and then by habitat loss due to construction of water control structures, dredging, ground water extraction, and flow alterations.

FWS and NMFS designated critical habitat essential to the conservation of the Gulf sturgeon (See**Figure 12-41**). In accordance with regulations, critical habitat determinations were based on the best scientific data available for those physical and biological features essential to the conservation of the species. Nearshore waters within one nautical mile of the mainland from Pensacola Pass to Apalachicola Bay and the Perdido Key area and the area north of Santa Rosa Island were designated as critical habitat, as they are believed to be important migratory pathways between Pensacola Bay and the Gulf of Mexico for winter feeding and genetic exchange (DOI and DOC 2003). East Bay is not a part of the critical habitat designation

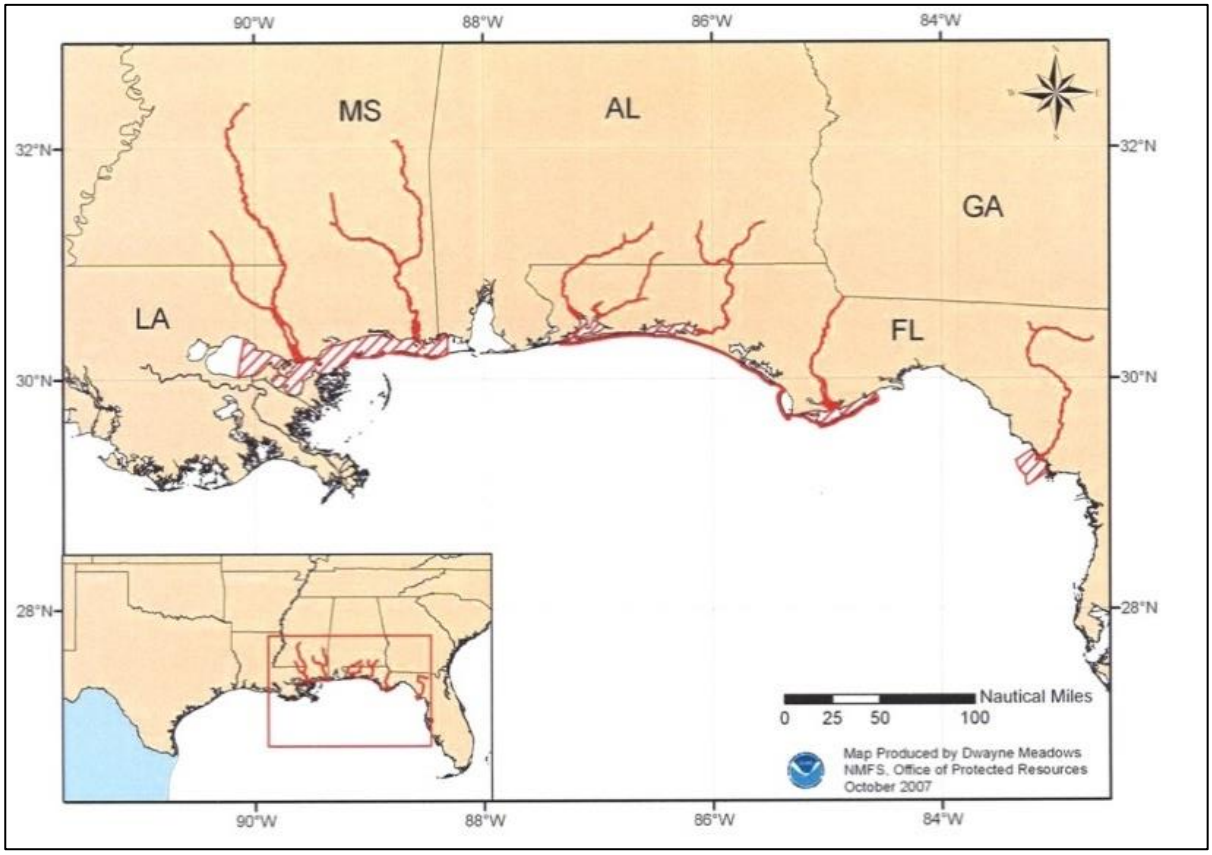

Figure 12-41. Gulf Sturgen critical habitat.

Smalltooth Sawfish:

The small tooth sawfish is federally listed asanendangered species. Formerly common from Texas to North Carolina ,its current distribution is mainly restricted to South Florida and the Keys; adults are uncommon in the Florida panhandle (NOAA2009b). Juveniles in habit shallow coastal waters, especially shallow mud banks and mangrove habitats. Very few juveniles have been documented in areas north of the current range of mangroves (*i.e.*, north of 29 N latitude). Adults are found with juveniles but also in deeperwater habitat (NOAA2009b). The decline of this species is mainly attributed to mortality as by catch in commercial and sport fisheries. The current range of this species has contracted to the peninsula of Florida, though smalltooth sawfish are common only in the Everglades region at the southern tip of the state.

Migratory Birds:

The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711) decreed that all migratory birds and their parts (including eggs, nests, and feathers) were fully protected. The migratory bird species protected by the Act are listed in 50 C.F.R. 10.13. More than 250 species of birds have been reported from the Florida panhandle, several of which breed there as well. These birds can be grouped generally as (1) species that occur year-round, both nesting and overwintering, (2) species that nest during the warm season and overwinter to the south, (3) species that overwinter and nest further north, and (4) species that

pass through during spring migrations to more northern nesting sites and/or during fall migrations to overwintering areas. Different populations of the same species sometimes exhibit more than one type of migratory behavior. Species that may occur in the vicinity of the project site include species of herons, egrets, gulls, and terns.

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-44 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-44. Potential project impacts to different migratory bird groups

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Shorebirds	Foraging, feeding, resting, nesting	At the project sites, shorebirds likely forage and rest and could be locally and temporally impacted during construction. Shorebirds nest, forage, feed, and rest on Shell Island. As such, they may be impacted by visitors traveling form the project sites to Shell Island.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Resting, roosting, nesting	Seabirds forage in water and rest/roost in terrestrial habitats at Shell Island. However, the level of project activity could startle resting birds. Because activities will occur during the day roosting should not be impacted.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized inTable 12-45.

Table 12-45. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Shorebirds	In general, the Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting if disturbed during construction. Shorebirds are not expected to be nesting in the area of construction but use nearby areas that could be visited by people using the ramps. Educational signage will be posted at each ramp and pier to prevent impacts to migratory birds at Shell Island and other locations. Signs will be developed in coordination with FWC and the Panama City Ecological Services Field Office to detail conservation measures to protect shorebirds in nearby habitats. At the Oakshore Drive location, there is an area with shallow sandbars off the point where shorebirds commonly feed. Design of this pier will be coordinated with FWC to minimize impacts and changes to the point and sand bars to the maximum extent practicable.

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity, which they will have. Roosting should not be impacted because the project will occur during daylight hours only. Nesting should not be impacted because the project will not occur near nesting habitats. Educational signage will be posted at each ramp and pier. Signs will be developed in coordination with FWC and the Panama City Ecological Services Field Office to detail conservation measures to protect seabirds while visitors may be fishing. Protective measures will also be implemented in the design phase and include the use of pointy, white, piling caps and containers for waste fishing gear.

Bald Eagles:

The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008). Three bald eagle nests occur within approximately 2.5 miles of the project site; the closest recorded active nesting site is approximately 1.5 miles from the project site (Nest ID BA011). Two other nests are within approximately 2.5 miles of the project site (Nest ID BA005 and BA018).

Essential Fish Habitat (EFH)

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. The EFH within the project area include emergent wetlands, mud substrate, and estuarine water columns for species of fish, such as red drum, brown shrimp, pink shrimp, and white shrimp. There are no marine components of EFH in the vicinity of the project site.

Table 12-46 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the City of Parker Oak Shore Drive Fishing Pier site and East Bay portion of St. Andrew Bay.

Table 12-46. Federally managed fisheries with designated Essential Fish Habitat (EFH) in the proposed project area.

EFH Category	Species
Atlantic Highly Migratory Species	
	Atlantic Sharpnose Shark-Neonate
	Bull Shark-Juvenile
	Nurse Shark-Juvenile
	Sandbar Shark-Adult
	Scalloped Hammerhead Shark-Juvenile
	Scalloped Hammerhead Shark-Neonate
	Spinner Shark-Juvenile
	Spinner Shark-Neonate
	Tiger Shark-Juvenile
Coastal Migratory Pelagics of the Gulf of Mexico AND South Atlantic	
	Spanish Mackerel
	Cobia
	King Mackerel
Gulf of Mexico Red Drum	
	Red Drum
Gulf of Mexico Shrimp	
	Pink Shrimp
	White Shrimp
	Brown Shrimp
Reef Fish Resources of the Gulf of Mexico	
	Lane Snapper
	Lesser Amberjack
	Mutton Snapper
	Nassau Grouper
	Queen Snapper
	Red Grouper
	Red Snapper
	Scamp
	Silk Snapper
	Snowy Grouper
	Speckled Hind
	Tilefish
	Vermilion Snapper
	Warsaw Grouper
	Wenchman
	Yellowedge Grouper
	Yellowfin Grouper
	Yellowmouth Grouper
	Almaco Jack
	Banded Rudderfish
	Black Grouper
	Blackfin Snapper
	Blueline Tilefish
	Cubera Snapper
	Gag
	Goldface Tilefish
	Gray (Mangrove) Snapper
	Gray Triggerfish
	Greater Amberjack
	Hogfish

Environmental Consequences

There are discontinuous patches of seagrass in the area of the proposed fishing pier that could be adversely impacted by construction of the pier. Seagrass could be destroyed or buried during installation of the pilings, and once constructed the area below the pier would be permanently shaded, adversely impacting any seagrass still intact. The total square footage of substrate that could be impacted by shading is approximately 8,960 square feet, though the final dimensions of the pier won't be determined until the final design phase for the project. Increased turbidity and the eventual settling out of resuspended sediments could also impact seagrass adjacent to the project site; however, the use of best management practices such as the use of sediment curtains, would help to contain any turbidity and minimize impacts to surrounding seagrasses. To minimize potential adverse impacts on seagrass, prior to construction activities a site-specific benthic survey would be conducted to document seagrass in the area. The survey would inform the final design of the fishing pier in terms of exact location, orientation, height above MHW, and overall size. However, due to the likely disturbance of seagrass plants and the removal of approximately 8,690 square feet of suitable habitat for seagrass, the proposed project would have long-term moderate adverse impacts on seagrass habitat. These impacts though would not threaten the viability of the seagrass population at the project site or regionally. To mitigate some of the adverse impacts the USACE through the permitting process for the project may require potentially impacted seagrass plants to be transplanted to other areas. This would likely mitigate the long-term adverse impacts to minor due to the loss of suitable habitat from the shading of the bay floor by the pier.

During construction of the fishing pier there could be local, short-term minor adverse impacts on both fish and macroinvertebrate species, including shellfish, in the vicinity of the project site. Fish species could be temporarily displaced from habitat in the area of construction due to noise and vibration impacts. Feeding success could also be impacted through increased turbidity; however, most species are highly mobile and would move out of the area to neighboring waters where feeding would be less problematic. Some mortality of sedentary and less mobile species and life stages could occur. Placement of the pilings in the substrate could crush species that cannot flee the area and resuspended sediments could cause problems with feeding for filter feeders such as shell fish, or as the sediments settle out of the water column they could bury sedentary species. However, given the small aerial extent of the impacted area compared to the available habitat within East Bay and St. Andrews Bay, the overall impact on species would be minor. Additionally, once construction was complete, fish and invertebrates species would be expected to readily recolonize the area. Some beneficial impacts to species would also occur. Piers and pilings provide a hard substrate habitat that otherwise would not exist in the area. As noted under the affected environment, such hard substrates provide habitat for species such cocoa damsels, angelfishes, parrotfishes, spadefishes, and butterfly fishes. Wrasses, groupers, and snappers also can be found among this type of habitat as well (FDNR 1991). As part of the project, information would be made available at the entrance to the pier on best practices on catch and release and other fishing practices (e.g. placing cut line and hooks for disposal in trash bins) designed to limit potential adverse impacts to fish and other marine species. Trash receptacles would also be placed on the pier to help reposted on the fishing pier to help anglers comply with the recommendations as well as keep other trash out of the water that could otherwise cause adverse impacts on species.

Although bird species that use the waters around the site for foraging or loafing are likely habituated to human activity, it is likely that they would experience some short-term, minor impacts from the increased human activity and the noise from construction activities. However, there is ample suitable habitat in surrounding areas for the birds to use, and impacts would only occur during the construction period. Though habitat at the site is not necessarily suitable for nesting, preconstruction nesting surveys would be conducted and if evidence of nesting is found, appropriate conservation measures would be taken. Therefore, impacts would be short-term and minor.

Protected Species

The USFWS reviewed the proposedOakshore Drive Pier project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA. On March 24, 2014, the review of potential impacts to species managed by USFWS was completed (McClain, 2014). The USFWS concurred with the Trustees' determination that the proposed project may affect, but is not likely to adversely affect, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead), West Indian manatee, piping plover, or red knot (if listed). The USFWS also concurred with the Trustees' determination that the project will not adversely modify or destroy critical habitat for the piping plover.

Consultation of potential impacts on protected species managed by NMFS from this project was initiated on April 9, 2014. NMFS Protected Resources Division reviewed the Biological Assessment and determined that there was a potential for adverse impacts to threatened and endangered species. NFMS Protected Resources Division is currently preparing a Biological Opinion that evaluates the potential effects this project may have on gulf sturgeon and sea turtles.

The procedures contained within the ESA consultation for West Indian manatee[25] constitute appropriate and responsible steps to promote compliance with MMPA prohibitions on take by requiring the proposed activities to achieve a standard of No Effect or May Affect, Not Likely to Adversely Affect for manatees. As such, the Trustees do not anticipate any take, incidental or otherwise, under the MMPA for West Indian manatee due to implementation the proposed project. The Trustees are continuing to coordinate with NMFS Office of Protected Resources to evaluate the potential and magnitude of take or harassment of marine mammals under NMFS jurisdiction.

Essential Fish Habitat

The Trustees' review of potential impacts to EFH from the project concluded the project is not likely to adversely affect EFH. A small area of subtidal habitat would be converted with the placing of pilings for the new pier, however, this would be a relatively small area compared with the surrounding habitat and would not completely convert or block habitat in the area where the pier is constructed. SAV habitat is in the area of the pier but the initial survey will be used to ensure impacts to this habitat are minimized and potentially avoided completely as there appear to be areas free of SAV where the pier could be constructed. Ultimately, disturbance to species and their habitats will be minor and brief.

Implementing of the Service's most recent version of the Standard Manatee Conditions for In-water Work (USFWS, 2011)

On April 17, 2014 NMFS completed its evaluation of potential EFH impacts and concluded that the project construction is not likely to adversely affect EFH and any disturbance to species will be minor and brief (Fay, 2014).

Migratory Birds and Bald Eagle:
There are no bald eagle nests within 660 feet of the project site and there is no suitable nesting habitat at the site. Therefore, there would be no impacts on bald eagles.At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources
Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences
Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.83.5.5 Human Uses and Socioeconomics

12.83.5.5.1 Socioeconomics and Environmental Justice

Affected Resources
Bay County is located in the northwestern corner of the State of Florida. The County encompasses 1,032.2 square miles, of which 758.5 square miles is land and 274.7 square miles is water area. The population of Bay County is currently estimated at 169,392 (FEDR 2010). Table 12-47 provides a brief demographic overview of Bay County, Florida.

Environmental Consequences
Constructing a new fishing pier would provide additional recreational fishing opportunities for the public in the City of Parker and Tyndall Air Force Base providing long-term beneficial impacts. However, the

extent to which the new structure would support new trips to the area for recreational fishing is difficult to quantify.Assessments of the actual levels of use of the pier would be completed as part of the proposed monitoring of this project.

Table 12-47. Demographic information for Bay County, Florida.

FLORIDA OFFICE OF ECONOMIC DEVELOPMENT	BAY COUNTY
Population, percent change, April 1, 2010 to April 1, 2012	0.3%
Population, 2010	168,852
Persons under 5 years, percent, 2010	6.3%
Persons under 18 years, percent, 2010	22.0%
Persons 65 years and over, percent, 2010	14.5%
Female persons, percent, 2010	50.5%
White alone, percent, 2010	82.2%
Black or African American alone, percent, 2010	10.8%
American Indian and Alaska Native alone, percent, 2012	0.9%
Asian alone, percent, 2012	0.7%
Native Hawaiian and Other Pacific Islander alone, percent, 2012	0.1%
Two or More Races, percent, 2010	3.1%
Hispanic or Latino, percent, 2010	4.8%
White alone, not Hispanic or Latino, percent, 2010	79.2%
Persons per household	2.0
Median household income, 2009	$44,357
Persons below poverty level, percent, 2009	13.0%

The proposed project is expected to have short-term, beneficial impacts on socioeconomics for the project area and adjacent areas, based on a slight increase in the workforce required to perform construction work on the fishing pier, staging docks, and boat ramp. The exact number of person to be employed by this project is undetermined, but is estimated to be approximately 15 persons.

12.83.5.6 Cultural Resources

Affected Resources

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project has not identified the presence of a historic property within the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.83.5.6.1 Infrastructure

Affected Resources

The project site is located in the City of Parker and surrounded by residential areas. East Highway 98 is a major road crossing East Bay that connects the City of Parker and Tyndall Air Force Base. There is a variety of infrastructure that includes roads and parks. The project site has approximately 12 parking spaces for vehicles and trailers along with one boat ramp and an existing pier. On the water side of the project, East Bay is part of the intracoastal waterway which transits down the axis of the bay in front of the project site..

Environmental Consequences

The majority of the work for the proposed project would be conducted from the water, though trucks would be used to stage material, likely in the parking lot at the project site. The surrounding road network would be expected to be able to handle the minimal truck traffic as well as the influx of approximately 15 workers for the project. With the likely staging of material in the parking lot, some parking spaces would be lost for use temporarily during the construction period. To minimize impacts on the use of the boat ramp and parking, construction activities on the fishing pier would occur outside of the fishing season which occurs from April through September (Pearce 2013). Additionally, there are other boat ramps in the area that could be used to access the bay (Pearce 2013). Therefore, adverse impacts would be expected to be short-term and minor.

For the fishing pier, in-water construction would occur outside of the intracoastal waterway and therefore would not impact boat movement within this waterway. Overall, impacts to infrastructure from the proposed project would be short-term minor and adverse.

12.83.5.6.2 Land and Marine Management

Affected Resources

The project site currently is zoned for recreation and the planned future use of the site continues to be for recreation (City of Parker 2009).

The project is located in a coastal area regulated by the federal Coastal Zone Management Act (CZMA) of 1972 and the Florida Coastal Management Act of 1978.

Environmental Consequences

The proposed project would increase and improve the public's access to East Bay and would be consistent with the proposed continued future land use for this site as a recreation area. This would provide long-term beneficial impacts. Some minor adverse impacts would result during construction activities as some parking spaces would be lost to the staging of materials. However, these short-term impacts would be minimized by conducting construction activities outside of the April – September fishing season to the extent practicable, and by the relatively short construction period which is estimated to be 7-12 months.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal

management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS. The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process.

12.83.5.6.3 Aesthetics and Visual Resources

Affected Resources

The project area is located in a recreational use area adjacent to a boat ramp and existing pier. The views from the site offer open vistas of East Bay.

Environmental Consequences

Construction of a fishing pier would be consistent with the features of the existing site and would not be in conflict with the surrounding developed area. Therefore, the proposed project would have no effect on aesthetics or visual resources.

12.83.5.6.4 Tourism and Recreational Use

Affected Resources

The project site is currently a recreational user destination. The boat ramp provides public access to East Bay and St. Andrews Bay and the surrounding waters, including the Gulf of Mexico.

Environmental Consequences

The project would have long-term beneficial impacts on tourist and recreational user enjoyment of the site. The project would provide additional recreational fishing opportunities for the public in the City of Parker and Tyndall Air Force Base, which currently has no public piers to fish from.

12.83.5.6.5 Public Health and Safety and Shoreline Protection

Affected Resources

There are no safety issues associated with the project site as it currently exists.

Environmental Consequences

Design of the fishing pier would include necessary handrails ensuring the safety of those that use it. The facilities would also be properly maintained by the City of Parker as part of its regular public facilities maintenance activities. During construction activities, staging and construction areas would be fenced off, and BMPs would be employed to ensure public safety both on land and on the water, as well as the safety of the construction workers.

12.83.6 Summary and Next Steps

The City of Parker Oak Shore Drive Pier project would construct a fishing pier at Oak Shore Drive in the City of Parker, Bay County Florida. The proposed work includes construction of a 500 foot long fishing pier. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities..

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase recreational fishing opportunities by constructing a fishing pier. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

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12.84 Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks: Project Description

12.84.1 Project Summary

The proposed Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks project would provide additional recreational fishing opportunities for the public in Panama City in Bay County. The proposed improvements include constructing a 400-foot long pier, replacing a poorly functioning boat ramp, and constructing new staging docks associated with the boat ramp at the Panama City Marina. The total estimated cost of the project is $2,000,000.

12.84.2 Background and Project Description

The Trustees propose to improve the Panama City Marina (see Figure 12-42 for general project location). The objective of the Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks project is to enhance and/or increase recreational boating and fishing opportunitiesby improving the city's marina. Therestoration work proposed includes constructing a 400-foot long pier, replacing a poorly functioning boat ramp, and constructing new staging docks at the Panama City Marina.

Figure 12-42. Location of Panama City Marina Project.

12.84.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposedPanama City Marina Fishing Pier, Boat Ramp, and Staging Docks project is intended to enhance and/or increase recreational boating and fishing opportunities by improving the city's marina.This project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill. Thus, the nexus to resources injured by the Spill is clear. See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. Agencies have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.84, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration with the exception of hydrology and water resources which would be minor, localized and long term. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.84 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com).In addition to meeting the criteria for the Framework Agreement and OPA, the Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area in which boom was deployed and that was impacted by response and SCAT activities for the Spill.

12.84.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. The project objective is to enhance and/or increase recreational boating and fishing opportunities by improving the marina. Performance monitoring will evaluate: 1) the construction of a 400-foot long pier; 2) the replacement of a poorly functioning boat ramp, and 3) the construction of new staging docks

at the Panama City Marina. Specific performance criteria include: 1) completion of the construction as designed and permitted, and 2)enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the marina and fishing pier are open and available.

Long-term monitoring and maintenance of the improved facilities will be completed by Panama City as part of their regular public facilities maintenance activities. Funding for this post-construction maintenance is not included in the previously provided value for the project cost and will be accomplished by Panama City.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users.Following the one year construction performance monitoring period, Panama Citywill monitor the recreational use activity at the site. Panama Citystaff will visit the site twice a year to count the number of users at the marina. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

The State of Florida Trustees and the Department of the Interior recognize the need to evaluate the effectiveness of conservation measures designed to avoid or minimize impacts to sensitive species or their habitats. To assess the public's awareness of the educational signage intended to minimize impacts of use associated with the improved facilities, readers will be invited to take an online survey accessed via a QR code on the sign. The Florida Trustees and DOI will determine the adequacy of this method of assessing public awareness six months after the completion of construction. If the online surveying is insufficient, concurrent with the twice annual performance monitoring, and performed by the same party, a survey will be taken of a sample of recreational users at the project location.

12.84.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $4,000,000expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[26]

12.84.6 Costs

The total estimated cost to implement this project is $2,000,000. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[26]For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.85 Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks: Environmental Review

The proposed Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks project would enhance and/or increase recreational boating and fishing opportunities for the public in Panama City in Bay County. The proposed improvements include constructing a 400-foot long pier, replacing a poorly functioning boat ramp, and constructing new staging docks at the Panama City Marina.

12.85.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP) entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf in advance of the completion of the injury assessment process. Early restoration is not intended to, and does not fully address all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill (Framework Agreement), the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the Federal Register on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III Early Restoration Plan (ERP). This boat ramp project was submitted as an Early Restoration project on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and the Oil Pollution Act (OPA), the project meets Florida's criteria that Early Restoration projects occur in the eight-county Florida panhandle area that deployed boom and was impacted by the Spill.

The Trustees propose to improve the Panama City Marina (see Figure 12-42 for general project location). The objective of the Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks project is to enhance and/or increase recreational boating and fishing opportunitiesby improving the city's marina. The restoration work proposed includes constructing a 400-foot long pier, replacing a poorly functioning boat ramp, and constructing new staging docks at the Panama City Marina.

The Panama City Marina consists of a marina, boat ramp, staging docks, restrooms and showers, parking area, and a business center (Figure 12-43). The marina has 240 slips that can accommodate boats ranging in size from 30 feet to 120 feet with drafts up to 10 feet. The parking lot has a capacity of approximately 200 vehicles. The proposed project would consist of constructing a new 400-foot long fishing pier, replacing a poorly functioning boat ramp, and constructing new staging docks adjacent to the boat ramp. The total estimated cost of the project is approximately $2,000,000.

12.85.1.1 Fishing Pier

The new fishing pier would be approximately 400 feet long and 14 feet wide extending southwest from the marina (at the end of Harrison Avenue) into St. Andrews Bay (

Figure 12-44). A the end of the pier, a small section would be oriented perpendicular to the rest of the pier and have dimensions of approximately 60 feet long by 14 feet wide, giving the pier an overall total area of approximately 6,440 square feet. The pier would have handrails and lighting installed along it as well.

Fixed signs that are consistent with National Oceanic and Atmospheric Administration (NOAA) and State of Florida guidelines with instructions on what to do in the event of hooking a listed species (e.g., sea turtle) would be placed at the entrance to the fishing pier and strategically at fixed intervals along its length. Additionally, a kiosk/booth would be placed at the entrance to the pier with additional information for best practices on catch and release and other fishing practices (e.g., placing cut line and hooks for disposal in trash cans) designed to limit potential adverse impacts to species. Any facilities (e.g., trash cans) needed to help anglers comply with these recommendations would also be provided.

12.85.1.2 Boat Ramp

The existing boat ramp at the marina is approximately 60 feet long and 20 feet wide. The ramp would be removed and replaced with a concrete boat ramp with similar footprint and a 13.33 percent grade (Figure 12-44). At the end of the boat ramp, 12-inch rip-rap would extend another 10 feet.

12.85.1.3 Staging Docks

Staging docks would be constructed on both sides and parallel the boat ramp (Figure 12-44). On the southeast side of the ramp the dock would be approximately 250 feet long by 6 feet wide (Figure 12-44). The dock on the northwest side of the ramp would be handicap accessible with dimension of approximately 72 feet long by 8 feet wide. Final dimensions of the docks would be determined during the final project design.

The total estimated cost of the project is $2,000,000.

12.85.2 Project Location

The proposed project is located at the City-owned Panama City Marina in Panama City, Florida (see

Figure 12-44 for detailed project location).Panama City is located in the Florida "panhandle" on St. Andrews Bay in Bay County and is approximately 170 miles east of Mobile, Alabama, 95 miles east of

Pensacola, Florida, and 100 miles southwest of Tallahassee, Florida. St. Andrews Bay surrounds much of Panama City and provides a protected harbor.

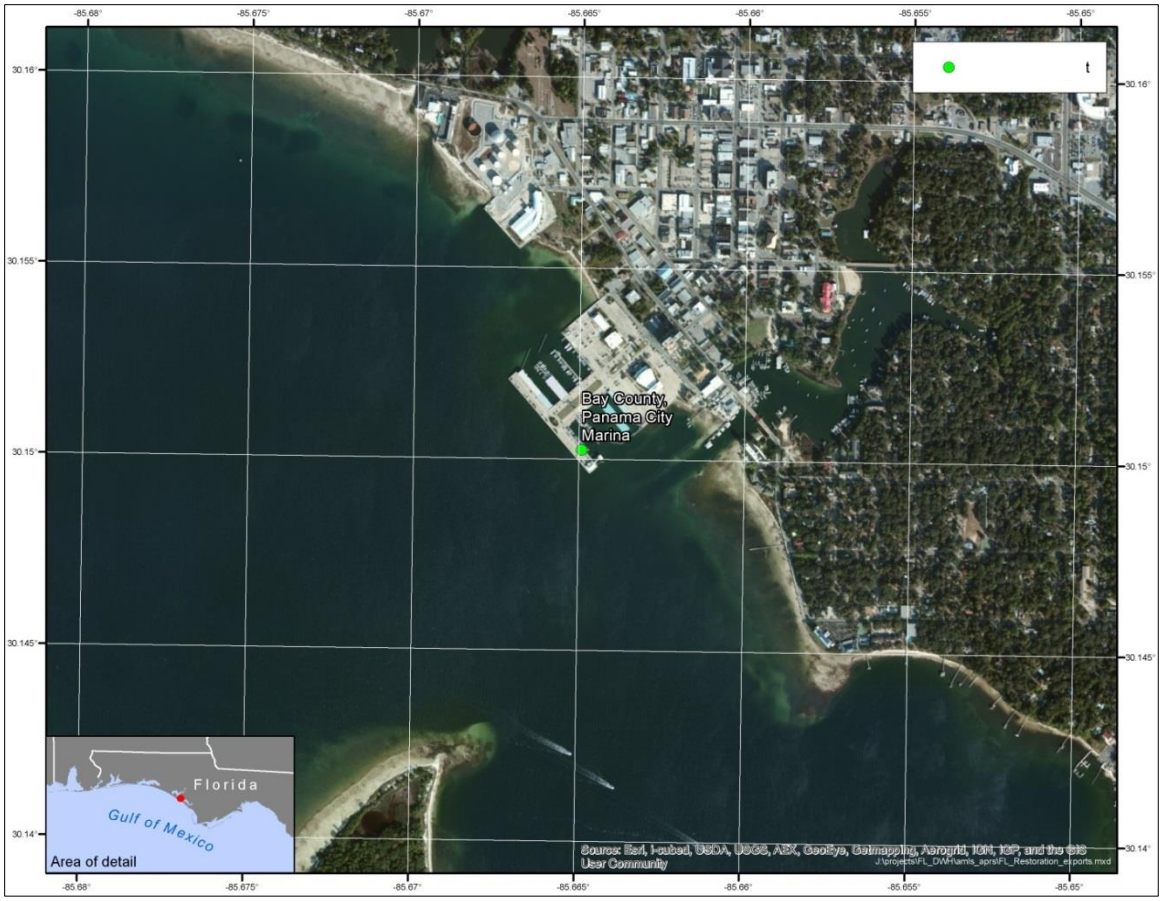

Figure 12-43. Location of Panama City Marina.

Figure 12-44. Location of proposed fishing pier, boat ramp, and staging docks as Panama City Marina.

12.85.3 Construction and Installation

The proposed project would consist of constructing a new 400-foot long fishing pier, replacing a poorly functioning boat ramp, and constructing new staging docks adjacent to the boat ramp. The proposed areas where these improvements to existing facilities would occur and where the new amenities would be constructed are indicated in the conceptual drawings in with respect to the existing marina facility.

Final design is not complete for any of these project elements. As part of the final engineering and orientation assessment associated with developing these final plans, a survey of submerged aquatic vegetation (SAV) in each of the project implementation areas would be completed. Should the site assessment for the project identify SAV in the proposed project area, the conditions in the *Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat* (U.S. Army Corps of Engineers/National Marine Fisheries Service, 2001) would be implemented as appropriate for each affected element. For example, among other elements this would require placing pilings for the dock expansion a minimum of 10 feet apart. Each element of this project is discussed in greater detail below.

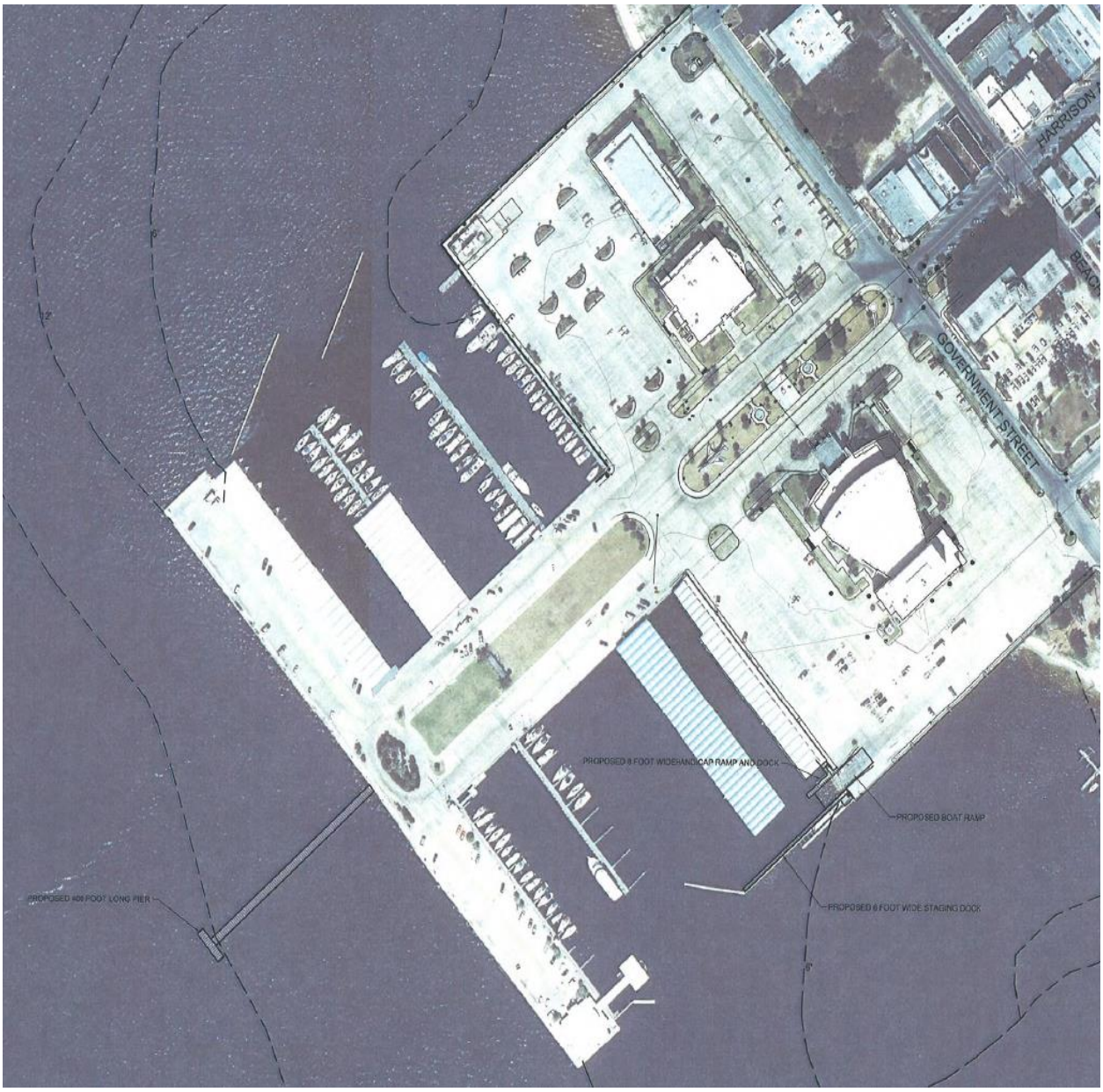

Figure 12-45. Drawing of the proposed improvements at the Panama City Marina

Fishing Pier Construction

Based on the current conceptual design (SeeFigure 12-45), the new fishing pier would be approximately 400 feet long and 14 feet wide, extending southwest from the marina (at the end of Harrison Avenue) into St. Andrews Bay (Figure 12-45 and Figure 12-46). A the end of the pier, a small section would be oriented perpendicular to the rest of the pier and have dimensions of approximately 60 feet long by 14 feet wide, giving the pier an overall total area of approximately 6,440 square feet.

Prior to the opening of the pier to the public, fixed signs that are consistent with National Oceanic and Atmospheric Administration (NOAA) and State of Florida guidelines with instructions on what to do in the event of hooking a listed species (e.g., sea turtle) would be placed at the entrance to the fishing pier

and strategically at fixed intervals along its length. Additionally, a kiosk/booth would be placed at the entrance to the pier with additional information for best practices on catch and release and other fishing practices (e.g., placing cut line and hooks for disposal in trash cans, not feeding dolphins) designed to limit potential adverse impacts to species. The signage in this kiosk would include the NMFS "Dolphin Friendly Fishing and Viewing Tips" sign with NMFS' "Protect Dolphin" signs along the pier and signage/notices not feed gulls. Monofilament recycling bins will be installed at regular intervals along the pier. These would be emptied regularly by city/county staff as part of the project maintenance activities, and fishing line recycled. Further, any lighting installed on the pier or addressed as part of the project will be wildlife friendly and comply with the guidance provided in the current edition of the FWC's *Lighting Technical Manual*. Finally, no fish cleaning stations will be included in the design and construction of these piers to help mitigate/avoid issues of species attraction to the pier.

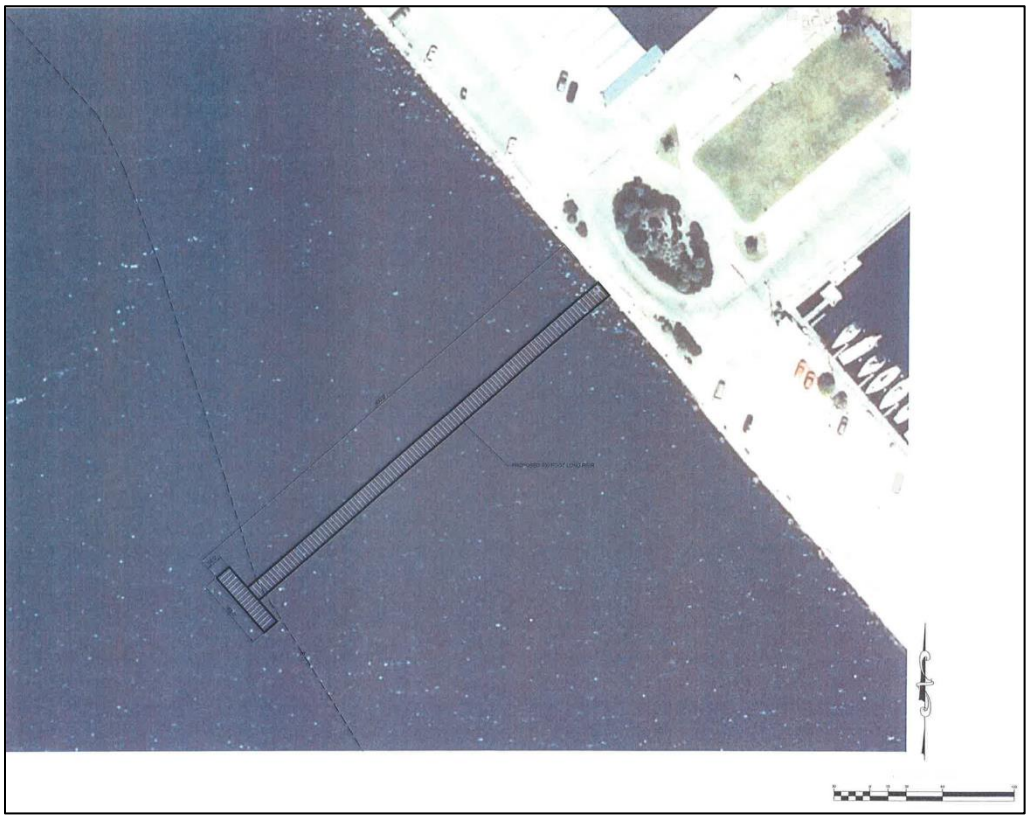

Figure 12-46. Drawing of the proposed fishing pier at the Panama City Marina.

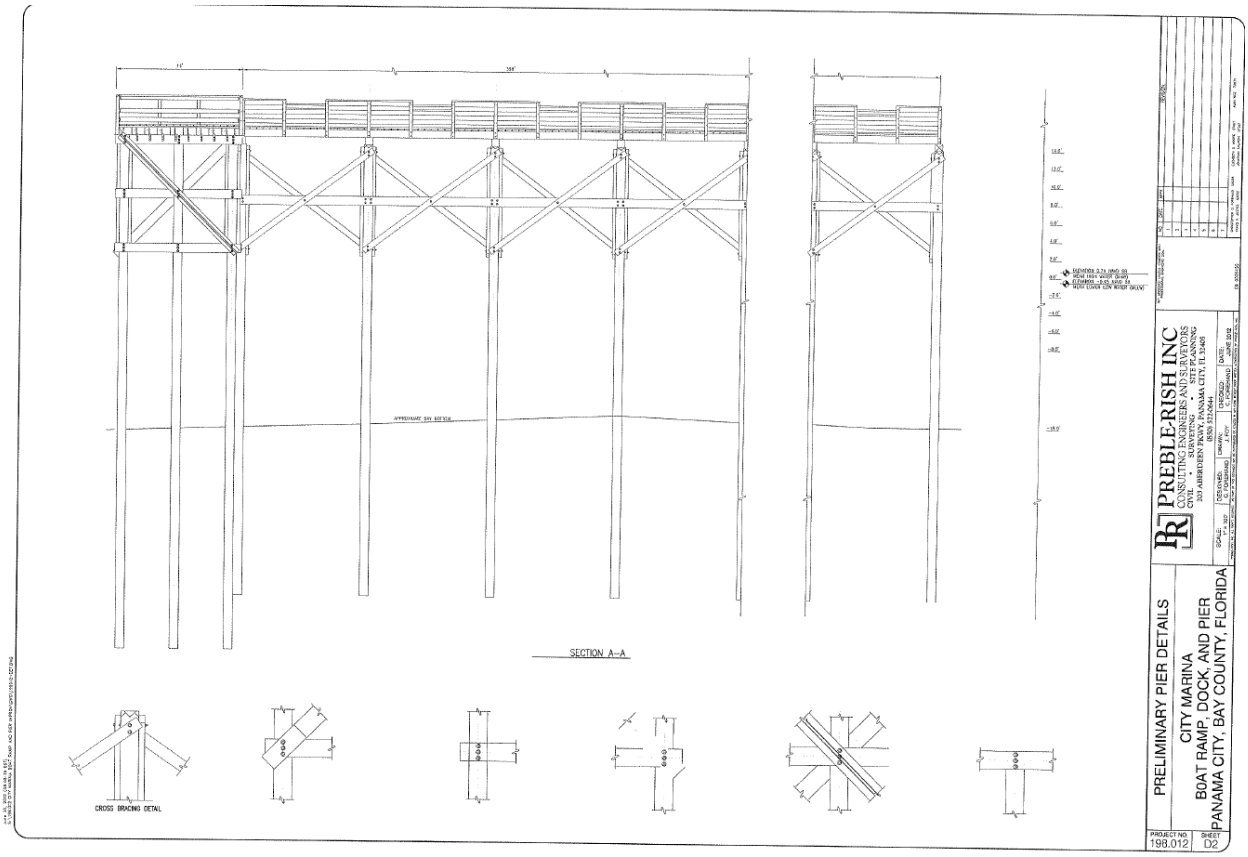

Figure 12-47. Drawing of the proposed fishing pier at the Panama City Marina, illustrating the proposed dimensions and height above mean high water.

Based on the conceptual plans (See Figure 12-47) and work on similar piers, it is assumed that the pier will be constructed using 8” diameter fiberglass pilings that are pre-filled with concrete. Based on the length and shape of the pier up to 130 pilings may be required. These pilings will be placed using a combination of water-jetting to initially set the piles to within 5 feet of their desired final depth. For the remaining five feet, the pilings will be set using a vibratory hammer. Final construction plans will also consider and account for options would minimize disruption to the aquatic environment including available BMPs (e.g., use of bubble curtains). All decking, cross members and railings for the pier will be made of timber. Following placement of the pilings the timber cross members will be placed from the water and then the rest of the pier will be built out from the existing developed area of the pier indicated in Figures A and B above. When complete, all pier pilings will incorporate pointed covers to discourage/minimize birds (e.g., laughing gulls) having a convenient perch from which to predate on nearby nesting birds. In total, the in-water work associated with this project is expected to last no more than 6 months.

During all in-water construction activity, the conditions and guidelines of the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006) would be implemented and adhered to. Among the significant aspects of these provisions is the requirement to stop operation of any equipment if sea

turtles or Smalltooth sawfish come within 50 feet of the equipment until the time when animals leave the project area of their own volition.

During construction BMPs for erosion control would also be implemented and maintained at all times during upland activity to prevent siltation and turbid discharges into surface waters. Methods could include, but are not limited to, the use of staked hay bales. However, the highly developed nature of the existing marina in the area surrounding the proposed pier reduces the concern of this type of impact.

Total construction time for the fishing pier is estimated to take approximately 12 months with the in-water work potentially taking 6 months to complete.

Boat Ramp Replacement and Staging Dock Construction

The existing boat ramp at the marina is approximately 60 feet long and 20 feet wide. As part of the project, the current ramp would be removed and replaced with a concrete boat ramp with similar footprint and a lower 13.33 percent grade (Figure 12-48). At the end of the boat ramp, 12-inch rip-rap would extend another 10 feet.

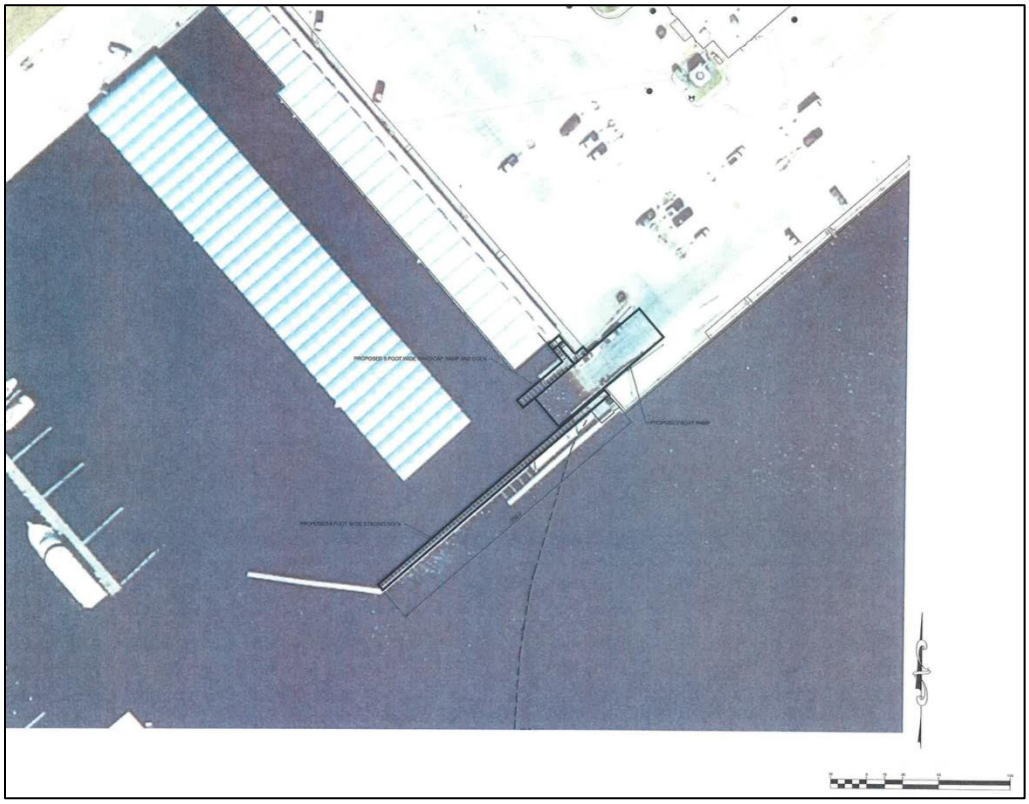

Figure 12-48. Drawing illustrating the boat ramp replacement and staging dock project areas.

While final plans have not been developed for the boat ramp, the construction work associated with repairs/replacement of a boat ramp can generally be summarized in terms of executing a number of specific tasks and subtasks including:

Task 1. Site Preparation

b. Prior to beginning any waterward work at the boat ramp site the project area needs to be surveyed and marked. Turbidity curtains are then installed to encapsulate the work area and other erosion control methods are put in place on the landward side of the project (e.g., placement of hay bales) to prevent erosion into the water from equipment movement and any work being performed on the upland areas.

Task 2. Ramp Repairs/Construction

d. The area for the ramp is surveyed in and marked by stake or pole (typically small diameter 2" or less PVC).
e. A coffer or bladder dam is installed and the water within the dam, between the waterward extent of the ramp and the land, is pumped out to upland storage ponds or run through a filter system to remove any sediment in the water before returning it to the receiving waterbody. The work area is kept dry by use of dewater pumps (ground water to be pumped is first sampled and tested for water quality) and disposed of in the same manner as the pumped surface water. This dewatering operation is run continuously throughout the construction of the ramps. Once the ramps are completed the dewatering pumps are shut down and the dams are removed.
f. Construction of the ramps begins once the area is sufficiently dry to remove unsuitable soils, if necessary, and replaced with suitable soil. This soil is then compacted to specification. Then the base material for the ramp is placed, usually a rock material. After placement and compaction of the base the ramp is formed, reinforcing steel placed and then the concrete poured and finished. Once curing of the concrete is complete the forms are removed and the coffer or bladder dams are removed.

Task 3. Monitoring

f. Every day, before the start of construction activities, the turbidity screen is checked and repaired if necessary.
g. The foreman or other designated individual checks the area inside the screen and the screen itself to see if any protected species (manatees, dolphins, small tooth sawfish etc.) have gotten trapped within the work area or in the screen. If so then appropriate (FWC) personnel are notified to request removal. No work is begun until the animal, fish or bird is removed.
h. During the work day the work area and area adjacent to the work are is monitored to make sure protected species have not ventured into the area. If so then work is stopped until the animal moves out of the area.
i. At the end of the day the area is checked for debris, sediment and possible spillage and these are properly removed and disposed of before shutting down the site.
j. If a storm is anticipated that might damage the turbidity screen it is removed and stored until the storm event has passed and seas have resided.

However, the existing boat ramp that would be replaced is best described as a “bridge ramp”. This means the portion of the ramp that extends into deeper water so is supported by pilings. As part of the replacement/renovation work this same design would be required because of the depth of the basin in the area of a ramp. In terms of construction this means the coffer or bladder dam described in Task 2 and activities related specifically to the coffer dam in Task 3 would not be relevant as a coffer dam could not be installed. Instead, the construction of the final in-water portion of the ramp will likely require placing concrete slabs from the shore onto the support pilings in the basin.

The fact that the boat ramp activities would be associated with replacing an existing structure in an area of active use and extensive human development should limit its impacts on the marine environment. However, as already noted, all in-water work will adhere to the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006). The in-water work for the boat ramp could take up to three months.

Finally, staging docks would be constructed on both sides and parallel the boat ramp (see Figure 12-D). On the southeast side of the ramp the dock would be approximately 250 feet long by 6 feet wide. The dock on the northwest side of the ramp would be handicap accessible with dimension of approximately 72 feet long by 8 feet wide. Final dimensions of the docks would be determined during the final project design based on, among other information, the results of the SAV survey and the corresponding need to comply with any conditions in the *Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat* (U.S. Army Corps of Engineers/National Marine Fisheries Service, 2001 – See Appendix A).

As with the pier, pilings would need to be placed for the staging dock. Based on these dimensions, it is expected that up to 80 pilings may need to be placed for these docks. These would be wither concrete or timber pilings not exceeding 8” in diameter. These pilings would generally be placed by barge or workboats (e.g., 20’ skiffs) using a combination of mechanical auguring and water jetting. Options to minimize disruption to the aquatic environment, including available BMPs (e.g., use of bubble curtains), would be evaluated as final engineering plans are determined. Following placement of the pilings and cross pieces from the water, work to construct the docks would generally proceed from shore and would not require additional in-water work unless pre-formed or pre-constructed sections are used and placed from workboats. The total expected in-water time for the dock construction is three to six months. As with the pier, all dock pilings will incorporate pointed covers to discourage/minimize birds (e.g., laughing gulls) having a convenient perch from which to predate on nearby nesting birds.

During all in-water construction activity for the staging dock, the conditions and guidelines of the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006) would be implemented and adhered to. Among the significant aspects of these provisions is the requirement to stop operation of any equipment if sea turtles or Smalltooth sawfish come within 50 feet of the equipment until the time when animals leave the project area of their own volition.

Construction Methods and Schedule

Construction activities for the proposed project would occur from both in-water and on land. Most of the work for the fishing pier and staging docks would take place in-water, while work for the boat ramp would take place both in-water and from land. Construction is estimated to take approximately 12 to 24 months overall. With cumulative in-water work likely to take from 6 to 12 months depending on the sequencing of the in-water activity for the three project elements.

12.85.4 Operations and Maintenance

Long-term monitoring and maintenance of the improved facilities would be completed by Panama City as part of their regular public facilities maintenance activities. Funding for this post-construction maintenance is not included in the previously provided value for the project cost and will be accomplished by Panama City.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager would go out twice to the site to record the number of users. Following the one year construction performance monitoring period, Panama City would monitor the recreational use activity at the site. Panama City staff would visit the site twice a year to count the number of users at the marina. The visitation numbers would then be provided to the Florida Department of Environmental Protection.

The State of Florida Trustees and the Department of the Interior recognize the need to evaluate the effectiveness of conservation measures designed to avoid or minimize impacts to sensitive species or their habitats. To assess the public's awareness of the educational signage intended to minimize impacts of use associated with the improved facilities, readers will be invited to take an online survey accessed via a QR code on the sign. The Florida Trustees and DOI will determine the adequacy of this method of assessing public awareness six months after the completion of construction. If the online surveying is insufficient, concurrent with the twice annual performance monitoring, and performed by the same party, a survey will be taken of a sample of recreational users at the project location.

12.85.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected environment and environmental consequences of the project.

12.85.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.85.5.2 Physical Environment

12.85.5.2.1 Geology and Substrates

Affected Resources

The project area lies within the geological division known as the West Florida Coast Strip that extends from the mouth of the Ochlockonee River west to the Mississippi River. This strip consists primarily of coastal islands and narrow peninsulas along the coast. St. Andrews Bay is a protected shallow embayment generally less than 49 feet (15 meters) deep. The Panama City Marina is classified as Urban Land. The Soil Survey for Bay County identifies the estuarine waters of the project area as "St. Andrew Bay" and no soils data is provided (USDA 1984). A study at Tyndall Air Force Base indicates that sediments in the St. Andrews Bay range from fine sands to silts (NOAA 1997).

Environmental Consequences

While pilings would be driven into the St. Andrews Bay substrate, no changes to geology of the bay floor would occur. The new boat ramp is replacing an existing boat ramp; therefore no changes to geology would occur. During installation of pier and staging dock pilings mechanical augers would be used to install the pilings, causing sediments to be temporarily disturbed. The number of pilings and the depth to which they would be installed would be determined during the final design phase of the project. BMPs, such as the use of sediment curtains, would be used to minimize the dispersal of sediments during the installation of the pilings. The USACE or Florida Department of Environmental Protection (FDEP) may also require other management practices to minimize potential adverse impacts through the permitting process for the project. Once the pilings are installed sediments would settle, resulting in localized, short-term minor impacts.

Replacement of the boat ramp would disturb soils that are already disturbed from construction of the existing boat ramp. BMPsand other erosion control measures required as part of the permitting process would minimize impacts to sediments during the construction process, resulting in short-term minor impacts.

12.85.5.2.2 Hydrology and Water Quality

Affected Resources

St. Andrews Bay is the receiving waterbody for the largest drainage basin in Bay County. The area drained is from the Apalachicola River west to the Choctawhatchee River (FDEP, 1991). There are nine major streams that flow into St. Andrews Bay. St. Andrews Bay is central in the St. Andrews Bay system. The bay opens directly to the Gulf of Mexico through East and West Passes. Connecting embayments include North, West, and East Bays, as well as Grand Lagoon and St. Andrews Sound. Tides in the estuary are typically diurnal with a mean range of 1.6 feet, with a longer ebb flow than flood flow (Murphy and Valle-Levinson, 2008).

The CWA requires that the surface waters of each state be classified according to designated uses. Florida has six classes with associated designated uses, which are arranged in order of degree of protection required. According to 62-302.400, Florida Administrative Code, St. Andrews Bay is designated as Class III waters. Therefore, standards to meet the following uses apply to the project area:

Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife.

Environmental Consequences

Construction of the fishing pier, staging docks, and boat ramp would require in-water work. Installing the pilings for the fishing pier and the staging docks would likely be by mechanical auger from a barge. Installing the piers would disturb and resuspend sediments, increasing turbidity levels in the vicinity of the project. Using a backhoe and other equipment to remove the existing boat ramp and construct a new boat ramp would disturb sediment in the water and at the water's edge, resuspending sediments and potentially resulting in sedimentation from runoff at the shoreline. BMPs, such as the use of sediment curtains to contain resuspended sediments and erosion control measures would be employed to minimize impacts to the surrounding area. Operating a barge(s) and mechanical equipment to install the pilings and construct the fishing pier, staging docks, and boat ramp could impact water quality through the leakage of hydraulic fluids, oil, gasoline etc. However, BMPs to avoid, minimize, and control spills would be employed to minimize the risk of adverse impacts. Additionally, appropriate permits would be obtained prior to beginning construction and all conditions set forth, such as erosion control measures and spill prevention, control, and countermeasure plan, would be followed. Once construction is complete, no additional impacts to water quality would be expected. Overall, impacts to water quality would be localized, short-term, minor and adverse.

The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (Corps) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). Coordination with the Corps and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

The fishing pier would extend out into St. Andrews Bay beyond the existing footprint of the marina. With this, once the fishing pier is complete the pilings would alter the currents slightly in and around the immediate vicinity of the pier itself. However, these changes would be localized and relatively small. The boat ramp would not impact currents at all and because the staging docks would occur within the footprint of the existing marina where currents are likely already altered slightly, no real change in local currents would occur. As a result, impacts to hydrology would be long-term, minor, and adverse.

12.85.5.2.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

Air quality and greenhouse gas emissions at the site are affected by Panama City and boat traffic in the Gulf of Mexico and Old River. Bay County, Florida is in attainment for all criteria pollutants (USEPA 2013).

Environmental Consequences

During construction activities, use of construction equipment, including heavy machineryand handheld tools, would likely increase emissions at the project site. However, impacts from construction activities would be temporary, occurring over a 12 to 24 month period and emissions from the project would cease upon completion of construction activities.

The following table (Table 12-48) provides greenhouse gas emissions estimates for the heavy equipment expected to be used during the construction of the fishing pier, staging docks, and boat ramp. The barge and crane emission total is based on an estimated 1,040 hours of operation over the life of the project (8 hours a day, five days a week, for 6 months) for the fishing pier and 176 hours of operation over the life of the project for the staging docks and boat ramp. The tractor trailer emission total is based on 32 hours of operation (based on the estimation that it would be used once per week, for 4 months) for the fishing pier and 18 hours of operation (based on the estimation that it would be used for a total of three trips) for the staging docks and boat ramp. A "minor impact" on air quality can be determined if the contributions to greenhouse gases of this project are measurable, but fall below 25,000 metric ton/year of carbon dioxide (CO_2) or its equivalent (CO_2e).

Table 12-48. Estimated greenhouse gas emissions for equipment to be used.

EQUIPMENT[27]	CO_2 (METRIC TONS)[28]	CH_4 (CO_2E) (METRIC TONS)[29]	NO_X (CO_2E) (METRIC TONS)	TOTAL CO_2E (METRIC TONS)
Barge with Crane				
Fishing Pier	37.700	0.104	1.040	38.844
Staging Docks/ Boat Ramp	6.380	0.018	0.176	6.574
Tractor Trailer30				
Fishing Pier	5.440	0.006	0.064	5.510
Staging Docks/ Boat Ramp	3.060	0.004	0.036	3.100
TOTAL	**52.580**	**0.132**	**1.316**	**54.028**

CO_2 – carbon dioxide
CH_4 – methane
CO_2e – carbon dioxide equivalent
NO_X – nitrogen oxide

Based on Table 12-48, CO_2 emissions or its equivalent from the proposed project would be measureable, but would not exceed the USEPA 25,000 metric ton/year threshold. Therefore, the proposed project would have minor adverse impacts on air quality. However, these impacts would be short-term since emissions from the project would cease upon completion of construction activities.

[27] Emissions assumptions for all equipment based on 8 hours of operation.

[28] CO_2 emissions assumptions for diesel and gasoline engines based on USEPA 2009.

[29] CH_4 and NOx emissions assumptions and CO_2e calculations based on USEPA 2011.

[30] Construction equipment emission factors based on USEPA NONROAD emission factors for 250hp pieces of equipment. Data was accessed through the California Environmental Quality Act Roadway Construction Emissions Model.

12.85.5.2.4 Noise

Affected Resources

Noise levels at the project area are influenced by the natural ambient soundscape of wind and waves as well as noise generated by vehicles driving on local roads, recreation activities at the marina and boat noise both at the marina and on St. Andrews Bay.

Environmental Consequences

Construction activities associated with the project would increase the amount of noise at the site. However, the site is at a working marina in a commercial and industrial area of Panama City. Therefore, increased noise impacts would be relatively small and only last during the period of construction, resulting in short-term minor adverse impacts.

12.85.5.3 Biological Environment

12.85.5.3.1 Living Coastal and Marine Resources

Affected Resources

The area surrounding the Panama City Marina is highly developed with the majority of non-hardscape habitat being landscaped grass and vegetation. The non-water portions of the marina are also mostly hardscape (buildings and parking lots). What little grass and landscape vegetation occurs is confined to areas immediately adjacent to buildings and in various vegetated islands situated throughout the parking areas.

The Panama City Marina is situated on St. Andrews Bay and the water portions of the marina consist of open, shallow estuarine/marine habitats. While nearly 20,000 acres of seagrasses extend through St. Andrews Bay and St. Josephs Bay to the southeast, the most extensive and diverse seagrass habitat in the Florida Panhandle (NFWMD n.d.), no seagrasses exist within the footprints of the proposed fishing pier, staging docks, or boat ramp. However, a small patch of discontinuous seagrass habitat exists adjacent to the marina southeast of the existing boat ramp (Figure 12-49).

Figure 12-49. Seagrass in the vicinity of Panama City Marina.

Estuaries are extremely diverse and complex systems and provide spawning, nursery, and forage grounds for many species of fish and invertebrates. Within St. Andrews Bay resident fish species include species such as bay anchovy, code goby, sheepshead minnow, silversides, and silver perch (NOAA, 1997). Other transient species include Atlantic croaker, blue runner, bluefish, Gulf flounder, Gulf Menhaden, pinfish, red drum, Spanish mackerel, spotted seatrout, striped mullet (FDNR 1991; NOAA 1997). Some of the invertebrates found within the bay include bay scallop, bay squid, blue crab, brown shrimp, eastern oyster, grass shrimp, and pink shrimp, as well as various species of marine worms and amphipods etc. (FDNR 1991; NOAA 1997). Within the bay "hard" habitats such as piers, docks, seawalls, and rock jetties also contain tropical species such as cocoa damsels, angelfishes, parrotfishes, spadefishes, and butterfly fishes. Wrasses, groupers, and snappers are also found along these hard substrates (FDNR 1991).

In and around St. Andrews Bay a large number of bird species occur. Many are migratory and are protected by the Migratory Bird Treaty Act (MBTA). Species that may occur in the vicinity of the marina include species of herons, egrets, gulls, and terns.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Bay County, Florida 31. Table 12-49 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

Table 12-49. Summary of Potentially Affected Species/Critical Habitats

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle, Hawksbill turtle, Kemp's ridley turtle; Leatherback turtle, Loggerhead turtle	No nesting habitat is present in any of the project areas; therefore no impacts from construction are anticipated. Sea turtles may nest in areas that boaters may access from these locations; therefore, visitors could disrupt nesting or hatching. The Trustees expect the conservation measures, including educational tools, will minimize impacts to sea turtles and their terrestrial habitats to an insignificant and discountable level. The main risk to sea turtles during execution of this project would come from boat collisions during in-water construction activity which could result in harm or mortality. Consultation will be initiated with NMFS to address this risk as this agency has jurisdiction to review impacts to sea turtles in the estuarine and marine environments.
West Indian manatee	Bay county is not part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the action areas. The main risk to manatees during execution of this project would come from noise during construction and boat collisions during use of ramps which could result in harm or mortality.The Trustees expect conservation measures and educational tools to minimize impacts to manatees (including those from noise) to an insignificant and discountable level.
Piping plover and red knot Piping plover critical habitat	The main risk to piping plovers and red knot is from human disturbance while resting and foraging in habitats adjacent to marine work areas and from human disturbance if boaters choose to visit nearby islands. The proposed project could result in short term increases in noise which could startle individuals and direct disturbance. The proposed project will not result in any changes to shoreline habitats where either species is likely to forage or rest. Educational signage will be posted at all ramps reminding visitors of nearby trust resources and any protective measures that may be necessary when visiting nearby islands. This signage will be developed in coordination with FWC and the Panama City Ecological Services Field Office. Piping plover critical habitat is not designated in the project area but is nearby (where visitors may access it via these ramps) on Shell Island. The primary constituent elements (PCEs) of wintering piping plover critical habitat include: 1) Intertidal flats with sand or mud flats (or both) with no or sparse emergent vegetation. 2) Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting piping plovers. Such sites may have debris, detritus, or microtopographic relief (less than 50 cm above substrate surface) offering refuge from high winds and cold weather. 3) Important components of the beach/dune ecosystem include surf-cast algae, sparsely vegetated back beach and salterns, spits, and washover areas.

[31] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
	4) Washover areas are broad, unvegetated zones, with little or no topographic relief, that are formed and maintained by the action of hurricanes, storm surge, or other extreme wave action. Project construction will not adversely modify or destroy critical habitat for piping plover because the construction work will not be taking place in any of the habitats listed above. Visitation of nearby area will not alter any of the PCEs or result in adverse modification or destruction of critical habitat.
Choctawhatchee beach mouse Choctawhatchee beach mouse critical habitat	Neither the Choctawhatchee beach mouse nor its critical habitat occurs within the project areas. Therefore, construction activities will not affect this species or its critical habitat. However, both the mouse and its critical habitat occur on Shell Island and Panama City Beach which could be accessed by visitors using the improved ramps. Mice or critical habitat could be disturbed if visitors travel to these areas from the ramps. Conservation measures are expected to minimize the risk of disturbance such that impacts are insignificant and discountable. Primary constituent elements(PCEs) for Choctawhatchee beach mouse critical habitat are: 1) A contiguous mosaic of primary, secondary scrub vegetation, and dune structure, with a balanced level of competition and predation and few or no competitive or predaceous nonnative species present, that collectively provide foraging opportunities, cover, and burrow sites; 2) Primary and secondary dunes, generally dominated by sea oats that, despite occasional temporary impacts and reconfiguration from tropical storms and hurricanes, provide abundant food resources, burrow sites, and protection from predators; 3) Scrub dunes, generally dominated by scrub oaks, that provide food resources and burrow sites, and provide elevated refugia during and after intense flooding due to rainfall and/or hurricane induced storm surge; 4) Functional, unobstructed habitat connections that facilitate genetic exchange, dispersal, natural exploratory movements, and recolonization of locally extirpated areas; and 5) A natural light regime within the coastal dune ecosystem, compatible with the nocturnal activity of beach mice, necessary for normal behavior, growth and viability of all life stages. Project construction will not adversely modify or destroy critical habitat for the Choctawhatchee beach mouse because the construction work will not be taking place in any of the habitats listed above. Conservation measures are expected to minimize impacts to PCEs such that no adverse modification or destruction of critical habitat occurs from visitor use.
Gulf sturgeon	NMFS is providing consultation for Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon will not be considered in the consultation with the USFWS.

In addition to the protected species managed by USFWS, the Trustees reviewed the proposed projects and associated actions for potential impacts to the following protected species (status indicated) and their associated critical habitat, if appropriate, managed by NMFS:

- Gulf Sturgeon, *Acipenser oxyrinchus desotoi*, Threatened
- Smalltooth Sawfish, *Pristis pectinata,* Endangered
- Green Sea Turtle, *Chelonia mydas*, Endangered
- Loggerhead Sea Turtle, *Caretta caretta*, Threatened

- Hawksbill Sea Turtle, *Eretmochelys imbricata*, Endangered
- Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
- Kemp's Ridley Sea Turtle, *Lepidochelys kempii*, Endangered

Additional information on some of these species is provided below.

Sea turtles:
There are five species of sea turtles that are found within the Gulf of Mexico: green sea turtle, hawksbill sea turtle, loggerhead sea turtle, Kemp's ridley sea turtle, and leatherback sea turtle. All five species of sea turtles found in the Gulf of Mexico are listed under the ESA. The Gulf populations of green (breeding populations in Florida), hawksbill, Kemp's ridley, and leatherback sea turtles are listed as endangered. Loggerhead (northwest Atlantic distinct population segment) and green (except the Florida breeding population) sea turtles are listed as threatened.

Sea turtles in the Gulf (with the exception of the leatherback turtle) have a life history cycle where hatchlings develop in open ocean areas (e.g., continental shelf) and juvenile and adult turtles move landward and inhabit coastal areas. Sea turtles nest on low and high energy ocean beaches and on sandy beaches in some estuarine areas. Immediately after hatchlings emerge from the nest, they begin a period of frenzied activity. During this active period, hatchlings move from their nest to the surf, swim, and are swept through the surf zone, and continue swimming away from land for up to several days (NOAA 2009a). Once hatchling turtles reach the juvenile stage, they move to nearshore coastal areas to forage. As adults, they utilize many of the same nearshore habitats as during the juvenile developmental stage. Sea turtles utilize resources in coral reefs, shallow water habitat (including areas of seagrasses), and areas with rocky bottoms.

All five species of sea turtles are migratory and thus have a wide geographic range. While there are no beaches in the vicinity of the proposed project that could accommodate sea turtle nesting, the species could occur in the open waters of St. Andrews Bay near the marina.

West Indian Manatee:
The West Indian Manatee is designated as endangered under the ESA and depleted under the Marine Mammal Protection Act (16 United States Code [U.S.C.] 1361 et seq.). In the Gulf Coast geographic area manatees are divided into two regional management units: the northwest and the southwest regional management units. Each regional unit is composed of individuals that tend to return to the same network of warmwater refuges each winter and have similar non-winter distribution patterns (FWC 2007). In addition, Florida enacted the Manatee Sanctuary Act in 1978 and declares the entire State of Florida to be a manatee "refuge and sanctuary" (FWC 2007).The FWC has developed a Florida Manatee Management Plan to provide a framework for conserving and managing manatees in Florida (FWC 2007). While Bay County is not one of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (USDOI 2011), they could be present in the open waters of St. Andrews Bay in the vicinity of the marina.

The main threat to the manatee is increased boat traffic and other accidents associated with the expanding development in Florida. Manateesinhabitboth salt and fresh water and can be found in shallow (5 feet to usually <20 feet), slow-moving rivers, estuaries, saltwater bays, canals, and coastal areas throughout their range where they feed on seagrass and other aquatic vegetation such as hydrilla and water lettuce.

Gulf Sturgeon and its Critical Habitat:

The NMFS and USFWS listed the Gulf sturgeon as a threatened speciesonSeptember30, 1991. The Gulf sturgeon, also known asthe Gulf of Mexico sturgeon, is a subspecies of the Atlantic sturgeon. Adults are 71-95 inches in length, with adult females larger than adult males. Adult fish are bottom feeders, eating primarily invertebrates, including brachiopods, insect larvae, mollusks, worms and crustaceans. The Gulf sturgeon is an anadromous fish that migrates from salt water into coastal rivers during the warmer months to spawn. Historically, the Gulf sturgeon occurred from the Pearl River to Charlotte Harbor, Florida. It still occurs, at least occasionally, throughout this range, but in greatly reduced numbers.River systems where the Gulf sturgeon are known to be viable today include the Mississippi, Pearl, Escambia, Yellow, Choctawhatchee, Apalachicola,andSwanneeRivers,andpossibly others. TheGulf sturgeon often stays in the Gulf of Mexico and its estuaries and bays in cooler months (NOAA 2013). Most adult feeding takes place in the Gulf of Mexico and its estuaries. Telemetry data in the Gulf of Mexico usually locate sturgeon in depths of 6 m (19.8 feet) or less. The fish return to breed in the river systemin which they hatched. Spawning occurs in areas of deeper water with clean (rock and rubble) bottoms. The eggs are sticky and adhere in clumps to snags, outcroppings, or other clean surfaces. Sexual maturity is reached between the ages of 8 and 12 years for females and 7 and 10 years for males. The Gulf sturgeon historically was threatened because of overfishing and then by habitat loss due to construction of water control structures, dredging, groundwater extraction, and flow alterations.

The USFWS and NMFS designated critical habitat essential to the conservation of the Gulf sturgeon. In accordance with regulations, critical habitat determinations were based on the best scientific data available for those physical and biological features essential to the conservation of the species. NearshorewaterswithinonenauticalmileofthemainlandfromPensacolaPasstoApalachicolaBayand thePerdidoKeyareaandtheareanorthofSantaRosaIslandweredesignatedascriticalhabitat,asthey arebelievedtobeimportantmigratorypathwaysbetweenPensacolaBayandtheGulfofMexicofor winter feedingandgeneticexchange(DOI and DOC 2003). St. Andrews Bay is not a part of the critical habitat designation (Figure 12-50).

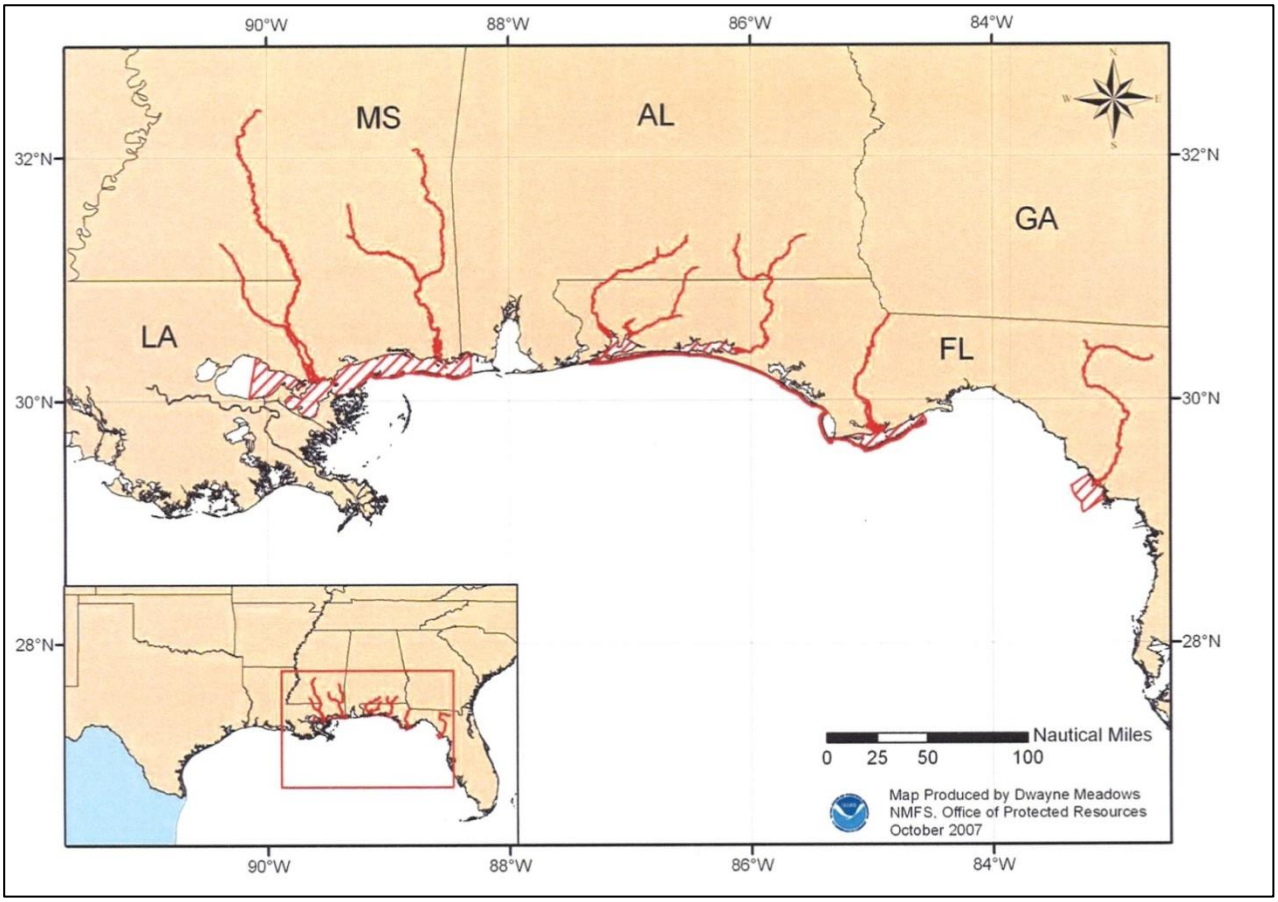

Figure 12-50. Gulf Sturgeon Critical Habitat.

Smalltooth Sawfish:

Thes malltooth sawfish is federally listed as an endangered species. Formerly common from Texas to North Carolina, its current distribution is mainly restricted to South Florida and the Keys; adults are uncommon in the Florida panhandle (NOAA2009b). Juveniles in habit shallow coastal waters, especially shallowmud banks and mangrove habitats. Very few juveniles have been documented in areas north of the current range of mangroves (i.e., north of 29 N latitude). Adults are found with juveniles but also in deeper water habitat (NOAA2009b). The decline of this species is mainly attributed to mortality as by catch in commercial and sport fisheries. The current range of this species has contracted to the peninsula of Florida, though smalltooth sawfish are common only in the Everglades region at the southern tip of the state.

Essential Fish Habitat

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. The EFH within the project area

include emergent wetlands, mud substrate, and estuarine water columns for species of fish, such as red drum, brown shrimp, pink shrimp, and white shrimp. There are no marine components of EFH in the vicinity of the project site.

Table 12-50 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the Panama City Marina site and St. Andrew's Bay.

Table 12-50. Federally managed fisheries with designated Essential Fish Habitat (EFH) in the proposed project area.

EFH Category	Species
Atlantic Highly Migratory Species	
	Atlantic Sharpnose Shark-Neonate
	Blacktip Shark-Adult
	Blacktip Shark-Juvenile
	Blacktip Shark-Neonate
	Bonnethead Shark-Juvenile
	Bonnethead Shark-Neonate
	Bull Shark-Juvenile
	Nurse Shark-Juvenile
	Sandbar Shark-Adult
	Scalloped Hammerhead Shark-Juvenile
	Scalloped Hammerhead Shark-Neonate
	Spinner Shark-Juvenile
	Spinner Shark-Neonate
	Tiger Shark-Juvenile
	Tiger Shark-Neonate
Coastal Migratory Pelagics of the Gulf of Mexico AND South Atlantic	
	Spanish Mackerel
	Cobia
	King Mackerel
Gulf of Mexico Red Drum	
	Red Drum
Gulf of Mexico Shrimp	
	Pink Shrimp
	White Shrimp
	Brown Shrimp
Reef Fish Resources of the Gulf of Mexico	
	Lane Snapper
	Lesser Amberjack
	Mutton Snapper
	Nassau Grouper
	Queen Snapper
	Red Grouper
	Red Snapper
	Scamp
	Silk Snapper
	Snowy Grouper
	Speckled Hind
	Tilefish
	Vermilion Snapper
	Warsaw Grouper
	Wenchman
	Yellowedge Grouper
	Yellowfin Grouper

EFH Category	Species
	Yellowmouth Grouper
	Almaco Jack
	Banded Rudderfish
	Black Grouper
	Blackfin Snapper
	Blueline Tilefish
	Cubera Snapper
	Gag
	Goldface Tilefish
	Gray (Mangrove) Snapper
	Gray Triggerfish
	Greater Amberjack
	Hogfish

Bald Eagles:

The closest recorded active nesting bald eagle sites are approximately 3 miles from the project site.The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008).

Migratory Birds

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-51 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-51. Potential project impacts to different migratory bird groups

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Shorebirds	Foraging, feeding, resting, nesting	At the project sites, shorebirds likely forage and rest and could be locally and temporally impacted during construction. Shorebirds nest, forage, feed, and rest on Shell Island. As such, they may be impacted by visitors traveling form the project sites to Shell Island.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Resting, roosting, nesting	Seabirds forage in water and rest/roost in terrestrial habitats at Shell Island. However, the level of project activity could startle resting birds. Because activities will occur during the day roosting should not be impacted.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized inTable 12-52.

Table 12-52. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Shorebirds	In general, the Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting if disturbed during construction. Shorebirds are not expected to be nesting in the area of construction but use nearby areas that could be visited by people using the ramps. Educational signage will be posted at each ramp and pier to prevent impacts to migratory birds at Shell Island and other locations. Signs will be developed in coordination with FWC and the Panama City Ecological Services Field Office to detail conservation measures to protect shorebirds in nearby habitats. At the Oakshore Drive location, there is an area with shallow sandbars off the point where shorebirds commonly feed. Design of this pier will be coordinated with FWC to minimize impacts and changes to the point and sand bars to the maximum extent practicable.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity, which they will have. Roosting should not be impacted because the project will occur during daylight hours only. Nesting should not be impacted because the project will not occur near nesting habitats. Educational signage will be posted at each ramp and pier. Signs will be developed in coordination with FWC and the Panama City Ecological Services Field Office to detail conservation measures to protect seabirds while visitors may be fishing. Protective measures will also be implemented in the design phase and include the use of pointy, white, piling caps and containers for waste fishing gear.

Environmental Consequences

As noted above, there is no seagrass located within the footprint of the proposed projects, so there would be no direct impacts. Potential indirect impacts could arise from in-water construction work increasing turbidity, and thus reducing sunlight reaching the seagrass, or resuspended sediments settling out onto the seagrass and either burying or smoothing it. The only patch of seagrass in proximity to the project area is the small discontinuous patch to the southeast of the boat ramp on the other side of the bulkhead. Given its location and the fact that in-water BMPs, such as sediment curtains, would be employed to contain resuspended sediments the proposed project would have no effect on seagrass.

During construction of the fishing pier, staging docks, and boat ramp there could be local, short-term minor adverse impacts on both fish and macroinvertebrate species, including shellfish, in the vicinity of the marina. Fish species could be temporarily displaced from habitat in the area of construction due to noise and vibration impacts. Feeding success could also be impacted through increased turbidity; however, most species are highly mobile and would move out of the area to neighboring waters where feeding would be less problematic. Some mortality of sedentary and less mobile species and life stages could occur. Placement of the pilings in the substrate could crush species that cannot flee the area and resuspended sediments could cause problems with feeding for filter feeders such as shell fish, or as the sediments settle out of the water column they could bury sedentary species. However, given the small aerial extent of the impacted area compared to the available habitat within St. Andrews Bay, the overall

impact on species would be minor. Additionally, once construction was complete, fish and invertebrates species would be expected to readily recolonize the area. Some beneficial impacts to species would also occur. Piers and pilings provide a hard substrate habitat that otherwise would not exist in the area. As noted under the affected environment, such hard substrates provide habitat for species such cocoa damsels, angelfishes, parrotfishes, spadefishes, and butterfly fishes. Wrasses, groupers, and snappers also can be found among this type of habitat as well (FDNR 1991). As part of the project, information would be made available at the entrance to the pier on best practices on catch and release and other fishing practices (e.g., placing cut line and hooks for disposal in trash bins) designed to limit potential adverse impacts to fish and other marine species. Trash receptacles would also be placed on the pier to help reposted on the fishing pier to help anglers comply with the recommendations as well as keep other trash out of the water that could otherwise cause adverse impacts on species.

Protected Species

The USFWS reviewed the proposedOakshore Drive Pier project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA. On March 24, 2014, the review of potential impacts to species managed by USFWS was completed (McClain, 2014). The USFWS concurred with the Trustees' determination that the proposed project may affect, but is not likely to adversely affect, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead), Choctawhatchee beach mouse, West Indian manatee, piping plover, or red knot (if listed). The USFWS also concurred with the Trustees' determination that the project will not adversely modify or destroy critical habitat for the Choctawhatchee beach mouse or piping plover.

Consultation of potential impacts on protected species managed by NMFS from this project was initiated on April 9, 2014. NMFS Protected Resources Division reviewed the Biological Assessment and determined that there was a potential for adverse impacts to threatened and endangered species. NFMS Protected Resources Division is currently preparing a Biological Opinion that evaluates the potential effects this project may have on gulf sturgeon and sea turtles.

The procedures contained within the ESA consultation for West Indian manatee[32] constitute appropriate and responsible steps to promote compliance with MMPA prohibitions on take by requiring the proposed activities to achieve a standard of No Effect or May Affect, Not Likely to Adversely Affect for manatees. As such, the Trustees do not anticipate any take, incidental or otherwise, under the MMPA for West Indian manatee due to implementation the proposed project. The Trustees are continuing to coordinate with NMFS Office of Protected Resources to evaluate the potential and magnitude of take or harassment of marine mammals under NMFS jurisdiction.

Bald Eagle and Migratory Birds:

There are no bald eagle nests within 660 feet of the project site and there is no suitable nesting habitat at the site. Therefore, there would be no impacts on bald eagles.At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Implementing of the Service's most recent version of the Standard Manatee Conditions for In-water Work (USFWS, 2011)

Essential Fish Habitat (EFH)

The proposed work in the EFH area will take place adjacent to the existing Panama City Marina. A small area of sub tidal habitat would be converted with the placing of pilings for the new pier, however, this area would be a relatively small compared with the surrounding habitat and would not completely convert or block habitat in the area where the pier is constructed. As a result, disturbance to species will be limited in their spatial extent, minor in scope, and brief in duration. All appropriate BMPs will be followed to minimize the potential impacts of construction activities on EFH and species in the area. During construction, adjacent areas with equivalent or better habitat will be available and undisturbed and organisms could move away from disturbed areas. Therefore, the project is not likely to adversely affect EFH.

On April 4, 2014 NMFS completed its evaluation of potential EFH impacts and concurred with the Trustees' conclusions that the project construction is not likely to adversely affect EFH and any disturbance to species will be minor and brief (Fay, 2014).

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.85.5.4 Human Uses and Socioeconomics

12.85.5.4.1 Socioeconomics and Environmental Justice

Affected Resources

Bay County is located in the extreme northwestern corner of the State of Florida. The County encompasses 1,032.2 square miles, of which 758.5 square miles is land and 274.7 square miles is water

area. The population of Bay County is currently estimated at 169,392 (FEDR 2010). Table 12-53 provides a brief demographic overview of Bay County, Florida.

Environmental Consequences

Constructing a new fishing pier would provide additional recreational fishing opportunities for the public at the Panama City Marina as well as within Panama City providing long-term beneficial impacts. The extent to which the new structure would support new trips to the marina for recreational fishing is difficult to quantify and would be monitored by Panama City staff for one year after construction to help determine the level of public use of the new facility. Improving the poorly functioning boat ramp and staging docks would likely improve the experience for those using the facilities in the future, although it is not expected to increase the number of users of the marina.

The proposed project is expected to have short-term, beneficial impacts on socioeconomics for the project area and adjacent areas, based on a slight increase in the workforce required to perform construction work on the fishing pier, staging docks, and boat ramp. The exact number of person to be employed by this project is undetermined, but is estimated to be approximately 25 persons.

Table 12-53. Demographic information for Bay County, Florida.

FLORIDA OFFICE OF ECONOMIC DEVELOPMENT	BAY COUNTY
Population, percent change, April 1, 2010 to April 1, 2012	0.3%
Population, 2010	168,852
Persons under 5 years, percent, 2010	6.3%
Persons under 18 years, percent, 2010	22.0%
Persons 65 years and over, percent, 2010	14.5%
Female persons, percent, 2010	50.5%
White alone, percent, 2010 (a)	82.2%
Black or African American alone, percent, 2010 (a)	10.8%
American Indian and Alaska Native alone, percent, 2012 (a)	0.9%
Asian alone, percent, 2012 (a)	0.7%
Native Hawaiian and Other Pacific Islander alone, percent, 2012 (a)	0.1%
Two or More Races, percent, 2010	3.1%
Hispanic or Latino, percent, 2010 (b)	4.8%
White alone, not Hispanic or Latino, percent, 2010	79.2%
Persons per household	2.0
Median household income, 2009	$44,357
Persons below poverty level, percent, 2009	13.0%

12.85.5.4.2 Cultural Resources

Affected Resources

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project has not identified the presence of a historic property within the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.85.5.4.3 Infrastructure

Affected Resources

The Panama City Marina is located in the Downtown District of the city with commercial, industrial, and residential development nearby. There is a variety of infrastructure that includes shoreline protection, roads, and parks. Several main roads service the marina with Harrison Avenue terminating within the marina itself. The marina itself has approximately 200 vehicle parking spaces and 240 boat slips along with one boat ramp. On the water side of the marina, St. Andrews Bay is part of the Gulf intracoastal waterway which transits down the axis of the bay in front of the marina.

Environmental Consequences

The majority of the work for the proposed project would be conducted from the water, though trucks would be used to stage material, likely in the marina parking lot for the project. The surrounding road network would be expected to be able to handle the minimal truck traffic as well as the influx of approximately 25 workers for the project. With the likely staging of material in the marina parking lot, some parking spaces would be lost for use temporarily during the construction period. But with 200 parking spaces the adverse impact would be expected to be short-term and minor. Use of the boat ramp providing access to St. Andrews Bay would be interrupted during its removal and construction of the new boat ramp. To minimize impacts on the use of the boat ramp, construction activities on the boat ramp would occur outside of the fishing season which occurs from April through September (Pearce 2013).

For the fishing pier, in-water construction would occur outside of the intracoastal waterway and therefore would not impact boat movement within this waterway. Overall, impacts to infrastructure from the proposed project would be short-term minor and adverse.

12.85.5.4.4 Land and Marine Management

Affected Resources

The Panama City Marina is owned by the City of Panama City and is located in the downtown zoning district of the city. The purpose of this zoning district is to provide for the vitality of downtown Panama City as a safe community of business, residential, commercial, cultural, government, public institutional, light industrial, and entertainment uses, including public green spaces and recreational access to the waterfront, while protecting the environment and enhancing the quality of life (City of Panama City 2012).

The project is located in a coastal area regulated by the federal Coastal Zone Management Act (CZMA) of 1972 and the Florida Coastal Management Act of 1978.

Environmental Consequences

The proposed project would increase and improve the public's access to the waterfront area of the City of Panama City and would therefore be consistent with the City's Land Development Regulations for the Downtown District; providing long-term beneficial impacts. Some minor adverse impacts would result from the construction of the boat ramp due to the fact that it would not be available for use during construction activities. However, these short-term impacts would be minimized by conducting construction activities outside of the April – September fishing season, and by the relatively short construction period which is estimated to be less than 6 months.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS. The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process.

12.85.5.5 Aesthetics and Visual Resources

Affected Resources

The Panama City Marina is located in Panama City. The surrounding area is heavily developed with commercial, industrial, and residential properties. Views from the marina offer open vistas of St. Andrews Bay.

Environmental Consequences

Construction of a fishing pier and replacement of staging docks and the boat ramp would be consistent with the features of the existing marina and would not be in conflict with the surrounding developed area. Therefore, the proposed project would have no effect on aesthetics or visual resources.

12.85.5.5.1 Tourism and Recreational Use

Affected Resources

The project site is currently a recreational user destination. Through its boat ramp and 240 boat slips, the marina provides public access to St. Andrews Bay and the surrounding waters, including the Gulf of Mexico.

Environmental Consequences

The project would have long-term beneficial impacts on tourist and recreational user enjoyment of the site. The project would replace the existing poorly functioning boat ramp and staging docks improving the safety of these facilities. Construction of the fishing pier would provide additional recreational fishing opportunities for the public in Panama City and Bay County. The fishing pier and staging docks would also be handicap accessible improving the safety and accessibility of the site structures. Some minor impacts would occur from the inability of the public to use the boat ramp during construction of the new boat ramp. However, these impacts would be short-term as they would be limited to the duration of the boat ramp construction period which is estimated to last less than 6 months. Impacts would also be minimized by conducting construction activities for the boat ramp outside of the fishing season (April – September) when the boat ramp receives heavy use (Pearce 2013).

12.85.5.5.2 Public Health and Safety and Shoreline Protection

Affected Resources

While the boat ramp at the Panama City Marina is poorly functioning, public health and safety and shoreline protection at the site are of high quality. The marina is owned by the City of Panama City and is maintained as part of the city's public facilities.

Environmental Consequences

The existing boat ramp at the Panama City Marina is poorly functioning and in need of repair. Thus, replacement of the boat ramp and staging docks at the marina would improve their functionality and the safety of those using them, providing long-term beneficial impacts. Design of the fishing pier would include necessary lighting and handrails ensuring the safety of those that use it. The facilities would also be properly maintained by Panama City as part of its regular public facilities maintenance activities. During construction activities, staging and construction areas would be fenced off,BMPs would be employed to ensure public safety both on land and on the water, as well as the safety of the construction workers.

12.85.6 Summary and Next Steps

The Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks project would provide additional recreational fishing opportunities for the public in Panama City in Bay County. The proposed improvements include constructing a 400-foot long pier, replacing a poorly functioning boat ramp, and constructing new staging docks associated with the boat ramp at the Panama City Marina. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase recreational boating and fishing opportunities by improving the city's marina. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

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12.86 Wakulla Mashes Sands Park Improvements: Project Description

12.86.1 Project Summary

The proposed Wakulla County Mashes Sands Park Improvements project would improve recreation areas at the Wakulla County Mashes Sands Park. The proposed improvements include constructing observation platforms, boardwalks, and walking paths, improving the boat ramp area, and picnic areas, renovating the parking area, and the restroom facility, and constructing a canoe/kayak launch site. The total estimated cost of the project is $1,500,000.

12.86.2 Background and Project Description

The Trustees propose to provide access to a range of year-round nature-based recreation activities for visitors to the Mashes Sands Beach area (see

Figure 12-51 for general project location). Mashes Sands is the collective name for a complex of low dunes, sandy beach, and a shallow offshore flat of rippled, sandy shoals. It is surrounded by three bodies of water: Apalachee Bay, Dickerson Bay, and Ochlockonee Bay, offering both salt and fresh water access.

The objective of the Wakulla County Mashes Sands Park Improvement project is to enhance and/or increase recreational boating and beach use opportunitiesby improving the recreational opportunities at the park. The proposed work includes constructing observation platforms, boardwalks, and walking paths, improving the boat ramp area, and picnic areas, renovating the parking area, and the restroom facility, and constructing a canoe/kayak launch site. The parking areas and bathrooms are needed to enhance and/or increase access to the park, which will make the public's recreational boating and beach use opportunities more accessible, functional or fully utilized.

12.86.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposedWakulla County Mashes Sands Park Improvements project is intended to enhance and/or increase recreational boating and beach use opportunities by improving the recreational opportunities at the park. This project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill. Thus, the nexus to resources injured by the Spill is clear. See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. Florida counties have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of the Framework Agreement. Additionally, the cost estimates are based on similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmentallaws and regulations, as described in section 12.86, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.86 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Figure 12-51. Location of Wakulla County Mashes Sands Park Improvements Project.

Many recreational use projects, including ones similar to this project, have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com). In addition to meeting the criteria for the Framework Agreement and OPA, the Wakulla County Mashes Sands Park Improvements project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area in which boom was deployed and that was impacted by response and SCAT activities for the Spill.

12.86.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented. Monitoring has been designed around the project goals and objectives. The project objective is to enhance and/or increase recreational boating and beach use opportunities by improving the recreational opportunities at the park. Performance monitoring will evaluate: 1) the construction of the observation platforms; 2) the construction of the boardwalks; 3) the construction of the walking paths; 4) the improvements to the boat ramp area; 5) the improvements to the picnic areas, 6) the renovation of the parking area; 7) the renovation of the restroom facility; and 8) the construction of a canoe/kayak launch site. Specific performance criteria include: 1) completion of the construction as

designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the park is open and available.

Long-term monitoring and maintenance of the improved facilities will be completed by Wakulla County as part of their regular public facilities maintenance activities. Funding for this post-construction maintenance is not included in the previously provided value for the project cost and will be accomplished by Wakulla County.

During the one year construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users.Following the one year construction performance monitoring period, Wakulla County will monitor the recreational use activity at the site. Wakulla County staff will visit the site twice a year to count the number of users at the park. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

The State of Florida Trustees and the Department of the Interior recognize the need to evaluate the effectiveness of conservation measures designed to avoid or minimize impacts to sensitive species or their habitats. To assess the public's awareness of the educational signage intended to minimize impacts of use associated with the improved facilities, readers will be invited to take an online survey accessed via a QR code on the sign. The Florida Trustees and DOI will determine the adequacy of this method of assessing public awareness six months after the completion of construction. If the online surveying is insufficient, concurrent with the twice annual performance monitoring, and performed by the same party, a survey will be taken of a sample of recreational users at the project location.

12.86.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $3,000,000expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[33]

12.86.6 Costs

The total estimated cost to implement this project is $1,500,000. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[33] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.87 Wakulla Mashes Sands Park Improvements: Environmental Review

The Wakulla County Mashes Sands Park improvement project is intended to improve the quantity and quality of recreation opportunities at Mashes Sands Park.The proposed project would construct observation platforms, boardwalks, and walking paths at Mashes Sands Park to improve accessibility to park areas.Additional components include boat ramp area improvements, picnic areas, renovations to parking and the restroom facility, and a canoe/kayak launch site.

12.87.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP) entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the *Deepwater Horizon* Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf in advance of the completion of the injury assessment process. Early restoration is not intended to and does not fully address all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement, the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the Federal Register on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III Early Restoration Plan.This park renovation project in Wakulla County, Florida, was submitted as a restoration project on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and the Oil Pollution Act (OPA), the project meets Florida's criteria that Early Restoration projects occur in the eight-county Florida panhandle area that deployed boom and was impacted by the Spill.

Prior to the Spill, this park was used widely by boaters, fisherman, and people using the beaches, but as a result of the Spill, much of those users went away. It is expected that the improvements to park amenities would bring those users back and that an enhancement and/or increase in ecotourism would result from the addition of a new boardwalk, observation platform, and canoe/kayak launch site.

12.87.2 Project Location

The proposed project is located in the southern portion of Wakulla County, Florida, approximately 6 miles south of the city of Panacea.Mashes Sands Park is situated on the tip of a small peninsula overlooking the Gulf of Mexico bordered by Ochlockonee Bay to the south and Apalachee Bay to the north and east with lands that extend inland to the West and include a boat launch and park facilities along a canal (

Figure 12-52).

Figure 12-52. Mashes Sands Park location, Panacea, Wakulla County, Florida.

12.87.3 Construction and Installation

The proposed Wakulla County Mashes Sands Park Improvements project would improve recreation areas at the Wakulla County Mashes Sands Park. The proposed improvements include constructing observation platforms, boardwalks, and walking paths; improving the boat ramp area and adjacent dock and picnic areas; renovating the parking area and the restroom facility; and constructing a canoe/kayak launch site. Figure 12-51 defines the project area for this work. The in-water aspect of this project would be limited to the work associated with the any renovation of the existing boat ramp and associated dock. This activity would take place in the southern half of the project area in Figure 12-51.

Detailed construction methods and plans for the entire have not yet been fully developed and would be subject to the final design and contractor approach. Proposed construction includes upland observation platforms, boardwalks, and walking paths. Additional components include boat ramp area improvements such as picnic areas, renovations to parking and the restroom facility, and development of a canoe/kayak launch site. A range of hand tools and heavy construction equipment would be used to

complete this project. Activities include grading, digging holes to place pilings or foundations for new structures, and removing old or damaged material from existing structures.

In upland areas without any connection to the water, pilings would need to be placed for the upland observation platforms and boardwalks and, depending on the nature of repairs required to picnic areas, pilings may be needed in those areas as well. Pilings would most likely be placed by mechanically auguring holes to place pre-formed pilings or to place forms that would be filled with pumped concrete to produce new pilings. The size and depth of the pilings would be approximately 1 to 2 feet in diameter, but the final size would depend on the engineering design requirements.

Construction materials would need to be staged in the project area; this would likely be accomplished in existing disturbed areas (e.g., parking lot areas). Construction Best Management Practices (BMPs) are as follows:

- All construction would be performed in accordance with all local, state, and federal requirements and all requirements of permits obtained so as to protect the surrounding vegetation and natural condition.
- The contractor would submit plan for control of surface water runoff in accordance with all local, state, and federal requirements and all requirements of permits obtained so as to protect the surrounding vegetation and natural condition (discussed in greater detail below).
- All construction adjacent to open water would be separated and confined by appropriate siltation screens and turbidity barriers so as to protect the quality of such open water.
- Upon completion of construction, the site would be cleared of all construction materials and restored to its natural state as shown on the drawings.
- The contractor would be responsible for assuring compliance with all permit requirements.

Based on a site visit conducted on January 10, 2014 with staff from NOAA, DOI and Florida DEP, it appears that the canoe/kayak launch area could be developed with no required in-water work. This is based on the fact that vehicles already have access to the location and there is a gently sloping access to the waterway that would be suitable for canoe/kayak launching. Based on the site visit, the main improvement needed at this area would be the placement of some sort of barrier that would prevent a truck with a trailer from backing to the water's edge to facilitate launching. This could be achieve with the placement of a large rock or rocks or possibly sinking spaced posts at the end of the road. Because the area can be prone to flooding from tides/storms and the width of the waterway at the road's end the construction of significant launching infrastructure is not necessary or desirable.
Renovation of the boat ramp, if undertaken, would involve excavating and replacing the existing ramp surface. In general, the construction of a boat ramp can be summarized in terms of executing a number of specific tasks and subtasks including:

Task 1. Site Preparation

a. Prior to beginning any waterward work at the boat ramp site the project area needs to be surveyed and marked. Turbidity curtains are then installed to encapsulate the work area and other erosion control methods are put in place on the landward side of the project (e.g., placement of hay bales) to prevent erosion into the water from equipment movement and any work being performed on the upland areas.

Task 2. Ramp Construction

a. The area for the ramp is surveyed in and marked by stake or pole (typically small diameter 2" or less PVC).
b. A coffer or bladder dam is installed and the water within the dam, between the waterward extent of the ramp and the land, is pumped out to upland storage ponds or run through a filter system to remove any sediment in the water before returning it to the receiving waterbody. The work area is kept dry by use of dewater pumps (ground water to be pumped is first sampled and tested for water quality) and disposed of in the same manner as the pumped surface water. This dewatering operation is run continuously throughout the construction of the ramps. Once the ramps are completed the dewatering pumps are shut down and the dams are removed.
c. Construction of the ramps begins once the area is sufficiently dry to remove unsuitable soils, if necessary, and replaced with suitable soil. This soil is then compacted to specification. Then the base material for the ramp is placed, usually a rock material. After placement and compaction of the base the ramp is formed, reinforcing steel placed and then the concrete poured and finished. Once curing of the concrete is complete the forms are removed and the coffer or bladder dams are removed.

Task 3. Monitoring

a. Every day, before the start of construction activities, the turbidity screen is checked and repaired if necessary.
b. The foreman or other designated individual checks the area inside the screen and the screen itself to see if any protected species (manatees, dolphins, small tooth sawfish etc) have gotten trapped within the work area or in the screen. If so then appropriate (FWC) personnel are notified to request removal. No work is begun until the animal, fish or bird is removed.
c. During the work day the work area and area adjacent to the work are is monitored to make sure protected species have not ventured into the area. If so then work is stopped until the animal moves out of the area.
d. At the end of the day the area is checked for debris, sediment and possible spillage and these are properly removed and disposed of before shutting down the site.
e. If a storm is anticipated that might damage the turbidity screen it is removed and stored until the storm event has passed and seas have resided.

When work being constructed in water requires it to be performed in a dry environment a cofferdam or bladder dam is installed. These devices are often employed when building boat ramps where the forming, pouring, finishing and curing of the concrete ramps is required to be constructed in a dry

area. More often than not, along the coastal areas where tides and wave action occurs, a cofferdam is utilized. A coffer dam is most often constructed of welded steel sheet piles, whales and cross bracing. The sheet piles are usually jetted in to a set depth and then driven in the last 3-5 feet to provide a secure fitting. The sheet piling will usually encompass the entire work area being installed in a "U" shape with the ends of the system connected into the uplands. The cofferdam then provides a barrier to keep out water during the work of placing the ramp. Once the sheet piles are in place the surface water is pumped out to either upland constructed holding ponds or more often through a filtration system in order to remove any sediment which may be disturbed during the pumping operation.

To keep the work area dry throughout construction of the ramp a dewatering system will also be installed by the contractor to lower and keep water levels below any depth from which soils or sediment may need to be removed in order to provide a firm foundation for the ramp. Prior to starting the dewatering system, water quality tests will be performed to insure the suitability of discharging groundwater back into the receiving water body. If the groundwater is found to not meet water quality criteria for the receiving water body then further treatment may be required before it is released. If the ground water meets water quality standards then it will be filtered through the same system as the surface water. The dewatering system will be run 24 hours a day continously throughout the construction period required to install the water ward facilities, i.e. ramp. Once all work is completed the dewatering system is shut down and removed and then the sheet piles are removed as well. All coffer dam installation and removal is to be only performed by a qualified contractor thoroughly experienced in this type of work.

Use of a bladder dam follows a similar approach but is less intensive where the bottom is anchored in the sediment and then the dam creating the watertight barrier is created by inflating a durable bladder wall vs installing sheet piles. The less invasive nature of the bladder dam makes it more appealing for use in situations, like the Mashes Sands boat ramp where there is a limited amount of in-water work for a limited duration of time.

Installing a bladder dam consists of the following steps:

1) ***Laying out the bladder dam in the general area for installation.***

The bladder dam is constructed of two general pieces 1) an outer durable, abrasion and puncture resistant shell and 2) the buoyant inflatable bladder. Because the outer shell contains a weighted bottom section it can be laid out prior to inflation.

2) Preliminary securing of the bladder dam.

The bladder dam is secured to the bottom of the in-water work area using spikes/ties that are driven into the sediment to secure the weighted bottom of the dam to the sediment. These spikes are driven using hand tools (e.g., sledge hammer, hand-held post driver) using designated eyelets/rings in the outer shell.

3) Inflation of the bladder

Once initially secured the dam can be inflated to more firmly establish the seal with the bottom. Once the seal is established final adjustments can be made in terms of securing the bladder dam and then any residual flow into the work area is addressed with pumping.

4) Removal of the bladder dam

Once the project work requiring a dry area is complete the dam is removed by 1) deflating the bladder, 2) removing the securing stakes, and 3) physically removing the device from the work area.

The decision to use either a coffer dam or bladder dam will be made as part of the final construction plan following an inspection and evaluation of the conditions in the area of the canal around the boat ramp.

Work on the dock associated with the boat ramp would focus on incorporating changes to make the structure compliant with existing access guidelines (e.g., for the Americans with Disabilities Act). As part of this work it is possible that up to 20 pilings could need to be removed and replaced. If required, piling removal would be undertaken with shore based heavy equipment. Subsequent replacement pilings would be made of wood, be up to 8" in diameter and would be placed using a combination of water jetting, pushing, and mechanical auguring. While any dock renovations should be constructed within the existing footprint, as part of final design effort, a survey of submerged aquatic vegetation (SAV) in the area would be completed. Should the site assessment for the project identify SAV in the proposed project area, the conditions in the *Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat* (U.S. Army Corps of Engineers/National Marine Fisheries Service, 2001) would be implemented. Among other elements that would result should these guidelines need to be implemented, there would requirements that pilings be placed a minimum of 10 feet apart and there would be requirements for the height of the dock and spacing of decking materials.

During all in-water construction activity the conditions and guidelines of the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA, 2006) and the *Standard Manatee Conditions for In-Water Work* (USFWS, 2011) would be implemented and adhered to.

One of the critical elements of the effort to limit impacts associated with the project development, particularly with any parking lot improvements, will be the consideration of, review for, and ultimate implementation of stormwater management controls for the project. Although each project site will pose its own issues when developing the stormwater and sediment control plans for pre, during, and completion of construction plans there is a standard approach to preparing these designs characterized by the following steps, which are distinguished by their relationship to construction, that will be followed for this project:

1. <u>Development of Pre-construction or existing conditions plans w/erosion and sediment control(E&SC)features.</u> These pre-construction plans will illustrate what sediment control measures will be initially installed and their location in order to minimize impacts to receiving waterways when upland land disturbance activities begin. These plans will be based upon an

existing site survey delineating the project boundaries, site topography, topographic features (vegetation, soil types, impervious and pervious areas, water bodies (streams and ponds), wetlands, drainage channels, existing structures, drainage basins, flow patterns and major points where stormwater enters and exits the site. The survey should extend to at least 50 feet beyond the project site and contours should depict intervals of 0.5 to 2.0 feet. The pre-construction plans should also identify phases of construction and areas that will be disturbed along with the overall limits of construction or disturbance. Sensitive areas (e.g., locations of sensitive/protected flora and fauna, wetlands, excessive slopes and unsuitable soils) should also be identified. Taking all the above information from the survey into consideration the designer will designate the locations and describe the structural controls to be installed in order to minimize erosion and control sediment from reaching adjacent receiving waters and wetlands. The most important aspect of the pre-construction drawings is to identify where water flows through the project site and where critical discharge points are located. The nature and location of best management practices (BMP's) that will then be emplaced and incorporated prior to construction are determined from these drawings. BMP's commonly identified/used include: placing combinations of silt screens, hay bales, fiber logs, and temporary vegetation down gradient of areas to be disturbed. Other sediment and stormwater control options include installing sediment ponds or traps or diversion berms and conveyance channels to redirect runoff and sediment from receiving waters.

2. Development of During Construction grading plans. These plans may be incorporated with the pre-development plans when feasible for a simple site but otherwise will be developed for depicting E&SC measures to be employed during grading operations. As the project progresses through its various phases of construction it may be necessary to adjust the location of structural E&SC measures or to include additional ones. These plans will show areas for stockpiling top soils and other materials and how they are to be contained (silt fencing, berms etc.), equipment storage areas and refueling areas (if allowed) with protective measures to be employed such as containment berms or absorbent material for possible spills. These plans may also include final stormwater control structures such as retention/detention ponds. These plans will also include requirements for inspection and maintenance of the BMP's such as inspections and repair/replacement, if necessary, after every storm event. These plans will point out to the contractor critical containment contours to ensure that optimal treatment of runoff from the disturbed areas is realized and minimal impact occurs to receiving waters.

3. Final Grading or Construction Plans. These plans will show how the site is to look upon completion of construction, final grades, stormwater controls and final stabilization of disturbed lands. These plans will include final landscaping (sod, mulching, plants (native trees and shrubs), ditch or swale lining utilizing sod mats, ditch breaks etc., and slope stabilization. Final grades on all impervious areas such as parking, entry and exit drives will designed so as to reduce runoff velocity and direct runoff into drainage conveyance systems and finally into treatment ponds dry or wet type depending on groundwater depths where the majority of runoff is treated before being released into the receiving waters. The design capacity of the treatment ponds will be based upon SCS curves for the required design storm event. Release of stormwater from the

sites will be at pre-construction rates. Outlet controls BMP's may include rip rap installation where necessary to control erosion at exit points. Most boat ramp installations will also include the installation of trench drains at the top the ramps to capture runoff from the drive areas and divert it to treatment areas or pass it through a filter "sock". Projects that have sufficient budgets and suitable site conditions may also consider the placement of pervious concrete in lieu of asphalt or concrete driving surfaces. The final grading plans will describe when and where removal of BMP construction sediment control structures (silt fencing, diversion berms etc.) is to be done i.e. establishment of 70% of permanent vegetation. The final part of the stormwater management system is the development of the monitoring or maintenance plan which will describe the frequency of inspection (after every major storm, x's per year etc.) and maintenance (removing sediment from ponds and swales, cleaning or replacing sand filter beds, replacing sediment "sock" in trench drain) and what actions to take when the system has been reduced in efficiency or has failed.

The total in-water period of work with this project could be up to six months depending on the sequencing of work.

12.87.4 Operations and Maintenance

Operation and maintenance of the new and renovated facilities would be performed by Wakulla County staff.Monitoring would include construction monitoring and tracking visitor use numbers through park admission fees during the summer.

The State of Florida Trustees and the Department of the Interior recognize the need to evaluate the effectiveness of conservation measures designed to avoid or minimize impacts to sensitive species or their habitats. To assess the public's awareness of the educational signage intended to minimize impacts of use associated with the improved facilities, readers will be invited to take an online survey accessed via a QR code on the sign. The Florida Trustees and DOI will determine the adequacy of this method of assessing public awareness six months after the completion of construction. If the online surveying is insufficient, concurrent with the twice annual performance monitoring, and performed by the same party, a survey will be taken of a sample of recreational users at the project location.

12.87.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected environment and environmental consequences of the project.

12.87.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.87.5.2 Physical Environment

12.87.5.2.1 Geology and Substrates

Affected Resources

Geology

The Mashes Island peninsula and the entire Mashes Sands Park are made up of Holocene sediments, which in Florida occur near the present coastline at elevations generally less than 5 feet. The sediments include quartz sands, carbonate sands and muds, and organics (Florida Geological Survey 2001).

Soils

The Soil Survey for Wakulla County identifies the soils in the area of the park as "Bayvi, Isles, and Estero," "Quartzipsamments, dredged," "Water," and "Waters of the Gulf of Mexico" (U.S. Department of Agriculture 2013).

Bayvi, Isles, and Estero soils are frequently flooded soils that are nearly level (slopes 0% to 1%) and poorly drained.They typically occur in the tidal marsh areas of the Gulf Coast and are flooded daily by high tides.Bayvi soils have a dark brown mucky sand surface layer approximately 26 inches deep with sand underlying.Isles soils typically have a black sand surface approximately 9 inches thick with grayish brown sand subsurface to 35 inches.Estero soils have a dark gray muck about 4 inches thick with approximately 14 inches of dark brown sand below.The subsurface is represented by grayish brown sand to about 34 inches.

Quartzipsamments, dredged soils are nearly level and poorly drained with slopes commonly 0% to 1%.They are formed by fill material that has been reworked and shaped by earthmoving equipment.The surface layer is typically a light brownish gray sand about 7 inches thick, while the remaining underlying material is made up of sand with various colors and combinations of brown and gray to about 80 inches.

Environmental Consequences

A range of hand tools and heavy construction equipment would likely be used to complete this project. Likely activities include grading, digging holes to place pilings or foundations for new structures, and removing old or damaged material from existing structures. Adverse impacts to geology and substrates would be short term and minor.

12.87.5.2.2 Hydrology and Water Quality

Affected Resources

Hydrology

Northwest Florida has seven major watersheds, all of which have been identified as priorities under the Surface Water Management and Improvement (SWIM) program. Water quality protection is the underlying goal of SWIM, along with the preservation and restoration of natural systems and associated public uses and benefits (Northwest Florida Water Management District [NWFWMD] 2011). Mashes Sands Park marks the point where the St. Marks River and Apalachee Bay Watershed and the Ochlockonee River and Bay Watershed (both SWIM priority waterbodies) meet.

Apalachee Bay is located at the western extent of Florida's Big Bend coastline. Freshwater inputs into the estuary include the Wakulla, Wacissa, Aucilla, Enconfina, and Fenholloway Rivers. The bay is in direct contact with the Gulf of Mexico but also contains some smaller, more isolated embayments, including Ochlockonee, Dickson, and Oyster Bays.The region is characterized by limestone "karst" topography and includes the popular tourist/diving area of Wakulla Springs. The estuarine ecosystem begins just offshore in the shallow waters of the Apalachee Bay. Forested swamps are located throughout the region, a great deal of which is protected by the 275-km² St. Marks National Wildlife Refuge.The environment consists of primarily coastal and estuarine habitats.

Ochlockonee Bay covers approximately 9 square miles bordering southern Wakulla and Franklin Counties. The primary sources of freshwater inflow into the bay are the Ochlockonee and Sopchoppy Rivers (Thorpe et al. 2012).

Floodplain

The project is located in Federal Emergency Management Agency (FEMA)-designated Flood Zones according to the Flood Insurance Rate Maps (FIRMs) for Wakulla County (FIRM No. 1203150480C Wakulla County, effective date January 16, 1981).The project is located in Zone V20, which indicates coastal flood zones with velocity hazards (wave action) with base flood elevations undetermined.

Wetlands

Review of the USFWS National Wetlands Inventory (USFWS 2013a) identified wetlands within the park area as estuarine intertidal emergent and unconsolidated shore under the Cowardin classification system (Cowardin 1979).A proposed boardwalk and kayak launch occurs within the estuarine intertidal emergent wetland.

Environmental Consequences

Hydrology may be affected during in-water work repairs of the boat ramp and would likely be affected temporarily during construction of the boardwalk and kayak/canoe launch within the tidal marsh.Disturbance of sediments from boardwalk construction would temporarily suspend sediments in the water column during construction activities.After park renovations, increased boat traffic in Ochlockonee Bay could result in minimal impacts to surface water quality through fuel/oil discharge, and sediment disturbance (Environmental Protection Agency [EPA] 2012).Gravel or paved walking paths would result in a small increase in impervious surface area leading to a negligible increase of runoff.

The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (Corps) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). Coordination with the Corps and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

All permit conditions, including mitigation measures for siltation, erosion, turbidity, and release of chemicals, would be strictly adhered to. During construction, BMPs and boom placement along with other avoidance and mitigation measures required by state and federal regulatory agencies would be employed to minimize any water quality and sedimentation impacts. Florida Department of Environmental Protection (FDEP) permit conditions require erosion and turbidity mitigation measures, which include the following:

- Installation of floating turbidity barriers.
- Installation of erosion control measures along the perimeter of all work areas.
- Stabilization of all filled areas with sod, mats, barriers, or a combination.
- Stoppage of work if turbidity thresholds are exceeded. The soils would then be stabilized, work procedures modified, and the FDEP would be notified.

The FDEP permit also constitutes a Certification of Compliance with State Water Quality Standards under Section 401 of the CWA, which indicates that the project would comply with state water quality standards and other aquatic resource protection requirements.

Impacts from chemicals that could be released from sources such as construction equipment and boats are expected to be negligible. Required spill containment measures would be implemented for applicable construction activities. FDEP permit conditions require spill containment protection and mitigation measures as follows:

- Prohibiting boat repair or fueling facilities over the water.
- Prohibiting vessels from being removed from the water for the purposes of maintenance or repair.
- Prohibited activities include hull cleaning and painting, discharges or release of oils or greases, and related metal-based bottom paints associated with hull scraping, cleaning, and painting (Consolidated Wetland Resource Field Permit and Sovereign Submerged Lands Authorization, FDEP, July 12, 2010).

Floodplains

There are no base flood elevations mapped for this area. Although construction of the boardwalk and kayak/canoe launch through tidal marsh and renovations to facilities at the boat ramp area would be in the floodplain, the construction or operation of the proposed project would not increase flood risk or change floodplain values. No adverse impacts would be anticipated.

Wetlands

Construction of the kayak/canoe launch and boardwalk would have a minor long-term impact on tidal marsh.Although construction of the kayak/canoe launch and boardwalk would affectemergent marsh habitat through shading, this represents only a small portion of the total emergent marsh habitat located in the surrounding area, which would continue to support local and regional vegetative communities.Overall, there would be short-term minor impacts to wetland habitats during construction due to vegetation loss and soil disturbance. There would be long-term impacts to wetlands as a result of the proposed project, but because of the small footprint of project features and the overall availability

of the wetland habitats on site, these impacts would also be minor. A USACE CWA Section 404/10 permit would be needed for all work in wetland and other jurisdictional waters.

With required mitigation in place, impacts to water quality would be expected to be minimal.During construction, BMPs along with other avoidance and mitigation measures required by state and federal regulatory agencies would be employed to minimize any water quality and sedimentation impacts.Overall, adverse impacts to hydrology and water quality would be minor over both short and long-term timescales.

12.87.5.2.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

The EPA has established the 8-hour ground-level ozone standard. Under this standard, the EPA can designate an area as "nonattainment" if it has violated the 8-hour ozone standard. The EPA may also designate an area as "attainment/unclassifiable," which is an area where monitored air quality data show either that the area has not violated the ozone standard over a 3-year period or that there is not enough information to determine the air quality in the area. The entire state of Florida was designated as attainment area for the 8-hour ozone standard.Air quality within the Florida panhandle is in attainment with the National Ambient Air Quality Standards (http://www.epa.gov/airquality/urbanair/sipstatus/reports/fl_areabypoll.html).

Greenhouse Gases

Greenhouse gases (GHGs) are chemical compounds found in the Earth's atmosphere that absorb and trap infrared radiation as heat. Global atmospheric GHG concentrations are a product of continuous emission (release) and removal (storage) of GHGs over time. In the natural environment, this release and storage is largely cyclical. For instance, through the process of photosynthesis, plants capture atmospheric carbon as they grow and store it in the form of sugars. Human activities such as deforestation, soil disturbance, and burning of fossil fuels disrupt the natural cycle by increasing the GHG emission rate over the storage rate, which results in a net increase of GHGs in the atmosphere. The principal GHGs emitted into the atmosphere through human activities are carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, with CO_2 as the major GHG emitted.

Environmental Consequences

Project implementation would require the use of heavy equipment, which could temporarily lead to air pollution due to equipment exhaust and fugitive dust (Table 12-54). Pollution that occurs during project implementation would be localized and short term in duration due to the limited amount of heavy equipment need for the project.Project implementation could increase park use and boat traffic, which would result in an increase in vehicle and exhaust fumes.

Based on the assumptions described in Table 12-54 above, GHG emissions would not exceed 25,000 metric tons per year.Given the projected construction-phase GHG emissions, the small scale and short duration of the project, and increased park use, predicted impacts on air quality from GHG emissions would be anticipated to be minor on both short and long-term timeframes.

12.87.5.2.4 Noise

Affected Resources

Noise can be defined as unwanted or nuisance sound. The Noise Control Act of 1972 (42 USC 4901–4918) was enacted to establish noise control standards and regulate noise emissions from commercial products such as transportation and construction equipment. Amplitude is the magnitude of a sound and is usually expressed in decibels (dB), a dimensionless ratio of sound pressure to that of a reference pressure. The A-weighted decibel (dBA) is the adjusted unit of sound used to describe the human response to noise from industrial and transportation sources. The threshold of hearing is 0 dB. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear.

Table 12-54. Greenhouse gas emission rates.

EQUIPMENT[1]	NUMBER OF 8-HOUR DAYS	CO_2[2] (METRIC TONS)	CH_4 (CO_2E)[3] (METRIC TONS)	NO_X (CO_2E) (METRIC TONS)	TOTAL CO_2E (METRIC TONS)
Bobcat	90	0.21	0.072	0.848	101.7
Grader	20	0.39	0.0003	0.003	7.8
Paver	20	0.16	0.04	0.64	16.8
Roller	20	0.16	0.04	0.64	16.8
Dump truck	21	0.34[4]	0.0002	0.002	7.14
Pickup truck[5]	360	0.16	0.0001	0.001	57.6
Total					**207.84**

[1]Emissions assumptions for all equipment based on 8 hours of operation.
[2] CO_2 emissions assumptions for diesel and gasoline engines based on EPA (2009).
[3] CH_4 and NO_x emissions assumptions and CO_2e calculations based on EPA (2011).
[4] Construction equipment emission factors based on EPA NONROAD emission factors for 250-horsepower pieces of equipment. Data were accessed through the California Environmental Quality Act Roadway Construction Emissions Model.
[5] Emissions assumptions for an 8-cylinder, 6.2-liter gasoline engine Ford F150 pickup and 18 gallon (half-tank) daily fuel consumption (U.S. Department of Energy 2013).

Table 12-55 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-55. Typical noise levels for common sources.

NOISE SOURCE OR EFFECT	SOUND LEVEL (DBA)
Rock-and-roll band	110
Truck at 50 feet	80
Gas lawn mower at 100 feet	70
Normal conversation indoors	60
Moderate rainfall on foliage	50
Refrigerator	40
Bedroom at night	25

Source: Adapted from U.S. Department of Energy and Bonneville Power Administration (1986).

Noise levels in the project area vary depending on the season, time of day, number and types of noise sources, and the distance of the receptor from noise sources. Existing ambient noise levels in Mashes Sands Park are generally low and primarily result from vehicle traffic, recreational boating, overhead aircraft, and ambient natural sounds such as wind, waves, and wildlife. Noise-sensitive receptors in the

project area include recreational users, nearby residences, and wildlife. No residential properties are directly adjacent to the boat ramp area.

Environmental Consequences

Machinery and equipment used during renovations of parking, picnic, and restroom facilities, repairs to the boat ramp, and construction of boardwalks and walking paths would generate noise during the project. This noise may disturb wildlife and humans using the area, but this effect would be short term during the construction phase and daylight hours only.Once built, the proposed project would not cause long-term noise impacts. There would be minor noise impacts associated with increased boat traffic on the water and increased vehicle traffic at the ramp area. Overall long-term impacts from renovations including increased boating, vehicle traffic, and recreational activities would remain minor.

12.87.5.3 Biological Environment4

12.87.5.3.1 Living Coastal and Marine Resources

Vegetation

Affected Resources

The northeast Gulf of Mexico shoreline contains about 60 percent of the coastal and freshwater marshes in the United States, including 400,000 to 500,000 acres of salt marsh in northern Florida alone. From Apalachicola Bay south to Tampa Bay, salt marshes are the main costal community. Salt marshes act as a transitional zone from terrestrial uplands to ocean life. They absorb and trap potential pollutants before they reach estuaries and fragile waterways. Salt marshes also stabilize coastal shorelines, preventing erosion and sediments from washing offshore, especially during storm tides. Widely considered one of the most productive ecosystems in the world, salt marshes produce up to 80 metric tons per hectare of plant material annually. Tidal waters distribute plant cellulose (created when plants die and decompose) and flush salt and toxins from the system, bringing in nutrients that stimulate growth. Salt marshes are important to wildlife as well. They are a habitat for early life stages of many ocean species as they feed on invertebrates and are home to many marine fishes because shallow brackish water keeps large predatory fish out. Estuaries near Gulf Coast salt marshes provide a nursery for at least 70% of Florida's recreational and commercial fishes, shellfish, and crustaceans—all dependent on coastal wetlands.

Salt marshes in the Florida panhandle are usually characterized by large, fairly homogeneous expanses of dense black needlerush (*Juncus roemerianus*) (Lewis 2009). Often they are accompanied on the water ward side by smooth cordgrass (*Spartina alterniflora*). The *Juncus* and *Spartina* zones are very distinctive and can be separated easily by elevation, with *Spartina* inhabiting the lower, regularly flooded zone, and *Juncus* found in higher, less flooded area. Frequently, additional species of cordgrass (*Spartina* spp.), saltgrass (*Distichlis spicata*), glasswort (*Salicornia virginica*), various sedges (*Scirpus* spp.), and common cane (*Phragmites australis*) occur (Lewis 2009).

Environmental Consequences

Within the project area, vegetative habitats at Mashes Sands Park consist of emergent salt marsh, sand dune zones that consist of various coastal grasses, and emergents such as cordgrasses.The proposed boardwalk and kayak/canoe launch within the salt marsh would create a localized, short- and long-term,

minor impact to the associated vegetation during construction through vegetation removal during installation and the long-term shading effect of the boardwalk.

Wildlife and Wildlife Habitat

Affected Resources

The project site is surrounded by a relatively undisturbed natural environment with a multitude of natural communities, including tidal marsh, shoreline, upland forest, and coastal dune grasslands that support a number of common mammals and birds including shorebirds, wading birds, and waterfowl.

Environmental Consequences

The common wildlife of the park and the respective wildlife habitat would face a short-term minor impact during construction from noise produced by construction equipment, as well as minor short- and long-term minor habitat loss due boardwalk and observation platform construction.

Marine and Estuarine Fauna (fish, shell beds, and benthic organisms)

Affected Resources

Ochlockonee and Apalachee Bays provide habitat for numerous fish and other marine species.Fish commonly caught in the project area are mullet (*Mugil cephalus*), red drum(*Sciaenops ocellatus*), speckled trout (*Cynoscion nebulosus*), white trout (*C. arenarius*), and flounder (*Paralichthys albigutta*).The parks tidal marsh area is supportive of many species, including sheepshead minnow (*Cyprinodon variegatus*), longnose killfish (*Fundulus similis*), sailfin molly (*Poecilia latipinna*), and pinfish (*Lagodon rhomboids*), in addition to being a nursery for many other fish species and benthic invertebrates (University of Florida 2013).

Environmental Consequences

Increases in boating opportunities and recreational fishing are not expected to adversely impact fish populations. The number of new trips generated by the park improvements would not be significant in the context of the total number of trips generated by all access points in Florida.Therefore, these impacts would be minor.As much of the renovations would take place in the uplands, the minor in-water work at the boat ramp and installation of a boardwalk within the salt marsh would result in short-term minor adverse impacts for fish and benthic invertebrates present in the area.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

Affected Resources

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Wakulla County,

Florida34. Table 12-56 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

Table 12-56. Potential Impacts to Species/Critical Habitats managed by USFWS.

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle, Hawksbill turtle, Kemp's ridley turtle; Leatherback turtle, Loggerhead turtle	Impacts to any sea turtles using estuarine or marine habitats will be evaluated in consultation with NMFS, the agency that has the jurisdiction to review impacts to sea turtles in the marine and estuarine environments, and are not addressed in this consultation. No nesting habitat is present within the construction area. Therefore, no impacts from construction are anticipated. Sea turtles may nest in areas north and east of the proposed project and these areas could be accessed by users of the facilities proposed in this project. Visitors could accidently trample nests/hatchlings, or increase predation through inadequate trash disposal. Conservation measures are expected to minimize any visitor impacts to an insignificant and discountable level.
West Indian manatee	Wakulla County is part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees are unlikely to be using the marsh channel habitats therefore no impacts from construction are expected. Implementation of conservation measures will ensure no impacts to manatees occur. This work will not increase motorized boating in the area, so the risks to West Indian manatees are discountable.
Piping plover and Red knot.	No habitat for piping plover or red knot is present in the construction area. Therefore, no impacts from construction are anticipated. Piping plover and red not may rest and forage in areas north and east of the proposed project and these areas could be accessed by users of the facilities proposed in this project. Visitors could accidently startle birds or increase predation through inadequate trash disposal. Human disturbance could startle individuals. Because other foraging/resting habitats are nearby (less than two miles) the Trustees would expect this temporary displacement to be within normal movement patterns and consider this effect insignificant and discountable. The proposed project will not result in any changes to shoreline habitats where these species could be feeding or resting. Conservation measures are expected to minimize any visitor impacts (including the potential for increased predation) to an insignificant and discountable level.
Gulf sturgeon	NMFS was consulted on Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon was not considered in the consultation with the USFWS. .

In addition to the protected species managed by USFWS, the Trustees reviewed the proposed projects and associated actions for potential impacts to the following protected species (status indicated) and their associated critical habitat, if appropriate, managed by NMFS:

- Gulf Sturgeon, *Acipenser oxyrinchus desotoi*, Threatened
- Smalltooth Sawfish, *Pristis pectinata,* Endangered
- Green Sea Turtle, *Chelonia mydas*, Endangered
- Loggerhead Sea Turtle, *Caretta caretta*, Threatened

[34] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

- Hawksbill Sea Turtle, *Eretmochelys imbricata*, Endangered
- Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
- Kemp's Ridley Sea Turtle, *Lepidochelys kempii*, Endangered

Additional information on some of these species is provided below.

Sea Turtles and Marine Mammals

There are five species of sea turtles that are found within the Gulf of Mexico: green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), loggerhead sea turtle (*Caretta caretta*), Kemp's ridley sea turtle (*Lepidochelys kempii*), and leatherback sea turtle (*Dermochelys coriacea*). All five species of sea turtles found in the Gulf of Mexico are listed under the ESA. The Gulf populations of green (breeding populations in Florida), hawksbill, Kemp's ridley, and leatherback sea turtles are listed as endangered. Loggerhead (northwest Atlantic distinct population segment) and green (except the Florida breeding population) sea turtles are listed as threatened (NMFS 2013a).

Sea turtles in the Gulf (with the exception of the leatherback turtle) have a life history cycle where hatchlings develop in open ocean areas (e.g., continental shelf), and juvenile and adult turtles move landward and inhabit coastal areas. Leatherback sea turtles spend both the developmental and adult life stages in the open oceanic areas of the Gulf of Mexico. Sea turtles nest on low and high energy ocean beaches and on sandy beaches in some estuarine areas. Immediately after hatchlings emerge from the nest, they begin a period of frenzied activity. Sea turtles utilize resources in coral reefs, shallow water habitat (including areas of seagrasses), and areas with rocky bottoms.

All five species of sea turtles are migratory and thus have a wide geographic range. All species may regularly occur within the waters surrounding Wakulla County though none of have had recent confirmed nesting or nesting attempts in the county according to the Florida Fish and Wildlife Research Institute.

Twenty-two marine mammals are native to the Gulf of Mexico: 21 pelagic species of whales and dolphins, and the West Indian manatee. The endangered West Indian manatee is known to occur in Wakulla Springs and river and is likely to occur in project area waters. Manatees typically seek out shallow seagrass areas as preferred feeding habitat (USFWS 2010)and commonly use the nearby Wakulla River . Additionally, bottlenose dolphin (*Tursiops* spp.) populations are known to migrate into bays, estuaries, and river mouths and could be located in any of the proposed project areas (NMFS 2013b).Bottlenose dolphins have been observed entering and leaving nearshore coastal waters (NMFS 2012).

Smalltooth Sawfish and Gulf Sturgeon

The small tooth sawfish (*Pristispectinata*) is federally listed as an endangered species. Formerly common from Texas to North Carolina, its current distribution is mainly restricted to south Florida and the Keys; adults are uncommon in the Florida panhandle (NMFS2009a). Juveniles inhabit shallow coastal waters, especially shallow mudbanks and mangrove habitats. Very few juveniles have been documented in areas north of the current range of mangroves (i.e., north of 29 N latitude). Adults are found with juveniles but also in deeper water habitat (NMFS2009a). The decline of this species is mainly attributed to mortality as by catch in commercial and sportfisheries. The current range of this species has contracted to the

peninsula of Florida, though smalltooth sawfish are common only in the Everglades region at the southern tip of the state.

Gulf sturgeon are restricted to the Gulf of Mexico and its drainages, occurring primarily from the Pearl River in Louisiana to the Suwannee River, in Florida (NMFS 2009). Adult fish reside in rivers for 8 to 9 months each year and in estuarine or Gulf of Mexico waters during the 3 to 4 cooler months of each year (NMFS 2009). Important marine habitats include seagrass beds with sand and mud substrates (Mason and Clugston 1993).

Gulf sturgeon critical habitat was jointly designated by the NMFS and USFWS on April 18, 2003 (50 C.F.R. 226.214). The proposed project site is located within Critical Habitat for Gulf sturgeon. Critical habitat was designated based on seven primary constituent elements (PCEs) essential for its conservation, as defined in the 2003 *Federal Register* and are listed below. PCE's 1, 5, 6, and 7 are present within the project area.

The PCE's are:

1. Abundant food items, such as detritus, aquatic insects, worms, and/or mollusks, within riverine habitats for larval and juvenile life stages; and abundant prey items, such as amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks, and/or crustaceans, within estuarine and marine habitats and substrates for subadult and adult life stages;

2. Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone, or hard clay;

3. Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths; these are believed necessary for minimizing energy expenditure during freshwater residency and possibly for osmoregulatory functions;

4. A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larval staging;

5. Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages;

6. Sediment quality, including texture and chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and

7. Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g., an unobstructed river or a dammed river that still allows for passage).

Piping Plover

The sandy beaches and shorelines adjacent to the project area offer suitable foraging and resting habitat for the piping plover during the winter migratory season, and piping plover may forage in the shallow waters of the project area. Natural shorelines in the proposed project vicinity provide suitable winter migration resting habitat for the piping plover. Piping plover wintering habitat includes beaches, mudflats, and sandflats, as well as barrier island beaches and spoil islands (Haig 1992 as cited by USFWS 2013). On the Gulf Coast, preferred foraging areas are associated with wider beaches, mudflats, and small inlets (USFWS 2013).

Red Knot

The red knot, a federal proposed species, uses the state of Florida both for wintering habitat and migration stopover habitat for those that continue to migrate down to specific wintering locations in South America (Niles et al. 2008). Wintering and migrating red knots forage along sandy beaches, tidal mudflats, salt marshes, and peat banks (Harrington 2001). Observations indicate that red knots also forage on oyster reef and exposed bay bottoms, and roost on high sand flats, reefs, and other sites protected from high tides (Niles et al. 2008). In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans.Threats to wintering and stopover habitat in Florida include shoreline development, hardening, dredging, deposition, and beach raking (Niles et al. 2008). The proposed project area at Mashes Sands Park contains tidal marsh that may provide suitable foraging habitat for migrating of wintering red knot.

Essential Fish Habitat (EFH)

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. The EFH within the project area include emergent wetlands, mud substrate, and estuarine water columns for species of fish, such as red drum, brown shrimp, pink shrimp, and white shrimp. There are no marine components of EFH in the vicinity of the project site.

Table 12-57 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the Wakulla Mashes Sands Improvement site and the Gulf of Mexico.

Table 12-57. Federally managed fisheries with designated Essential Fish Habitat (EFH) in the proposed project area.

EFH Category	Species
Atlantic Highly Migratory Species	
	Atlantic Sharpnose Shark - Adult
	Atlantic Sharpnose Shark - Juvenile
	Atlantic Sharpnose Shark - Neonate
	Blacknose Shark - Adult
	Blacknose Shark - Juvenile
	Blacknose Shark - Neonate
	Blacktip Shark - Adult
	Blacktip Shark - Juvenile
	Blacktip Shark - Neonate
	Bonnethead Shark - Adult
	Bonnethead Shark - Juvenile
	Bonnethead Shark - Neonate
	Bull Shark - Adult
	Great Hammerhead Shark - All
	Lemon Shark - Adult
	Nurse Shark - Juvenile
	Scalloped Hammerhead Shark - Juvenile
	Scalloped Hammerhead Shark - Neonate
	Tiger Shark - Juvenile
Coastal Migratory Pelagics of the Gulf of Mexico AND South Atlantic	
	Spanish Mackerel
	Cobia
	King Mackerel
Gulf of Mexico Shrimp	
	Pink Shrimp
	White Shrimp
	Brown Shrimp
Reef Fish Resources of the Gulf of Mexico	
	Lane Snapper
	Lesser Amberjack
	Mutton Snapper
	Nassau Grouper
	Queen Snapper
	Red Grouper
	Red Snapper
	Scamp
	Silk Snapper
	Snowy Grouper
	Speckled Hind
	Tilefish
	Vermilion Snapper
	Warsaw Grouper

EFH Category	Species
	Wenchman
	Yellowedge Grouper
	Yellowfin Grouper
	Yellowmouth Grouper
	Almaco Jack
	Banded Rudderfish
	Black Grouper
	Blackfin Snapper
	Blueline Tilefish
	Cubera Snapper
	Gag
	Goldface Tilefish
	Gray (Mangrove) Snapper
	Gray Triggerfish
	Greater Amberjack
	Hogfish

State-Listed Birds, MBTA, and BGEPA

At Bald Point State Park, located approximately 1 mile south of Mashes Sands Park, approximately 250 species have been observed, while at St. Marks National Wildlife Refuge to the north of the park, over 300 species have been recorded. There are numerous State of Florida—listed bird species with potential for occurrence in and around Mashes Sands Park.

The sandy shores of Mashes Sands Park provide foraging habitat for many shorebird species, while the salt marshes provide habitat for many wading birds and wintering waterfowl.

The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008). One historically used bald eagle nest (last active in 2011) has been recorded in Mashes Sands Park approximately 3,300 feet north of any aspect of the proposed project (FWC 2013).

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-58 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-58. Potential project impacts to different migratory bird groups

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Oystercatchers and Wilson's plovers	Nesting, foraging, feeding, resting	These species are known to nest, feed, and rest within Mashes Sands (though not within the construction area).
Shorebirds/marsh	Foraging, feeding, resting, nesting	Shorebirds nest, forage, feed, and rest, and in the types of habitats consistent with some of the shoreline areas near the proposed project. As such, they may be impacted locally and temporarily by the project.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Resting, roosting, nesting	Seabirds forage in water and rest/roost in terrestrial habitats including dunes. However, could startle resting birds, but,because activities will occur during the day, roosting should not be impacted.
Passerines		Passerines could be foraging, resting, or nesting in nearby grasses, shrubs, or trees.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized inTable 12-59.

Table 12-59. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Oystercatchers and Wilson's plovers	Educational signage/Kiosks will be posted at various locations at the project site including the existing boat ramp and the new canoe/kayak launch. The signage will be developed in coordination with NMFS, FWC, and the Panama City Ecological Services Field Office and will discuss various trust resources (listed species below and migratory birds) and means to protect species and habitats while enjoying the park. Signage may identify areas to avoid in order to prevent impacts to species. If necessary, breeding areas may need to be posted (during breeding season) for avoidance to further identify sensitive areas that visitors must avoid.
Shorebirds/Marsh birds	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. The Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting. If project activities occur during shorebird nesting season (February 15 to August 31), the FWC will be contacted to obtain the most recent guidance to protect nesting shorebirds/marsh birds or rookeries and their recommendations will be implemented.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity, which they will have. Roosting should not be impacted because the project will occur during daylight hours only. Nesting should not be impacted because the project will not occur near nesting habitats.
Passerines	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. Roosting should not be impacted because the project will occur during daylight hours only. Limited vegetation removal may be necessary. If vegetation removal is necessary during the nesting season, FWC will be contacted for guidance to protect any nesting birds.

Environmental Consequences

The proposed project has been evaluated for potential short- and long-term impacts to state and federally listed threatened and endangered species that may occur within and adjacent to the project areas based on available suitable habitat and restoration goals. Descriptions of these evaluations are provided below.

Protected Species

The USFWS reviewed the proposedWakulla Mashes Sands Park Improvements project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA. On March 24, 2014, the review of potential impacts to species managed by USFWS was completed (McClain, 2014). The USFWS concurred with the Trustees' determination that the proposed project may affect, but is not likely to adversely affect, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead), piping plover, and red knot (if listed). The USFWS also concurred with the Trustees' determination that the project will have no effect on West Indian manatee.

Consultation of potential impacts on protected species managed by NMFS from this project was initiated on February 4, 2014.The Trustees' review of the potential impacts of the project for protected species managed by NMFS determined the proposed action "may affect, but is not likely to adversely affect" the following species and associated critical habitats in the project implementation area:

- Smalltooth Sawfish – The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Gulf Sturgeon - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Green Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Loggerhead Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Hawksbill Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Leatherback Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.
- Kemp's Ridley Sea Turtle - The proposed project may affect, but is not likely to adversely affect and will not jeopardize the continued existence of the species.

Concurrence from NMFS with the Trustees' conclusions for these species and associated critical habitats is still pending.

The Trustees also evaluated the potential for take of Marine Mammals under the MMPA and due to these species' mobility and the implementation of NMFS' *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS, 2006), *Standard Manatee Conditions for In-Water Work* (USFWS 2011), and USFWS recommended conservation measures for listed species and other trust resources, take of marine mammals under the MMPA is not anticipated.

Essential Fish Habitat

The Trustees' review concluded the project is not likely to adversely affect EFH. The proposed canoe/kayak launch construction will take place adjacent to the existing boat ramp. A very small area of subtidal habitat may be converted by constructing a hard-surfaced boat launch, however, this will take place near the existing boat launch designed for larger vessels, where the habitat is already likely to be significantly disturbed as a result of both the boat traffic to and from the boat ramp and use of the existing boat launch structure and shoreline habitat.

On April 24, 2014 NMFS completed its evaluation of potential EFH impacts and concluded that the project construction is not likely to adversely affect EFH and any disturbance to species will be minor and brief (Fay, 2014).

Bald Eagle and MBTA

Bald eagles are not present at the project location so will not be affectedAt the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6 Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.87.5.4 Human Uses and Socioeconomics

12.87.5.4.1 Socioeconomics and Environmental Justice

Affected Resources

The proposed project would be located in Wakulla County, Florida. Data and characteristics on the population of Wakulla County are summarized and compared to those same measures for the population of the state as a whole (Table 12-60).

Environmental Consequences

The proposed project would create approximately 40 jobs in the short term during construction.The improved park access and amenities restoration would result in a minor increase in visitation to the site, which would potentially benefit the local economy for multiple years.This project would not create a benefit for any specific group or individual, but rather would produce benefits realized by the local community and visitors.Also, there are no indications that the public park improvements would be contrary to the goals of Executive Order 12898 or would create disproportionate, adverse human health or environmental impacts on minority or low income populations of the surrounding community. Therefore no environmental justice impacts would be anticipated in the short or long term.

Table 12-60. Population characteristics of Wakulla County compared to State of Florida data.

TOPIC	WAKULLA COUNTY	FLORIDA
Population, 2012 estimate	30,818	19,317,568
Persons under 5 years, percent, 2012	5.4%	5.5%
Persons under 18 years, percent, 2012	21.7%	20.7%
Persons 65 years and over, percent, 2012	12.0%	18.2%
Female persons, percent, 2012	45.2%	51.1%
White alone, percent, 2012	82.2%	78.3%
Black or African American alone, percent, 2012	14.7%	16.6%
American Indian and Alaska Native alone, percent, 2012	0.7%	0.5%
Asian alone, percent, 2012	0.5%	2.7%
Native Hawaiian and Other Pacific Islander alone, percent, 2012	0.1%	0.1%
Two or More Races, percent, 2012	1.8%	1.9%
Hispanic or Latino, percent, 2012	3.6%	23.2%
White alone, not Hispanic or Latino, percent, 2012	79.2%	57.0%
Homeownership rate, 2007–2011	84.2%	69.0%
Median household income, 2007–2011	$54,151	$47,827
Persons below poverty level, percent, 2007–2011	12.8%	14.7%

Source: U.S. Census Bureau State and County QuickFacts (2013).

12.87.5.5 Cultural Resources

Affected Resources

A review of the Florida Master Site File shows that there are seven previously recorded archaeological sites located within 1 mile of the project location. These sites are all prehistoric and generally consist of shell middens with ceramic artifacts and some faunal remains.

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project has not identified the presence of a historic property within the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.87.5.5.1 Infrastructure

Affected Resources

The existing infrastructure at Mashes Sands Park consists of access roads, parking areas, restrooms, a boardwalk, a boat ramp, a dock, and both beachfront and boat ramp area pavilions with picnic tables. Access to the park is from County Road 372 traveling west from State Highway 98.

Environmental Consequences

The project would have a short-term minor impact on traffic during the construction phase only. No impacts to other infrastructure are anticipated in the project during construction. There may be a small increase in traffic entering the park due to improvements, but this would not be expected to have any impact on existing traffic conditions.

12.87.5.5.2 Land and Marine Management

Affected Resources

Wakulla County has a Comprehensive Plan (WakullaCounty 2009) that includes a Recreation and Open Space Element. The Recreation and Open Space Element includes policies and goals for preservation and enhancement of existing park areas and expansion of new areas. The surrounding land use outside the park is currently undisturbed private lands or residential along the southern side of the peninsula.Within Mashes Sands Park land use is primarily recreational.The project would be located in a coastal area that is regulated by the federal Coastal Zone Management Act of 1972 (CZMA) and the Florida Coastal Management Act of 1978.

Environmental Consequences

The project would be consistent with current land use and the Wakulla County Comprehensive Plan and would have no adverse impact on land use or marine management in the area.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS. The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process.

12.87.5.6 Aesthetics and Visual Resources

Affected Resources

Mashes Sands Park is mostly an undeveloped natural park site.A public boat ramp area with picnic and restroom facilities is located near an inlet in the southern portion of the park along Ochlockonee Bay.A residential area is approximately 200 feet west of the park boat ramp area.A small dirt road running south from County Road 372 leads to an existing boardwalk and fishing pier in Ochlockonee Bay.

Environmental Consequences

Temporary impacts to visual resources would result from implementation of the proposed park improvement activities. Construction equipment would be temporarily visible to nearby residents, visitors, and recreational users.There would be new structures placed in various natural areas that would detract from the existing character of the viewshed. These impacts would be long term, but would not be expected to result in a significant detraction from the overall natural viewshed.

12.87.5.6.1 Tourism and Recreational Use

Affected Resources

Primary activities and uses that occur at the park are boating access, fishing, bird watching, swimming, and other recreational beach activities.From October 2012 to September 2013, Wakulla County parks and recreation staff estimated approximately 1,404 visitors to Mashes Sands beach and 1,119 visitors to the boat ramp.Use numbers are mostly based on the time period from May 1 to Labor Day when a park attendant is there to charge an entrance fee.

Environmental Consequences

For a short time, the construction process would limit recreational activities near the construction areas.However, if the proposed project is implemented, an increase in visitation for the life of the project is anticipated.Minor long-term beneficial impacts to tourism and recreational use would be expected.There would be a minor short-term adverse impact to tourism or recreational use during construction.

12.87.5.6.2 Public Health and Safety and Shoreline Protection

Affected Resources

The management of hazardous materials is regulated under various federal and state environmental and transportation laws and regulations, including the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Emergency Planning and Community Right-to-Know Act, and the Hazardous Materials Transportation Act. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment, transport, and disposal) of these materials. Some of these laws provide for the investigation and cleanup of sites that have already been contaminated by releases of hazardous materials, wastes, or substances.

A review of the EPA's EnviroMapper revealed that there are no CERCLA sites located within or immediately adjacent to the park (EPA 2013).

Environmental Consequences

Project construction would require mechanical equipment that uses oil, lubricants, and fuels. The contractor would be required to take appropriate actions to prevent, minimize, and control the spill of construction-related hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids.If a release should occur, it would be contained and cleaned up promptly in accordance with all applicable regulations, and the incident would be reported to appropriate agencies.As a result, no adverse impacts associated with construction-related hazardous materials would be anticipated.The period of time during which a release could occur from construction activities would be short term and any release would be expected to be minor.

As no work is expected to take place on the shoreline, the proposed project would have no anticipated adverse impacts on shoreline erosion.

12.87.6 Summary and Next Steps

The Wakulla County Mashes Sands Park Improvements project would improve recreation areas at the Wakulla County Mashes Sands Park. The proposed improvements include constructing observation platforms, boardwalks, and walking paths, improving the boat ramp area, and picnic areas, renovating the parking area, and the restroom facility, and constructing a canoe/kayak launch site. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase recreational boating and beach use opportunities by improving the recreational opportunities at the park. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

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12.88 Northwest Florida Estuarine Habitat Restoration, Protection and Education- Fort Walton Beach: Project Description

12.88.1 Project Summary

The proposed Northwest Florida Fort Walton Beach Educational Boardwalk project would construct new boardwalks and connect them to existing boardwalks as well as conducting several small natural resource and habitat enhancement projects in Fort Walton Beach. The proposed improvements include constructing a new educational and interactive boardwalk, expansion of an existing intertidal oyster reef, and restoration of a degraded salt marsh. The total estimated cost of the project is $4,643,547.

12.88.2 Background and Project Description

The Trustees propose to improve and enhance an existing boardwalk as well as expanding an oyster reef and restoration a salt marsh in Fort Walton Beach in Okaloosa County (See Figure 12-53 for general project location). The objective of the proposed project is to enhance and/or increase recreational use opportunities by improving the boardwalks and enhancing adjoining natural resources and habitat. The restoration work proposed includes constructing an educational and interactive boardwalk along the bay shoreline at Fort Walton Beach. The boardwalk would allow public access to areas of Santa Rosa Sound that are currently inaccessible to the public.

The new boardwalk would be 8,390 ft long and would be constructed using a combination of wood and concrete, depending on the specific needs and constraints in different sections of the anticipated project area (current estimates are that mix would be approximately 65% concrete and 35% wood). The boardwalk would extend the length of the City of Fort Walton Beach mostly along Highway 98 and along Santa Rosa Sound from the Highway 98 bridge to the city's western boundary. The newly constructed boardwalk wouldalso connect existing boardwalks together into one continuous walkway. In locations where the proposed boardwalk would extend across private property the City is obtaining permanent easements.

In addition, the project would take advantage of access and equipment availability to conduct several small natural resource and habitat enhancement projects including a 0.1 acre expansion of an existing intertidal oyster reef and an approximately 0.4 acre restoration of a degraded salt marsh by planting appropriate native vegetation in Santa Rosa Sound. These resource enhancements would provide additional educational opportunities along the new boardwalk for visitors and school groups and would enhance the quality of the experience for those who use it in the respective areas. The boardwalk construction and placement of educational signage would increase access to and enjoyment of the coastal resources in the project area. The project planting of native vegetation would expand the local acreage of estuarine salt marsh. The placement of cultch material would increase local oyster habitat and will support increased oyster production. No new parking lots or additional parking spaces will be developed by implementing this project.

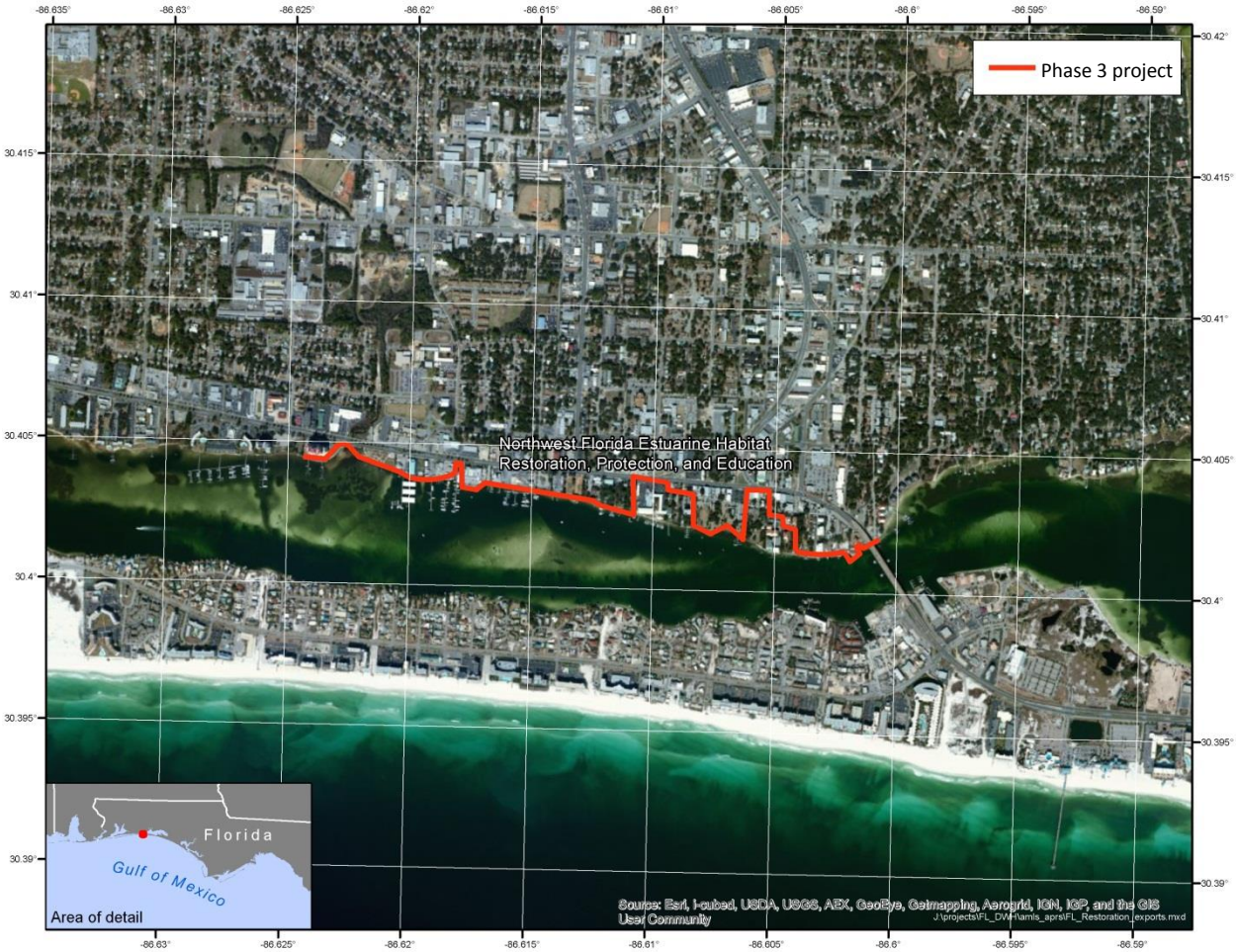

Figure 12-53. Location of Northwest Florida Fort Walton Beach Educational Boardwalk

12.88.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. As a result of the Deepwater Horizon oil spill and related response actions, the public's access to and enjoyment of the natural resources along Florida's Panhandle was denied or severely restricted. The proposedNorthwest Florida Fort Walton Beach Educational Boardwalk project is intended to enhance and/or increase recreational use opportunities byimproving the boardwalks and enhancing adjoining natural resources and habitat. The project would enhance and/or increaseopportunities for the public's use and enjoyment of the natural resources, helping to offset adverse impacts to such uses that resulted from the Spill.Thus, the nexus to resources injured by the Spill is clear.See 15 C.F.R. § 990.54(a)(2); and Sections 6a-6c of the Framework Agreement.

The project is technically feasible and uses proven techniques with established methods and documented results. Further, the project can be implemented with minimal delay. The State of Florida and/or federal resource agencies have successfully completed projects of similar scope throughout Florida over many years. For these reasons, the project has a high likelihood of success. See 15 C.F.R. § 990.54(a)(3); and Section 6e of theFramework Agreement. Additionally, the cost estimates are based on

similar past projects and therefore the project can be conducted at a reasonable cost. See 15 C.F.R. § 990.54(a)(1); and Section 6e of the Framework Agreement.

A thorough environmental review, including review under applicable environmental laws and regulations, as described in section 12.88, indicates that adverse impacts from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse impacts described in 12.88 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (construction and installation and operations and maintenance). See 15 C.F.R. § 990.54(a)(4).Finally, this proposed project is not anticipated to negatively affect regional ecological restoration and is therefore not inconsistent with the long-term restoration needs of the State of Florida. See Section 6d of the Framework Agreement.

Many recreational use projects, including ones similar to this project have been submitted as restoration projects on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and to the State of Florida (http://www.deepwaterhorizonflorida.com).In addition to meeting the evaluation criteria for the Framework Agreement and OPA, the Northwest Florida Fort Walton Beach Educational Boardwalk project also meets the State of Florida's additional criteria that Early Restoration projects occur in the 8-county panhandle area that was impacted by SCAT and response activities, including boom deployment.

12.88.4 Performance Criteria, Monitoring and Maintenance

As part of the project cost, monitoring will be conducted to ensure project plans and designs were correctly implemented and to evaluate project performance. Monitoring has been designed around the project goals and objectives. The project objective is enhance and/or increase recreational use opportunities by improving the boardwalks and enhancing the adjoining natural resources and habitat. Performance monitoring will evaluate: 1) the construction of new boardwalk sections along the Santa Rosa sound shoreline; 2) the expansion of an existing oyster reef by ~0.1 acre; and 3) the enhancement of approximately 0.4 acres of salt marsh. Specific success criteria include: 1) the completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to the natural resources, which will be determined by observation that the boardwalks are open and available,

Long term monitoring and maintenance of the boardwalk facilities will be completed by the City of Ft. Walton Beach as part of their regular public facilities maintenance activities. No long-term monitoring activities are envisioned for the habitat enhancement components beyond compliance of design and performance standards. Funding for this post-construction maintenance is not included in the project cost estimate and the expense for these activities will be assumed by the City of ft. Walton Beach.

During the construction performance monitoring period, the Florida Trustees' Project Manager will go out twice to the site to record the number of users. Following the post construction performance monitoring period, the City of Ft. Walton Beach will monitor the recreational use activity at the site. The City of Ft. Walton Beach will visit the site twice a year to count the number of users at the boardwalk. The visitation numbers will then be provided to the Florida Department of Environmental Protection.

12.88.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $9,287,094expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured in Florida, which will be determined by the Trustees' assessment of lost recreational use for the Oil Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.[35]

12.88.6 Costs

The total estimated cost to implement this project is $4,643,547. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, engineering and design, construction, monitoring, and contingencies.

[35] For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.89 Northwest Florida Estuarine Habitat Restoration, Protection and Education- Fort Walton Beach: Environmental Review

The proposed project, located in the City of Fort Walton Beach, Florida, and within waters of the surrounding Santa Rosa Sound, involves construction of educational and interactive boardwalk structures (also referred to as Brooks Landing Shorewalk) intended to provide access to commercial, residential, and public areas of Santa Rosa Sound that are currently inaccessible, promote environmental education, and increase economic activity along the shoreline. Another component of the proposed project would include oyster reef creation and estuarine salt marsh habitat restoration along the shoreline and in adjacent waters of Santa Rosa Sound. These proposed projects would enhance public access to the Santa Rosa Sound shoreline, as well as stimulate economic activity on the waterfront and downtown Fort Walton Beach. Shellfish and salt marsh habitat restoration/creation would provide ecological benefits, including improved water quality and marine life inhabiting local nearshore areas, and would help protect the shoreline areas along Santa Rosa Sound and Fort Walton Beach from further degradation from future erosion and human use.

12.89.1 Introduction and Background

In April 2011, the Natural Resource Trustees (Trustees) and BP Exploration and Production, Inc. (BP) entered into the Framework Agreement for Early Restoration Addressing Injuries Resulting from the *Deepwater Horizon* Oil Spill (Framework Agreement). Under the Framework Agreement, BP agreed to make $1 billion available for Early Restoration project implementation. The Trustees' key objective in pursuing Early Restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is underway. The Framework Agreement is intended to expedite the start of restoration in the Gulf in advance of the completion of the injury assessment process. Early restoration is not intended to and does not fully address all injuries caused by the Spill. Restoration beyond Early Restoration projects will be required to fully compensate the public for natural resource losses from the Spill.

Pursuant to the process articulated in the Framework Agreement for Early Restoration Addressing Injuries Resulting from the *Deepwater Horizon* Oil Spill (Framework Agreement), the Trustees released, after public review of a draft, a Phase I Early Restoration Plan (ERP) in April 2012. In December 2012, after public review of a draft, the Trustees released a Phase II ERP. On May 6, 2013, the National Oceanic and Atmospheric Administration (NOAA) issued a public notice in the *Federal Register* on behalf of the Trustees announcing the development of additional future Early Restoration projects for a Draft Phase III Early Restoration Plan (ERP). This boardwalk installation and oyster and estuarine salt marsh restoration project in the city of Fort Walton Beach and adjacent Santa Rosa Sound within Okaloosa County was submitted as an Early Restoration project on the NOAA website (http://www.gulfspillrestoration.noaa.gov) and submitted to the State of Florida. In addition to meeting the evaluation criteria for the Framework Agreement and the Oil Pollution Act (OPA), the project meets Florida's criteria that Early Restoration projects occur in the eight-county Florida panhandle area that deployed boom and was impacted by the Spill.

The proposed project would achieve two basic objectives: 1) educate the public on the importance of shoreline habitat and stimulating the regional economy through increased tourism by installing an educational interactive waterfront boardwalk, and 2) restore the natural estuarine shoreline using

techniques that encompass oyster reef creation/restoration and salt marsh restoration through the planting of native shoreline grasses. The proposed project would connect phases of a larger initiative included in a long-term city plan that would accomplish the goals of the Coastal and Conservation Element in the City of Fort Walton Beach Comprehensive Plan adopted in 2000 (City of Fort Walton Beach 2000). The Comprehensive Plan states the City of Fort Walton Beach would preserve, protect, and when possible restore the resources of the city's coastal protection area, specifically coastal wetlands, living marine resources, and wildlife habitats. Currently, portions of the long-term project have been implemented and completed. Those projects included installation of segments of Sound Side Boardwalk, planting of native vegetation along Santa Rosa Sound at Sound Park Boardwalk, construction of an oyster reef in Santa Rosa Sound, and installation of environmental education signage along existing boardwalks, all implemented from 2006 to 2010 (City of Fort Walton Beach 2012a).

The proposed Santa Rosa County boardwalk creation project would construct 8,390 feet of new boardwalk infrastructure along Santa Rosa Sound in the city of Fort Walton Beach to increase opportunities for the public to safely access coastal resources including the beach and ocean, which are currently inaccessible in certain locations. The project would improve existing boardwalks, as well as create new kiosks for recreational and educational use by the public. In addition, the enhancement of the recreational experience from these infrastructure improvements would also be complemented by oyster reef and estuarine salt marsh restoration in Santa Rosa Sound to reduce shoreline erosion and enhance habitat. The proposed project would create a total of approximately 20,460 square feet (0.4 acre) of salt marsh habitat and approximately 7,200 square feet (0.1 acre) of oyster reefs.

12.89.2 Project Location

The proposed project is located on the Gulf Coast in the city of Fort Walton Beach and adjacent Santa Rosa Sound, Okaloosa County, Florida. Newly constructed boardwalk structures will extend the length of the city of Fort Walton Beach from Alconese Pier, east of Brooks Bridge, to Liza Jackson Park following alongside the Santa Rosa Sound shoreline and portions of U.S. Highway 98. Estuarine salt marsh enhancement will occur along the shoreline adjacent to the newly installed boardwalk structure, while oyster reef construction and enhancement actions would be completed in Santa Rosa Sound in areas where living shoreline structures have already been placed. Figure 12-54 and Figure 12-55 illustrate the area where boardwalk construction and installation will take place.

Figure 12-54. Vicinity map for the proposed project.

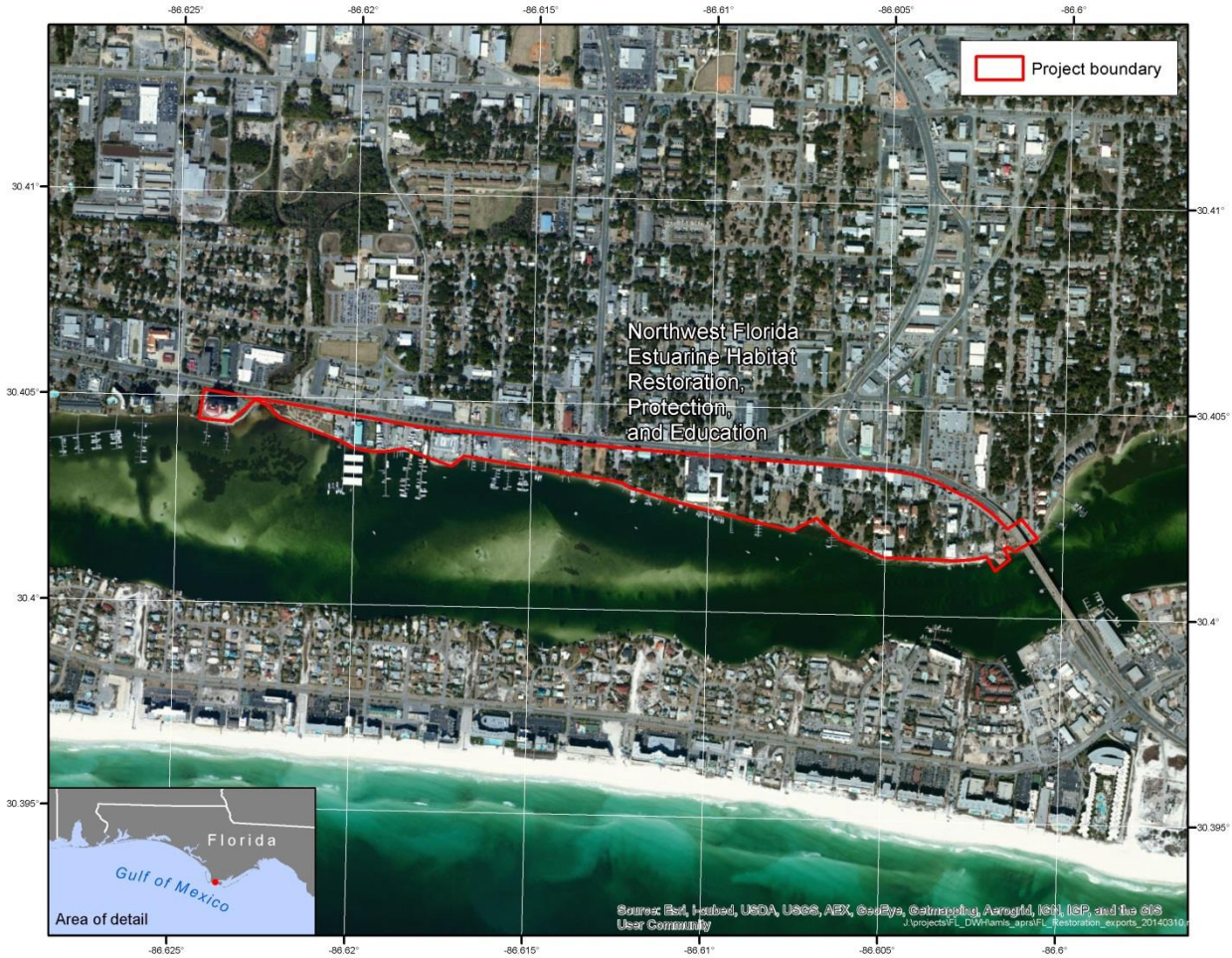

Figure 12-55. Illustration of the area where boardwalk construction and installation would occur.

12.89.3 Construction and Installation

The proposed project, located in the City of Fort Walton Beach, Florida, and within waters of the surrounding Santa Rosa Sound, involves construction of educational and interactive boardwalk structures (also referred to as Brooks Landing Shorewalk) intended to provide access to commercial, residential, and public areas of Santa Rosa Sound that are currently inaccessible, promote environmental education, and increase economic activity along the shoreline. Another component of the proposed project would include limited oyster reef creation and estuarine salt marsh habitat restoration along the shoreline and in adjacent waters of Santa Rosa Sound. These proposed projects would enhance public access to the Santa Rosa Sound shoreline.

The proposed project is located on the Gulf Coast in the city of Fort Walton Beach and adjacent Santa Rosa Sound, Okaloosa County, Florida. Newly constructed boardwalk structures will extend the length of the city of Fort Walton Beach from Alconese Pier, east of Brooks Bridge, to Liza Jackson Park following alongside the Santa Rosa Sound shoreline and portions of U.S. Highway 98. Estuarine salt marsh enhancement will occur along the shoreline adjacent to the newly installed boardwalk structure, while oyster reef construction and enhancement actions would be completed in Santa Rosa Sound in areas where living shoreline structures have already been placed.

This area is already highly developed with numerous manmade features along the waterfront in the proposed project area including boat slips, docks, marinas, and areas of armored shoreline. Access to the waterfront in this area is mainly provided through side roads off of the main state route 98 in the area or through facilities with parking on the sound side of this road.

Additional details on the individual components of this project follows.

12.89.3.1 Boardwalk Construction

A range of hand tools and mechanized, heavy equipment would likely be used to complete the construction of 8,390-foot new boardwalk and for the installation of educational devices such as U.S.-manufactured pier-mounted coin binoculars, wooden markers to identify bird and fish species, and eight life-size bird statutes showing wingspan length. Approximately 65% of the boardwalk would be constructed of concrete and 35% would be constructed of wood. Larger equipment such as backhoes with auger capabilities, graders, tractor trailers, or other equipment may be required to prepare the site for construction, as well as delivery of materials and removal of sand or soil to install pilings or other support structures. The depth of ground/sediment that would be disturbed during construction of the boardwalk would vary by section, location, and finalized design plans, but is not likely to be greater than several feet.

Posts would be required for boardwalk construction and would be placed by mechanically auguring holes to place pre-formed pilings or forms that would be filled with pumped concrete to create new pilings. The holes for the pilings are estimated to be approximately 1 to 2 feet in diameter (this is an estimate, final sizes will depend on final design requirements). In addition, as work proceeds, the project area may be isolated by construction fencing to prevent incidental access. This fencing material would be emplaced by hand driving (e.g., with a sledge hammer or post driver) stakes as necessary. These stakes would likely be less than 2 inches in diameter and driven to a depth of 1 to 2 feet to secure the fencing. Material that would be placed at the site includes construction materials. Cement and

wood would be placed to construct the boardwalk structure while cement, wood, and various other materials would be used to construct educational devices.The footprint of construction activities for most sections of boardwalk installation would occur within the footprint of existing boardwalks or other developed areas of the Fort Walton Beach. New sections of boardwalk would require some minimal area disturbance, as they would occur outside existing areas developed by the municipality or private landowners, but will be limited to the extent possible given the area available between existing developed areas along Santa Rosa Sound and the shoreline.

12.89.3.2 Oyster Reef Construction

An additional part of the project includes expanding an existing constructed oyster reef within the project site (proposed reef is on the Western end of the project area). Construction plans/designs of the oyster reef have yet to be finalized although conceptual plans have been developed. Construction would involve placement of material from shore as the water in the area is too shallow for a barge.

The location for the placement of the reef materials will be marked during construction, most likely using PVC stakes that would be driven by hand using a post driver or other means into the sediment. Following final materials placement these stakes would be removed. Materials would most likely be placed by crane from shore. If this is not feasible materials would be transported from staging areas on shore in shallow draft workboats to the project site. The oyster reef would be constructed with either cured oyster shells or, more likely, mined fossilized oyster shells. Should cured shells be used they will have been stored and dried for a period of time consistent with the existing state guidelines given the final design of the oyster bar (time varies based on factors such as proposed relief of the reef off the bottom). The final oyster reef elevation and design would be selected to maximize shoreline protection and meet state regulatory requirements. As part of the final design the risk for creating a structure that poses an entrapment risk would be evaluated and addressed by ensuring gaps are left between constructed units – both new and existing. These gaps would be a minimum of 3 feet wide.

12.89.3.3 Salt Marsh Restoration

Placement and plans/designs of the salt marsh restoration have yet to be finalized although the general area for the marsh is toward Eastern end of project area. Possible restoration techniques would include planting native marsh vegetation in sediment in areas adjacent to the newly constructed boardwalk and along Santa Rosa Sound shoreline. All planting work would be conducted from the shoreline. The created marsh areas would be monitored for natural revegetation and to determine success and identify any corrective action needed. The conceptual plans provide an initial view of the types of marsh plantings that could be used according to the elevation of the planting area.

Potential impacts from construction operations may also be avoided by requiring compliance during all in-water activities with the *Sea turtle and Smalltooth Sawfish Construction Conditions* (NMFS, 2006) and *Standard Manatee Conditions for In-water Work* (USFWS, 2011).

12.89.3.4 Anticipated Construction Schedule

Construction work is expected to take 6 months once design plans are finalized. Overall, the project is anticipated to be completed within 2 years. The following schedule is currently planned:

- Design Complete: Summer/Fall 2014

- Permitting Complete: U.S. Army Corps of Engineers (USACE) permits for oyster reef and salt marsh construction have been obtained. All remaining permitting would be obtained once funding is secured.
- Contract Bid: Summer/Fall 2014
- Construction Start: Summer/Fall 2014
- Construction Compete: Summer/Fall 2016

12.89.3.5 Best Management Practices

Standard best management practices (BMPs) for this type of construction with limited in-water work would be used to minimize impacts (e.g., silt fencing, vehicles would be staged and refueled away from waterways).

12.89.4 Operations and Maintenance

Long-term monitoring and maintenance of the boardwalk structure would be conducted by the City of Fort Walton Beach as part of its regular public facilities maintenance activities. Funding for this postconstruction maintenance is not included in the value for the project cost and would be the responsibility of the City of Fort Walton Beach. As part of the project cost, monitoring would be conducted to ensure project plans and designs are correctly implemented. Performance monitoring would evaluate the construction of the boardwalks to ensure successful completion as designed and permitted. Following the construction performance monitoring period, human use and activity at the site would be monitored through the local government's regular maintenance activities.

As indicated in the feasibility study for Brooks Landing Shorewalk (City of Fort Walton Beach 2009), the University of West Florida's Department of Environmental Science and Department of Biology would regularly monitor the oyster reef and coastal salt marsh restoration efforts and provide hands-on education outreach to students and the general public.

12.89.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental impacts oftheir actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected environment and environmental consequences of the project.

12.89.5.1 No action

Both OPA and NEPA require consideration of the No Action alternative. For this Final Phase III ERP/PEIS proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected environment subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.89.5.2 Physical Environment

12.89.5.2.1 Geology and Substrates

Affected Resources

According to the Geologic Map of Florida, sites are likely located on the Quaternary system, Holocene series, Pleistocene/Holocene Sediments stratigraphic unit (Scott 2001). This stratigraphic unit consists of siliciclastics, organics, and freshwater carbonates. The siliciclastics are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey, silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty clays. Gravel is occasionally present. Organics occur as plant debris, roots, disseminated organic matrix, and beds of peat. Freshwater carbonates, or marls, are buff-colored to tan, unconsolidated to poorly consolidated, fossiliferous carbonate muds. Sand, silt, and clay may be present in limited quantities and these carbonates often contain organics. The dominant fossils in the freshwater carbonates are mollusks. (Natural Resources Conservation Service [NRCS] 2004). All sites are located within the geographical division known as the West Florida Coast Strip, which extends from the mouth of the Ochlockonee River west to Mississippi. This geographic region is characterized by coastal islands and narrow peninsulas. Notable geographic features include the long barrier peninsulas of Santa Rosa Island and Perdido Key, as well as Big Lagoon (NRCS 2004).

Topographically, the proposed project lies within the Gulf Coastal Lowlands, a subdivision of Coastal Lowlands physiographic region that extends along Florida's entire Gulf coastline. In recent geologic times, the Coastal Lowlands were marine terraces (sea floors) during at least three successive high ocean level periods. The area is a flat region, except where remnant dune ridges occur or where the surface has been modified by erosion or underground solution cavities. Landforms typical of this subdivision include barrier islands, such as Santa Rosa Island; lagoons, such as Santa Rosa Sound; estuaries, such as the Choctawhatchee Bay; coastal ridges; sand dune ridges; relict splits and bars; and valleys (NRCS 2004).

Environmental Consequences

Mechanized equipment and hand tools would be used to complete the construction of the boardwalk structures. Some excavation of soils would occur; however, adverse impacts to geology and substrates would be minor. Disturbance would be detectable, but would be short term, small, and localized at each site. There would be no long-term changes to local geology, soils, and sediments associated with each project. Erosion and/or compaction may occur in localized areas. Adverse impacts to geology and substrates will be minor.

12.89.5.2.2 Hydrology and Water Quality

Affected Resources

Northwest Florida has seven major watersheds, all of which have been identified as priorities under the Surface Water Management and Improvement (SWIM) program. Water quality protection is the underlying goal of SWIM, along with the preservation and restoration of natural systems and associated public uses and benefits (Northwest Florida Water Management District [NWFWMD] 2011). Santa Rosa Sound is part of the Pensacola Bay watershed system. Santa Rosa Sound receives relatively little direct freshwater inflow and has annual mean salinity of 24 parts per thousand (Hand et al. 1996). Water

quality in Santa Rosa Sound has been assessed as good, but broad issues for this watershed system include water and sediment quality degradation through point and nonpoint pollution sources, habitat quality that is threatened by and degraded through sedimentation and deposition, management and coordination between two states and numerous local governments and agencies, and public education and awareness (Hand et al. 1996).

The CWA requires that the surface waters of each state be classified according to designated uses. Florida has six classes with associated designated uses, which are arranged in order of degree of protection required. According to Florida Administrative Code (FAC) 62.302.400, the proposed project occurs within Class II waters. Therefore, standards to meet the following uses apply to the project area: shellfish propagation or harvesting. The surface waters of the state are Class III waters, unless described differently in Florida rule. There are no designated Outstanding Florida Waters by the State of Florida (Rule 62-302.700, Fla. Admin. Code), located in the project area.

Wetlands

Based on the National Wetland Inventory data, the area around the city of Fort Walton Beach is designated as an estuarine wetland (USFWS 2013).

Floodplains

Based on Federal Emergency Management Agency (FEMA) flood insurance rate maps (Panel 12091C046H), the boardwalk installation portion of the proposed project appears to be located primarily in Zone AE. Zone AE is defined as other flood areas with a 1% annual chance of flooding and are considered high risk areas by FEMA (FEMA 2006).

Environmental Consequences

Water quality would be potentially impacted during construction from equipment leaks or spills or disturbance of sediments that result in siltation, turbidity, and the release of chemicals from sediments. If the disturbed sediments are anoxic, the biological oxygen demand in the water column would increase. With required mitigation in place, the effect on hydrology and water quality would be measurable or detectable, but it would be small, short term, and localized. Water quality impacts would quickly become undetectable, and the area's hydrology would be only temporarily altered during construction.

All permit conditions would be strictly adhered to, including mitigation measures for siltation, erosion, turbidity, and release of chemicals. During construction, BMPs and boom placement along with other avoidance and mitigation measures required by state and federal regulatory agencies would be employed to minimize any water quality and sedimentation impacts. FDEP permit conditions require erosion and turbidity mitigation measures, which include the following:

- Installation of floating turbidity barriers.
- Installation of erosion control measures along the perimeter of all work areas.
- Stabilization of all filled areas with sod, mats, barriers, or a combination.
- Stoppage of work if turbidity thresholds are exceeded. The soils would then be stabilized, work procedures modified, and the FDEP would be notified.

The FDEP permit also constitutes a Certification of Compliance with State Water Quality Standards under Section 401 of the CWA, which indicates that the project would comply with state water quality standards and other aquatic resource protection requirements.

Impacts from chemicals that could be released from sources such as construction equipment and boats are expected to be negligible. Required spill containment measures would be implemented for applicable construction activities. FDEP permit conditions require spill containment protection and mitigation measures as follows:

- Prohibiting boat repair or fueling facilities over the water.
- Prohibiting vessels from being removed from the water for the purposes of maintenance or repair.
- Prohibited activities include hull cleaning and painting, discharges or release of oils or greases, and related metal-based bottom paints associated with hull scraping, cleaning, and painting.

The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (Corps) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). Coordination with the Corps and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

This project would not impact groundwater. A wetlands permit is required for the project and would stipulate appropriate BMPs and mitigation.

12.89.5.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

The Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS have been set for six common air pollutants (also known as criteria pollutants), consisting of particle pollution or particulate matter, ozone, carbon monoxide, sulfur dioxide (SO_2), nitrogen dioxide, and lead. Particulate matter is defined as fine particulates with a diameter of 10 micrometers or less (PM_{10}) and fine particulates with a diameter of 2.5 or less ($PM_{2.5}$). When a designated air quality area or airshed within a state exceeds a NAAQS, that area may be designated as a “nonattainment” area. Areas with levels of pollutants below the health-based standard are designated as “attainment” areas. To determine whether an area meets the NAAQS, air monitoring networks have been established and are used to measure ambient air quality. The EPA also regulates 187 hazardous air pollutants (HAPs) that are known or suspected to cause cancer or other serious health effects. Air quality in the Florida panhandle is in attainment with the NAAQs (EPA 2013a).

Greenhouse Gases

Gases that trap heat in the air are called greenhouse gases (GHGs). The primary GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO_x), and fluorinated gases. Over the past century, human activities have released large amounts of GHGs into the atmosphere, which are contributing to global warming. Global warming is defined as the ongoing rise in global average temperature near the Earth's surface and is known to cause changes in climate patterns.

According to the EPA, the average annual temperature in the southeast portion of the United States has increased by approximately 2.0 degrees Fahrenheit (°F) since 1970. Winters, in particular, are getting warmer, and the average number of freezing days has decreased by 4 to 7 days per year since the mid-1970s. Most areas are getting wetter; autumn precipitation has increased by 30% since 1901 (EPA 2013b). In many parts of the region, the number of heavy downpours has increased. Despite the increases in fall precipitation, the area affected by moderate and severe drought has increased since the mid-1970s (EPA 2013b).

Average annual temperatures in the region are projected to increase from 4°F to 9°F by 2080. Hurricane-related rainfall is projected to continue to increase. Models suggest that rainfall will arrive in heavier downpours, with increased dry periods between storms. These changes would increase the risk of both flooding and drought. The coasts will likely experience stronger hurricanes and sea level rise. Storm surge could present problems for coastal communities and ecosystems (EPA 2013b).

Total GHG emissions in the state of Florida from 1990 to 2007 have increased at an average rate of 2.1% per year. Total GHG emissions in 2007 were 290 million metric tons of CO_2 equivalent ($MMTCO_2E$). In 2007, 91% of GHG emissions in Florida were CO_2 emissions (FDEP 2010).

Environmental Consequences

Project implementation would require the use of heavy mechanized equipment, which would lead to temporary air pollution (e.g., criteria pollutants, HAPs, GHGs) due to emissions from the operation of construction vehicles and equipment. Project plans have not yet been finalized for the various boardwalk construction and artificial oyster reef and estuarine marsh expansion/restoration; however, any air quality impacts that occur would likely be minor due to their localized nature, short-term duration, and the small size of the project. Available BMPs would be employed to prevent, mitigate, and control potential air pollutants during project implementation. No air quality-related permits would be required. The project area is currently in attainment with NAAQS parameters. The proposed action would not affect the attainment status of the project area or region. A State Implementation Plan conformity determination (42 USC 7506 (c) is not required since the project areas are in attainment for all criteria pollutants.

Project plans have not been finalized for this project. As such, it is unclear what equipment would be used and the duration of use for that equipment. The following table provides GHG emissions estimates for a variety of construction and transportation equipment that would likely be used for the construction of boardwalk structures and artificial oyster reef and salt marsh expansion/restoration. Each of these emissions is based on use of the heavy equipment over an 8-hour day (Table 12-61).

Table 12-61. Greenhouse gas emissions for various mechanized equipment that would likely be used for the proposed project.

Equipment[1]	Number of 8-hour Days	CO_2 (metric tons)[2]	CH_4 (CO_2e) (metric tons)[3]	NO_x (CO_2e) (metric tons)	Total CO_2e (metric tons)
Crane	120	0.29	0.0001	0.001	34.8
Dump Truck	40	0.34[4]	0.0002	0.002	13.6
Barge	120	4.5	0.01	0.04	546
Pickup Truck[5]	120	0.16	0.0001	0.001	19.2
Bobcat	60	0.212	0.072	0.848	67.92
TOTAL					681.52

[1]Emissions assumptions for all equipment based on 8 hours of operation.

[2] CO_2 emissions assumptions for diesel and gasoline engines based on EPA (2009).

[3] CH_4 and NO_X emissions assumptions and CO_2e calculations based on EPA (2011).

[4] Construction equipment emission factors based on EPA NONROAD emission factors for 250-horsepower pieces of equipment. Data were accessed through the California Environmental Quality Act Roadway Construction Emissions Model.

[5]Emissions assumptions for an 8-cylinder, 6.2-liter gasoline engine Ford F150 pickup and 18 gallon (half-tank) daily fuel consumption (U.S. Department of Energy 2013).

Based on the assumptions described in Table 12-61 above, GHG emissions would not exceed 25,000 metric tons per year. Given the projected construction-phase GHG emissions, the small scale and short duration of the project, and increased park use, predicted impacts on air quality from GHG emissions would be anticipated to be minor on both short term and long term timeframes.

At the completion of the project, boat use could increase due to subsequent monitoring requirements of the oyster reef expansion/restoration, but monitoring would likely require a single boat several times a year. This boat use would likely increase exhaust emissions and could affect air quality, but it would occur over a short-time period and would be temporary so adverse impacts to air quality would be expected to be minor because management actions could be taken to limit boat use.

12.89.5.3.1 Noise

Affected Resources

Noise can be defined as unwanted sound and noise levels, and its impacts are interpreted in relationship to impacts on nearby visitors to the recreational areas and wildlife in the project vicinity. The Noise Control Act of 1972 (42 USC 4901–4918) was enacted to establish noise control standards and regulate noise emissions from commercial products such as transportation and construction equipment. The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale which approaches the sensitivity of the human ear across the frequency spectrum. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear. Table 12-62 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-62. Common noise levels.

Noise Source or Effect	Sound Level (dBA)
Rock-and-roll band	110
Truck at 50 feet	80
Gas lawnmower at 100 feet	70
Normal conversation indoors	60
Moderate rainfall on foliage	50
Refrigerator	40
Bedroom at night	25

Source: Adapted from U.S. Department of Energy and Bonneville Power Administration (1986).

Noise levels in the project areas vary depending on the season, time of day, number and types of noise sources, and distance from noise sources. Existing sources of noise in the project area are mainly from recreational boating, vehicle traffic on Highway 98, with occasional overhead aircraft or commercial traffic. Ambient natural sounds such as wind, waves, and wildlife also contribute to existing noise levels. Existing ambient noise levels in the project area would be generally low and predominantly result from daily boating activities and vehicle traffic from the adjacent highway (Highway 98).

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the proposed project. Noise-sensitive receptors in the project vicinities include beach and park recreational use and wildlife. The project area is, for the most part, consistent with a developed urban environment. The shoreline of the project area supports a variety of residential and industrial developed areas, and the Gulf of Mexico supports commercial and recreational boat traffic.

Environmental Consequences

Increased noise would occur during the proposed project. Equipment and vehicles used during the construction of the project would generate noise. Construction would be short term and temporary and would only occur during daylight hours. The project would be completed over a 2-year period, and the noise in the project areas during boardwalk construction and artificial oyster reef and salt marsh expansion/restoration would be slightly elevated for short periods of time, so adverse impacts to the soundscape would be minor.

After completion of the project, the soundscape would return to pre-project levels. The potential for increased public use of the boardwalk areas would likely result in a slight increasein noise levels in the downtown area of Fort Walton Beach. Oyster reef and salt marsh monitoring in subsequent years after initial expansion/restoration would likely require the use of boats to visit the project site, so increased noise may result from monitoring, but this would be short term and temporary. Overall, long-term noise impacts from recreational activities and project monitoring would remain minor.

12.89.5.4 Biological Environment

12.89.5.4.1 Living Coastal and Marine Resources

Vegetation

Affected Resources

According to the Natural Vegetation of Florida, the project area would be historically located in pine flatwood forest, composed of three species of pine: longleaf (*Pinus palustris*), slash (*P. elliottii*) and pond (*P. serotina*). Many herbs, saw palmetto (*Serenoa repens*), shrubs, and small trees form an understory. This vegetation type also includes small hardwood forests, many kinds of cypress swamps, prairies, marshes, and bay tree swamps (Davis 1967). However, the proposed project area is located with highly developed urban areas of the city of Fort Walton Beach. Based on aerial reviews, the site of the boardwalk construction portion of the proposed project appears to contain mainly unvegetated sandy beach adjacent to large areas of urban development. A small number of native plants would likely be located in the project area. Two state-listed plant species have the potential to occur within the project area, Gulf Coast lupine (*Lupinus westinous*) and Cruise's golden-aster (*Chrysopsis gossypina cruiseana*).

Submerged aquatic vegetation may be present in areas where oyster reef placement is proposed. Santa Rosa Sound has approximately 3,032 acres of mapped seagrass beds composed primarily of turtle grass (*Thalassia testudinum*) along with some shoal grass (*Halodule wrightii*), but seagrasses are sparse and stunted (FDEP 2011).

A review of Florida's Efficient Transportation Decision Making tool indicates that while submerged aquatic vegetation (seagrasses) are present off the coastline, they are not present within the project area (Florida Department of Transportation 2013).

Environmental Consequences

There would be multi-phase construction events associated with this project, mainly in urban developed areas and along Santa Rosa Sound shoreline. During the construction and placement of the proposed boardwalk structure, any vegetation that may be present would be disturbed during construction and would result in the permanent removal of vegetation within the construction footprint. The use of equipment and disturbance of soil and existing vegetation would also potentially introduce a risk of noxious weed or invasive vegetation species. However, replanting of native grasses and other native vegetation is a portion of the proposed project, so impacts on native vegetation would not be expected.

Project installation activities would use BMPs, including impact avoidance of existing seagrass habitat through the use of small vessels for construction of oyster reefs. Every effort would be made to access the oyster reef placement sites during periods of high tide using shallow draft vessels to minimize potential adverse impacts to seagrass habitat as a result of navigation. Therefore, impacts to seagrass would be short term and minor, localized, and would not alter natural conditions.

Wildlife

Affected Resources

The project site is surrounded by an urban environment and common wildlife that potentially occurs at the project site includes raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), skunks (*Spilogale putorius, Mephitis mephitis*), armadillos (*Dasypus novemcinctus*), squirrels (*Sciurus carlinensis*), multiple bat, snake, avian and rodent species.

Environmental Consequences

Although common wildlife may be disturbed from construction activities, these species live in an urban environment where ambient noise levels are high. Habitat conditions after construction would be similar to the existing conditions, and no impacts to common wildlife would be anticipated.

Marine and Estuarine Fauna (fish, shell beds, and benthic organisms)

Affected Resources

The proposed project area is located at the confluence of Santa Rosa Sound and Choctawhatchee Bay. Santa Rosa Sound is a 42.4-square-mile lagoon that connects Choctawhatchee Bay to the east and Pensacola Bay to the west and has similar marine and estuarine resources as these two bay systems. More than 200 species of fish and shellfish have been reported in the estuarine waters of the Pensacola Bay system. Choctawhatchee Bay provides habitat for numerous fish and other marine species similar to that of Pensacola Bay. The value of marine habitats at the project site, as well as the Pensacola and Choctawhatchee Bay systems as a whole, has been affected by population growth, development, and wastewater disposal. Increased coastal development, in particular, has contributed to displaced habitats, loss of wetlands, and greater amounts of stormwater runoff entering the river, bay, and tributaries (NWFWMD 2011). Nonetheless, the marine environment at the project site provides habitat to an array of aquatic species, including ladyfish (*Elops saurus*), hardhead catfish (*Arius felis*), gafftopsail catfish (*Bagre marinus*), pigfish (*Orthopristis chrysoptera*), Gulf sturgeon (*Acipenser oxyrinchus desotoi*), Alabama shad (*Alosa alabamae*), and striped bass (*Morone saxatilis*). Other species native to the area include bay anchovy (*Anchoa mitchilli*), spotted seatrout (*Cynoscion nebulosus*), Gulf menhaden (*Brevoortia patronus*), channel catfish (*Ictalurus punctatus*), striped mullet (*Mugil cephalus*), blue crab (*Callinectes sapidus*), American oyster (*Crassotrea virginica*), and Penaeid shrimp (*Penaeus* spp.), among others (Florida Fish and Wildlife Commission [FWC] 2001; Livingston 1999). Benthic organisms such as bivalves, gastropods and other mollusks, anemones, amphipods, annelids, crustaceans, and echinoderms and are also abundant in these waters (FWC 2001).

Environmental Consequences

The proposed project would likely result in short-term, minor adverse impacts to fish that may be present during the in-water construction as a result of turbidity and noise disturbance during construction/restoration of the artificial oyster reef. Benthic organisms that may be present in the substrate may also be adversely affected during reef construction. However, the proposed project is intended to increase available oyster habitat by providing surface for attachment of sessile organisms, so reef construction impacts would be short term and minor and in the long term would benefit the ecosystem around the expanded oyster reef.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act (MBTA) and bald eagles protected under the Bald and Golden Eagle Protection Act (BGEPA).

Affected Resources

The Trustees have reviewed the proposed project for potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA for species managed by USFWS. For this, the Trustees first reviewed the species list for Okaloosa County, Florida36. Table 12-63 presents a summary of these potentially affected species/critical habitats and the nature of the potential impact that could result from project implementation.

Table 12-63. Potential Impacts to Species/Critical Habitats managed by USFWS.

SPECIES/CRITICAL HABITAT	SPECIES/CRITICAL HABITAT IMPACTS
Green turtle[a], Hawksbill turtle[a], Kemp's ridley turtle; Leatherback turtle[a], Loggerhead turtle	Sea turtle nesting is not expected in the project area because of its shoreside location within the Santa Rosa Sound and lack of suitable nesting habitat. Rather the turtles use the beaches directly along the Gulf Coast for nesting. Therefore, no impacts to sea turtles in terrestrial habitats are expected. No proposed or designated critical habitat for sea turtles occurs within the action area; including the limited area of in-water work, therefore, none will be adversely modified or destroyed.
West Indian manatee	The counties in the project area are not part of the 36 Florida counties that are identified as being counties where manatees regularly occur in coastal and inland waters (U.S. Department of the Interior, 2011). However, manatees could be present in the project waters and would potentially seek out shallow seagrass areas as they are preferred feeding habitat (U.S. Department of the Interior, 2011). The main risk to manatees during execution of this project would come from boat collisions which could result in harm or mortality.
Gulf sturgeon	NMFS was consulted on Gulf sturgeon and its Critical Habitat in the estuarine environment. As a result, Gulf Sturgeon was not considered in the consultation with the USFWS.

[36] The U.S. Fish and Wildlife, Panama City office website (http://www.fws.gov/panamacity/specieslist.html) provides a county-based list of federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle. Information downloaded March 13, 2013.

In addition to the protected species managed by USFWS, the Trustees reviewed the proposed projects and associated actions for potential impacts to the following protected species (status indicated) and their associated critical habitat, if appropriate, managed by NMFS:

- Gulf Sturgeon, *Acipenser oxyrinchus desotoi*, Threatened
- Smalltooth Sawfish, *Pristis pectinata,* Endangered
- Green Sea Turtle, *Chelonia mydas*, Endangered
- Loggerhead Sea Turtle, *Caretta caretta*, Threatened
- Hawksbill Sea Turtle, *Eretmochelys imbricata*, Endangered
- Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
- Kemp's Ridley Sea Turtle, *Lepidochelys kempii*, Endangered

Additional information on some of these species is provided below.

Sea Turtles and Marine Mammals

There are five species of endangered or threatened sea turtles that may occur or have potential to occur within the project area. These include green turtle (*Chelonia mydas*), hawksbill turtle (*Eretmochelys imbricata*), Kemp's ridley turtle (*Lepidochelys kempii*), leatherback turtle (*Dermochelys coriacea*), and loggerhead turtle (*Caretta caretta*). Sea turtles forage in the waters of the coastal Florida panhandle region and have potential to occur within the waters where in-water work is proposed. The project site does not contain suitable sea turtle nesting habitat and is surrounded by urban development.

Twenty-two marine mammals are native to the Gulf of Mexico: 21 pelagic species of whales and dolphins, and the West Indian manatee. The endangered West Indian manatee has the potential to occur in project area waters. Manatees typically seek out shallow seagrass areas as preferred feeding habitat (FWC 2007). Additionally, bottlenose dolphins (*Tursiops* spp.) populations are known to migrate into bays, estuaries, and river mouths and could be located in any of the proposed project areas (NMFS 2013a). Bottlenose dolphins have been observed entering and leaving Choctawhatchee Bay and on nearshore coastal waters (NMFS 2012).

Smalltooth Sawfish, Gulf Sturgeon, and Gulf Sturgeon Critical Habitat8

Smalltooth sawfish (*Pristis pectinata)*do not typically use northern Gulf of Mexico waters (NMFS 2013b). Gulf sturgeon are restricted to the Gulf of Mexico and its drainages, occurring primarily from the Pearl River in Louisiana to the Suwannee River, in Florida (NMFS 2009). Adult fish reside in rivers for 8 to 9 months each year and in estuarine or Gulf of Mexico waters during the 3 to 4 cooler months of each year (NMFS 2009). Important marine habitats include seagrass beds with sand and mud substrates (Mason and Clugston 1993).

Gulf sturgeon critical habitat was jointly designated by the NMFS and the USFWS on April 18, 2003 (50 C.F.R. 226.214). The proposed project site is located within Critical Habitat for Gulf sturgeon. See Figure 12-56 for a map of critical habitat in the project area. Critical habitat was designated based on seven primary constituent elements (PCEs) essential for its conservation, as defined in the 2003 *Federal Register* and are listed below. PCE's 1, 5, 6, and 7 occur within the project site.

1. Abundant food items, such as detritus, aquatic insects, worms, and/or mollusks, within riverine habitats for larval and juvenile life stages, and abundant prey items, such as amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks, and/or crustaceans, within estuarine and marine habitats and substrates for subadult and adult life stages;
2. Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone, or hard clay;
3. Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths; these are believed necessary for minimizing energy expenditure during freshwater residency and possibly for osmoregulatory functions;
4. A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larval staging;
5. Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages;
6. Sediment quality, including texture and chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and
7. Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g., an unobstructed river or a dammed river that still allows for passage).

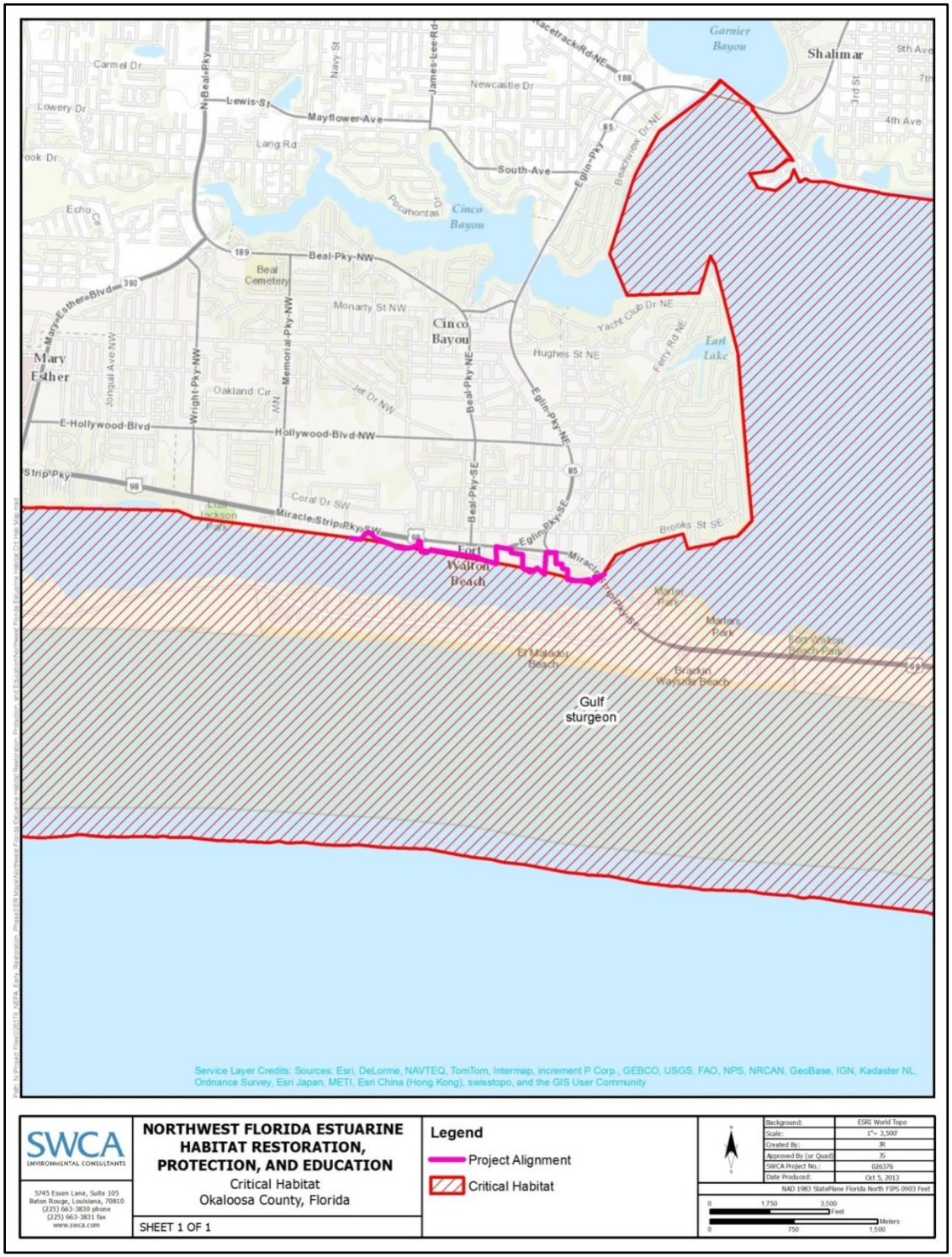

Figure 12-56. Map of Gulf sturgeon critical habitat adjacent to the proposed project area.

Essential Fish Habitat (EFH)

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse impacts on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. The EFH within the project area include emergent wetlands, mud substrate, and estuarine water columns for species of fish, such as red drum, brown shrimp, pink shrimp, and white shrimp. There are no marine components of EFH in the vicinity of the project site.

Table 12-64 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the Northwest Florida Fort Walton Beach Educational Boardwalk site and Santa Rosa Sound.

Table 12-64. Federally managed fisheries with designated Essential Fish Habitat (EFH) in the proposed project area.

EFH Category	Species
Atlantic Highly Migratory Species	
	Atlantic Sharpnose Shark-Neonate
	Bull Shark-Adult
	Bull Shark-Juvenile
	Nurse Shark-Juvenile
	Sandbar Shark-Adult
	Scalloped Hammerhead Shark-Juvenile
	Scalloped Hammerhead Shark-Neonate
	Spinner Shark-Adult
	Spinner Shark-Juvenile
	Tiger Shark-Juvenile

State-Listed Birds, MBTA, and BGEPA

All migratory bird species are protected under MBTA. There are numerous State of Florida–listed bird species with potential for occurrence in and around the boardwalk construction and artificial oyster reef and salt marsh expansion/restoration site. These include Arctic peregrine falcon (*Falcoperegrinus tundrius*), least tern (*Sterna antillarum*), southeastern American kestrel (*Falco sparverius paulus*), American oystercatcher (*Haematopus palliates*), and southeastern/Cuban snowy plover (*Charadrius alexandrinus tenuirostris*).

The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to

determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008).

The proposed project was also reviewed for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Table 12-65 provides a summary of the different migratory bird groups specifically addressed by this review and summarizes the potential impacts to these groups and associated habitats that could result from the implementation of this project.

Table 12-65. Potential project impacts to different migratory bird groups.

SPECIES	BEHAVIOR	SPECIES/HABITAT IMPACTS
Shorebirds	Loafing/Foraging	Construction noise and increased human disturbance during construction may cause birds to temporarily stop foraging or loafing or cause them to temporarily relocate. The Trustees expect that birds in the project area are likely habituated to human activity and would not experience more than short-term impacts. No nesting is known to occur within the project site due to a lack of habitat.
Seabirds	Resting, roosting, nesting	Seabirds forage in water and rest/roost in terrestrial habitats. However, the level of project activity in open water is unlikely to disturb roosting as all construction will occur during the day.

Considering the nature of the potential project and the potential impacts to migratory bird groups and associated habitats, a number of conservation measures were identified and will be followed to minimize potential impacts. These measures are summarized inTable 12-66.

Table 12-66. Conservation measures to minimize impacts to migratory bird groups

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Shorebirds	The Trustees expect foraging and resting birds would be able to move to another nearby location to continue foraging and resting. Shorebird nesting is not expected. However if project activities occur during shorebird nesting season (February 15 to August31), the FWC will be contacted to obtain the most recent guidance to protect nesting shorebirds or rookeriesand their recommendations will be implemented.
Seabirds	Care will be taken to minimize noise and physical disruptions near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity, which they will have. Roosting should not be impacted because the project will occur during daylight hours only. Nesting should not be impacted because the project will not occur near nesting habitats.

Environmental Consequences

The proposed project has been evaluated for potential short- and long-term impacts to state and federally listed threatened and endangered species that may occur within and adjacent to the project areas based on available suitable habitat and restoration goals. Descriptions of these evaluations are provided below.

Protected Species

The USFWS reviewed the proposedprojectfor potential impacts to listed, candidate, and proposed species and designated and proposed critical habitats in accordance with Section 7 of the ESA. On March 10, 2014 the review of potential impacts to species managed by USFWS was completed (McClain, 2014). The USFWS concurred with the Trustees' determination that the proposed project may affect, but is not likely to adversely affect West Indian manatee. The review also concurred with the Trustees' assessment that there would be no effect to five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead).

Consultation of potential impacts on protected species managed by NMFS from this project was initiated on February 19, 2014.The Trustees' review of the potential impacts of the project for protected species managed by NMFS determined the proposed action "may affect, but is not likely to adversely affect" the following species and associated critical habitats in the project implementation area:

- Gulf Sturgeon - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Gulf Sturgeon Critical Habitat – The project footprint does fall within Gulf sturgeon critical habitat (Critical Habitat Unit 10, Santa Rosa Sound); however, it has been determined that the construction activities associated with this project will not adversely modify designated Gulf sturgeon critical habitat.
- Green Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Loggerhead Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Hawksbill Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Leatherback Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Kemp's Ridley Sea Turtle - The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.
- Smalltooth Sawfish – The restoration operations associated with this project may affect, but not likely to adversely affect and will not jeopardize the continued existence of the species.

Concurrence from NMFS with the Trustees' conclusions for these species and associated critical habitats is still pending.

The Trustees also evaluated the potential for take of Marine Mammals under the MMPA and due to these species' mobility and the implementation of NMFS' *Sea Turtle and Smalltooth Sawfish*

Construction Conditions (NMFS, 2006), *Standard Manatee Conditions for In-Water Work* (USFWS 2011), and USFWS recommended conservation measures for listed species and other trust resources, take of marine mammals under the MMPA is not anticipated.

Essential Fish Habitat

The Trustees' review of potential impacts to EFH from the project implementation concluded the project is not likely to adversely affect EFH. Restoring the oyster reef and planting native salt marsh vegetation may result in a small area of existing habitat being converted from one EFH habitat to another type; however, both habitat changes will be small and are anticipated to have a net beneficial impact to habitat quality and species found in the area. Disturbance to any EFH and species using the habitat in areas adjacent to locations where restoration would occur would be brief and insignificant, with risks further mitigated by following identified best management practices during construction. No adverse impacts to other EFH types would result from the proposed restoration techniques.

On April 4, 2014 NMFS completed its evaluation of potential EFH impacts and concluded that the project construction is not likely to adversely affect EFH and any disturbance to species will be minor and brief (Fay, 2014).

State-Listed Birds,MBTA, and BGEPA

According to the FWC Bald Eagle Nest Locater, there are no bald eagle nests within 5 miles of the project site (FWC 2012) so bald eagles would not be affected by the project. At the same time, implementation of the conservation measures previously identified in the review of potential impacts to migratory birds will prevent take of the identified migratory bird groups.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within the project area, and possibly expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. Chapter 7 addresses invasive species, pathways, impacts, and prevention. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project will be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/ vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. In addition, to best management practices, outreach and educational materials may be provided to project workers and potential users/visitors. Other measures that could be implemented are identified in the Chapter 6

Appendix. Due to the implementation of BMPs, the Trustees expect impacts due to invasive species introduction and spread to be short term and minor.

12.89.5.5 Human Uses and Socioeconomics

12.89.5.5.1 Socioeconomics and Environmental Justice

Affected Resources

The population of Okaloosa County is 180,822. Table 12-67 contains population/minority data for Okaloosa County and Florida (U.S. Census Bureau 2010).

Table 12-67. Population characteristics of Okaloosa County compared to State of Florida data.

Topic	Florida		Okaloosa County	
2010 total population	18,688,787		180,822	
White alone	14,270,053	76.4%	146,582	81.1%
Black or African American alone	2,946,899	15.8%	16,797	9.3%
American Indian and Alaska Native alone	58,192	0.3%	1,068	0.6%
Asian alone	455,403	2.4%	5,328	2.9%
Native Hawaiian and Other Pacific Islander alone	11,005	0.1%	354	0.2%
Some other race alone	564,351	3.0%	3,592	2.0%
Two or more races	382,884	2.0%	7,101	3.9%
Median household income, 2007–2011	$47,827		$54,140	
Persons below poverty level, percent, 2007–2011	14.7%		11.7%	

Environmental Consequences

Newly constructed boardwalk structures in downtown Fort Walton Beach would have a direct, beneficial effect for people that live near the area. Improvements would encourage more people to visit Fort Walton Beach and participate in outdoor activities along and within Santa Rosa Sound. This might benefit the health and well being of the local population. The proposed installation of the boardwalk would draw more visitors to the county and, specifically, Fort Walton Beach. Long-term, indirect, moderate benefits would result from increasing recreational and fishing value of the area. Greater fishing success may increase the number of fishing trips in the area, which could generate ancillary purchases such as license fees, fuel, equipment or other ancillary purchases. Local revenue for businesses located along the boardwalk would likely increase after construction provided increased access to businesses located in downtown Fort Walton Beach and along the Santa Rosa Sound shoreline.

Direct, short-term, moderate benefits through local job creation would result from construction activities. The proposed improvement would create approximately 10 to 20 temporary construction jobs. This project is not designed to create a benefit for any group or individual, but rather would provide benefits to a local and regional basis. Because the project occurs in an area that is not disproportionately minority or low income (see Table 12-67), there are no indications that the proposed project would be contrary to the goals of Executive Order 12898 or would create disproportionate, adverse human health or environmental impacts on minority or low income populations of the surrounding community.

12.89.5.5.2 Cultural Resources

Affected Resources

A review of the Florida Master Site File shows that there are numerous previously recorded cultural resources within 0.25 mile of the boardwalk project area. These include prehistoric and historic archaeological sites, historic standing structures, structures listed on the National Register of Historic Places (NRHP), and at least one NRHP historic district.

The city of Fort Walton Beach has been historically occupied since at least the 1830s. Camp Anderson/Camp Walton (Site 8OK780) was utilized from 1838 to at least the 1940s. The NRHP-listed Fort Walton Historic District is located just north of the beach at the vicinity of Shell Street and First Street. Historically a boardwalk along with a casino, restaurant, dance pavilion, and beach cottages were located along the beach. Many of these structures were burned and/or destroyed in a fire in 1942 (Hamilton 1955).

There are several prehistoric archaeological sites that are located along the beach. These range from surface scatters to mounds, and most of them are of unknown eligibility.

This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. While the Section 106 review process is ongoing, an initial review of the project has not identified the presence of a historic property within the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse impacts on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.89.5.5.3 Land and Marine Management

Affected Resources

The land use surrounding the boardwalk installation location is primarily zoned as mixed-use high, community facilities, and recreation (City of Fort Walton Beach 2012b). Fort Walton Beach Landing Park and Liza Jackson Park are adjacent to the proposed project footprint. Both parks and the boardwalk installation would be managed by the City of Fort Walton Beach.

The mixed-use land use allows single and multi-family residential, commercial, limited industrial (such as artisan studios or cottage industries), educational, public, civic, cultural, and specific tourist-related activities. The City of Fort Walton Beach intends that mixed-use development within the mixed-use land use category provides a range of uses to achieve a diverse, compatible, and pedestrian-friendly area. The civic land use category provides for public educational facilities and civic uses while the recreational land use category provides locations for active or passive parks, and public or private recreation lands (City of Fort Walton Beach 2000). Under the Comprehensive Plan (2000), the City of Fort Walton Beach

will also continue to implement measures that would further develop the waterfront areas of the city to increase revenue through tourism and recreation opportunities.

The project would be located in a coastal area that is regulated by the CZMA and the Florida Coastal Management Act of 1978.

Environmental Consequences

Although the action would require several permits for the short-term construction period, it would not require a variance, zoning change, or amendment to a land-use area or comprehensive management plan. The long-term impact of the project would be minor because it would not affect overall use and management beyond the local boardwalk area and would be consistent with current land use. The proposed boardwalk would align with city development measures in the Fort Walton Beach Comprehensive Plan allowing structures to be constructed in the mixed-use zoned areas along Santa Rosa Sound. The proposed boardwalk would provide educational and recreational activities and is intended to increase local tourism.

Under the Coastal Zone Management Act of 1972, the selection of the projects for early restoration must be consistent to the maximum extent practicable with the federally-approved coastal management programs for the states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with the public review of the Phase III DERP/PEIS (Federal Trustees 2013). The State of Florida responded and concurred with the federal determination of consistency at this point in the early restoration planning process (Milligan 2014).

12.89.5.5.4 Tourism and Recreational Use

Affected Resources

Tourism and recreation are common activities throughout the Florida panhandle region. Downtown Fort Walton Beach, where the proposed project is located, provides public access to Santa Rosa Sound for tourism and recreation use. Recreational activities on and around downtown Fort Walton Beach include fishing, boating, passive recreation, cultural and heritage enrichment, and wildlife viewing.

Environmental Consequences

During the construction period, recreational visitors would have very limited access to the Santa Rosa Sound shoreline and would experience negative impacts from noise and visual disturbances associated with the use of construction equipment. These limitations would be a minor inconvenience to visitors. Construction would have a short-term, minor, direct adverse impact on tourism and recreational use of the project area. Once completed, the project would result in a long-term, direct positive impact on tourism and recreational use by providing access to local restaurants, bars, shops, and lodging that would likely enhance revenue and recreational opportunities in downtown Fort Walton Beach.

12.89.5.6 Aesthetics and Visual Resources

Affected Resources

The landward side of the proposed project has a variety of land uses that provide access for residents, visitors, and commuters, including Liza Jackson Park and Fort Walton Beach Landing Park. Existing

aesthetics and visual resources to the south of the boardwalk from the project site are views of developed areas and the open water of Santa Rosa Sound.

Environmental Consequences

Aesthetics would be reduced in the project area during the construction operations, due to the physical presence of the equipment used to transport the material, as well as the presence of other land-based support equipment. However, these impacts would be minor, direct, and temporary because they would only be visible from a small portion of the project area and would not dominate the viewshed or detract from current visitor activities. Following construction, the boardwalk structure and artificial reef and salt marsh expansion/restoration would provide for minor, direct benefits through improved aesthetics to the local area. These changes would be readily apparent but minor because they are consistent with other facilities in the surrounding areas and would not attract attention, dominate the view, or detract from visitor experiences.

12.89.5.6.1 Infrastructure

Affected Resources

The proposed boardwalk installation is located in the developed, downtown area of Fort Walton Beach. The project area is bordered by residential and commercial buildings and public parks immediately north of the boardwalk footprint and the shoreline of Santa Rosa Sound to the immediate south.

Environmental Consequences

The project is not anticipated to have an adverse impact because it is believed that the proposed project would hook up to existing utilities and other public facilities that have capacity.

12.89.5.7 Public Health and Safety and Shoreline Protection

Affected Resources

The management of hazardous materials is regulated under various federal and state environmental and transportation laws and regulations, including the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Emergency Planning and Community Right-to-Know Act; and the Hazardous Materials Transportation Act. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment, transport, and disposal) of these materials. Some of these laws provide for the investigation and cleanup of sites that have already been contaminated by releases of hazardous materials, wastes, or substances.

A review of the EPA's EnviroMapper revealed that there are no Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), or Permit Compliance System (PCS) sites on or immediately adjacent to the boardwalk installation site or the artificial oyster reef and salt marsh expansion/restoration (EPA 2013c).

Environmental Consequences

Project construction would require mechanical equipment that uses oil, lubricants, and fuels. The contractor would be required to take appropriate actions to prevent, minimize, and control the spill of

construction-related hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids.

12.89.6 Summary and Next Steps

The Northwest Florida Fort Walton Beach Educational Boardwalk project would expand existing boardwalks as well as conducting several small natural resource and habitat enhancement projects in Fort Walton Beach. The proposed improvements include constructing a new educational and interactive boardwalk, expansion of an existing intertidal oyster reef, and restoration of a degraded salt marsh. The project is consistent with the selected alternative in the Final Phase III ERP/PEIS (Alternative 4), under which the Trustees propose to implement projects emphasizing the restoration of habitat and living coastal and marine resources as well as projects emphasizing the restoration of recreational opportunities.

NEPA analysis of the environmental consequences suggests that while minor adverse impacts to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and/or increase recreational use opportunities by improving the boardwalks and enhancing adjoining natural resources and habitat. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees' determination on selection of the project will be included in the Record of Decision.

12.89.7 References

City of Fort Walton Beach.2000.Fort Walton Beach Comprehensive Plan.Available at: http://fwb.org/engineering/planning-zoning/comprehensive-plan/. Accessed October 5, 2013.

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12.90 Cumulative Impacts

The CEQ regulations for implementing NEPA require the assessment of cumulative impacts in the decision-making process for federal projects. The regulations define cumulative impacts as the:

> *impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions*.

In the context of the Phase III Early Restoration Program, cumulative impacts assessment requires the Trustees to (1) define appropriate spatial and temporal boundaries for the analysis; (2) describe existing environmental and/or socioeconomic conditions for affected resources within the spatial and temporal boundaries; (3) identify past, present and reasonably foreseeable future government and private actions that could have or contribute to potentially significant impacts on the affected resources; and (4) characterize the cumulative impacts of the proposed project assuming implementation of the other past, present, and reasonably foreseeable future actions.

Given the broad geographic scope of the Phase III program, the requirement for cumulative impacts analysis poses unique challenges. Although Early Restoration encompasses projects located across hundreds of miles of Gulf of Mexico coastline, a cumulative analysis of all impacts across the Gulf is not practically feasible. Moreover, at that scale, local or regional detail would not be sufficient for analysis. Instead, the Trustees have developed a cumulative impacts approach built around discrete, state-by-state, spatially-based project groupings that focus the analysis on the most likely areas for cumulative resource impacts (e.g., watersheds, estuaries or counties). This is designed to supplement the programmatic cumulative impact analysis found in Chapter 6. Following the CEQ guidance for scoping cumulative analyses, the goal is not to capture every theoretically possible impact, but instead 'to count what counts.' Defining spatial boundaries in this manner also facilitates identification and analysis of existing environmental and socioeconomic conditions.

Once the project spatial groups have been selected and baseline conditions characterized, the cumulative impacts analysis depends heavily on the availability of information and data about past, present, and reasonable foreseeable future actions. For the analysis of the Phase III program, the Trustees identified past, present, and reasonably foreseeable future actions through consultations with local, state and federal environmental experts familiar with major environmental and development initiatives that have a potential to contribute substantially to cumulative impacts. In some cases, environmental analyses of reasonably foreseeable actions are available to inform the Trustees' analyses. But in the absence of such completed analyses, the Trustees generally had to rely on expert judgments, primarily qualitative, about the potential for impacts, using publicly available information about the likely design and location of these actions.

For the 30 Florida Phase III Early Restoration projects, the Trustees believe the cumulative impact analyses discussed here represent best estimates of how current environmental and socioeconomic conditions may be changed by the proposed actions when their impacts are combined with other past, present, and reasonably foreseeable future actions. However, the cumulative impacts analysis remains subject to uncertainties and data limitations. Nonetheless, because the proposed Florida Phase III Early Restoration projects are all designed to improve environmental quality directly or to increase public

access and enjoyment of natural resources, the Trustees concluded that although some of the projects may have an incremental contribution to adverse cumulative impacts, the contribution would not be substantial over the long term. The reasons for this conclusion are detailed in the remainder of this chapter.

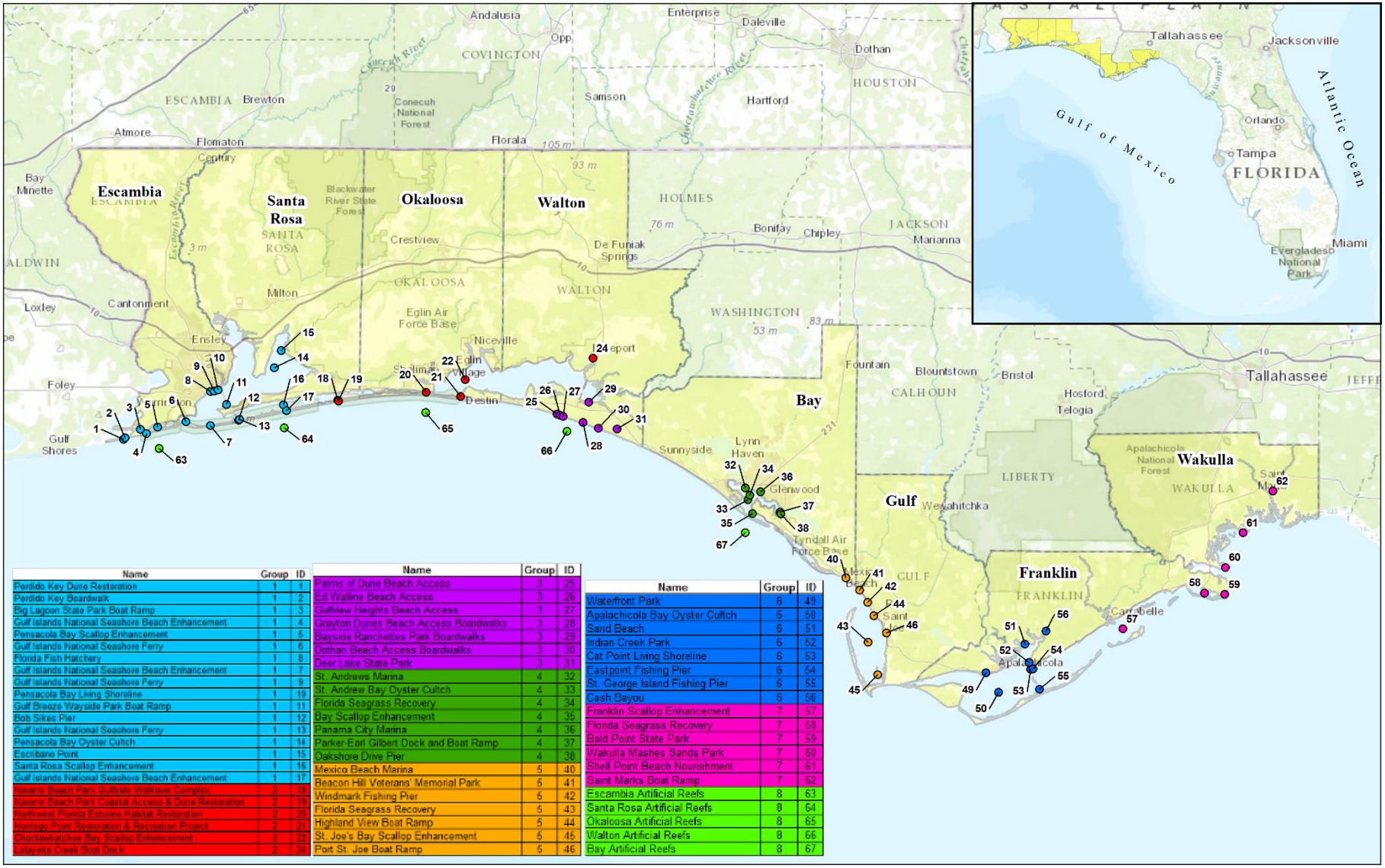
Spatial and Temporal Boundaries for Florida Projects

Spatial Boundaries

The Phase III Early Restoration projects proposed in Florida are physically separated from each other and are distributed across a wide geographical range in Florida. The projects were therefore grouped geographically in order to analyze the potential for cumulative impacts at appropriate regional scales.

In developing the following cumulative impact analysis, the cumulative actions discussed in Chapter 6 were considered (e.g. marine transportation, oil and gas, etc.). As part of the cumulative analysis, past, present and reasonably foreseeable future actions were identified (past actions are considered part of the existing conditions analyzed in the individual environmental reviews). This analysis considers the incremental contribution of proposed Phase III early restoration projects to potential cumulative impacts to resources discussed in Chapter 3. The analysis includes resources that are relevant to the concerns identified on the regional scale.

For Florida Phase III Early Restoration projects, eight regional or spatial groupings were developed. They are: Grouping 1 – Pensacola Bay (Escambia and Santa Rosa Counties); Grouping 2 – Santa Rosa Sound/Choctawhatchee Bay (Okaloosa and Walton Counties); Grouping 3 – Walton County; Grouping 4 – St. Andrew Bay (Bay County); Grouping 5 – St. Joseph Bay (Bay and Gulf Counties); Grouping 6 – Apalachicola Bay (Franklin County); Grouping 7 – Apalachicola and Apalachee Bays (Franklin and Wakulla Counties); Group 8ing – Offshore Waters of Florida. Regional group were analyzed for, past, present, and reasonably foreseeable future actions which could result in cumulative impacts to the affected resource when combined with the impacts of the projects being considered (Figure 12-57) below.



Name	Group	ID
Perdido Key Dune Restoration	1	1
Perdido Key Boardwalk	1	2
Big Lagoon State Park Boat Ramp	1	3
Gulf Islands National Seashore Beach Enhancement	1	4
Pensacola Bay Scallop Enhancement	1	5
Gulf Islands National Seashore Ferry	1	6
Florida Fish Hatchery	1	8
Gulf Islands National Seashore Beach Enhancement	1	7
Gulf Islands National Seashore Ferry	1	9
Pensacola Bay Living Shoreline	1	10
Gulf Breeze Wayside Park Boat Ramp	1	11
Bob Sikes Pier	1	12
Gulf Islands National Seashore Ferry	1	13
Pensacola Bay Oyster Cultch	1	14
Escribano Point	1	15
Santa Rosa Scallop Enhancement	1	16
Gulf Islands National Seashore Beach Enhancement	1	17
Navarre Beach Park Gulfside Walkover Complex	2	18
Navarre Beach Park Coastal Access & Dune Restoration	2	19
Northwest Florida Estuine Habitat Restoration	2	20
Nomego Point Restoration & Recreation Project	2	21
Choctawhatchee Bay Scallop Enhancement	2	22
Lafayette Creek Boat Dock	2	23

Name	Group	ID
Palms of Dune Beach Access	3	25
Ed Walline Beach Access	3	26
Gulfview Heights Beach Access	3	27
Grayton Dunes Beach Access Boardwalks	3	28
Bayside Ranchettes Park Boardwalks	3	29
Dothan Beach Access Boardwalks	3	30
Deer Lake State Park	3	31
St. Andrews Marina	4	32
St. Andrew Bay Oyster Cultch	4	33
Florida Seagrass Recovery	4	34
Bay Scallop Enhancement	4	35
Panama City Marina	4	36
Parker-Earl Gilbert Dock and Boat Ramp	4	37
Oakshore Drive Pier	4	38
Mexico Beach Marina	5	40
Beacon Hill Veterans' Memorial Park	5	41
Windmark Fishing Pier	5	42
Florida Seagrass Recovery	5	43
Highland View Boat Ramp	5	44
St. Joe's Bay Scallop Enhancement	5	45
Port St. Joe Boat Ramp	5	46

Name	Group	ID
Waterfront Park	6	49
Apalachicola Bay Oyster Cultch	6	50
Sand Beach	6	51
Indian Creek Park	6	52
Cat Point Living Shoreline	6	53
Eastpoint Fishing Pier	6	54
St. George Island Fishing Pier	6	55
Cash Bayou	6	56
Franklin Scallop Enhancement	7	57
Florida Seagrass Recovery	7	58
Bald Point State Park	7	59
Wakulla Marshes Sands Park	7	60
Shell Point Beach Nourishment	7	61
Saint Marks Boat Ramp	7	62
Escambia Artificial Reefs	8	63
Santa Rosa Artificial Reefs	8	64
Okaloosa Artificial Reefs	8	65
Walton Artificial Reefs	8	66
Bay Artificial Reefs	8	67

Figure 12-57. Map of Florida Phase III Early Restoration projects which have been divided into eight regional groupings.

Cultural resource investigations and consultations would be completed for all the proposed projects that are selected for implementation. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make such determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

New construction or projects that could increase recreational use capacity have the potential to result in indirect impacts on marine habitats, marine resources, or protected resources. These impacts include increased fishing pressure, wildlife-vehicle collisions, wildlife harassment from domestic pets, and additional human presence disturbance. Although in certain instances, including the development of new facilities, roads, and piers, planned Phase III Early Restoration projects designed to address recreational use in Florida have the potential to cause these impacts, the projects are not expected to substantially exacerbate these issues. Where appropriate, project-specific analysis is included in the project reviews.

Temporal Boundaries

As detailed in Chapter 6 of the Phase III ERP/PEIS, the temporal boundary may vary by each resource and project. Once the impacts of the proposed actions are no longer experienced by the affected resource, the cumulative impacts of the other past, present, and reasonably foreseeable future actions need no longer be considered. For the most part, actions are qualified as those that are anticipated to persist beyond the construction phase for proposed Phase III Early Restoration projects and those that are ongoing for other actions considered in the cumulative analysis.

Identification of Other Actions Included in the Cumulative Impact Scenarios

For purposes of the cumulative impacts analyses in this Chapter, past actions are assumed to be represented in the existing conditions discussed in the Environmental Reviews for the Florida projects.

Present actions are those that are occurring now and result in ongoing impacts to the same resources that the proposed action will impact.

Reasonably foreseeable future actions are those actions that are likely to occur and affect the same resource as the proposed alternatives. The determination of what future actions should be considered requires a level of certainty that they will occur to ensure that the consideration of future actions is not overly speculative. This level of certainty could be met by a number of factors such as the completion of permit applications, the subject of approved proposals or planning documents, or other similar evidence. Determining how far into the future to consider actions is based on the impact of the alternatives being considered.

Group 1 Phase III Early Restoration Projects: Pensacola Bay Area

Table 12-68 summarizes the impacts to resources associated with proposed Florida projects in the Pensacola Bay coastal region, comprising habitat, living coastal and marine resources, and recreational use projects. The projects occur within Pensacola Bay, the shoreline of Pensacola Bay, or along the keys that are adjacent to Pensacola Bay. Projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in Pensacola Bay and its watershed, may result in cumulative impacts to resources. Projects are

currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented. In order to comply with the National Park Service's Director's Order 12, additional cumulative impacts analysis for the projects at Gulf Islands National Seashore can be found in sections 12.90 and 12.92.

Table 12-68. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 1 Projects													
Perdido Key Dune Restoration	S	S	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	+
Florida Oyster Cultch Placement Project (Pensacola Bay Section)	NE	S/+	S	S	S/+	S/+	S/+	S/+	+	S	NE	NE	NE
Pensacola Bay Living Shorelines	S	S/+	S	S	S/+	S	S/+	+	NE	S	S/+	NE	+
Beach Enhancement Project at Gulf Islands National Seashore	S/+	S/+	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	+
Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center	-	S/+	S	-	+	S	S	+	NE	+/-	+	NE	S
Big Lagoon State Park Boat Ramp Improvements	S	S	S	S	S	S	S	+	NE	S	S/+	+/-	S
Perdido Key Boardwalk Improvements	S	S	S	S	S/+	S/+	S/+	+	NE	+	+	NE	+
Bob Sikes Pier Restoration	S	S/+	S	S	S	S	S	+	NE	S/+	S/+	+	+
Gulf Breeze Wayside Boat Ramp	S	S	S	S	S	S	S	S/+	NE	S/+	S/+	S/+	S
Ferry Project, Gulf Islands National Seashore	-	-	-	-	-	-	-	+	-	+/-	S/+	+/-	+/-
Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle	NE	S	S	S	S/+	S	S	+	NE	+	+	NE	S
Developing Enhanced Recreational Opportunities on Escribano Point	S	S	S	-	-	S	S	+	NE	S	S/+	+	+

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 1 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 1 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present, and reasonably foreseeable future actions.

Summary of Impacts: Group 1 Phase III Early Restoration Projects

All of the resource areas listed in Table 12-68 above would be affected by at least some of the project proposed under Group 1 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. Some resource areas would be affected long term, some beneficially and some adversely. However, none of the projects proposed under Group 1 Phase III Early Restoration would result in any long-term adverse impacts that rise above a minor status. In fact, many of the projects proposed under Group 1 Phase III Early Restoration would result in long-term benefits to certain resources. Overall, long-term benefits from projects proposed in the Group 1 Phase III Early Restoration region are expected to outweigh the short-term adverse impacts necessary for project implementation as well as long-term minor adverse impacts.

Identification of Past, Present and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present, and reasonably foreseeable future projects in each of the applicable categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 1 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative discussions about potential impacts based on best professional judgment. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-69. Other Activities Identified in Group 1 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
ERP I – Florida Boat Ramp Facilities	The Florida Public Boat Ramp Enhancement provided boaters enhanced access to public waterways within Pensacola Bay, Perdido Bay, and offshore areas. The project included repairs to existing boat ramps and new boat ramps and construction of kiosks to provide environmental education to boaters re:	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
	water quality and sustainable practices in coastal areas of Florida.	• Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
ERP I – The Florida (Pensacola Beach) Dune Restoration Project	The Florida (Pensacola Beach) Dune Restoration Project would help restore primary vegetated dune habitat lost due to spill-related activities. The project would help restore an area of the beach where oiling and the extensive use of all-terrain vehicles and heavy equipment has inhibited plant growth and prevented the natural seaward expansion of the dunes since June 2010.	• Geology and Substrates • All other impacts determined *de minimus* in EA for ERP I
ERP II – Restoring the Night Sky	Restoring the Night Sky aims to improve the quality of sea turtle nesting habitat in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin County beaches by reducing negative impacts on turtles from artificial lighting. This will be accomplished by installing turtle-friendly lighting in place of more harmful traditional lighting within the vicinity of nesting beaches, increased enforcement of local lighting ordinances, and a public awareness campaign.	• All impacts determined *de minimus* in EA for ERP II
ERP II – Enhanced Management of Avian Breeding Habitat Injured by Response Activities in the Florida Panhandle	Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin Counties. Predator control, placement of symbolic fencing, protection of nesting bird areas and monitoring.	• All impacts determined *de minimus* in EA for ERP II
Other Restoration Projects		
Pensacola Beach FL and Perdido Key Beach Restoration Project Phase 2 (FDEP Beach Erosion Control Program)	Projects to restore Pensacola Beach and Perdido Key Beach to repair damages sustained from previous storm events.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Tourism and Recreational Use
FDEP/FWCC 10 Living Shoreline Projects (proposed or underway)	FDEP and FWCC are developing and constructing Living Shoreline projects throughout Pensacola Bay.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Oyster Enhancement in East Bay (Garcon Point and White Point)	Garcon Point: 2 miles-18 acre oyster breakwaters, with fossilized shell (currently 870 reefs) encompassing 22 acres restored fish habitat; White Point: 2 miles – 18 acres oyster breakwaters	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice
The Enhanced Management of Avian Breeding Habitat Project	This early restoration Phase II project helps restore avian breeding habitat injured by response activities and includes visitor education, predator control, surveying for shorebird nesting behaviors and their nests, and placing symbolic fencing with signage around nesting areas to keep visitors from disturbing nests. The project occurs in several areas, including the Seashore units on Santa Rosa Island and Perdido Key.	• Protected Species
Littoral Zone Placement of Dredge Spoil on Perdido Key Project	Approximately 557 cubic yards of sand was placed on the southern beach of the Perdido Key Area of Gulf Islands National Seashore from mile markers R64 to R52, December 9, 2011 – January 18, 2012. The dredge material was obtained during maintenance dredging of the Pensacola Harbor Gulf Entrance Channel, by the U.S. Army Corps of Engineers, Mobile District.	• Geology and Substrates • Protected Species
Asphalt Debris Removal/Disposal Project	In 2012 approximately 3,000 cubic yards of asphalt fragments and road base materials were removed from approximately 50-100 acres of beach at the Santa Rosa (Opal Beach) and Fort Pickens areas.	• Geology and Substrates • Living Coastal and Marine Resources • Protected Species • Aesthetics and Visual Resources • Tourism and Recreational Use
Military Operations		
Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base, Florida Gulf Regional Airspace Strategic Initiative - Eglin Air Force Base, Florida	To analyze the beddown location and operational alternatives and examine mitigations for the 59 F-35 PAA authorized for delivery, including the use of Duke Field airfield and construction of a new runway(s) at Eglin Main Base.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Infrastructure
Pensacola Naval Air Station (U.S. Navy)	Continuing operations at the Pensacola Naval Air Station.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
		• Socioeconomics and Environmental Justice • Infrastructure
Marine Transportation		
Perdido Pass Navigation Project	The Perdido Pass Navigation Project was initiated in 1965 to create a vessel navigation channel between the Gulf of Mexico and Perdido Bay. Project construction and maintenance dredging is carried out by the U.S. Army Corps of Engineers	• Geology and substrates • Hydrology and Water Resources • Air quality and GHGs • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomic and Environmental Justice • Aesthetics and Visual Resources • Infrastructure • Tourism and Recreational Use
Fort Pickens Ferry Support Facilities and Shuttle Service Project	A transportation study has been prepared and an Environmental Assessment is being prepared for the establishment of support facilities and operation of a landside shuttle tram service at the Fort Pickens Historic District of Gulf Islands National Seashore to complement the future water ferry service (see #4 above and #22 below). Several historic buildings would be repurposed to serve as a visitor center, retail area, restrooms, and shuttle shelters for the shuttle service. Existing parking areas would be repurposed as shuttle pull-off areas. The shuttle service would connect those arriving on the passenger ferry to visitor amenities and points of interest throughout the historic district on the western end of the island. The shuttle service would begin operating around 2017, would use electric trams or other alternative fuels, and would operate on a schedule that mirrored that of the passenger ferry service.	• Noise • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project	An Environmental Assessment is being prepared for the realignment of 1.67 miles of the road farther to the north, and removal and restoration of the old roadbed, resurfacing 4.5 miles of Fort Pickens Road and two parking lots (lots 21 and 22), and reconfiguring the existing entrance station area there to accommodate more vehicles. Project implementation is proposed to begin in 2015.	• Geology and Substrates • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Fort Pickens Pier and Ferry Service Project	An Environmental Assessment was prepared in 2011 for the establishment of a ferry service between the Fort Pickens area at the Seashore, the City of Pensacola, and Pensacola Beach, and also for the	• Air Quality and GHG • Noise • Protected Species • Socioeconomics and Environmental Justice • Tourism and Recreational Use

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
	construction a ferry docking pier at Fort Pickens. Although the ferry service has yet to be established, the pier was constructed in 2012. The ferry service is anticipated to run two ferries at a time and make approximately three trips each per day during the peak season, and fewer or no trips during the shoulder and off seasons, respectively. Ferry service is expected to begin in 2017.	• Infrastructure
Maintenance dredging of Intracoastal Waterways and Pensacola Harbor Gulf Entrance Channel	Involves placement of dredge material at Robertson Island and other dredge disposal areas within the boundaries and waters of Gulf Islands National Seashore. Dredge material was removed from the ICW and placed on Robertson Island (Disposal Area 45) within GUIS boundaries in January 2014. Other schedules are not known. Work conducted under contract to the US Army Corps of Engineers, Mobile District.	• Air Quality and GHG • Noise • Protected Species • Socioeconomics and Environmental Justice
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		
No known projects		
Coastal Development and Land Use		
University of West Florida Master Plan Update 2011-2021	The update consists of editing and/or updating elements of the University's 2006-2016 Campus Master Plan.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Infrastructure
Bayou Chico (Pensacola Bay) Basin Action Management Plan for the Implementation of Total Maximum Daily Loads for Fecal Coliform Adopted by the Florida Department of Environmental Protection	The action plan identifies projects and management actions need to decrease bacteria in six Waterbody Identification units in the Bayou Chico Basin.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Infrastructure
FDOT Pensacola Bay Bridge Replacement Project	The bridge between Pensacola and Gulf Breeze, FL on US Highway 98 is considered "structurally deficient"; therefore FDOT is	• Hydrology and Water Quality • Air Quality and GHG

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
	required to plan for a replacement bridge within the next 3-5 years. A Project Development and Environmental Study is currently in progress.	• Noise • Protected Species • Socioeconomics and Environmental Justice
Fisheries and Aquaculture		
No known projects		
Tourism and Recreation		
City of Pensacola Community Maritime Park	This is a small baseball stadium, park, and outdoor amphitheater about ¼ mile west of the Plaza de Luna site.	• Socioeconomics and Environmental Justice • Tourism and Recreational Use
Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project	In 2009 approximately seven miles of road through the Fort Pickens and Santa Rosa areas of the Seashore were reconstructed, repaired, or realigned, thereby restoring damage done by hurricanes and storms in 2004 and 2005. The project reconnected both the Fort Pickens area of the Seashore and the City of Navarre Beach with the city of Pensacola Beach.	• Geology and Substrates • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Socioeconomics and Environmental Justice • Tourism and Recreational Use • Infrastructure

Cumulative Impacts Analysis for Group 1 Phase III Early Restoration Projects

Table 12-69 identifies the following resource categories where there is a possibility that impacts of past, present and reasonably foreseeable future actions might overlap those of the Group 1 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through analysis of the Group 1 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air quality and GHGs;
- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice;
- Aesthetics and Visual Resources;
- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate from the construction at a number of the proposed project sites. Long-term minor adverse impacts would result from the projects like the Fish Hatchery permanently converting upland geology and the Gulf Islands Ferry project converting submerged substrates with the installation of pilings. Long-term benefits to geology and substrate would include the removal of asphalt from the Gulf Islands National Seashore.

Fourteen projects in Table 12-69 are identified as potential contributors to cumulative impacts on geology and substrates when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. Actions related to coastal development or upland military installations would result in permanent alterations to existing geology for construction of foundations, roadways and other permanent structures. Other actions such as construction of boat ramps or living shorelines would result in placement of hard structure on submerged sandy sediments and permanent conversation of those areas. The projects would have relatively small footprint for conversion of soil and substrate to hard structure.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to geology and substrates would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to geology and substrates.

Hydrology and Water Resources

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to hydrology and water resources. The majority of the projects proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. The Gulf Islands Ferry project would result in long-term minor adverse impacts through the continuing operation of the ferry service. Long-term benefits to hydrology and water resources would result from living shoreline and oyster reef creation.

Ten projects in Table 12-69 are identified as having potential contributors to cumulative impacts on hydrology and water resources when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. These include coastal development, marine transportation, recreational boat ramps and ongoing military operations. These activities would contribute to long-term hydrologic or water quality impacts as a result of shipping and navigation, increased development and impervious surface area that may result in increases in stormwater runoff and pollutants carried in that runoff and increased recreational use in the waterways. Oyster reefs and artificial reefs contribute long term water quality benefit from biological filtering. Long-term beneficial impacts are anticipated from marshes that are created by beneficial use of dredge materials.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to hydrology and water resources would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to hydrology and water resources.

Air Quality and GHGs

Group 1 Phase III Early Restoration projects would have both short-term and long term minor adverse impacts to air quality and GHGs. The majority of the projects proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts. The Gulf Islands Ferry project would result in long-term minor adverse impacts through the continuing operation of the ferry service.

Fourteen projects in Table 12-69 are identified as potential contributors to cumulative impacts to air quality or GHG when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. The impacts would occur mainly during construction with limited long term operational impacts. Construction and operations impacts of each project would be short to long-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards. For operations, all facilities, would follow applicable federal and state regulations, and would not be expected to change the air quality attainment status of the region.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to noise. The majority of the projects proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts. The Gulf Islands Ferry project and the Florida Fish Hatchery would result in long-term minor adverse impacts through the continuing operation of the ferry service and the hatchery.

Fifteen projects in Table 12-69 are identified as potential contributors to cumulative impacts to noise levels when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. Project types include military operations, marine transportation and coastal development. In most cases the noise impacts would be of relatively short duration, ending upon completion of construction activities, and are projected to result in only minor adverse impacts. Noise levels from military and facility operations and use will be increased but not at an excessive level given the surrounding land use.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to noise would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to living coastal and marine resources. The majority of the projects proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. The Gulf Islands Ferry project and the Escribano Point project would result in long-term minor adverse impacts due to the continuing operation of the ferry service and increased use of Escribano Point. Long-term beneficial impacts would result from dune restoration, living shoreline and oyster reef creation, enhancing the Gulf Islands National Seashore, and fixing dune walkovers.

Twelve projects in Table 12-69 are identified as potential contributors to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. Ongoing military operations and coastal development have affected upland and aquatic living coastal and marine resources due to human disturbances including noise, domestic pets, introduction of invasive species, placement of roadways and traffic, recreational use, etc. These ongoing activities have all contributed to habitat losses and habitat fragmentation in areas that living and coastal marine resources rely on for breeding, foraging and other uses. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from reef and marsh creation which will provide will provide habitat for smaller organisms mainly consisting of crustaceans and mollusks, such as juvenile shrimp, crab, oysters and mussels that live on the reef and in the sediment.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to living and coastal marine resources.

Protected Species

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to protected species. The majority of the projects proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. The Gulf Islands Ferry project would result in long-term minor adverse impacts due to the continuing operation of the ferry service. Long-term beneficial impacts would result from dune restoration, oyster reef creation, enhancing the Gulf Islands National Seashore, and fixing dune walkovers.

Seventeen projects in Table 12-69 are identified as potential contributors to cumulative impacts to protected species when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. The ongoing military, marine transportation and coastal development activities

have adversely affected protected species through human related disturbances such as noise, vessel traffic and pollution, placement of roadways and traffic, domestic pets, loss of habitats, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from living shorelines and oyster reefs which will provide will potentially provide habitat for protected species. Furthermore, the Phase II habitat restoration projects will provide long-term benefits to nesting birds and sea turtles.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to protected species would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to protected species.

Habitats

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to habitats. The majority of the projects proposed in the Group 1 Phase III Early Restoration would result in short term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. The Gulf Islands Ferry project would result in long-term minor adverse impacts due to the continuing operation of the ferry service. Long-term beneficial impacts would result from dune restoration, living shoreline and oyster reef creation, enhancing the Gulf Islands National Seashore, and fixing dune walkovers.

Nine projects in Table 12-69 are identified as potential contributors to cumulative impacts to habitats when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. The ongoing military, coastal development and marine transportation activities have adversely affected habitats through human related disturbances such as loss of habitats to developed areas, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from living shorelines and oyster reefs which will provide will provide habitat. Furthermore, the Phase II Early Restoration projects will provide long-term benefits to nesting birds and sea turtles habitat.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to habitats would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to habitats.

Socioeconomics and Environmental Justice

Group 1 Phase III Early Restoration projects would have short-term adverse impacts to socioeconomics. The oyster project proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts during the construction time frame due to potential closure of the oyster reef. However, these projects and the other projects would benefit the local economies adjacent to the

project site in both the short-term and long-term from increased employment during the project construction and by increasing use of the facilities.

Sixteen projects in Table 12-69 are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. Many of the projects actions in the table may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to socioeconomics would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to aesthetics and visual resources. The majority of the projects proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Both the Florida Fish Hatchery and the Gulf Islands Ferry project would result in long-term minor adverse impacts due to the construction of the fish hatchery and the operation of the ferry service. Long term beneficial impacts would result from enhancing the Gulf Islands National Seashore, restoring dunes and upgrading facilities.

Eight projects in Table 12-69 are identified as potential contributors to adverse cumulative impacts to aesthetics and visual resources when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. Many of the actions described in the table above may affect aesthetics and visual resources in the short-term and long-term. Temporary impacts to visual resources would result from restoration, construction, maintenance and recreational use. Long-term impacts would occur with coastal development.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative aesthetics and visual resources impacts.

Tourism and Recreational Use

Group 1 Phase III Early Restoration projects would have short-term adverse impacts to tourism and recreational use. The majority of the projects proposed in the Group 1 Phase III Early Restoration would

result in short-term adverse impacts from potential facility closures during construction related activities. However once the construction activities are completed, the Group 1 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources.

Nine projects in Table 12-69 are identified as potential contributors to cumulative impacts to tourism and recreational use when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. Enhanced and/or increased visitation at the boat ramps and the renourished beach is expected to provide long-term beneficial impacts to tourism and recreational use.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to tourism and recreational use would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative tourism and recreational use impacts.

Infrastructure

Group 1 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to infrastructure. The projects proposed in the Group 1 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Some of the projects have the potential to lead to increased use of existing public facilities and access roadways. However, the contribution of these projects to cumulative adverse impacts to infrastructure would not be substantial due to their relative small size and the proposed public facility or roadway use increases that may result. Furthermore, some of the projects have the potential to provide long-term beneficial impacts through the enhancement of parking at some of the recreational use facilities.

Ten projects in Table 12-69 are identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 1 Phase III Early Restoration projects. These include military operations, which add personnel and increase population pressures on existing infrastructure. Marine transportation improvements also can affect infrastructure by increasing vessel trips to local ports, use marine facilities and increase truck or rail traffic for moving imported goods. Coastal development also increases pressure on existing infrastructure. These impacts are anticipated to continue into the future.

When Group 1 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to infrastructure would likely occur. Group 1 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 1 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative infrastructure impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present, and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (see Table 12-69), the Group 1 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in the Group 1 Phase III Early Restoration region. Group 1 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term beneficial cumulative impacts to geology and substrates, hydrology and water resources, living coastal and marine resources, habitat, socioeconomic, aesthetics and visual resources, tourism and recreational use, and infrastructure.

Group 2 Phase III Early Restoration Projects: Choctawhatchee Bay Projects

Table 12-70 summarizes the impacts to resources associated with proposed Florida projects in the Choctawhatchee Bay coastal region, comprising of recreational use projects. The projects occur within the Choctawhatchee Bay, the shoreline of the Choctawhatchee Bay, or in areas slightly inland that are adjacent or in the vicinity of the Bay. Projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in Choctawhatchee Bay and the nearby vicinity, may result in cumulative impacts to resources. Projects are currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

Table 12-70. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 2 Projects													
Navarre Beach Park Coastal Access	S	S	S	S	S/+	S	S/+	+	NE	S	S/+	NE	+
Navarre Beach Park Gulfside Walkover Complex	S	S	S	S	S/+	S	S/+	+	NE	S	S/+	NE	+
Northwest Florida Fort Walton Beach Educational Boardwalk	S	S	S	S	S/+	S/+	S/+	+	NE	+	S/+	NE	S
Norriego Point Restoration and Recreation Project	S	S	S	S	S	S	S	+	NE	S	S/+	+	S
Choctawhatchee Bay Scallop Enhancement	NE	S	S	S	S/+	S	S	+	NE	+	+	NE	S
Lafayette Creek Boat Dock	S	S	S	S	S	S	S	NE	NE	S	S/+	S/+	S

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 2 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 2 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present and reasonably foreseeable future actions.

Summary Impacts Group 2 Phase III Early Restoration Projects

All of the resource areas listed in Table 12-70 above, with the exception of land and marine management, would be affected by at least some of the project proposed under Group 2 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. None of the projects proposed under Group 2 Phase III Early Restoration would result in any long-term adverse impacts. In fact, many of the projects proposed under Group 2 Phase III Early Restoration would result in long-term benefits to certain resources. Overall, long-term benefits from projects proposed in the Group 2 Phase III Early Restoration region are expected to outweigh the short-term adverse impacts necessary for project implementation.

Identification of Past, Present, and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present, and reasonably foreseeable future projects in each of the applicable categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 2 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative discussions about potential impacts based on best professional judgment. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-71: Other Activities Identified in Group 2 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
ERP II – Restoring the Night Sky	Restoring the Night Sky aims to improve the quality of sea turtle nesting habitat in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin County beaches by reducing negative impacts on turtles from artificial lighting. This will be accomplished by installing turtle-friendly lighting in place of more harmful traditional lighting within the vicinity of nesting beaches, increased enforcement of local lighting ordinances, and a public awareness campaign.	• All impacts determined *de minimus* in EA for ERP II
ERP II - Comprehensive Program for Enhanced Management of Avian Breeding	Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin Counties. Predator control, placement of symbolic fencing, protection of nesting bird areas and monitoring.	• All impacts determined *de minimus* in EA for ERP II
Other Restoration Projects		
Multiple living shorelines & oyster recycling program (CBA, Northwest Florida State College)	Construction of living shorelines and to collect oyster shells that would go to landfills and reuse them to construct oyster reef habitat.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice
Navarre Beach Berm and Dune Restoration Project (FDEP Beach Erosion Control Program)	Project includes renourishing Navarre Beach as well restoring the dune system to repair damages sustained from previous storm events.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected species

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
		• Habitats • Socioeconomics and Environmental Justice • Tourism and Recreational Use
FDEP/FWCC 10 Living Shoreline Projects (proposed or underway)	FDEP and FWCC are developing and constructing Living Shoreline projects throughout Pensacola Bay.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources
Oyster Enhancement in East Bay (Garcon Point and White Point)	Garcon Point: 2 miles-18 acre oyster breakwaters, with fossilized shell (currently 870 reefs) encompassing 22 acres restored fish habitat; White Point: 2 miles – 18 acres oyster breakwaters	• Geology and Substrates • Hydrology and Water Resources • Air quality and GHGs • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice
Military Operations		
Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base, Florida Gulf Regional Airspace Strategic Initiative - Eglin Air Force Base, Florida	To analyze the beddown location and operational alternatives and examine mitigations for the 59 F-35 PAA authorized for delivery, including the use of Duke Field airfield and construction of a new runway(s) at Eglin Main Base.	• Geology and Substrates • Hydrology and Water Resources • Air quality and GHGs • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Infrastructure
Naval Air Station Whiting Field, Santa Rosa County	Continuing operations at the Naval Air Station at Whiting Field.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice • Infrastructure
Marine Transportation		
No known projects.		
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
No known projects		
Coastal Development and Land Use		
Navarre Beach Master Plan	Plan provides the supporting documentation for the development of the Navarre Beach Planning and Zoning Overlay Zone, which entails a set of Comprehensive Plan goals, objectives, policies and Land Development Code regulations that are applied only to the property within the boundaries of the overlay zone.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Fisheries and Aquaculture		
No known projects.		
Tourism and Recreation		
No known projects.		

Cumulative Impacts Analysis for Group 2 Projects

Table 12-71 identifies the following resource categories where there is a possibility that impacts of past, present and reasonably foreseeable future actions might overlap those of Group 2 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through the analysis of the Group 2 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air Quality and GHGs;
- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice;
- Aesthetics and Visual Resources;
- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate from the construction at a number of the proposed project sites.

Seven projects in Table 12-71 are identified as potential contributors to cumulative impacts to geology and substrates when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. Actions related to coastal development or upland military installations have resulted in permanent alterations to existing geology for construction of foundations, roadways and other permanent structures. Other actions such as construction of boat ramps or living shorelines may have resulted in placement of hard structure on submerged sandy sediments and permanent conversation of those areas. The projects would have relatively small footprint for conversion of soil and substrate to hard structure.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to geology and substrates would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Hydrology and Water Resources

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to hydrology and water resources. The projects proposed in the Group 2 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs.

Seven projects in Table 12-71 are identified as potential contributors to cumulative impacts to hydrology and water resources when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. These include coastal development and ongoing military operations. These activities may contribute to long-term hydrologic or water quality impacts as a result of increased development and impervious surface area that may result in increases in stormwater runoff and pollutants carried in that runoff and increased recreational use in the waterways.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to hydrology and water quality would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Air Quality and GHGs

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to air quality and GHGs. The projects proposed in the Group 2 Phase III Early Restoration would result in short-term construction related impacts. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Seven projects in Table 12-71 are identified as potential contributors to cumulative impacts to air quality or GHG impacts when their impacts are combined with those of the Group 2 Phase III Early

Restoration projects. The impacts would occur mainly during construction with limited long term operational impacts. Construction and operations impacts of each project would be short to long-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards. For operations, all facilities, would follow applicable federal and state regulations, and would not be expected to change the air quality attainment status of the region.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to noise. The projects proposed in the Group 2 Phase III Early Restoration would result in short-term adverse impacts from construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Seven projects in Table 12-71 are identified as potential contributors to cumulative impacts to noise levels when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. In most cases the noise impacts would be of relatively short duration, ending upon completion of construction activities, and are projected to result in only minor adverse impacts. Noise levels from military and facility operations and use will be increased but not an excessive level given the surrounding land use.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to noise would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to living coastal and marine resources. The projects proposed in the Group 2 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from the reef and marsh creation as well as building boardwalks and walkovers that will funnel foot traffic away from sensitive resources.

Seven projects in Table 12-71 are identified as potential contributors to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. Ongoing military operations, existing and proposed coastal development have affected upland and aquatic living coastal and marine resources due to human disturbances including noise, domestic pets, introduction of invasive species, placement of roadways and traffic, recreational use, etc. These ongoing activities have all contributed to habitat losses and habitat fragmentation in areas that living and coastal marine resources rely on for breeding, foraging and other uses. These

impacts are anticipated to continue into the future. Long-term benefits are anticipated from reef and marsh creation which will provide will provide habitat for smaller organisms mainly consisting of crustaceans and mollusks, such as juvenile shrimp, crab, oysters and mussels that live on the reef and in the sediment.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 2 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to living and coastal marine resources.

Protected Species

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to protected species. The projects proposed in the Group 2 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from oyster reef creation.

Seven projects in Table 12-71 are identified as potential contributors to cumulative impacts to protected species when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. The ongoing military and coastal development activities have adversely affected protected species through human related disturbances such as noise, vessel traffic and pollution, placement of roadways and traffic, domestic pets, loss of habitat, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from living shorelines and oyster reefs which will provide will potentially provide habitat for protected species. Furthermore, the Phase II habitat restoration projects will provide long-term benefits to nesting birds and sea turtles.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to protected species would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 2 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to protected species.

Habitats

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to habitats. The majority of the projects proposed in the Group 2 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term benefits impacts would result from the building of boardwalks and walkovers that will minimize impacts to sensitive habitats.

Seven projects in Table 12-71 are identified as potential contributors to cumulative impacts to habitats when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. The

ongoing military and coastal development have adversely affected habitats through human related disturbances such as loss of habitats to developed areas, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from living shorelines and oyster reefs which will provide will provide habitat. Furthermore, the Phase II Early Restoration projects will provide long-term benefits to nesting birds and sea turtles habitat.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to habitats would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 2 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to habitats.

Socioeconomics and Environmental Justice

Group 2 Phase III Early Restoration projects would have long-term beneficial impacts to socioeconomics. The projects proposed in the Group 2 Phase III Early Restoration would benefit the local economies adjacent to the project site in both the short-term and long-term from increased employment during the project construction and by increasing use of the facilities.

Seven projects in Table 12-71 are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. Many of the projects actions in the table may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, no cumulative short-term adverse impacts to socioeconomics would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 2 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 2 Phase III Early Restoration projects would have short-term adverse impacts to aesthetics and visual resources. The projects proposed in the Group 2 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Long-term beneficial impacts would result from enhancing coastal habitat and constructing a boardwalk to enhance the public's view of the coastal resources.

Two projects in Table 12-71 is identified as potential contributors to cumulative impacts to aesthetic or visual resources when their impacts are combined with those of the Group 2 Phase III Early Restoration

projects. Many of the projects described in the table above may affect aesthetics and visual resources in the short-term and long-term. Temporary impacts to visual resources would result from restoration, construction, maintenance and recreational use. Long-term impacts would occur with coastal development

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 2 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative aesthetics and visual resources impacts.

Tourism and Recreational Use

Group 2 Phase III Early Restoration projects would have short-term adverse to tourism and recreational use. The projects proposed in the Group 2 Phase III Early Restoration would result in short-term adverse impacts from potential facility closures during construction related activities. However once the construction activities are completed, the Group 2 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources.

Two of the projects in Table 12-71 are identified as potential contributors to cumulative impacts to tourism and recreational use when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. Enhanced and/or increased visitation at the renourished beach and potential new costal development is expected to provide long-term beneficial impacts to tourism and recreational use.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to tourism and recreational use would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 2 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative tourism and recreational use.

Infrastructure

Group 2 Phase III Early Restoration projects would have short-term adverse impacts. The Lafayette Creek project would result in short-term adverse impacts during construction related activities. The Norriego Point project would provide long-term beneficial impacts through the enhancement of the point as well as additional facilities.

Three projects in Table 12-71 are identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 2 Phase III Early Restoration projects. These include military operations, which add personnel and increase population pressures on existing infrastructure. Coastal development also increases pressure on existing infrastructure. These impacts are anticipated to continue into the future.

When Group 2 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to infrastructure would likely occur. Group 2 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 2 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative infrastructure impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present, and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (seeTable 12-71), the Group 2 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in the Group 2 Phase III Early Restoration region. Group 2 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term benefits cumulative impacts to living coastal and marine resources, protected species, habitat, socioeconomics, aesthetics and visual resources, tourism and recreational use, and infrastructure.

Group 3 Phase III Early Restoration Projects: Walton County Florida Recreational Enhancement and Access Projects

Table 12-72 summarizes the impacts to resources associated with proposed Florida projects in the shoreline area of Walton County that comprise of recreational and visitor enhancement and access projects focusing on beach access and boardwalk improvements. The projects occur within southeast Walton County, along the shoreline and along Choctawhatchee Bay. Projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in southeast Walton County and the nearby vicinity, may result in cumulative impacts to resources. Projects are currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

Table 12-72. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 3 Projects													
Palms of Dune Beach Access	S	S	S	S	S	S	S	+	NE	S	+	NE	+
Ed Walline Beach Access	S	S	S	S	S	S	S	+	NE	S	+	NE	+
Gulfview Heights Beach Access	S	S	S	S	S	S	S	+	NE	S	+	NE	+
Grayton Dunes Beach Access Boardwalks	S	S	S	S	S	S	S	+	NE	S	+	NE	+
Bayside Ranchettes Park Boardwalks	S	S	S	S	S	S	S	+	NE	S	+	NE	+
Dothan Beach Access Boardwalks	S	S	S	S	S	S	S	+	NE	S	+	NE	+
Deer Lake State Park	S	S	S	S	S	S	S	NE	NE	S	+	S	S

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 3 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 3 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present and reasonably foreseeable future actions.

Summary Impacts Group 3 Phase III Early Restoration Projects

All of the resource areas listed in Table 12-72 above, with the exception of land and marine management, would be affected by at least some of the project proposed under Group 3 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. None of the projects proposed under Group 3 Phase III Early Restoration would result in any long-term adverse impacts. In fact, many of the projects proposed under Group 3 Phase III Early Restoration would result in long-term benefits to certain resources. Overall, long-term benefits from projects proposed in the Group 3 Phase III Early Restoration region are expected to outweigh the short-term adverse impacts necessary for project implementation.

Identification of Past, Present, and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present, and reasonably foreseeable future projects in each of the categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 3 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative discussions about potential impacts based on best professional judgment. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-73: Other Activities Identified in Group 3 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
ERP II – Restoring the Night Sky	Restoring the Night Sky aims to improve the quality of sea turtle nesting habitat in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin County beaches by reducing negative impacts on turtles from artificial lighting. This will be accomplished by installing turtle-friendly lighting in place of more harmful traditional lighting within the vicinity of nesting beaches, increased enforcement of local lighting ordinances, and a public awareness campaign.	• All impacts determined *de minimus* in EA for ERP II
ERP II - Comprehensive Program for Enhanced Management of Avian Breeding	Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin Counties. Predator control, placement of symbolic fencing, protection of nesting bird areas and monitoring.	• All impacts determined *de minimus* in EA for ERP II
Other Restoration Projects		
Walton County Hurricane and Storm Damage Restoration Project (FDEP Beach Erosion Control Program)	Construct berms and dunes along Walton County shoreline to reduce coastal storm damage.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Tourism and Recreational Use
Military Operations		
Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base, Florida	To analyze the beddown location and operational alternatives and examine mitigations for the 59 F-35 PAA authorized	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Gulf Regional Airspace Strategic Initiative - Eglin Air Force Base, Florida	for delivery, including the use of Duke Field airfield and construction of a new runway(s) at Eglin Main Base.	• Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Infrastructure
Marine Transportation		
No known projects.		
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		
No known projects		
Coastal Development and Land Use		
Implementation of Total Maximum Daily Loads for Fecal Coliform for Choctawhatchee/St. Andrew Bay (FDEP)	An action plan could identify projects and management actions to decrease bacteria Choctawhatchee / St. Andrew Bay.	• Geology and substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Infrastructure
FDOT West Bay Parkway Project (Walton, Washington and Bay Counties)	Construction of a new four-lane roadway from US 98 (SR 30) east of Peach Creek in Walton County to SR 77 in Bay County.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational use • Infrastructure
Northwest Florida Beaches Airport	Continuing operation of the airport.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
		• Infrastructure
Fisheries and Aquaculture		
No known projects.		
Tourism and Recreation		
No known projects.		

Cumulative Impacts Analysis for Group 3 Phase III Early Restoration Projects

Table 12-73 identifies the following resource categories where there is a possibility that impacts of past, present and reasonably foreseeable future actions might overlap those of the Group 3 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through analysis of the Group 3 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air quality and GHGs;
- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice;
- Aesthetics and Visual Resources;
- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate from the construction at a number of the proposed project sites.

Five projects in Table 12-73 are identified as potential contributors to cumulative impacts to geology and substrates when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. Actions related to coastal development or upland military installations have resulted in permanent alterations to existing geology for construction of foundations, roadways and other permanent structures. Other actions would lead to short-term and long-term minor adverse impacts

resulting from construction of new facilities. Long-term benefits would result from the proposed beach renourishment project.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to geology and substrates would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Hydrology and Water Resources

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to hydrology and water resources. The projects proposed in the Group 3 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs.

Five projects in Table 12-73 are identified as potential contributors to cumulative impacts to hydrology and water resources when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. These include storm protection projects, coastal development, and ongoing military operations. These activities may contribute to long-term hydrologic or water quality impacts as a result of increased development and impervious surface area that may result in increases in stormwater runoff and pollutants carried in that runoff.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to hydrology and water quality would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Air Quality and GHGs

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to air quality and GHGs. The projects proposed in the Group 3 Phase III Early Restoration would result in short-term adverse impacts related to construction activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Five projects in Table 12-73 are identified as potential contributors to cumulative impacts to air quality or GHG impacts when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. The impacts would occur mainly during construction with limited long term operational impacts. Construction and operations impacts of each project would be short to long-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards. For operations, all facilities, would follow applicable federal and state regulations, and would not be expected to change the air quality attainment status of the region.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to noise. The projects proposed in the Group 3 Phase III Early Restoration would result in short-term adverse impacts related to construction activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Five projects in Table 12-73 are identified as potential contributors to cumulative impacts to noise levels when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. Project types include military operations and coastal development. In most cases the noise impacts would be of relatively short duration, ending upon completion of construction activities, and are projected to result in only minor adverse impacts. Noise levels from military and airport operations will be increased but not an excessive level given the surrounding land use.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to noise would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to living coastal and marine resources. The projects proposed in the Group 3 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs.

Four projects in Table 12-73 are identified as potential contributors to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. Ongoing military operations, existing and proposed coastal development have affected upland and aquatic living coastal and marine resources due to human disturbances. These ongoing activities have all contributed to habitat losses and habitat fragmentation in areas that living and coastal marine resources rely on for breeding, foraging and other uses. These impacts are anticipated to continue into the future.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Protected Species

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to protected species. The projects proposed in the Group 3 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs.

Five projects in Table 12-73 are identified as potential contributors to cumulative impacts to protected species when their impacts are combined with those of the Group 3 Phase III Early Restoration projects.

The ongoing military and coastal development activities have adversely affected protected species through human related disturbances such as noise, vessel traffic and pollution, placement of roadways and traffic, domestic pets, loss of habitat, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. The Phase II habitat restoration projects will provide long-term benefits to nesting birds and sea turtles.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to protected species would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Habitats

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to habitats. Construction related activities from the projects proposed in the Group 3 Phase III Early Restoration would result in short-term adverse impacts to habitats. These short-term impacts would be minimized through the implementation of BMPs.

Five projects in Table 12-73 are identified as potential contributors to cumulative impacts to habitats when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. The ongoing military and coastal development have adversely affected habitats through human related disturbances such as loss of habitats to developed areas, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. The Phase II Early Restoration projects will provide long-term benefits to nesting birds and sea turtles habitat.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to habitats would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Socioeconomics and Environmental Justice

Group 3 Phase III Early Restoration projects would have long-term beneficial impacts to socioeconomics. The projects proposed in the Group 3 Phase III Early Restoration would benefit the local economies adjacent to the project site in both the short-term and long-term from increased employment during the project construction and by increasing use of the facilities.

Five projects in Table 12-73are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. Many of the projects in the table may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, no cumulative adverse impacts to socioeconomics would

likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 3 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 3 Phase III Early Restoration projects would have short-term adverse impacts to aesthetics and visual resources. Construction related activities from the projects proposed in the Group 3 Phase III Early Restoration would result in short-term adverse impacts.

Three project in Table 12-73 are identified as potential contributors to cumulative impacts to aesthetic or visual resources when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. Many of the projects described in the table above may affect aesthetics and visual resources in the short-term and long-term. Temporary impacts to visual resources would result from restoration, construction, maintenance and recreational use. Long-term impacts would occur with coastal development.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Tourism and Recreational Use

Group 3 Phase III Early Restoration projects would have short-term and long-term beneficial impacts to tourism and recreational use. The Group 3 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources.

Two projects in Table 12-73are identified as potential contributors to cumulative impacts to tourism and recreation when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. Enhanced and/or increased visitation at the renourished beach along with the increased traffic at the airport and on the proposed road is expected to provide long-term beneficial impacts to tourism and recreational use.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, no cumulative adverse impacts to tourism and recreational use would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 3 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative impacts to tourism and recreational use.

Infrastructure

Group 3 Phase III Early Restoration projects would have short-term adverse impacts. The proposed Deer Lake project would result in short-term adverse impacts during construction related activities.

Four projects in Table 12-73 are identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 3 Phase III Early Restoration projects. These include military operations, which add personnel and increase population pressures on existing infrastructure. Coastal development also increases pressure on existing infrastructure. These impacts are anticipated to continue into the future.

When Group 3 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to infrastructure resources would likely occur. Group 3 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present, and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (see Table 12-73), the Group 3 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in the Group 3 Phase III Early Restoration region. Group 3 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term beneficial cumulative impacts to socioeconomics, aesthetics and visual resources, and tourism and recreational use.

Group 4 Phase III Early Restoration Projects: Panama City and St. Andrews Bay Projects

Table 12-74 summarizes the impacts to resources associated with proposed Florida projects in the area of Panama City and St. Andrews Bay that comprise of habitat restoration projects including oyster cultch, and seagrass recovery as well as recreational and visitor enhancement and access projects including two boat ramps, one marina, scallop enhancement and two fishing piers. The projects occur within Panama City and St. Andrews Bay, all in central Bay County. Projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in Panama City and St. Andrews Bay and the nearby vicinity, may result in cumulative impacts to resources. Projects are currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

Table 12-74. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 4 Projects													
St. Andrews Marina	S	S	S	S	S	S	S	NE	NE	S	S/+	S/+	NE
St. Andrews Bay Oyster Cultch	NE	S/+	S	S	S/+	S/+	S/+	S/+	+	S	NE	NE	NE
Florida Seagrass Recovery	S	S/+	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	NE
Bay Scallop Enhancement	NE	S	S	S	S/+	S	S	+	NE	+	+	NE	S
Panama City Marina	S	-	S	S	S	S	S	+	NE	S	S/+	S	+
Parker-Earl Gilbert Dock and Boat Ramp	S	S	S	S	S	S	S	NE	NE	S	S/+	S/+	NE
Oakshore Drive Pier	S	-	S	S	S	S	S	+	NE	S	S/+	S	+

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 4 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 4 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present, and reasonably foreseeable future actions.

Summary Impacts Group 4 Phase III Early Restoration Projects

All of the resource areas listed in

Table 12-74 above would be affected by at least some of the project proposed under Group 4 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. Some resource areas would be affected long term, some beneficially and some adversely. However, none of the projects proposed under Group 4 Phase III Early Restoration would result in any long-term adverse impacts that rise above a minor status. In fact, many of the projects proposed under Group 4 Phase III Early Restoration would result in long-term benefits to certain resources. Overall, long-term benefits from projects proposed in the Group 4 Phase III Early Restoration region are expected to outweigh the short-term adverse impacts necessary for project implementation as well as long-term minor adverse impacts.

Identification of Past, Present, and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present, and reasonably foreseeable future projects in each of the categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 4 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative discussions about potential impacts based on best professional judgment. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-75. Other Activities Identified in Group 4 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
ERP II – Restoring the Night Sky	Restoring the Night Sky aims to improve the quality of sea turtle nesting habitat in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin County beaches by reducing negative impacts on turtles from artificial lighting. This will be accomplished by installing turtle-friendly lighting in place of more harmful traditional lighting within the vicinity of nesting beaches, increased enforcement of local lighting ordinances, and a public awareness campaign.	• All impacts determined *de minimus* in EA for ERP II
ERP II - Comprehensive Program for Enhanced Management of Avian Breeding	Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin Counties. Predator control, placement of symbolic fencing, protection of nesting bird areas and monitoring.	• All impacts determined *de minimus* in EA for ERP II
Other Restoration Projects		
Restoring shorelines,	Local entity is implementing projects to	• Geology and Substrates

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
wetlands, seagrasses in St. Andrews Bay (St. Andrew Bay Resource Management Association, Inc.)	restore shorelines, wetlands and seagrasses in St. Andrews Bay.	• Hydrology and Water Resources • Air quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice
St. Andrews Inlet Management Plan Implementation: Gator Lake Shoreline Stabilization and Beach Access Improvement Project (Florida State Parks)	The project proposes to reduce the erosion rate along the shoreline fronting Gator Lake; reduce the rate of the "Grand Lagoon" spit growth; increase the transfer of sand downdrift of the pass; and increase sand bypassing efficiency.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use
Northwest Florida Water Management District St. Andrews Bay Stormwater Improvements	Water Management district provides funding for stormwater retrofit projects that will improve water quality in the St. Andrew Bay watershed.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice
Northwest Florida Water Management District St. Andrews Drainage Stabilization Project	Project will reduce nonpoint source pollution entering waterbodies.	• Geology and Substrates • Hydrology and Water Quality • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice
Military Operations		
On-going CERCLA Remediation at Tyndall Air Force Base	The Air Force is operating a cleanup program at Tyndall Air Force Base.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources
Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative EIS, Tyndall Air Force Base	GRASI is a US Air Force-led paternership with the State of Florida and other states and federal agencies to ensure near optimum use of airspace by civilians and the military throughout the Gulf Coast region.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
		• Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Infrastructure
Marine Transportation		
No known projects.		
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		
No known projects		
Coastal Development and Land Use		
Implementation of Total Maximum Daily Loads for Fecal Coliform for Choctawhatchee/St. Andrew Bay (FDEP)	An action plan could identify projects and management actions to decrease bacteria Choctawhatchee / St. Andrew Bay.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Infrastructure
Bay County Long Range Beach Management and Erosion Control Plan for Panama City Beaches (FDEP)	Plan is to address issues of beach preservation and beach renourishment.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected species • Habitats • Socioeconomics and Environmental Justice • Tourism and Recreational Use
Northwest Florida Beaches Airport	Continuing operation of the airport.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Protected species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Bayview Boardwalk and Signage Enhancement Project (Panama City)	Project consists of replacing decking and redesigning the railing to incorporate historical signage.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
		• Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Fisheries and Aquaculture		
No known projects.		
Tourism and Recreation		
Pirates' Cove Marina Expansion	Project is increasing the capacity of dry storage at the Pirate's Cove Marina.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Panama City Marina Redevelopment Project	Project will involve making improvements to the seawall, construction of a new civic plaza, improvements to the marina facilities, and a marina park.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure

Cumulative Impacts Analysis for Group 4 Phase III Early Restoration Projects

Table 12-75 identifies the following resource categories where there is a possibility that impacts of past, present and reasonably foreseeable future actions might overlap those of the Group 4 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through analysis of the Group 4 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air Quality and GHGs;

- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice;
- Aesthetics and Visual Resources;
- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate from the construction at a number of the proposed project sites.

Twelve projects in Table 12-75 are identified as potential contributors to cumulative impacts to geology and substrates when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. Actions related to coastal development or upland military installations have resulted in permanent alterations to existing geology for construction of foundations, roadways and other permanent structures. Other actions such as construction of boat ramps or living shorelines may have resulted in placement of hard structure on submerged sandy sediments and permanent conversation of those areas. The projects would have relatively small footprint for conversion of soil and substrate to hard structure.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to geology and substrates would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Hydrology and Water Resources

Group 4 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to hydrology and water resources. The projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. The Panama City Marina and the Oakshore Drive Pier would result in long-term minor adverse impacts through the continuing use of the fishing piers. Long-term benefits to hydrology and water resources would result from and oyster reef creation and seagrass recovery.

Twelve projects in Table 12-75 are identified as potential contributors to cumulative impacts to hydrology and water resources when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. These include coastal development and ongoing military operations. These activities may contribute to long-term hydrologic or water quality impacts as a result of increased development and impervious surface area that may result in increases in stormwater runoff and pollutants carried in that runoff and increased recreational use in the waterways. Artificial reefs

contribute long term water quality benefit from biological filtering. Long-term beneficial impacts are anticipated from seagrass plantings.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to hydrology and water resources would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to hydrology and water resources.

Air Quality and GHGs

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to air quality and GHGs. The projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts to air quality during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Twelve projects in Table 12-75 are identified as potential contributors to cumulative impacts to air quality or GHG impacts when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. The impacts would occur mainly during construction with limited long term operational impacts. Construction and operations impacts of each project would be short to long-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards. For operations, all facilities, would follow applicable federal and state regulations, and would not be expected to change the air quality attainment status of the region.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to noise. Construction related activities from the projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Twelve projects in Table 12-75 are identified as potential contributors to cumulative impacts to noise levels when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. Project types include military operations and coastal development. In most cases the noise impacts would be of relatively short duration, ending upon completion of construction activities, and are projected to result in only minor adverse impacts. Noise levels from military and airport operations will be increased but not at an excessive level given the surrounding land use.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to noise would likely

occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to living coastal and marine resources. The projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from oyster reef creation and seagrass plantings.

Eleven projects in Table 12-75 are identified as potential contributors to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. Ongoing military operations, existing and proposed coastal development have affected upland and aquatic living coastal and marine resources due to human disturbances including noise, domestic pets, introduction of invasive species, placement of roadways and traffic, recreational uses, etc. These ongoing activities have all contributed to habitat losses and habitat fragmentation in areas that living and coastal marine resources rely on for breeding, foraging and other uses. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from reef and marsh creation which will provide will provide habitat for smaller organisms mainly consisting of crustaceans and mollusks, such as juvenile shrimp, crab, oysters and mussels that live on the reef and in the sediment.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to living and coastal marine resources.

Protected Species

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to protected species. The projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from oyster reef creation and plating of seagrass.

Twelve projects in Table 12-75 are identified as potential contributors to cumulative impacts to protected species when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. The ongoing military and coastal development activities have adversely affected protected species through human related disturbances such as noise, vessel traffic and pollution, placement of roadways and traffic, domestic pets, loss of habitat, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from living shorelines and wetlands which will provide will potentially provide habitat for protected species. Furthermore, the Phase II habitat restoration projects will provide long-term benefits to nesting birds and sea turtles.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to protected species

would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to protected species.

Habitats

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to habitats. The projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from oyster reef creation and planting of seagrass.

Twelve projects in Table 12-75 are identified as potential contributors to cumulative impacts to habitats when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. The ongoing military and coastal development have adversely affected habitats through human related disturbances such as loss of habitats to developed areas, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term benefits are anticipated from living shorelines and wetlands which will provide will provide habitat. Furthermore, the Phase II Early Restoration projects will provide long-term benefits to nesting birds and sea turtles habitat.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to habitats would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to habitats.

Socioeconomics and Environmental Justice

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to socioeconomics. The oyster project proposed in the Group 4 Phase III Early Restoration would result in short term adverse impacts during the construction time frame due to potential closure of the oyster reef. However, this project and the other projects would benefit the local economies adjacent to the project site in both the short-term and long-term from increased employment during the project construction and by increasing use of the facilities.

Twelve projects in Table 12-75 are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. Many of the projects actions in the table may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to socioeconomics would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 4 Phase III Early Restoration projects would have short-term adverse impacts to aesthetics and visual resources. The projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Long-term beneficial impacts would result from seagrass plantings.

Six projects in Table 12-75 are identified as potential contributors to adverse cumulative impacts to aesthetics and visual resources when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. Many of the projects described in the table above may affect aesthetics and visual resources in the short-term and long-term. Temporary impacts to visual resources would result from restoration, construction, maintenance and recreational use. Long-term impacts would occur with coastal development.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative aesthetics and visual resources impacts.

Tourism and Recreational Use

Group 4 Phase III Early Restoration projects would have short-term adverse to tourism and recreational use. The majority of the projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts from potential facility closures during construction related activities. However once the construction activities are completed, the Group 4 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources.

Six projects in Table 12-75 are identified as potential contributors to cumulative impacts to tourism and recreational use when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. Enhanced and/or increased visitation at the renourished beach, revamped boardwalk and renovated marina along with the increased traffic at the airport and on the proposed road is expected to provide long-term beneficial impacts to tourism and recreational use.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to tourism and recreational use would likely occur. Group 4 Phase III Early Restoration projects would not contribute

substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative tourism and recreational impacts.

Infrastructure

Group 4 Phase III Early Restoration projects would have short-term adverse impacts. The projects proposed in the Group 4 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Some of the projects have the potential to provide long-term beneficial impacts through the enhancement of parking at some of the recreational use facilities.

Six projects in Table 12-75 are identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 4 Phase III Early Restoration projects. These include military operations, which add personnel and increase population pressures on existing infrastructure. Coastal development also increases pressure on existing infrastructure. These impacts are anticipated to continue into the future.

When Group 4 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts infrastructure resources would likely occur. Group 4 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 4 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative infrastructure impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (see Table 12-75), the Group 4 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in the Group 4 Phase III Early Restoration region. Group 4 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term beneficial cumulative impacts to hydrology and water resources, living coastal and marine resources, protected species, habitats, socioeconomics, aesthetics and visual resources, tourism and recreational use, and infrastructure.

Group 5 Phase III Early Restoration: St. Joseph Bay (Gulf County and a small portion of Bay County)

Table 12-76 summarizes the impacts to resources associated with proposed Florida projects in the St Joseph Bay region (Gulf and Bay Counties) comprising habitat, and recreational use projects. The projects occur within St. Joseph Bay or on the shoreline of St. Joseph Bay. Projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in St Joseph's Bay and its watershed, may result in cumulative impacts to resources. Projects are currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are

anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

Table 12-76. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 5 Projects													
Mexico Beach Marina	S	S	S	S	S	S	S	NE	NE	S	S/+	S/+	NE
Beacon Hill Veterans' Memorial Park	S	S	S	S	S	S	S	+	NE	S	S/+	S/+	NE
Windmark Fishing Pier	-	-	S	S	S	S	S	+	NE	S	S/+	NE	NE
Florida Seagrass Recovery	S	S/+	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	NE
Highland View Boat Ramp	S	S	S	S	S	S	S	S/+	NE	S	S/+	S/+	NE
St. Joe's Bay Scallop Enhancement	NE	S	S	S	S/+	S	S	+	NE	+	+	NE	S
Port St. Joe Boat Ramp	S	S	S	S	S	S	S	NE	NE	S	S/+	S/+	NE

Beneficial effect: +
Short term adverse effect: S
Adverse effect: -
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 5 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 5 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present, and reasonably foreseeable future actions.

Summary Impacts Group 5 Phase III Early Restoration Projects

All of the resource areas listed in Table 12-76 above, with the exception of land and marine management, would be affected by at least some of the project proposed under Group 5 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. Some resource areas would be affected long term, some beneficially and some adversely. However, none of the projects proposed under Group 5 Phase III Early Restoration would result in any long-term adverse impacts that rise above a minor status. In fact, many of the projects proposed under Group 5 Phase III Early Restoration would result in long-term benefits to certain resources. Overall, long-term benefits from projects proposed in the Group 5 Phase III Early Restoration region are expected to

outweigh the short-term adverse impacts necessary for project implementation as well as long-term minor adverse impacts.

Identification of Past, Present, and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present, and reasonably foreseeable future projects in each of the categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 5 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative discussions about potential impacts based on best professional judgment. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-77. Other Activities Identified in Group 5 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
ERP II – Restoring the Night Sky	Restoring the Night Sky aims to improve the quality of sea turtle nesting habitat in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin County beaches by reducing negative impacts on turtles from artificial lighting. This will be accomplished by installing turtle-friendly lighting in place of more harmful traditional lighting within the vicinity of nesting beaches, increased enforcement of local lighting ordinances, and a public awareness campaign.	• All impacts determined *de minimus* in EA for ERP II
ERP II - Comprehensive Program for Enhanced Management of Avian Breeding	Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin Counties. Predator control, placement of symbolic fencing, protection of nesting bird areas and monitoring.	• All impacts determined *de minimus* in EA for ERP II
Other Restoration Projects		
St. Joseph Peninsula Beach Restoration Project, Gulf County, FL	Project will reduce nonpoint source pollution entering waterbodies.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Tourism and Recreational Use

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Military Operations		
On-going CERCLA Remediation at Tyndall Air Force Base	The Air Force is operating a cleanup program at Tyndall Air Force Base.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual resources
Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative EIS, Tyndall Air Force Base	GRASI is a US Air Force-led paternership with the State of Florida and other states and federal agencies to ensure near optimum use of airspace by civilians and the military throughout the Gulf Coast region.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHGs • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Infrastructure
Marine Transportation		
No known projects.		
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		
No known projects		
Coastal Development and Land Use		
Historic Lighthouse Rescue/Cape San Blas Lighthouse	The historic Cape San Blas Lighthouse has been approved for moving from its present, eroding location on the Cape to the City of Port St. Joe.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Fisheries and Aquaculture		
No known projects.		
Tourism and Recreation		
No known projects.		

Cumulative Impacts Analysis for Group 5 Phase III Early Restoration Projects

Table 12-77 identifies the following resource areas where there is a possibility that impacts of past, present and reasonably foreseeable future actions might overlap those of the Group 5 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through analysis of the Group 5 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air Quality and GHGs;
- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice
- Aesthetics and Visual Resources;
- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 5 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate from the construction at a number of the proposed project sites. Long-term minor adverse impacts would result from the Windmark Fishing Pier converting submerged substrates with the installation of pilings.

Four projects in Table 12-77 are identified as potential contributors to cumulative impacts to geology and substrates when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. Actions related to coastal development or upland military installations have resulted in permanent alterations to existing geology for construction of foundations, roadways and other permanent structures. Other actions would lead to short-term and long-term minor adverse impacts

resulting from construction of new facilities. Long-term benefits would result from the proposed beach renourishment project.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to geology and substrates would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Hydrology and Water Resources

Group 5 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to hydrology and water resources. The projects proposed in the Group 5 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. The Windmark Fishing Pier project would result in long-term minor adverse impacts through the continuing use of the fishing pier. Long-term benefits to hydrology and water resources would result from the planting of seagrass.

Four projects in Table 12-77 are identified as potential contributors to cumulative impacts to hydrology and water resources when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. These include coastal development and ongoing military operations. These activities may contribute to long-term hydrologic or water quality impacts as a result of increased development and impervious surface area that may result in increases in stormwater runoff and pollutants carried in that runoff and increased recreational use in the waterways.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to hydrology and water resources would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to hydrology and water resources.

Air Quality and GHGs

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to air quality and GHGs. The projects proposed in the Group 5 Phase III Early Restoration would result in short-term adverse impacts during construction activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Four projects in Table 12-77 are identified as potential contributors to cumulative impacts to air quality or GHG impacts when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. The impacts would occur mainly during construction with limited long term operational impacts. Construction and operations impacts of each project would be short to long-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards. For operations, all facilities, would follow applicable federal and state regulations, and would not be expected to change the air quality attainment status of the region.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to noise. The projects proposed in the Group 5 Phase III Early Restoration would result in short-term adverse impacts related to construction activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Four projects in Table 12-77 are identified as potential contributors to cumulative impacts to noise levels when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. Project types include military operations and coastal development. In most cases the noise impacts would be of relatively short duration, ending upon completion of construction activities, and are projected to result in only minor adverse impacts. Noise levels from military operations will be increased but not an excessive level given the surrounding land use.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to noise would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to living coastal and marine resources. Construction related activities from the projects proposed in the Group 5 Phase III Early Restoration would result in short-term adverse impacts. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from seagrass plantings and scallop enhancement.

Four projects in Table 12-77 are identified as potential contributors to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. Ongoing military operations, existing and coastal development have affected upland and aquatic living coastal and marine resources due to human disturbances including noise, domestic pets, introduction of invasive species, placement of roadways and traffic, recreational uses, etc. These ongoing activities have all contributed to habitat losses and habitat fragmentation in areas that living and coastal marine resources rely on for breeding, foraging and other uses. These impacts are anticipated to continue into the future.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short- term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to living and coastal marine resources.

Protected Species

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to protected species. Construction related activities from the proposed in the Group 5 Phase III Early Restoration would result in short term adverse impacts. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from the plantings of seagrass.

Four projects in Table 12-77 are identified as potential contributors to cumulative impacts to protected species when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. The ongoing military and coastal development activities have adversely affected protected species through human related disturbances such as noise, vessel traffic and pollution, placement of roadways and traffic, domestic pets, loss of habitat, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. The Phase II habitat restoration projects will provide long-term benefits to nesting birds and sea turtles.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to protected species would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to protected species.

Habitats

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to habitats. The projects proposed in the Group 5 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs.

Four projects in Table 12-77 are identified as potential contributors to cumulative impacts to habitats when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. The ongoing military and coastal development have adversely affected habitats through human related disturbances such as loss of habitats to developed areas, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. The Phase II Early Restoration projects will provide long-term benefits to nesting birds and sea turtles habitat.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to habitats would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to habitats.

Socioeconomics and Environmental Justice

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to socioeconomics. The Highland View Boat Ramp project would result in short-term adverse impacts during the construction phase of the project due to disruption of local fishing. However, this project and the projects proposed in the Group 5 Phase III Early Restoration would benefit the local economies adjacent to the project site in both the short-term and long-term from increased employment during the project construction and by increasing use of the facilities.

Four projects in Table 12-77 are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. Many of the projects in the table may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term adverse impacts to socioeconomics would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to aesthetics and visual resources. The majority of the projects proposed in the Group 5 Phase III Early Restoration would result in short-term adverse impacts from construction related activities. Long-term beneficial impacts would result from planting seagrass.

Three projects in Table 12-77 are identified as potential contributors to cumulative impacts to aesthetic or visual resources when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. Many of the projects described in the table above may affect aesthetics and visual resources in the short-term and long-term. Temporary impacts to visual resources would result from restoration, construction, maintenance and recreational use. Long-term impacts would occur with coastal development.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative aesthetics and visual resources impacts.

Tourism and Recreational Use

Group 5 Phase III Early Restoration projects would have short-term adverse impacts to tourism and recreational use. The majority of the projects proposed in the Group 5 Phase III Early Restoration would result in short term adverse impacts from potential facility closures during construction related activities. However once the construction activities are completed, the Group 5 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources.

Two projects in Table 12-77 are identified as potential contributors to cumulative impacts to tourism and recreation when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. Enhanced and/or increased visitation at the renourished beach and the relocated lighthouse is expected to provide long-term beneficial impacts to tourism and recreational use.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to tourism and recreational use would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative tourism and recreational use impacts.

Infrastructure

Group 5 Phase III Early Restoration projects would have short-term adverse impacts. The projects proposed in the Group 5 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Some of the projects have the potential to provide long-term beneficial impacts through the enhancement of parking at some of the recreational use facilities.

Two projects in Table 12-77 is identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 5 Phase III Early Restoration projects. These include military operations, which add personnel and increase population pressures on existing infrastructure. Coastal development also increases pressure on existing infrastructure. These impacts are anticipated to continue into the future.

When Group 5 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to infrastructure would likely occur. Group 5 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 5 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative infrastructure impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present, and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (see Table 12-77), the Group 5 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in

the Group 5 Phase III Early Restoration region. Group 5 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term beneficial cumulative impacts to hydrology and water resources, living coastal and marine resources, protected species, habitats, socioeconomics, aesthetics and visual resources, tourism and recreational use, and infrastructure.

Group 6 Phase III Early Restoration Projects: Apalachicola Bay (Franklin County)

Table 12-78 summarizes the impacts to resources associated with proposed Florida projects in the Apalachicola Bay region, comprising habitat, living coastal and marine resources, and recreational use projects. The projects occur mainly within Apalachicola Bay with a few upland park improvement projects proposed. Projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in Apalachicola Bay and its watershed, may result in cumulative impacts to resources. Projects are currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

Table 12-78. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 6 Projects													
Waterfront Park	S	S	S	S	S	S	S	+	NE	S	S/+	S/+	NE
Indian Creek Park	S	S	S	S	S	S	S	+	NE	S	S/+	S/+	NE
Eastpoint Fishing Pier	S	S	S	S	S	S	S	+	NE	S	S/+	S/+	+
St. George Island Fishing Pier	S	S	S	S	S	S	S	+	NE	S	S/+	S/+	+
Apalachicola Bay Oyster Cultch	NE	S/+	S	S	S/+	S/+	S/+	S/+	+	S	NE	NE	NE
Cash Bayou	S	S	S	-	S	S	S	NE	NE	S	S/+	+	NE
Sand Beach	S	S	S	-	S	S	S	NE	NE	S	S/+	+	NE
Cat Point Living Shoreline	S/+	S	S	S	S/+	S	S/+	S/+	NE	S	+	S/+	+

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 6 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 6 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present, and reasonably foreseeable future actions.

Summary Impacts Group 6 Phase III Early Restoration Projects

All of the resource areas listed in Table 12-78 above would be affected by at least some of the project proposed under Group 6 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. Some resource areas would be affected long term, some beneficially and some adversely. However, none of the projects proposed under Group 6 Phase III Early Restoration would result in any long-term adverse impacts that rise above a minor status. In fact, many of the projects proposed under Group 6 Phase III Early Restoration would result in long-term benefits to certain resources. Overall, long-term benefits from projects proposed in the Group 6 Phase III Early Restoration region are expected to outweigh the short-term adverse impacts necessary for project implementation as well as long-term minor adverse impacts.

Identification of Past, Present, and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present, and reasonably foreseeable future projects in each of the categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 6 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative best professional judgment about potential impacts. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-79. Other Activities Identified in Group 6 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
ERP II – Restoring the Night Sky	Restoring the Night Sky aims to improve the quality of sea turtle nesting habitat in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin County beaches by reducing negative impacts on turtles from artificial lighting. This will be accomplished by installing turtle-friendly lighting in place of more harmful traditional lighting within the vicinity of nesting beaches, increased	• All impacts determined *de minimus* in EA for ERP II

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
	enforcement of local lighting ordinances, and a public awareness campaign.	
ERP II - Comprehensive Program for Enhanced Management of Avian Breeding	Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf and Franklin Counties. Predator control, placement of symbolic fencing, protection of nesting bird areas and monitoring.	• All impacts determined *de minimus* in EA for ERP II
Other Restoration Projects		
Water quality improvements and stormwater retrofits in Apalachicola Bay (NW FL Water Management District)	Projects to improve quality as well as constructing stormwater treatment facilities.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Infrastructure • Socioeconomics and Environmental Justice
Military Operations		
No known projects.		
Marine Transportation		
No known projects.		
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		
No known projects		
Coastal Development and Land Use		
Big Ben Scenic Byway (FDOT)	Expansion of the Big Bend Scenic Highway.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Tates Hell State Forest Hydrologic Restoration Plan (NW FL Water Management District)	Plan provides for: 1) improving the water quality of surface water flows and runoff discharged into the surrounding water bodies, 2) restoring historic surface water drainage patterns and hydrologic connectivity; 3) enhancing wetland hydrology and function; and 4) restoring a	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
	mix of natural ecological communities.	• Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Infrastructure
Fisheries and Aquaculture		
No known projects.		
Tourism and Recreation		
No known projects.		

Cumulative Impacts Analysis for Group 6 Phase III Early Restoration Projects

Table 12-79 identifies the following resource areas where there is a possibility that impacts of past, present and reasonably foreseeable future actions might result overlap those of the Group 6 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through analysis of the Group 6 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air Quality and GHGs;
- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice;
- Aesthetics and Visual Resources;
- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate from the construction at a number of the proposed project sites. Long-term beneficial impacts would result from living shoreline creation.

Three projects in Table 12-79 are identified as potential contributors to cumulative impacts to geology and substrates when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. Actions related to coastal development or upland military installations have resulted in permanent alterations to existing geology for construction of foundations, roadways and other

permanent structures. Other proposed actions would lead to short-term and long-term minor adverse impacts resulting from construction of new facilities.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to geology and substrates would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to geology and substrates.

Hydrology and Water Resources

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to hydrology and water resources. The projects proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term benefits to hydrology and water resources would result from living shoreline creation.

Four projects in Table 12-79 are identified as potential contributors to cumulative impacts to hydrology and water resources when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. These include coastal development and ongoing military operations. These activities may contribute to long-term hydrologic or water quality impacts as a result of increased development and impervious surface area that may result in increases in stormwater runoff and pollutants carried in that runoff and increased recreational use in the waterways. Long-term beneficial impacts to water quality would come from implementing stormwater retrofit projects.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to hydrology and water resources would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to hydrology and water resources.

Air Quality and GHGs

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to air quality and GHGs. The projects proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Three projects in Table 12-79 are identified as potential contributors to cumulative impacts to air quality or GHG impacts when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. The impacts would occur mainly during construction with limited long term operational impacts. Construction and operations impacts of each project would be short to long-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards. For operations, all facilities, would

follow applicable federal and state regulations, and would not be expected to change the air quality attainment status of the region.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 6 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to noise. The majority of the projects proposed in the Group 6 Phase III Early Restoration would only result in short-term adverse impacts during construction related activities. The Cash Bayou and Sane Beach projects would result in long-term minor adverse impacts through the use of new facilities but not at an excessive level given the surrounding land use.

Three projects in Table 12-79 are identified as potential contributors to cumulative impacts to noise levels when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. Project types include coastal development. In most cases the noise impacts would be of relatively short duration, ending upon completion of construction activities, and are projected to result in only minor adverse impacts.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to noise would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to living coastal and marine resources. The projects proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts to living coastal and marine resources would result from living shoreline and oyster reef creation.

Three projects in Table 12-79 are identified as potential contributors to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. Existing coastal development has affected upland and aquatic living coastal and marine resources due to human disturbances including noise, domestic pets, introduction of invasive species, placement of roadways and traffic, recreational uses, etc. These ongoing activities have all contributed to habitat losses and habitat fragmentation in areas that living and coastal marine resources rely on for breeding, foraging and other uses. These impacts are anticipated to continue into the future.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in

conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to living and coastal marine resources.

Protected Species

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to protected species. The projects proposed in the Group 6 Phase III Early Restoration would result in short term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from oyster reef creation.

Three projects in Table 12-79 are identified as potential contributors to cumulative impacts to protected species when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. The ongoing coastal development activities have adversely affected protected species through human related disturbances such as noise, vessel traffic and pollution, placement of roadways and traffic, domestic pets, loss of habitat, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. The Phase II habitat restoration projects will provide long-term benefits to nesting birds and sea turtles.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to protected species would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to protected species.

Habitats

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to habitats. The majority of the projects proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from living shoreline and oyster reef creation.

Three projects in Table 12-79 are identified as potential contributors to cumulative impacts to habitats when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. The ongoing coastal development has adversely affected habitats through human related disturbances such as loss of habitats to developed areas, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. The Phase II Early Restoration projects will provide long-term benefits to nesting birds and sea turtles habitat.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to habitats would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in conjunction

with other restoration efforts, have the potential to result in some long-term beneficial impacts to habitats.

Socioeconomics and Environmental Justice

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to socioeconomics. The oyster project proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts during the construction time frame due to potential closure of the oyster reef. However, this project and the other projects would benefit the local economies adjacent to the project site in both the short and long term from increased employment during the project construction and by increasing use of the facilities.

Three projects in Table 12-79 are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. Many of the projects actions in the table may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short term cumulative adverse impacts to socioeconomics would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to aesthetics and visual resources. Construction related activities from the projects proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts.

One project in Table 12-79 is identified as a potential contributor to cumulative impacts to aesthetic or visual resources when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. Many of the projects described in the table above may affect aesthetics and visual resources in the short-term and long-term. Temporary impacts to visual resources would result from restoration, construction, maintenance and recreational use. Long-term impacts would occur with coastal development.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Tourism and Recreational Use

Group 6 Phase III Early Restoration projects would have short-term adverse impacts to tourism and recreational use. The majority of the projects proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts from potential facility closures during construction related activities. However once the construction activities are completed, the Group 6 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources.

One project in Table 12-79 is identified as a potential contributor to cumulative impacts to tourism and recreation when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. Enhanced and/or increased visitation due to the potential increase of traffic on the proposed road is expected to provide long-term beneficial impacts to tourism and recreational use.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to tourism and recreational use would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative tourism and recreational use impacts.

Infrastructure

Group 6 Phase III Early Restoration projects would have short-term adverse to infrastructure. The projects proposed in the Group 6 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Some of the projects have the potential to provide long-term beneficial impacts through the enhancement of parking at some of the recreational use facilities.

Three projects in Table 12-79 are identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 6 Phase III Early Restoration projects. These include military operations, which add personnel and increase population pressures on existing infrastructure. Coastal development also increases pressure on existing infrastructure. These impacts are anticipated to continue into the future.

When Group 6 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to infrastructure would likely occur. Group 6 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 6 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative infrastructure impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present, and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (seeTable 12-79), the Group 6 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in

the Group 6 Phase III Early Restoration region. Group 6 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term beneficial cumulative impacts to geology and substrates, hydrology and water resources, living coastal and marine resources, protected species, habitats, socioeconomics, aesthetics and visual resources, tourism and recreational use, and infrastructure.

Group 7 Phase III Early Restoration: Apalachee Bays (Wakulla County)

Table 12-80 summarizes the impacts to resources associated with proposed Florida projects in the area of Apalachicola and Apalachee Bays that are comprised of habitat restoration projects including, Seagrass recovery, and scallop enhancement as well as recreational and visitor enhancement and access projects including, one beach nourishment project, improvements to two parks (constructing observation platforms, boardwalks, and walking paths, improving the boat ramp area, and picnic areas, renovating the parking area, and the restroom facility, and constructing a canoe/kayak launch site), and a dock. The projects occur in Apalachicola and Apalachee Bays, in central Franklin and Wakulla Counties. Projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in Apalachicola and Apalachee Bays and the nearby vicinity, may result in cumulative impacts to resources. Projects are currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

Table 12-80. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 7 Projects													
Franklin Scallop Enhancement	NE	S	S	S	S/+	S	S	+	NE	+	+	NE	S
Florida Seagrass Recovery	S	S/+	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	NE
Bald Point State Park	S	S	S	S	S	S	S	+	NE	S/+	S/+	S/+	NE
Wakulla Mashes Sands Park	S	S	S	S	S	S	S	NE	NE	S	S/+	S	S
Shell Point Beach Nourishment	S/+	+	S	S	S	S	S	+	+	S/+	S/+	S	S
Saint Marks Boat Ramp	S	S	S	S	S	S	S	NE	NE	S	S/+	S/+	NE

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 7 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 7 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present, and reasonably foreseeable future actions.

Summary Impacts Group 7 Phase III Early Restoration Projects

All of the resource areas listed in Table 12-80 above would be affected by at least some of the project proposed under Group 7 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. None of the projects proposed under Group 7 Phase III Early Restoration would result in any long-term adverse impacts. In fact, many of the projects proposed under Group 7 Phase III Early Restoration would result in long-term benefits to certain

resources. Overall, long-term benefits from projects proposed in the Group 7 Phase III Early Restoration region are expected to outweigh the short-term adverse impacts necessary for project implementation.

Identification of Past, Present, and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present and reasonably foreseeable future projects in each of the categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 7 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative discussions about potential impacts due to best professional judgment. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-81. Other Activities Identified in Group 7 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
No known projects.		
Other Restoration Projects		
No known projects.		
Military Operations		
No known projects.		
Marine Transportation		
No known projects.		
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		
No known projects		
Coastal Development and Land Use		
Big Ben Scenic Byway (FDOT)	Expansion of the Big Bend Scenic Highway.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
		• Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Wakulla Land Tract Acquistion (Wakulla Aquatic Association)	The continuing purchasing of tracts of land for conservation purposes.	• Hydrology and Water Resources • Living Coastal and Marine Resources • Protected Species • Habitats • Aesthetics and Visual Resources
Fisheries and Aquaculture		
No known projects.		
Tourism and Recreation		
Wakulla County Bicycle, Pedestrian and Blueways Master Plan (Wakulla County)	Series of projects that aim to connect and promote a system of walking, cycling and paddling trails within Wakulla County.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Big Bend Maritime Center	Plans to build a center that is a collection of buildings, boats and equipment, interpretive displays and activities depicting life as it was and still is in Coastal Florida.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats • Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure

Cumulative Impacts Analysis for Group 7 Phase III Early Restoration Projects

Table 12-81 identifies the following resource areas where there is a possibility that impacts of past, present, and reasonably foreseeable future actions might overlap those of the Group 7 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through analysis of the Group 7 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air Quality and GHGs;
- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice;
- Aesthetics and Visual Resources;
- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate from the construction at a number of the proposed project sites. Long-term benefits to geology and substrate would include the renourishment of Shell Point.

Three projects in Table 12-81 are identified as potential contributors to cumulative impacts to geology and substrates when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Actions related to coastal development have resulted in permanent alterations to existing geology for construction of foundations, roadways and other permanent structures. Other proposed actions would lead to short-term and long-term minor adverse impacts resulting from construction of new facilities.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to geology and substrates would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to geology and substrates.

Hydrology and Water Resources

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to hydrology and water resources. The majority of the projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from the planting of seagrass.

Four projects in Table 12-81 are identified as potential contributors to cumulative impacts to hydrology and water resources when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. These include coastal development and tourism and recreational use projects. These activities may contribute to long-term hydrologic or water quality impacts as a result of increased development and impervious surface area that may result in increases in stormwater runoff and pollutants carried in that runoff and increased recreational use in the waterways. Long-term beneficial impacts are anticipated from the purchasing of land for conservation measures.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to hydrology and water resources would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term, beneficial cumulative impacts to hydrology and water resources.

Air Quality and GHGs

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to air quality and GHGs. The projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Three projects in Table 12-81 are identified as potential contributors to cumulative impacts to air quality or GHG impacts when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. The impacts would occur mainly during construction with limited long term operational impacts. Construction and operations impacts of each project would be short to long-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards. For operations, all facilities, would follow applicable federal and state regulations, and would not be expected to change the air quality attainment status of the region.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to noise. The majority of the projects proposed in the Group 7 Phase III Early Restoration would result in short-term, adverse impacts during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

Three projects in Table 12-81 are identified as potential contributors to cumulative impacts to noise levels when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Project types include coastal development and tourism and recreational. In most cases the noise impacts would be of relatively short duration, ending upon completion of construction activities, and are projected to result in only minor adverse impacts.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to noise would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to living coastal and marine resources. The projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from seagrass plantings as well as enhancement of the scallop population.

Four projects in Table 12-81 are identified as potential contributors to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Existing coastal development has affected upland and aquatic living coastal and marine resources due to human disturbances including noise, domestic pets, introduction of invasive species, placement of roadways and traffic, recreational uses, etc. These ongoing activities have all contributed to habitat losses and habitat fragmentation in areas that living and coastal marine resources rely on for breeding, foraging and other uses. These impacts are anticipated to continue into the future. Long-term beneficial impacts would result from the purchasing of land for conservation measures.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to living coastal and marine resources.

Protected Species

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to protected species. The projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized

through the implementation of BMPs. Long-term beneficial impacts would result from the planting of new seagrass.

Four projects in Table 12-81 are identified as potential contributors to cumulative impacts to protected species when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Coastal development activities have adversely affected protected species through human related disturbances such as noise, vessel traffic and pollution, placement of roadways and traffic, domestic pets, loss of habitat, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term beneficial impacts would result from the purchasing of land for conservation measures.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to protected species would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to protected species.

Habitats

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to habitats. The majority of the projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from the planting of new seagrass.

Three projects in Table 12-81 are identified as potential contributors to cumulative impacts to habitats when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Coastal development has adversely affected habitats through human related disturbances such as loss of habitats to developed areas, introduction of invasive species and habitat fragmentation. These impacts are anticipated to continue into the future. Long-term benefits would result from the purchasing of tracts of land for conservation measures.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to habitats would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to habitats.

Socioeconomics and Environmental Justice

Group 7 Phase III Early Restoration projects would have long-term beneficial impacts to socioeconomics. The projects proposed in the Group 7 Phase III Early Restoration would benefit the local economies adjacent to the project site in both the short-term and long-term from increased employment during the project construction and by increasing use of the facilities.

Three projects in Table 12-81 are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Many of the projects in the table may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, no cumulative adverse impacts to socioeconomics would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to aesthetics and visual resources. The majority of the projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Long-term beneficial impacts would result from enhancing Shell Point and the Bald Point State Park.

Three projects in Table 12-81 is identified as potential contributors to cumulative impacts to aesthetic or visual resources when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Many of the projects described in the table above may affect aesthetics and visual resources in the short-term and long-term. Temporary impacts to visual resources would result from restoration, construction, maintenance and recreational use. Long-term impacts would occur with coastal development.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative aesthetics and visual resources impacts.

Tourism and Recreational Use

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to tourism and recreational use. The majority of the projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts from potential facility closures during construction related activities. However once the construction activities are completed, the Group 7 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources

Three projects in Table 12-81 are identified as potential contributors to cumulative impacts to tourism and recreation when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. Enhanced and/or increased visitation at the proposed maritime center and on the bicycle, pedestrian and blueways trails is expected to provide long-term beneficial impacts to tourism and recreational use.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to tourism and recreational use would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative tourism and recreational use impacts.

Infrastructure

Group 7 Phase III Early Restoration projects would have short-term adverse impacts to infrastructure. The projects proposed in the Group 7 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. However, some of the projects have the potential to provide long-term beneficial impacts through the enhancement of parking at some of the recreational use facilities.

Three projects in Table 12-81 are identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 7 Phase III Early Restoration projects. These include coastal development and tourism and recreational use projects which increase pressure on existing infrastructure. These impacts are anticipated to continue into the future.

When Group 7 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to infrastructure would likely occur. Group 7 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 7 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative infrastructure impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present, and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (see Table 12-81), the Group 7 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in the Group 7 Phase III Early Restoration region. Group 7 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term beneficial cumulative impacts to geology and substrates, hydrology and water resources, living coastal and marine resources, protected species, habitats, socioeconomics, aesthetics and visual resources, tourism and recreational use, and infrastructure.

Group 8 Phase III Early Restoration Projects: Artificial Reef Placement Gulf Coast Waters

Table 12-82 summarizes the impacts to resources associated with proposed Florida habitat restoration projects in the area of the Gulf Coastal Waters off of the Florida coast. These projects involve the installation of multiple deep water and shallow water "snorkeling" reefs. The projects occur off of Escambia, Santa Rosa, Okaloosa, Walton and Bay County shorelines and because they are the same type of project, offering the same impacts, have been grouped together. Therefore, Group 8 Phase III Early Restoration projects are evaluated together to determine if they have any cumulative impacts that, when combined with other past, present, and reasonably foreseeable future actions in the Gulf waters off of the Florida coast, may result in cumulative impacts to resources. Projects are currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. Although no cumulative impacts to cultural resources are anticipated, there is insufficient information at this time to make determinations. If cultural resources would be impacted, mitigation identified during the consultation process would be implemented.

Table 12-82. Summary of Impacts of Proposed Phase III Early Restoration Projects.

	Geology and Substrates	Hydrology and Water Resources	Air Quality and GHGs	Noise	Living Coastal and Marine Resources	Protected Species	Habitats	Socioeconomics and Environmental Justice	Land and Marine Management	Aesthetics and Visual Resources	Tourism and Recreational Use	Infrastructure	Public Health and Safety and Shoreline Protection
Group 8 Projects													
Escambia Artificial Reefs	**S**	**S**	**S**	**-**	**S/+**	**S/+**	**S/+**	**+**	NE	**S/+**	**S/+**	**S**	**NE**
Santa Rosa Artificial Reefs	**S**	**S**	**S**	**-**	**S/+**	**S/+**	**S/+**	**+**	**NE**	**S/+**	**S/+**	**S**	**NE**
Okaloosa Artificial Reefs	**S**	**S**	**S**	**-**	**S/+**	**S/+**	**S/+**	**+**	**NE**	**S/+**	**S/+**	**S**	**NE**
Walton Artificial Reefs	**S**	**S**	**S**	**-**	**S/+**	**S/+**	**S/+**	**+**	**NE**	**S/+**	**S/+**	**S**	**NE**
Bay Artificial Reefs	**S**	**S**	**S**	**-**	**S/+**	**S/+**	**S/+**	**+**	NE	**S/+**	**S/+**	**S**	**NE**

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Existing Conditions

Existing environmental and socio-economic conditions in and around Group 8 Phase III Early Restoration projects are represented by the affected environment in the preceding environmental reviews for Group 8 Phase III Early Restoration projects. The existing conditions include the environmental impacts of past projects in the area and therefore are the assumed existing conditions for the cumulative analysis of impacts for past, present and reasonably foreseeable future actions.

Summary Impacts Group 8 Phase III Early Restoration Projects

All of the resource areas listed in Table 12-82 above, with the exception of land and marine management, infrastructure, and public health and safety and shoreline protection, would be affected by at least some of the project proposed under Group 8 Phase III Early Restoration. These impacts would not be anticipated to extend beyond the construction period for the most part. None of the projects proposed under Group 8 Phase III Early Restoration would result in any long-term adverse impacts. In fact, many of the projects proposed under Group 8 Phase III Early Restoration would result in long-term benefits to certain resources. Overall, long-term benefits from projects proposed in the Group 8 Phase III Early Restoration region are expected to outweigh the short-term adverse impacts necessary for project.

Identification of Past, Present, and Reasonably Foreseeable Future Actions and Impacts

The table below identifies past, present, and reasonably foreseeable future projects in each of the categories described in Chapter 6. For each of the actions, the table provides (1) a brief description of the action and (2) a listing of NEPA resource categories that are the most likely areas of concern for cumulative impacts when the action is considered in conjunction with implementation of Group 8 Phase III Early Restoration projects. In most cases, detailed environmental impact data are not available for these other actions. Consequently, the analyses generally reflect qualitative best professional judgment about potential impacts. Also, as noted previously, the focus of the cumulative impacts analysis is on the resource areas that are deemed most likely to exhibit cumulative impacts; hence the analysis does not include in the listing those resources where impacts have been judged to be *de minimis.*

Table 12-83. Other Activities Identified in Group 8 Region

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
Restoration Related to the Spill (Early Restoration Phases I & II, Restore Act, Gulf Environmental Benefit Fund, North American Wetlands Conservation Fund, National Academy of Sciences)		
No known projects.		
Other Restoration Projects		
FWC Artificial Reef Program	Program places a number of artificial reefs each year in state waters.	• Geology and Substrates • Hydrology and Water Resources • Air Quality and GHG • Noise • Living Coastal and Marine Resources • Protected Species • Habitats

Category/Projects	Project Description	Key Resource Areas with Potential to Contribute to Cumulative Impacts
		• Socioeconomics and Environmental Justice • Aesthetics and Visual Resources • Tourism and Recreational Use • Infrastructure
Military Operations		
No known projects.		
Marine Transportation		
No known projects.		
Energy Activities (Offshore oil production, Offshore Natural Gas Facilities, State Oil and Gas Activities)		
No known projects.		
Marine Mineral Mining, Including Sand and Gravel Mining		
No known projects		
Coastal Development and Land Use		
No known projects.		
Fisheries and Aquaculture		
No known projects.		
Tourism and Recreation		
No known projects.		

Cumulative Impacts Analysis for Group 8 Phase III Early Restoration Projects

Table 12-83 identifies the following resource areas where there is a possibility that impacts of past, present and reasonably foreseeable future actions might overlap those of the Group 8 Phase III Early Restoration projects and therefore result in adverse cumulative impacts not identified through analysis of the Group 8 Phase III Early Restoration projects alone. The following resource categories are identified for further cumulative impacts analysis:

- Geology and Substrates;
- Hydrology and Water Resources;
- Air quality and GHGs;
- Noise;
- Living Coastal and Marine Resources;
- Protected Species;
- Habitat;
- Socioeconomics and Environmental Justice;
- Aesthetics and Visual Resources;

- Tourism and Recreational Use; and
- Infrastructure.

Cumulative impacts for each of these categories are discussed below.

Geology and Substrates

Group 8 Phase III Early Restoration projects would have short-term adverse impacts to geology and substrate. There would be short-term adverse impacts to geology and substrate during the placement of the artificial reefs.

The project in Table 12-83 is identified as a potential contributor to cumulative impacts to geology and substrates when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. Actions related to FWC Artificial Reef Program have resulted in placement of hard structure on submerged sandy sediments and permanent conversation of those areas. The project has and would continue to have relatively small footprint for conversion of substrate to hard structure.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to geology and substrates would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Hydrology and Water Resources

Group 8 Phase III Early Restoration projects would have short-term adverse impacts to hydrology and water resources. The projects proposed in the Group 8 Phase III Early Restoration would result in short-term adverse impacts to water quality during construction related activities. These short-term impacts would be minimized through the implementation of BMPs.

The project in Table 12-83 is identified as a potential contributor to cumulative impacts to hydrology and water resources when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. Actions related to FWC Artificial Reef Program have resulted in short-term adverse impacts to water quality during the placement of the artificial reef structures.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to hydrology and water resourecs would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Air Quality and GHGs

Group 8 Phase III Early Restoration projects would have short-term adverse impacts to air quality and GHGs. The projects proposed in the Group 8 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts.

The project in Table 12-83 is identified as a potential contributor to cumulative impacts to air quality or GHG impacts when their impacts are combined with those of the Group 8 Phase III Early Restoration

projects. The impacts would occur during placement of the artificial reefs. Construction impacts of the project would be short-term in nature, would constitute a very small portion of the overall inventory of air emissions in the region, and would not be expected to violate state or federal standards.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to air quality and GHGs would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Noise

Group 8 Phase III Early Restoration projects would have both short-term and long-term minor adverse impacts to noise. The majority of the projects proposed in the Group 8 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Where appropriate, BMPs would be implemented to minimize these short-term impacts. Long-term adverse minor impacts have the potential to result from any increases in motor boat access to the emplacement areas.

The project in Table 12-83 is identified as a potential contributor to cumulative impacts to noise levels when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. The majority of the noise is related to temporary construction activities. Noise levels from increases in motor boat access to the emplacement areas will be increased but not at an excessive level given the surrounding land use.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term and long-term cumulative adverse impacts to noise would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Living Coastal and Marine Resources

Group 8 Phase III Early Restoration projects would have short-term adverse impacts to living coastal and marine resources. The projects proposed in the Group 8 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from the placement of artificial reef structures.

The project in Table 12-83 is identified as a potential contributor to cumulative impacts to living coastal and marine resources when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. Actions related to FWC Artificial Reef Program have resulted in short-term adverse impacts to during the placement of the artificial reef structures. Long-term beneficial impacts would result from the placement of artificial reef structures which would enhance living coastal and marine resources.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to living coastal and marine resources would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 8 Phase III Early Restoration projects, carried out in

conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to living and coastal marine resources.

Protected Species

Group 8 Phase III Early Restoration projects would have short-term adverse impacts to protected species. The projects proposed in the Group 8 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from the placement of artificial reef structures.

The project in Table 12-83 is identified as a potential contributor to cumulative impacts to protected species when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. Actions related to FWC Artificial Reef Program have resulted in short-term adverse impacts to protected species during the placement of the artificial reef structures. Long-term beneficial impacts to protected species would result from the placement of artificial reef structures which would create more habitat for protected species.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to protected species would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 8 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to protected species.

Habitats

Group 8 Phase III Early Restoration projects would have short-term adverse impacts to habitats. The projects proposed in the Group 8 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. These short-term impacts would be minimized through the implementation of BMPs. Long-term beneficial impacts would result from the placement of artificial reef structures.

The project in Table 12-83 is identified as a potential contributor to cumulative impacts to habitats when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. Actions related to FWC Artificial Reef Program have resulted in short-term adverse impacts to habitats during the placement of the artificial reef structures. Long-term beneficial impacts to habitats would result from the placement of artificial reef structures which would create additional habitat.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to habitats would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 8 Phase III Early Restoration projects, carried out in conjunction with other restoration efforts, have the potential to result in some long-term beneficial impacts to habitats.

Socioeconomics and Environmental Justice

Group 8 Phase III Early Restoration projects would have long-term beneficial impacts to socioeconomics. The projects proposed in the Group 8 Phase III Early Restoration would benefit the local economies adjacent to the project site in both the short-term and long-term from increased employment during the project construction and by increasing use of the facilities.

The project in Table 12-83 are identified as potential contributors to cumulative beneficial impacts to socioeconomics when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. The FWC artificial reef program may affect socioeconomics in the short-term and long-term through job creation, increased local sales, and potential increased demand for local business services. Additionally, the increase in workers and tourism related activities would increase revenues in local communities.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, no cumulative adverse impacts to socioeconomics would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 8 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative socioeconomic impacts.

Aesthetics and Visual Resources

Group 8 Phase III Early Restoration projects would have short-term adverse impacts to aesthetics and visual resources. The projects proposed in the Group 8 Phase III Early Restoration would result in short-term adverse impacts during construction related activities. Long term beneficial impacts would result from the placement of artificial reef structures.

The project in Table 12-83 are identified as potential contributors to adverse cumulative impacts to aesthetics and visual resources. The FWC artificial reef program has resulted in short-term impacts during the placement of artificial reef structures. Long-term beneficial impacts to aesthetics and visual resources would result from the placement of artificial reef structures.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to aesthetics and visual resources would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 8 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative aesthetics and visual resource impacts.

Tourism and Recreational Use

Group 8 Phase III Early Restoration projects would have short-term adverse to tourism and recreational use. The projects proposed in the Group 8 Phase III Early Restoration would result in short term adverse impacts during the placement of artificial reef structures. However once the placement is done,

the Group 8 Phase III Early Restoration projects will provide long-term benefits through enhanced and/or increased access to the natural resources.

The project in Table 12-83 is identified as potential contributors to cumulative impacts to tourism and recreation when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. The FWC Artificial Reef Project has resulted in short-term adverse impacts during the placement of the artificial reef structures. Long-term beneficial impacts to tourism and recreational use would result from the placement of the artificial reef structures which would increase the number of reefs to fish and dive at.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to tourism and recreational use would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts. Group 8 Phase III Early Restoration projects, carried out in conjunction with other actions have the potential to provide some long-term beneficial cumulative tourism and recreational use impacts.

Infrastructure

Group 8 Phase III Early Restoration projects would have short-term adverse impacts. During the construction phase, there may be short-term impacts in the transportation corridors when the artificial reef structures are moved to the staging locations.

The project in Table 12-83 is identified as potential contributors to cumulative impacts to infrastructure when their impacts are combined with those of the Group 8 Phase III Early Restoration projects. The FWC Artificial Reef program has resulted in short-term adverse impacts during the construction phase. There are no anticipated long-term cumulative impacts to infrastructure.

When Group 8 Phase III Early Restoration projects are analyzed in combination with other past, present, and reasonably foreseeable future actions, short-term cumulative adverse impacts to infrastructure would likely occur. Group 8 Phase III Early Restoration projects would not contribute substantially to cumulative adverse impacts.

Summary of Cumulative Impacts

Based on the above analysis of past, present, and reasonably foreseeable future actions and the anticipated resources to be impacted for these actions (see Table 12-83), the Group 8 Phase III Early Restoration projects would not substantially contribute to adverse cumulative impacts to resources in the Group 8 Phase III Early Restoration region. Group 8 Phase III Early Restoration projects, carried out in conjunction with other projects, have the potential to provide long-term beneficial cumulative impacts to living coastal and marine resources, protected species, habitats, socioeconomic, aesthetics and visual resources, and tourism and recreational use.

Other Planning Considerations

In addition to foreseeable actions identified in the table above, in November 2013, NFWF announced initial projects to receive funding from the Gulf Environmental Benefit Fund (http://www.nfwf.org/gulf/pages/gulf-projects.aspx). More than $112 million was obligated for 22 projects designed to protect, restore and enhance natural and living resources across the Gulf Coast. Six of these projects are in Florida:

1. Management & Restoration of Escribano Point Coastal Habitat – Phase I
2. Government Street Regional Stormwater Pond at Corrine Jones Park
3. Apalachicola Bay Oyster Restoration
4. Comprehensive Panhandle Coastal Bird Conservation
5. Eliminating Light Pollution on Sea Turtle Nesting Beaches
6. Enhanced Assessment for Recovery of Gulf of Mexico Fisheries – Phase I

12.91 Beach Enhancement Project at Gulf Islands National Seashore - Cumulative Impacts Analysis

12.91.1 Introduction

The impacts of the Beach Enhancement Project at Gulf Islands National Seashore ("Seashore") are fully considered in Chapter 12A, section 12.2.5, Affected Environment and Environmental Consequences. Additionally, Chapter 12E analyzes cumulative impacts of this and other Phase III Early Restoration projects at the regional level. The Beach Enhancement project is included in that analysis within "Group 1" (e.g. the greater Pensacola Bay area including Escambia and Santa Rosa counties). What follows here is a site-specific analysis focusing solely on the project area at the Seashore. It examines impacts to the same resource topics considered in section 12.2.5. The list of actions in the following analysis were chosen based on whether or not the resources they affect overlap in time and space with any of the same resources associated with the Beach Enhancement project.

Of course, not every action in the list below would impact every resource at the Seashore in the footprint of the Beach Enhancement project. For example, an in-water construction project taking place in Pensacola Bay a mile from the Beach Enhancement project area could not affect the geology and substrates or terrestrial wildlife at the Seashore but *could* affect Gulf sturgeon critical habitat or air quality resources that the two projects share. Where actions are not mentioned in the cumulative impacts analyses below, no effect from that project is expected on the resource.

The projects noted below with an asterisk (*) are other Phase III early restoration projects; the projects listed below those are other past, present, and reasonably foreseeable future actions within or near the Seashore. In-depth project descriptions for the former are given in Chapters 12A-B and 12E; brief project descriptions of all projects and actions considered are provided below.

1. Perdido Key Dune Restoration Project* – would restore appropriate dune vegetation to approximately 20 acres of degraded beach dune habitat in Perdido Key, Florida, including habitat used by the federally endangered Perdido Key Beach Mouse. The project will consist of planting appropriate dune vegetation (e.g., sea oats, panic grasses, cord grasses, sea purslane, beach elder) approximately 20 – 60' seaward of the existing primary dune to provide a buffer to the primary dune and enhance dune habitats. In addition, gaps in existing dunes within the project area would be re-vegetated to provide a continuous dune structure.
2. Big Lagoon State Park Boat Ramp Improvement Project*– would involve enhancing an existing boat ramp and surrounding facilities in the Big Lagoon State Park in Escambia County. These improvements would include adding an additional lane to the boat ramp, expanding boat trailer parking, improving traffic circulation at the boat ramp, and providing a new restroom facility to connect the park to the Emerald Coast Utility Authority (ECUA) regional sanitary sewer collection system.
3. Perdido Key State Park Beach Boardwalk Improvements Project* – would improve a number of existing boardwalks in Perdido Key State Park in Escambia County. The proposed improvements

include removing and replacing six existing boardwalks leading to the beach from two public access areas.

4. Ferry Purchase (and Dock Facility Improvements) Project* – would fund the purchase of up to three ferries to be used to ferry visitors (no automobiles) between the City of Pensacola, Pensacola Beach, and the Fort Pickens area of the Seashore in Florida. It also involves the connected but separate actions of: constructing two passenger queuing areas (one with a small ticketing facility); constructing a floating dock, a landing, and a ramp between the two in one area; and constructing a dock that is fixed to and extending from an existing pier in another area. Should the ferries be delivered before the docks are funded or completed, DOI has identified the "interim option" of docking the ferries at the existing Plaza de Luna marina and operating them from the docks there and at Quietwater Beach (and at the Fort Pickens pier as originally planned). Council on Environmental Quality (CEQ) regulations require connected actions[37] to be analyzed in the same NEPA analysis as a proposed action (40 C.F.R. §1508.25(a)1). These connected actions would not utilize funds from this proposed project, but rather would be funded by a non-federal partner.
5. Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project*– would involve enhancing local scallop populations in targeted areas in the Florida Panhandle. The proposed improvements include the harvesting and redistribution of naturally-occurring juvenile scallops supplemented with stocking from a commercial scallop hatchery.
6. Florida Artificial Reef Creation and Restoration Project* – Artificial reefs would be constructed on several sites using a similar process; however, the average water depth and substrate composition of the water bottom at each reef site may differ. A survey would be conducted to determine the placement, alignment, and boundaries of the artificial reefs. In Escambia County, reefs would likely use a concrete, prefabricated tetrahedral artificial reef module commonly deployed in the northeastern Gulf of Mexico, like Florida Limestone or EcoSystem Reef modules from Walter Marine. The "Florida Limestone" module measures 10 feet along each base and is 8 feet in height, yielding a total volume (per module) of approximately 116 cubic feet. Each module covers approximately 43.3 square feet of seafloor area.
7. Bob Sikes Pier, Parking and Trail Restoration Project* – would improve access to a fishing pier in the Pensacola area in Escambia County as well as enhancing the quality of the experience for its recreational users. The proposed improvements include renovating parking areas, enhancing bicycle/pedestrian access, and aesthetic improvements to the surrounding area.
8. Gulf Breeze Wayside Park Boat Ramp Project* – would improve the existing boat ramp at Wayside Park in the City of Gulf Breeze, Santa Rosa County, FL. The proposed improvements include repairing the existing boat ramp and seawall cap, constructing a public restroom facility, and repairing and enhancing the parking area to improve access.
9. Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project*– would involve constructing and operating a saltwater sportfish hatchery in Pensacola, Florida. This project would

[37] The National Park Service defines connected actions as those that are "closely related" to the proposal and alternatives. Actions are connected if they automatically trigger other actions that may have environmental impacts; they cannot or will not proceed unless other actions have been taken previously or simultaneously; or they are interdependent parts of a larger action and depend on the larger action for their justification (NPS Director's Order 12 Handbook).

increase and/or enhance recreational fishing opportunities by producing and releasing highly sought-after sportfish species.

10. The Enhanced Management of Avian Breeding Habitat Project – This early restoration Phase II project helps restore avian breeding habitat injured by response activities and includes visitor education, predator control, surveying for shorebird nesting behaviors and their nests, and placing symbolic fencing with signage around nesting areas to keep visitors from disturbing nests. The project occurs in several areas, including the Seashore units on Santa Rosa Island and Perdido Key.
11. FDEP Beach Erosion Control Program at Pensacola Beach and Perdido Key, FL Project – The 2012 and 2013 Pensacola Beach Restoration Project was a beach nourishment project for approximately 8.2 miles of shoreline in Escambia County and was implemented to restore damage sustained from Tropical Storm Gustav in 2008. It included the installation of a berm, the placement of sand, native plantings, and the installation of sand fencing. The 2012 Perdido Key Beach Restoration Project restored approximately 6.5 miles of shoreline in Escambia County through the addition of sand that was recovered during a dredging of Pensacola Bay.
12. Littoral Zone Placement of Dredge Spoil on Perdido Key Project – Approximately 557 cubic yards of sand was placed on the southern beach of the Perdido Key Area of Gulf Islands National Seashore from mile markers R64 to R52, December 9, 2011 – January 18, 2012. The dredge material was obtained during maintenance dredging of the Pensacola Harbor Gulf Entrance Channel, by the U.S. Army Corps of Engineers, Mobile District.
13. Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project – In 2009 approximately seven miles of road through the Fort Pickens and Santa Rosa areas of the Seashore were reconstructed, repaired, or realigned, thereby restoring damage done by hurricanes and storms in 2004 and 2005. The project reconnected both the Fort Pickens area of the Seashore and the City of Navarre Beach with the city of Pensacola Beach.
14. Asphalt Debris Removal/Disposal Project – In 2012 approximately 3,000 cubic yards of asphalt fragments and road base materials were removed from approximately 50-100 acres of beach at the Santa Rosa (Opal Beach) and Fort Pickens areas.
15. Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base, Florida Gulf Regional Airspace Strategic Initiative, Eglin Air Force Base, Florida – The F-35 beddown and the general operation of the Air Force Base includes the maintenance and operation of an F-35 fleet as well as other Air Force aircraft.
16. Pensacola Naval Air Station continued operations – Pensacola Naval Air Station is generally located on the northwest side of Pensacola Bay. It employs more than 16,000 military and 7,400 civilian personnel and includes extensive training and education facilities. The Blue Angels Navy Flight Demonstration Squadron operates out of there. There are no navy homeported ships; the only homeported ships are a 210-ft USCGC vessel, a USAF 93-ft service craft, and some smaller boats under 40 ft.
17. FDEP/FWCC Living Shoreline Projects – These ten projects are located at various points, including along Pensacola Bay and East Bay, and include projects that are both proposed and underway. Living shoreline creation is a technique that protects tidal shorelines from erosion. They generally include planting native wetland plants and placement of bioengineered materials to protect vegetation and soils from tidal movement.

18. Two FWC Oyster Restoration Projects – Project areas include Garcon Point and White Point in East Bay in the larger Pensacola Bay system. Project consists of distributing cultch material (usually recycled oyster shell) over existing appropriate substrates and using a hatchery to provide seed oysters where spat set is nonexistent or unreliable.
19. FDOT Pensacola Bay Bridge Replacement Project – The bridge between Pensacola and Gulf Breeze, FL on US Highway 98 is considered "structurally deficient"; therefore FDOT is required to plan for a replacement bridge within the next 3-5 years. A Project Development and Environmental Study is currently in progress.
20. Fort Pickens Ferry Support Facilities and Shuttle Service Project - – A transportation study has been prepared and an Environmental Assessment is being prepared for the establishment of support facilities and operation of a landside shuttle tram service at the Fort Pickens Historic District of Gulf Islands National Seashore to complement the future water ferry service (see #4 above and #22 below). Several historic buildings would be repurposed to serve as a visitor center, retail area, restrooms, and shuttle shelters for the shuttle service. Existing parking areas would be repurposed as shuttle pull-off areas. The shuttle service would connect those arriving on the passenger ferry to visitor amenities and points of interest throughout the historic district on the western end of the island. The shuttle service would begin operating around 2017, would use electric trams or other alternative fuels, and would operate on a schedule that mirrored that of the passenger ferry service.
21. Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project – An Environmental Assessment is being prepared for the realignment of 1.67 miles of the road farther to the north, and removal and restoration of the old roadbed, resurfacing 4.5 miles of Fort Pickens Road and two parking lots (lots 21 and 22), and reconfiguring the existing entrance station area there to accommodate more vehicles. Project implementation is proposed to begin in 2015.
22. Fort Pickens Pier and Ferry Service Project – An Environmental Assessment was prepared in 2011 for the establishment of a ferry service between the Fort Pickens area at the Seashore, the City of Pensacola, and Pensacola Beach, and also for the construction a ferry docking pier at Fort Pickens. Although the ferry service has yet to be established, the pier was constructed in 2012. The ferry service is anticipated to run two ferries at a time and make approximately three trips each per day during the peak season, and fewer or no trips during the shoulder and off seasons, respectively. Ferry service is expected to begin in 2017.

Cumulative impacts are determined below for each resource and for each of the four Alternatives in the Environmental Review (Chapter 12A, section 12.2). The analysis follows the same structure as the Affected Environment and Environmental Consequences section (12.2.5). In each analysis, spatial and temporal boundaries were established to identify the past, present, and reasonably foreseeable future actions (including other Phase III projects) whose resources overlapped in space and time with those in the Beach Enhancement project area. These actions are listed for each resource impact topic below. The type of impact (adverse or beneficial), level of intensity (minor, moderate, or major), and duration (short- or long-term) are stated after each action. Then, 1) the cumulative impacts of the listed actions are assessed and 2) added to the impacts (if any) of the Beach Enhancement project, and 3) a cumulative impact is stated for the additive impact of both the listed projects and the Beach Enhancement project together. Finally, an approximation of the increment added to the cumulative impact by the Beach Enhancement project is stated.

The impact thresholds used are based on the duration and intensity definitions provided above in Table 6.2 of Chapter 6. Each of the summary statements below about the cumulative impacts to a resource under a given Alternative are based on an assessment made using those definitions.

12.91.2 Physical Environment

12.1.1.1 *Potential Impacts to Geology and Substrates*

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement Project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's geology and substrates as follows:

1. The 2012 Asphalt Debris Removal/Disposal Project at the Seashore has long-term beneficial impacts to the resource by removing foreign objects from the substrate, albeit in a relatively small area. This returned the resource to its natural composition and allows it to now move and form naturally in that area.
2. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has long-term moderate adverse impacts to the resource because of the compaction and paving of the road which essentially removes the resource from the area by covering it up, but only in the fraction of the area where the road footprints exists.
3. The upcoming Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project is anticipated to have two different impacts: the realignment of one mile of the road will cause short-term minor adverse impacts by increasing the area that is compacted and disturbed during construction, thus temporarily preventing the resource from moving and forming naturally in the construction footprint; the reconfiguration of the entrance station will have a long-term moderate adverse effect on a very small area where the footprint of the entrance area is slightly increased, thus essentially removing the resource from the area by covering it up. Resurfacing the already paved road should have no impact on the resource.
4. The Littoral Zone Placement of Dredge Spoil on Perdido Key Project has long-term beneficial impacts on the geology and substrates of Perdido Key due to the addition of sand substrate materials to the geological system of Perdido Key.

The past, present, and reasonably foreseeable future actions (#1-4, above) would result, on balance, in long-term moderate adverse cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same four actions as are described above in the No Action Alternative are expected to impact the geology and substrates of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1:

long-term moderate adverse, short-term minor adverse, and long-term beneficial cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-4 described in Alternative 1 above are expected to impact geology and substrates in the same way as stated there. Additionally under Alternative 3:

1. The proposed Beach Enhancement Project would have short-term minor adverse impacts due to brief ground disturbance at discreet work locations during project implementation, and substantial long-term beneficial impacts over the entire several-hundred-acre project area. Effects are beneficial because the resource is returned to its natural composition and is allowed to move and form more naturally.

The four past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-4), when combined with the short-term minor adverse and substantial long-term beneficial impacts of implementing the proposed project (#5, above), would result, on balance, in long-term moderate adverse, short-term minor adverse, and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a substantial long-term beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same five actions as are described in Alternative 3 above would be likely to impact the geology and substrates of the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: long-term moderate adverse, short-term minor adverse, and long-term beneficial cumulative. The Beach Enhancement project would contribute a substantial long-term beneficial increment to this cumulative impact.

12.1.1.2 *Potential Impacts to Hydrology, Water Quality, and Floodplains*

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to impact the project area's hydrology, water quality, or floodplains. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. As such, there are no cumulative impacts on hydrology, water quality, or floodplains – adverse or beneficial – under Alternative 2.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the same scenario as described above in the No Action Alternative would apply. However, under this Alternative, the Beach Enhancement project would occur and would impact hydrology, water quality, and floodplains as follows:

1. The Beach Enhancement Project would have short-term minor adverse impacts to water quality due to localized sediment disturbance and turbidity as backhoes disturb the sandy benthic substrate to remove asphalt, road base materials, and/or concrete chunks from the intertidal and sub-tidal zones. This work would occur in a very small space at any one time, and the total affected area would not exceed five acres total over the two-mile-long area. Any impacts, therefore, would be extremely limited in scope and duration.

The lack of any other past, present, and reasonably foreseeable future actions noted in this Alternative or in Alternative 1 means that there are only impacts from the project itself and that there are no cumulative impacts on this resource.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same action as described in Alternative 3 above would be likely to impact the water quality of the area; no other actions impacting this resource are anticipated. Therefore, there are only impacts from the project itself and there are no cumulative impacts on this resource.

12.1.1.3 *Potential Impacts to Air Quality and Greenhouse Gas Emissions*

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's air quality and greenhouse gas (GHG) emissions as follows:

1. The Pensacola Naval Air Station continued operations have long-term minor adverse impacts on the resource because of emissions from aircraft and other vehicles.
2. The Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base allows for long-term minor adverse impacts on the resource because of emissions from aircraft and other vehicles.
3. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has long-term minor adverse impacts because it re-established the roads in the area and allows vehicular traffic and their emissions back into the area.

4. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have short term minor adverse impacts to the resource because of emissions caused by construction machinery such as backhoes, bulldozers, and excavators.
5. The Ferry Service and Fort Pickens Pier would have long-term minor adverse impacts within the project area due to emissions from the ferries.

The past, present, and reasonably foreseeable future actions (#1-5, above) would result, on balance, in short- and long-term minor adverse cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same five actions as are described above in the No Action Alternative are expected to impact the air quality and GHG emissions of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: short- and long-term minor adverse cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-5 described in Alternative 1 above are expected to impact air quality and GHG emissions in the same way as stated there. Additionally under Alternative 3:

1. The Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project would have short-term minor adverse impacts within the project area during implementation caused by emissions from boats carry materials to, and working at, the site.
2. The Florida Artificial Reef Creation and Restoration Project would also have short-term minor adverse impacts within the project area during implementation caused by emissions from boats carry materials to, and working at, the site.
3. The Beach Enhancement Project would have short-term minor adverse impacts because of emissions from vehicles and equipment used during project implementation.

The five past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-5) and the two actions above (#6-7), when combined with the short-term, minor adverse impacts of implementing the proposed project (#8, above), would result, on balance, in short- and long-term minor adverse cumulative impacts on the resource. The Beach Enhancement project would contribute a very small adverse increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same eight actions as are described in Alternative 3 above would be likely to impact the air quality and GHG emissions of the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: short- and long-term minor adverse cumulative. The Beach Enhancement project would contribute a very small adverse increment to this cumulative impact.

12.1.1.4 *Potential Impacts to Noise/Natural Soundscape*

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's noise/natural soundscape as follows:

1. The Pensacola Naval Air Station continued operations have long-term minor adverse impacts on the resource because of the noise related to any aircraft flying over or near the project area.
2. The Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base allows for long-term minor adverse impacts because of the noise related to any aircraft flying over or near the project area.
3. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project returned vehicular traffic to the island after a several year absence. The noise associated with that traffic will have a long-term minor adverse impact on the natural soundscapes within the project area for as long as the road is in use.
4. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project will have a short-term minor adverse impact to the natural soundscapes in the project area during project construction because of the noise associated with road-building equipment.
5. The Fort Pickens Ferry Support Facilities and Shuttle Service Project will have a long-term minor adverse impact on the natural soundscapes of the project area because of the noise generated by both its operation (which should be very minor if the shuttle is electric, as anticipated) and also by the conversations of the shuttle's potential riders.
6. The Ferry Service and Ft. Pickens Pier will have long-term minor adverse impacts to the natural soundscape within the project area if the route it takes is close enough to the north side of Santa Rosa Island to be heard from the project area.

The past, present, and reasonably foreseeable future actions (#1-6, above) would result, on balance, in short- and long-term minor adverse cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same six actions as are described above in the No Action Alternative are expected to impact the noise/natural soundscape of the area; no other actions impacting this resource

are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: short- and long-term minor adverse cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-6 described in Alternative 1 above are expected to impact noise/natural soundscape in the same way as stated there. Additionally under Alternative 3:

7. The Big Lagoon State Park Boat Ramp Improvement Project would result in more pleasure boating in the vicinity of the project area, and would therefore have a long-term minor adverse impact to the natural soundscapes of the project area.
8. The Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project may have short-term minor adverse impacts on the natural soundscapes of the area due to the boat noise associated with project implementation.
9. The Florida Artificial Reef Creation and Restoration Project may have short-term minor adverse impacts on the natural soundscapes of the area due to the boat noise associated with project implementation.
10. The Beach Enhancement Project would have short-term minor adverse impacts to the natural soundscapes of the area because of the noise associated with vehicles and equipment used during project implementation.

The six past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-6) and the three actions described immediately above (#7-9), when combined with the short-term minor adverse impacts of implementing the proposed project (#10, immediately above), would result, on balance, in short- and long-term minor adverse cumulative impacts on the resource. The Beach Enhancement project would contribute a very small adverse increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same ten actions as are described in Alternative 3 above would be likely to impact the noise/natural landscape of the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: short- and long-term minor adverse cumulative. The Beach Enhancement project would contribute a very small adverse increment to this cumulative impact.

12.91.3 Biological Environment - Living Coastal and Marine Resources

12.91.3.1 Potential Impacts to Coastal and Submerged Aquatic Vegetation

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's coastal and submerged aquatic vegetation as follows:

1. The FDEP Beach Erosion Control Program at Pensacola Beach and Perdido Key, FL Project has long-term beneficial impacts to the area's coastal vegetation because the installation of sand fencing helps create dunes in which coastal vegetation can take root. In addition, the project included the planting of native vegetation.
2. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has had a long-term minor adverse impact to the coastal vegetation of the area because, during road construction, some plants were destroyed in the relatively small footprint of the road and possible plant habitat was covered up with pavement.
3. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project will have both long-term, minor, adverse impacts on the vegetation where the new section of road will be located due to destruction of some existing vegetation and covering up of vegetation habitat, and also long-term beneficial impacts on vegetation where the old section of road will be removed and returned to natural habitat. As such, these long-term impacts cancel each other out. Still the realignment project will have short-term minor adverse impacts on coastal vegetation in the project area during, and shortly after, the road construction and demolition project as both the new and old sections are paved and devoid of vegetation. Additionally, the reconfiguration of the Fort Pickens area entrance station will have long-term moderate adverse impacts on vegetation in the very small area where the footprint of the station will be expanded and some vegetation may be destroyed and habitat covered up with pavement.
4. The 2012 Asphalt Debris Removal/Disposal Project at the Seashore has long-term beneficial impacts to the coastal vegetation of the area because it removed foreign objects from the soil which inhibited root growth and normal plant establishment.

The past, present, and reasonably foreseeable future actions (#1-4, above) would result, on balance, in short-term minor adverse, long-term moderate adverse, and long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same four actions as are described above in the No Action Alternative are expected to impact the coastal vegetation of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: short-term minor adverse, long-term moderate adverse, and long-term beneficial cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-4 described in Alternative 1 above are expected to impact coastal vegetation in the same way as stated there. Additionally under Alternative 3:

1. The Beach Enhancement Project would have short-term minor adverse impacts to coastal vegetation in the area due to unavoidable collateral damage to plants during the cleanup process. However, all plants destroyed would be replaced. This project would also have long-term beneficial impacts because it would remove foreign objects from the growth substrate and allow vegetation to grow and establish in the area more naturally.

The four past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-4), when combined with the short-term minor adverse and long-term beneficial impacts of implementing the proposed project (#5, above), would result, on balance, in short-term minor adverse, long-term moderate adverse, and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a substantial long-term beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same five actions as are described in Alternative 3 above would be likely to impact the coastal vegetation of the project area; no other actions impacting this resource are anticipated. The cumulative impacts of Alternative 4 would be the same as for Alternative 3: short-term minor adverse, long-term moderate adverse, and long-term beneficial cumulative. The Beach Enhancement project would contribute a substantial long-term beneficial increment to this cumulative impact.

Potential Impacts to Terrestrial Wildlife Species, Migratory Birds, Bald Eagles, Protected Terrestrial Species, and Critical Terrestrial Habitats

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's terrestrial wildlife species, migratory birds, bald eagles, protected terrestrial species, and critical terrestrial habitats as follows:

1. The FDEP Beach Erosion Control Program at Pensacola Beach and Perdido Key, FL Project has long-term beneficial impacts to the terrestrial wildlife species in the project area; this includes protected species and species of concern such as Perdido Key and Santa Rosa beach mice, piping plover and their critical habitats, as well as sea turtles and migratory birds. The impacts are beneficial because the action improves the habitat in which these animals and birds live (including critical habitat for Perdido Key beach mouse and piping plover) by improving dune structure via nourishment, sand fence installation, and the planting of native vegetation. In addition, the planting of native vegetation has provided additional sources of food and cover.
2. The Littoral Zone Placement of Dredge Spoil on Perdido Key Project has long-term beneficial impacts on the Perdido Key beach mouse, Perdido Key beach mouse critical habitat, sea turtles, loggerhead sea turtle critical habitat, and migratory birds by increasing the sand substrate to the geological system of Perdido Key, thus allowing nesting/foraging/resting habitat for these animals and birds to increase and improve.

3. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has long-term minor adverse impacts to terrestrial wildlife species in the project area; this includes protected species and species of concern such as Santa Rosa beach mice, piping plover and their critical habitats, as well as sea turtles and migratory birds. The impacts occur because the action reintroduced the road surface that, in that footprint, covered up and removed the habitat in which these animals and birds live (including critical habitat for Santa Rosa beach mouse and piping plover). It also reintroduced vehicles and visitors into the area which disturb the animals and birds.
4. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have short-term minor adverse impacts to terrestrial wildlife species in the project area; this includes protected species and species of concern such as Santa Rosa beach mice, piping plover and their critical habitats, as well as sea turtles and migratory birds. The impacts are adverse because individuals would be disturbed during construction and construction would temporarily reduce the availability of quality habitat during the realignment. Additionally, the realignment should have long-term beneficial impacts on the same terrestrial wildlife, protected species, critical habitat, and migratory birds in the project area by moving the road to a location where its destruction by storms and overwash is less likely to occur and result in degradation of the habitat used by these animals and birds.
5. The 2012 Asphalt Debris Removal/Disposal Project at the Seashore has long-term beneficial impacts to terrestrial wildlife species in the project area; this includes protected species and species of concern such as Santa Rosa beach mice, piping plover and their critical habitats, as well as sea turtles and migratory birds. The impacts are beneficial because they removed the foreign objects that degraded the habitat for these animals and birds.
6. The Enhanced Management of Avian Breeding Habitat Project would have short-term minor adverse impacts to terrestrial wildlife populations in the project area such as raccoons and coyotes because the predator control portion of the action includes trapping and/or euthanizing those species. However, the action would also have long-term beneficial impacts to protected species such as migratory birds (including the piping plover and red knot) as well as to the Santa Rosa and Perdido Key beach mice, because reducing predator pressure in these areas would allow more of these individuals to live to successfully reproduce.

The past, present, and reasonably foreseeable future actions (#1-6, above) would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same six actions as are described above in the No Action Alternative are expected to impact the terrestrial wildlife, protected terrestrial species and critical terrestrial habitat, and migratory birds of the area. Additionally under Alternative 2:

1. The Perdido Key Dune Restoration Project would have localized short-term minor adverse impacts to terrestrial wildlife species in the area; this includes protected species such as Perdido Key beach mice, piping plover and their critical habitats, as well as sea turtles (and loggerhead turtle critical habitat) and migratory birds. This would be caused during implementation as individuals are startled or disturbed and habitat is impacted by equipment. The project would also have long-term beneficial impacts to these same animals, birds and critical habitat because it would improve habitat by improving dune habitat and plant composition which are used as sources of food and cover.

These impacts, however, would have only an "edge effect" on the Beach Enhancement project area since it would occur outside of – but immediately adjacent to – just one of the three project areas (the Perdido Key area). Therefore, the cumulative impacts of Alternative 2 would be essentially the same as for Alternative 1: short- and long-term minor adverse, and long-term beneficial cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-6 described in Alternative 1 above are expected to impact terrestrial wildlife, protected species and critical habitat, and migratory birds of the area in the same way as stated there. Additionally under Alternative 3:

1. The Perdido Key State Park Beach Boardwalk Improvements Project would have localized, short-term minor adverse impacts to terrestrial wildlife species; this includes protected species such as Perdido Key beach mice, piping plover and their critical habitats, as well as sea turtles (and loggerhead turtle critical habitat) and migratory birds. This impact would be caused during implementation as individuals are startled or disturbed and habitat is impacted by equipment. The project would also have long-term, beneficial impacts to these animals and birds and their habitat (including critical habitat for the Perdido Key beach mouse, piping plover, and loggerhead turtle) after project completion because the boardwalk would be raised off the ground, allowing for more area to be used as habitat for these animals and birds.
2. The Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project would have short-term minor adverse impacts on piping plover and red knot by disturbing their roosting and foraging habitat adjacent to project work areas. It may also have short-term minor adverse impacts on bald eagles by disturbing nests adjacent to the project area.
3. The Gulf Breeze Wayside Park Boat Ramp Project would have short-term minor adverse impacts on migratory birds by possibly disturbing them with noise and activity as they nest/rest/roost in areas adjacent to the project area.
4. The Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project would have short-term minor adverse impacts on bald eagles by possibly disturbing them with noise and activity as they nest/rest/roost in areas adjacent to the project area.

5. The Ferry Purchase (and Dock Facility Improvements) Project would cause short-term minor adverse impacts to migratory birds and bald eagles by disturbing them if they happened to nest/rest/roost in the project area.
6. The Beach Enhancement Project would have short-term minor adverse impacts to terrestrial wildlife species; this includes protected species such as Perdido Key beach mice, loggerhead turtles, and their critical habitats, as well as other sea turtles, piping plover, and migratory birds. This would be caused during implementation as individuals are startled or disturbed and habitat is impacted by equipment. The project would also have widespread, long-term beneficial impacts to these animals and birds and their habitat (including critical habitat for Perdido Key beach mouse, piping plover, and loggerhead turtle) after project completion because it would remove the foreign objects from the area and improve the several-hundred-acre area for nesting, foraging, cover, etc.

The six past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-6) and the action described immediately above (#8-12), when combined with the short-term minor adverse and long-term beneficial impacts of implementing the proposed project (#13, above), would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a small short-term adverse increment and a substantial beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same 12 actions as are discussed in Alternative 3 above, as well as the action (#7) described in Alternative 2 above, would be likely to impact the terrestrial wildlife, protected species and critical habitat, and migratory birds of the area; no other actions impacting this resource are anticipated. Therefore, and since the Perdido Key Dune Restoration project in Alternative 2 would have only an "edge effect" on the Beach Enhancement project area, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: short- and long-term minor adverse, and long-term beneficial cumulative. The Beach Enhancement project would contribute a small short-term adverse increment and a substantial beneficial increment to these cumulative impacts.

12.91.3.2 Potential Impacts to Marine and Estuarine Fauna, including Related Protected Species and Critical Habitats

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's marine and estuarine fauna or related protected species and critical habitat as follows:

1. The FDEP/FWCC Living Shoreline Projects would have short-term minor adverse impacts on Gulf sturgeon, Gulf sturgeon critical habitat and potentially other marine/estuarine species as well because of the noise, activity, and turbidity caused in the area during project implementation.

2. The Two FWC Oyster Restoration Projects would have short-term minor adverse impacts on Gulf sturgeon, Gulf sturgeon critical habitat and potentially other marine/estuarine species as well because of the noise, activity, and turbidity caused in the area during project implementation.
3. FDOT Pensacola Bay Bridge Replacement Project would have short-term minor adverse impacts on Gulf sturgeon, Gulf sturgeon critical habitat and potentially other marine/estuarine species as well because of the noise, activity, and turbidity caused in the area during project implementation.

The past, present, and reasonably foreseeable future actions (#1-3, above) would result, on balance, in short-term minor adverse cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same three actions as are described above in the No Action Alternative are expected to impact the project area's marine and estuarine fauna or related protected species and critical habitat; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: short-term minor adverse cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the same scenario as described above in the No Action Alternative would apply. However, under this Alternative, the Beach Enhancement project would occur and would impact marine and estuarine fauna or related protected species and critical habitat as follows:

1. The Florida Artificial Reef Creation and Restoration Project would have short-term minor adverse impacts to marine fauna such as fish and benthic organisms due to a temporary increase in turbidity around the reef construction site. It would also have short-term minor adverse impacts on protected marine species such as sea turtles, manatees, dolphins, Gulf sturgeon and its critical habitat, and Essential Fish Habitat – all mostly due to noise and turbidity during project implementation. This project would also have long-term beneficial impacts to marine fauna such as reef-dwelling species. It would also have long-term benefits on protected marine species' habitat such as Essential Fish Habitat (by creating more habitat in the area).
2. Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project would have short-term minor adverse impacts on sea turtles, Gulf sturgeon, Gulf sturgeon critical habitat, manatees and dolphins because of the noise, activity, and turbidity caused in the area during project implementation.
3. The Gulf Breeze Wayside Park Boat Ramp Project would have short-term minor adverse impacts on sea turtles, Gulf sturgeon, Gulf sturgeon critical habitat, manatees and dolphins from the noise, activity, and turbidity caused in the area during project implementation.

4. The Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project would have short-term minor adverse impacts on sea turtles, Gulf sturgeon, Gulf sturgeon critical habitat, manatees and dolphins from the noise, activity, and turbidity caused in the area during project implementation.
5. The Ferry Purchase (and Dock Facility Improvements) Project would cause short-term minor adverse impacts to sea turtles, Gulf sturgeon, Gulf sturgeon critical habitat, manatees, and marine mammals from the noise, activity, and turbidity caused in the area during project implementation. The operation of the ferries around these two dock areas would cause long-term minor adverse impacts to marine mammals due to the risk of vessel strikes. If the interim docking option is utilized, only the same long-term minor adverse impacts to marine mammals due to the risk of vessel strikes would occur.
6. The Beach Enhancement Project would have short term minor adverse impacts to marine fauna such as fish, shellfish, manatees, and dolphins due to noise and increased turbidity during project implementation. It would also have short-term minor adverse impacts on protected marine species such as sea turtles, Gulf sturgeon and their critical habitat, and Essential Fish Habitat – also due to noise and increased turbidity during implementation. This project would also have long-term beneficial impacts to marine fauna such as fish and shellfish and to protected marine species' habitat such as Essential Fish Habitat due to the removal of foreign materials from sandy benthos.

The three past, present, and reasonably foreseeable future actions noted in Alternative 1 and the five actions described immediately above (#4-8), when combined with the short-term minor adverse and long-term beneficial impacts of implementing the proposed project (#9, above), would result, on balance, in short-term minor adverse and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a small adverse and a small beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same nine actions as described in Alternative 3 above would be likely to impact the marine and estuarine fauna or related protected species and critical habitat of the project area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: short-term minor adverse and long-term beneficial cumulative. The Beach Enhancement project would contribute a small adverse and a small beneficial increment to this cumulative impact.

12.91.3.3 Potential Impacts because of Non-Native Species

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to impact the project area's non-native species. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. As such, there are no cumulative impacts on non-native species – adverse or beneficial – under Alternative 2.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the only action to occur which would impact the non-native species composition in the project area is:

1. The Beach Enhancement project, which would cause short-term minor adverse impacts by increasing the risk that non-native species would be introduced into the area because of the risk of equipment bringing non-native seed sources and because of non-native species' tendency to colonize recently disturbed areas.

The lack of any other past, present, and reasonably foreseeable future actions noted in this Alternative or in Alternative 1 means that there are only impacts from the project itself and that there are no cumulative impacts on this resource.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same action as described in Alternative 3 above would be likely to impact the non-native species in the project area; no other actions impacting this resource are anticipated. Therefore, there are only impacts from the project itself and there are no cumulative impacts on this resource.

12.91.4 Human Uses and Socioeconomics

12.1.1.5 *Potential Impacts to Socioeconomics and Environmental Justice*

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's socioeconomics and environmental justice as follows:

1. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has long-term beneficial impacts on the socioeconomics of the Seashore and surrounding communities by restoring the roads through the Fort Pickens and Santa Rosa areas of the Seashore and bringing back visitors and commuters who spend money in the area.
2. The Pensacola Naval Air Station continued operations have long-term beneficial impacts on the socioeconomics of the Seashore and surrounding communities by employing a large workforce that spends its money in the area.
3. Two FWC Oyster Restoration Projects would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services

from local businesses during project construction. It would also have long-term beneficial impacts by attracting oyster harvesters (and their dollars) to the area during harvesting.

4. The FDOT Pensacola Bay Bridge Replacement Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction. It would also have long-term beneficial impacts on the socioeconomics of the Seashore and surrounding communities by ensuring flow of visitors (and their dollars) into the area over reliable and attractive new infrastructure.
5. The Fort Pickens Ferry Support Facilities and Shuttle Service Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors (and their dollars) to the surrounding communities and to the Seashore to use them in conjunction with the ferry service.
6. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors (and their dollars) to the Fort Pickens area with improved roads and especially a new entrance station that can allow in more visitors (and their dollars) more rapidly than the current arrangement.
7. The Fort Pickens Pier and Ferry Service Project would have long-term beneficial impacts on socioeconomics of the Seashore and surrounding communities, especially Pensacola Beach and the City of Pensacola, by attracting visitors (and their dollars) to the area to ride the ferry.

The past, present, and reasonably foreseeable future actions (#1-7, above) would result, on balance, in short- and long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same seven actions as are described above in the No Action Alternative are expected to impact the socioeconomics of the area. Additionally under Alternative 2:

1. The Perdido Key Dune Restoration Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction.

Under Alternative 2, the same seven actions as are described above in the No Action Alternative are expected to impact the socioeconomics of the area as is the action above (#8); no other actions impacting this resource are anticipated. The cumulative impacts of Alternative 2 end up being the same as for Alternative 1: long-term beneficial cumulative. Since the Beach Enhancement project would not

be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-7 described in Alternative 1 above are expected to impact socioeconomics in the same way as stated there. Additionally under Alternative 3:

1. The Big Lagoon State Park Boat Ramp Improvement Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting boaters (and their dollars) to the area.
2. The Perdido Key State Park Beach Boardwalk Improvements Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction.
3. The Ferry Purchase (and Dock Facility Improvements) Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during construction of the dock facilities. There would also be long-term beneficial impacts due to money coming into the area once facilities are in place. There may be long-term environmental justice benefits by providing another regional transportation option. If the interim docking option is utilized, there could be long-term (i.e., until the new dock facilities are built) minor adverse impacts to socioeconomics if normal marina users (i.e., boat owners/users) used the marina less or differently than they currently are due to the presence of the ferries and passengers. However, there should also be long-term beneficial impacts in the areas served by the ferry operation. There may also be long-term environmental justice benefits by providing an additional regional transportation option.
4. The Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting scallop fishermen (and their dollars) to the area.
5. The Florida Artificial Reef Creation and Restoration Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting snorkelers and scuba divers (and their dollars) to the area.
6. Bob Sikes Pier, Parking and Trail Restoration Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors and fishermen (and their dollars) to the area.
7. The Beach Enhancement Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because of workers buying goods and services from local businesses during project implementation.

The seven past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-7) and the action described immediately above (#9-14), when combined with the short-term beneficial impacts of implementing the proposed project (#15, above), would result, on balance, in short- and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a small beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same 14 actions as are described in Alternative 3 above and the action in Alternative 2 above (#8) would be likely to impact the socioeconomics of the project area; no other actions impacting this resource are anticipated. Since the impacts of the action in Alternative 2 is so small relative to Alternative 3, the cumulative impacts of Alternative 4 (which combines the two) would be essentially the same as for Alternative 3: short- and long-term beneficial cumulative. The Beach Enhancement project would contribute a small beneficial increment to this cumulative impact.

12.91.4.1 Potential Impacts to Cultural Resources

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to impact the project area's cultural resources. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. As such, there are no cumulative impacts on cultural resources – adverse or beneficial – under Alternative 2.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the proposed Beach Enhancement Project will undergo a complete review under Section 106 of the NHPA prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse effects on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources. However since no other past, present, and reasonably foreseeable future actions are and would be impacting the project area's cultural resources, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 3.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same scenario as described above in Alternative 3 would apply. As such, there are no cumulative impacts on cultural resources – adverse or beneficial – under Alternative 4.

12.91.4.2 Potential Impacts to Infrastructure

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's infrastructure as follows:

1. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has had a long-term beneficial impact to infrastructure in the area because it rebuilt the road on Santa Rosa Island, making the island more accessible by vehicles and bicycles.
2. The Fort Pickens Ferry Support Facilities and Shuttle Service Project would have a long-term beneficial impact to infrastructure in the area because it would create an alternative means of transportation between the Fort Pickens Historic area and certain other locations on the island. Repurposing historic buildings would also have a beneficial impact, as buildings in use are better maintained than those used only for storage.
3. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have a long-term beneficial impact on the infrastructure in the area because it would improve the longevity and function of the road by realigning part of it (to lessen impacts from storms), resurfacing it, and reconfiguring and improving traffic flow at the entrance and fee station.
4. The Fort Pickens Pier and Ferry Service Project would have a long-term beneficial impact on the infrastructure of the area because it would create an entirely new means of transportation between Fort Pickens, Pensacola, and Pensacola Beach. The construction of the pier at Fort Pickens Historic area also benefits the project area's infrastructure because it makes it possible for large boats – including ferries – to dock there.

The past, present, and reasonably foreseeable future actions (#1-4, above) would result, on balance, in long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same four actions as are described above in the No Action Alternative are expected to impact the infrastructure of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: long-term beneficial cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-4 described in Alternative 1 above are expected to impact infrastructure in the same way as stated there. Additionally under Alternative 3:

1. The Ferry Purchase (and Dock Facility Improvements) Project would have long-term beneficial impacts to the area's infrastructure because it would allow for an entirely new means of transportation to the Fort Pickens area. The "connected actions" of improving the ferry dock facilities at the City of Pensacola and Pensacola Beach also benefits the project area's infrastructure because it facilitates large boats – including ferries – docking there. Conversely, there could be long-term minor adverse impacts on infrastructure in the area that gets more use from ferry passengers but is not upgraded.
2. The Ferry Purchase (and Interim Dock Facilities) Project would also have long-term beneficial impacts to the project area's infrastructure because it would allow for an entirely new means of transportation to the Fort Pickens area. Similarly, there could be long-term minor adverse impacts on infrastructure in the area that gets more use from ferry passengers but is not upgraded.
3. The Beach Enhancement Project would have short-term minor adverse impacts on the area's infrastructure if cleanup equipment impedes the normal flow of traffic and parking on the existing road and parking lot infrastructure in the project area.

The four past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-4) and the project described immediately above (#5), when combined with the short-term minor adverse impacts of implementing the proposed project (#7, above), would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute all of the short-term adverse increment to this cumulative impact.

When actions #1-4 in Alternative 1 and the "Interim" action #6 immediately above are combined with the short-term minor adverse impacts of implementing the proposed project (#7, above), the result would also be, on balance, short- and long-term minor adverse, and long-term beneficial cumulative. The Beach Enhancement project would contribute all of the short-term adverse increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same six actions as are described in Alternative 3 above would be likely to impact the infrastructure of the area; no other actions impacting this resource are anticipated under this Alternative. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: short- and long-term minor adverse, and long-term beneficial cumulative. The Beach Enhancement project would contribute all of the short-term adverse increment to this cumulative impact.

12.91.4.3 Potential Impacts to Land and Marine Management

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's land and marine management as follows:

1. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has long-term beneficial impacts on land management because by re-establishing these roads, 1) public access to these areas was restored and 2) the areas can continue to be managed for the benefit of human enjoyment.
2. The Fort Pickens Ferry Support Facilities and Shuttle Service Project would have long-term beneficial impacts on land and marine management by 1) improving public access to the resources at the Fort Pickens area, 2) allowing the resources there to be managed for the benefit of human enjoyment, and 3) aligning with and furthering the management goals of the Seashore.
3. The Fort Pickens Pier and Ferry Service Project would have long-term beneficial impacts on land management by 1) improving public access to the resources at the Fort Pickens area, 2) allowing the resources there to be managed for the benefit of human enjoyment, and 3) aligning with and furthering the management goals of the Seashore.

The past, present, and reasonably foreseeable future actions (#1-3, above) would result, on balance, in long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same three actions as are described above in the No Action Alternative are expected to impact the land management of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: long-term beneficial cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-3 described in Alternative 1 above are expected to impact land management in the same way as stated there. Additionally under Alternative 3:

1. The Beach Enhancement project would have long-term beneficial impacts on land and marine management by 1) allowing the resources there to be managed for the benefit of the environment and of human enjoyment, and 2) aligning with and furthering the management goals of the Seashore for this area.

The three past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-3), when combined with the long-term beneficial impacts of implementing the proposed project (#4, above), would result, on balance, in long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a substantial beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the four actions as are described in Alternative 3 above would be likely to impact the land and marine management of the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: long-term beneficial cumulative. The Beach Enhancement project would contribute a substantial beneficial increment to this cumulative impact.

12.91.4.4 Potential Impacts to Aesthetics and Visual Resources

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's aesthetics and visual resources as follows:

1. The Fort Pickens Ferry Support Facilities and Shuttle Service Project would have a long-term, minor, adverse impact to the area's aesthetics and visual resources because some people may not like seeing the shuttle from the beach.
2. The FDEP Erosion Control Program at Pensacola Beach has a long-term beneficial impact to the area's aesthetics and visual resources because it improves the sand quality and quantity on the beach and fosters dune accretion.
3. The 2012 Asphalt Debris Removal/Disposal Project at the Seashore has long-term beneficial impact to the area's aesthetics and visual resources because it removed foreign objects that looked out of place from the area, returning it to a more natural condition.
4. The Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base has a long-term minor adverse impact on the area's aesthetics and visual resources because of fly-overs.
5. The Pensacola Naval Air Station continued operations have a long-term minor adverse impact on the area's aesthetics and visual resources because of fly-overs.
6. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have a short-term minor adverse impact to the area's aesthetics and visual resources during project implementation while the old road is torn up and the new one built, while the road is resurfaced, and while the entrance station is reconfigured.

The past, present, and reasonably foreseeable future actions (#1-6, above) would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same six actions as are described above in the No Action Alternative are expected to impact the aesthetics and visual resources of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: short- and long-term minor adverse, and long-term beneficial cumulative. Since the

Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-6 described in Alternative 1 above are expected to impact aesthetics and visual resources in the same way as stated there. Additionally under Alternative 3:

1. The Florida Artificial Reef Creation and Restoration Project would have short-term minor adverse impacts on aesthetics and visual resources in the project area during the time that Seashore visitors can see the boats at the reef project site.
2. The Beach Enhancement Project would have short-term minor adverse impacts on aesthetics and visual resources in the project area during implementation. This would be caused by cleanup equipment, vehicles, and work crews moving through the natural environment in plain sight of Seashore visitors. The project would also have very substantial long-term beneficial impacts by removing the unnatural, foreign materials from several hundred acres such that they are no longer seen or walked on by Seashore visitors.

The six past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-6) and the project described above (#7), when combined with the short-term minor adverse impacts and very substantial long-term beneficial impacts of implementing the proposed project (#8, above), would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a very substantial beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same eight actions as are described in Alternative 3 above would be likely to impact the aesthetics and visual resources of the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: short- and long-term minor adverse, and long-term beneficial cumulative. The Beach Enhancement project would contribute a very substantial beneficial increment to this cumulative impact.

12.91.4.5 Potential Impacts to Tourism and Recreational Use

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed the Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's tourism and recreational use as follows:

1. The FDEP Erosion Control Program at Pensacola Beach and Perdido Key has long-term beneficial impact to the area's tourism and recreational use by building up beach habitat that attracts tourists to this area.
2. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has a long-term beneficial impact on the area's tourism and recreational use

because restoring the road increased visitor access to and use of many beach and picnic areas in the project area on Santa Rosa Island.

3. The 2012 Asphalt Debris Removal/Disposal Project at the Seashore has long-term beneficial impacts on the area's tourism and recreational use because cleaner beaches attract more visitors over time.
4. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have short-term minor adverse impacts to the area's tourism and recreational use by disrupting the normal flow of traffic or visitors into or through the area during project implementation. It would also have long-term beneficial impacts to the area's tourism and recreational use by allowing more visitors to enter the park more rapidly, and by reducing the likelihood of missed trips due to road closures from flooding or road erosion after extreme storm events.
5. The Fort Pickens Pier and Ferry Service Project would have long-term beneficial impacts to the area's tourism and recreational use by providing an additional tourist attraction near the project area (especially once the support facilities and shuttle service are operating) and also an additional means of transportation to take visitors to – or near – the project area.
6. The Fort Pickens Ferry Support Facilities and Shuttle Service Project would have long-term, beneficial impacts to the tourism and recreational use in the area by providing an additional means of transportation to take visitors to – or near – the project area from the ferry dock.

The past, present, and reasonably foreseeable future actions (#1-6, above) would result, on balance, in short-term minor adverse, and long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same six actions as are described above in the No Action Alternative are expected to impact tourism and recreational use in the area; no other actions impacting these are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: short-term minor adverse, and long-term beneficial cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-6 described in Alternative 1 above are expected to impact tourism and recreational use in the same way as stated there. Additionally under Alternative 3:

1. The Big Lagoon State Park Boat Ramp Improvement Project would have long-term beneficial impacts to tourism and recreational use in the area because it would improve the boat launching experience and would draw more tourists to the general area, including the project area.

2. Ferry Purchase (and Dock Facility Improvements) Project would have long-term beneficial impacts to tourism and recreational use by facilitating the establishment of a successful ferry service which would function as an additional tourist attraction near the project area (especially once the support facilities and shuttle service are operating) and also as an additional means of transportation to take visitors to – or near – the project area. If the interim docking option is utilized, there could be long-term (i.e., until the new dock facilities are built) minor adverse impacts to tourism and recreational use because of potential crowding and other inconveniences associated with the lack of the new docking facilities.
3. The Beach Enhancement Project would have short-term minor adverse impacts on tourism and recreational use if project activities keep visitors from using certain areas while they are being cleaned. It would also have long-term beneficial impacts to tourism and recreational use in the area by removing foreign objects from the sands; this would encourage more visitation and use by tourists of certain areas of the Seashore – e.g. beaches or swimming/wading areas where asphalt fragments are no longer especially numerous and bothersome.

The six past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-6) and the two described above (#7-8), when combined with the short-term minor adverse impacts and long-term beneficial impacts of implementing the proposed project (#9, above), would result, on balance, in short-term minor adverse and long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a small beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same nine actions as are described in Alternative 3 above would be likely to impact tourism and recreational use in the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: short-term minor adverse, and long-term beneficial cumulative. The Beach Enhancement project would contribute a small beneficial increment to this cumulative impact.

12.91.4.6 Potential Impacts to Public Health and Safety and Shoreline Protection

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Beach Enhancement project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and would impact the project area's public health and safety and shoreline protection as follows:

1. The FDEP Erosion Control Program at Pensacola Beach and Perdido Key has a long-term beneficial impact to the area's public health and safety and shoreline protection because it has stabilized dunes and beaches near the boundaries of the project area through sand fencing, planting native vegetation, and adding sand to the system, making the shoreline more resilient to storms and thereby improving public safety.
2. Littoral Zone Placement of Dredge Spoil on Perdido Key Project has long-term beneficial impacts to public health and safety and shoreline protection by increasing the sand substrate to the

geological system of Perdido Key, thus making the shoreline more resilient to storms and thereby improving public safety.

3. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have long-term beneficial impacts to the area's public health and safety because it would realign a portion of the road through the Fort Pickens area into an area where it would be less likely to flood or erode during extreme storms, thereby increasing the safety of the public traveling it.
4. The Fort Pickens Pier and Ferry Service Project would have a long-term beneficial impact to the area's public health and safety because it would provide an alternative means of access to and egress from the barrier island in the event that an extreme storm destroys the road to/from the Fort Pickens Historic Area or makes it impassable.

The past, present, and reasonably foreseeable future actions (#1-4, above) would result, on balance, in long-term beneficial cumulative impacts on the resource. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same four actions as are described above in the No Action Alternative are expected to impact public health and safety and shoreline protection in the area. Additionally under Alternative 2:

1. The Perdido Key Dune Restoration Project would have a long-term beneficial impact on the area's public health and safety and shoreline protection because the planting of additional native vegetation would help create and grow dunes, which help stabilize shorelines and buffer storm surges, thereby increasing public safety.

These impacts, however, would have only an "edge effect" on the Beach Enhancement project area since it would occur outside of – but immediately adjacent to – just one of the three project areas. Therefore, the cumulative impacts of Alternative 2 would be essentially the same as for Alternative 1: long-term beneficial cumulative. Since the Beach Enhancement project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-4 described in Alternative 1 above are expected to impact public health and safety and shoreline protection in the same way as stated there. Additionally under Alternative 3:

1. Ferry Purchase (and Dock Facility Improvements) Project would have short-term minor adverse impacts to public health and safety during construction because of tripping hazards and other potential dangers from construction and construction equipment, and long-term minor adverse impacts around the two dock areas during ferry operations because of the potential for injury while loading and unloading the ferries. There would also be long-term beneficial impacts on the area's public health and safety by facilitating the establishment of a successful ferry service

which would provide an alternative means of access to – and egress from – the barrier island in the event that an extreme storm destroys the road to/from the Fort Pickens Historic Area or makes it impassable. If the interim docking option is utilized, impacts on public safety would be more adverse, but still long-term (i.e., until the new dock facilities are built) and minor, because the docking areas in particular would not be optimally sized or constructed to accommodate the greater number of people using them. There may also be some long-term beneficial impacts if boat trips – presumably safer than car trips – reduce risk to the public who are traveling between the areas serviced by the ferries.

2. The Beach Enhancement Project would have a long-term beneficial impact on the area's public health and safety and shoreline protection because removing the foreign objects in the area would encourage dune creation which thereby improves shoreline protection and increases public safety. It also would also no longer be an environment where minor injuries (e.g. cuts or abrasions on feet) could occur due to contact with the asphalt fragments.

The four past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-4) and the action described immediately above (#6), when combined with the long-term beneficial impacts of implementing the proposed project (#7, above), would result, on balance, in long-term beneficial cumulative impacts on the resource. The Beach Enhancement project would contribute a small beneficial increment to this cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same six actions as are described in Alternative 3 above and the action in Alternative 2 above (#5) would be likely to impact the public health and safety and shoreline protection in the project area; no other actions impacting this resource are anticipated. The impacts of the Perdido Key project (#5 above) would have only an "edge effect" on the Beach Enhancement project area since it would occur outside of – but immediately adjacent to – just one of the three project areas. Therefore, the cumulative impacts of Alternative 4 would be essentially the same as for Alternative 3: long-term beneficial cumulative. The Beach Enhancement project would contribute a small beneficial increment to this cumulative impact.

12.92 Ferry Purchase (and Dock Facility Improvements) Project at Gulf Islands National Seashore - Cumulative Impacts Analysis

12.92.1 Introduction

The impacts of the Ferry Purchase (and Dock Facility Improvements) Project at Gulf Islands National Seashore ("Seashore") are fully considered in Chapter 12A, section 12.4.5, Affected Environment and Environmental Consequences. Additionally, Chapter 12E analyzes cumulative impacts of this and other Phase III Early Restoration projects at the regional level. The Ferry Purchase (and Dock Facility Improvements) project is included in that analysis within "Group 1" (e.g. the greater Pensacola Bay area including Escambia and Santa Rosa Counties). What follows here is a narrower, site-specific analysis. It examines potential impacts to the same resource topics considered in section 12.4.5, but only in the footprint of the Ferry Project's "connected actions"[38] as defined below:

- Constructing a dock and improving facilities at the Plaza de Luna area at the City of Pensacola
- Constructing a dock and improving facilities at the Quietwater Beach area at Pensacola Beach
- The operation of the ferries around these two docks

Like the regional analysis, the following site-specific analysis includes not only other Group 1 Phase III projects but also other past, present, and/or reasonably foreseeable actions in the project area. The actions below were chosen based on whether or not the resources they affect overlap in time and space with any of the same resources associated with the Ferry Purchase (and Dock Facility Improvements) project. In the unlikely event that the ferries are delivered before the docks are funded or completed, DOI has identified the interim option of docking the ferries at the existing Plaza de Luna marina and operating the ferries from the existing docks at Plaza de Luna marina and Quietwater Beach (and the Fort Pickens pier as originally planned). This option is included in the cumulative impacts analysis below.

Of course, not every action in the list below would impact every resource in the project area. For example, an in-water construction project taking place in Pensacola Bay a mile from the Ferry Purchase (and Dock Facility Improvements) project area could not affect the geology and substrates of the project area, but *could* affect Gulf sturgeon critical habitat or air quality resources that the two projects share. Where actions are not mentioned in the cumulative impacts analyses below, no effect from that project is expected on the resource.

The projects noted below with an asterisk (*) are other Phase III early restoration projects; the projects listed below those are other past, present, and reasonably foreseeable future actions that overlap, somehow, within the project area. Extensive project descriptions for the Phase III early restoration projects are given in Chapters 12A-B and 12E. Brief project descriptions for all actions considered are provided below.

[38] The National Park Service defines connected actions as those that are "closely related" to the proposal and alternatives. Actions are connected if they automatically trigger other actions that may have environmental impacts; they cannot or will not proceed unless other actions have been taken previously or simultaneously; or they are interdependent parts of a larger action and depend on the larger action for their justification (NPS Director's Order 12 Handbook).

1. Big Lagoon State Park Boat Ramp Improvement Project* – would involve enhancing an existing boat ramp and surrounding facilities in the Big Lagoon State Park in Escambia County. These improvements would include adding an additional lane to the boat ramp, expanding boat trailer parking, improving traffic circulation at the boat ramp, and providing a new restroom facility to connect the park to the Emerald Coast Utility Authority (ECUA) regional sanitary sewer collection system.
2. Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project* – would involve enhancing local scallop populations in targeted areas in the Florida Panhandle. The proposed improvements include the harvesting and redistribution of naturally-occurring juvenile scallops supplemented with stocking from a commercial scallop hatchery.
3. Florida Artificial Reef Creation and Restoration Project* – Artificial reefs would be constructed on several sites using a similar process; however, the average water depth and substrate composition of the water bottom at each reef site may differ. A survey would be conducted to determine the placement, alignment, and boundaries of the artificial reefs. In Escambia County, reefs would likely use a concrete, prefabricated tetrahedral artificial reef module commonly deployed in the northeastern Gulf of Mexico, like Florida Limestone or EcoSystem Reef modules from Walter Marine. The "Florida Limestone" module measures 10 feet along each base and is 8 feet in height, yielding a total volume (per module) of approximately 116 cubic feet. Each module covers approximately 43.3 square feet of seafloor area.
4. Bob Sikes Pier, Parking and Trail Restoration Project* – would improve access to a fishing pier in the Pensacola area in Escambia County as well as enhancing the quality of the experience for its recreational users. The proposed improvements include renovating parking areas, enhancing bicycle/pedestrian access, and aesthetic improvements to the surrounding area.
5. Gulf Breeze Wayside Park Boat Ramp Project* – would improve the existing boat ramp at Wayside Park in the City of Gulf Breeze, Santa Rosa County, FL. The proposed improvements include repairing the existing boat ramp and seawall cap, constructing a public restroom facility, and repairing and enhancing the parking area to improve access.
6. Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project* – would involve constructing and operating a saltwater sportfish hatchery in Pensacola, Florida. This project would increase and/or enhance recreational fishing opportunities by producing and releasing highly sought-after sportfish species.
7. Pensacola Bay Living Shorelines Project* – would employ living shoreline techniques that utilize natural and/or artificial breakwater material to reduce shoreline erosion and provide habitat at two sites within a portion of Pensacola Bay. This project would create reefs to reduce wave energy, increase benthic secondary productivity, and create salt marsh habitat. Proposed activities constructing breakwaters that will provide reef habitat and create salt marsh habitat at both sites. In total, approximately 18.8 acres of salt marsh habitat and 4 acres of reefs would be created.
8. Beach Enhancement Project*– would remove remnant asphalt and road base material from the Perdido Key, Fort Pickens, and Santa Rosa Island areas of Gulf Islands National Seashore. This project would take place primarily on non-vegetated beaches, but would have a small component that would occur in the intertidal area at Fort Pickens (where a backhoe would be used from the beach), and also some work would be done with hand tools in areas where vegetation may be

damaged or destroyed by the use of mechanized equipment. Damaged vegetation would be replaced.

9. Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project – In 2009 approximately seven miles of road through the Fort Pickens and Santa Rosa areas of the Seashore were reconstructed, repaired, or realigned, thereby restoring damage done by hurricanes and storms in 2004 and 2005. The project reconnected both the Fort Pickens area of the Seashore and the City of Navarre Beach with the city of Pensacola Beach.
10. Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base, Florida Gulf Regional Airspace Strategic Initiative, Eglin Air Force Base, Florida – The F-35 beddown and the general operation of the Air Force Base includes the maintenance and operation of an F-35 fleet as well as other Air Force aircraft.
11. Pensacola Naval Air Station continued operations – Pensacola Naval Air Station is generally located on the northwest side of Pensacola Bay. It employs more than 16,000 military and 7,400 civilian personnel and includes extensive training and education facilities. The Blue Angels Navy Flight Demonstration Squadron operates out of there. There are no navy homeported ships; the only homeported ship is a 210-ft USCGC vessel, a USAF 93-ft service craft, and some smaller boats under 40 ft.
12. Maintenance dredging of Intracoastal Waterways and Pensacola Harbor Gulf Entrance Channel – involves placement of dredge material at Robertson Island and other dredge disposal areas within the boundaries and waters of Gulf Islands National Seashore. Dredge material was removed from the ICW and placed on Robertson Island (Disposal Area 45) within GUIS boundaries in January 2014. Other schedules are not known. Work conducted under contract to the US Army Corps of Engineers, Mobile District.
13. City of Pensacola Community Maritime Park – This is a small baseball stadium, park, and outdoor amphitheater about ¼ mile west of the Plaza de Luna site.
14. FDEP/FWCC Living Shoreline Projects – These ten projects are located at various points, including along Pensacola Bay and East Bay, and include projects that are both proposed and underway. Living shoreline creation is a technique that protects tidal shorelines from erosion. They generally include planting native wetland plants and placement of bioengineered materials to protect vegetation and soils from tidal movement.
15. Two FWC Oyster Restoration Projects – Project areas include Garcon Point and White Point in East Bay in the larger Pensacola Bay system. Project consists of distributing cultch material (usually recycled oyster shell) over existing appropriate substrates and using a hatchery to provide seed oysters where spat set is nonexistent or unreliable.
16. FDOT Pensacola Bay Bridge Replacement Project – The bridge between Pensacola and Gulf Breeze, FL on US Highway 98 is considered “structurally deficient”; therefore FDOT is required to plan for a replacement bridge within the next 3-5 years. A Project Development and Environmental Study is currently in progress.
17. Fort Pickens Ferry Support Facilities and Shuttle Service Project – A transportation study has been prepared and an Environmental Assessment is being prepared for the establishment of support facilities and operation of a landside shuttle tram service at the Fort Pickens Historic District of Gulf Islands National Seashore to complement the future water ferry service (see #19, below). Several historic buildings would be repurposed to serve as a visitor center, retail area, restrooms, and

shuttle shelters for the shuttle service. Existing parking areas would be repurposed as shuttle pull-off areas. The shuttle service would connect those arriving on the passenger ferry to visitor amenities and points of interest throughout the historic district on the western end of the island. The shuttle service would begin operating around 2017, would use electric trams or other alternative fuels, and would operate on a schedule that mirrored that of the passenger ferry service.

18. Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project – An Environmental Assessment is being prepared for the realignment of 1.67 miles of the road farther to the north, and removal and restoration of the old roadbed, resurfacing 4.5 miles of Fort Pickens Road and two parking lots (lots 21 and 22), and reconfiguring the existing entrance station area there to accommodate more vehicles. Project implementation is proposed to begin in 2015.
19. Fort Pickens Pier and Ferry Service Project – An Environmental Assessment was prepared in 2011 for the establishment of a ferry service between the Fort Pickens area at the Seashore, the City of Pensacola, and Pensacola Beach, and also for the construction a ferry docking pier at Fort Pickens. Although the ferry service has yet to be established, the pier was constructed in 2012. The ferry service is anticipated to run two ferries at a time and make approximately three trips each per day during the peak season, and fewer or no trips during the shoulder and off seasons, respectively. Ferry service is expected to begin in 2017.

Cumulative impacts are determined below for each resource and for each of the four Alternatives in the Environmental Review (Chapter 12A, section 12.4). The analysis follows the same structure as the Affected Environment and Environmental Consequences section (12.4.5). In each analysis, spatial and temporal boundaries were established to identify the past, present, and reasonably foreseeable future actions (including other Phase III projects) whose resources overlapped in space and time with those in the Ferry Purchase (and Dock Facilities Improvement) project area. These actions are listed for each resource impact topic below. The type of impact (adverse or beneficial), level of intensity (minor, moderate, or major), and duration (short- or long-term) are stated after each action. Then, 1) the cumulative impacts of the listed actions are assessed and 2) added to the impacts (if any) of the Ferry Purchase (and Dock Facility Improvements) project, and 3) a cumulative impact is stated for the additive impact of both the listed projects and the Ferry Purchase (and Dock Facility Improvements) project together. Finally, an approximation of the increment added to the cumulative impact by the Ferry Purchase (and Dock Facility Improvements) project is stated.

The impact thresholds used are based on the duration and intensity definitions provided above in Table 6.2 of Chapter 6. Each of the summary statements below about the cumulative impacts to a resource under a given Alternative are based on an assessment made using those definitions.

12.92.2 Physical Environment

12.92.2.1 Potential Impacts to Geology and Substrates

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur near enough to the Ferry Purchase and Dock Facility Improvements to impact the same geology and substrates. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. As such, there are no cumulative impacts on geology and substrates – adverse or beneficial – under Alternative 2.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the same scenario as described above in the No Action Alternative would apply. However, under this Alternative, the Ferry Purchase (and Dock Facility Improvements) project would occur and would impact geology and substrates as follows:

1a. Ferry Purchase (and Dock Facility Improvements) would have long-term minor adverse impacts on geology and substrates in the benthic areas of the two docks. This is due to the disturbance that would occur when pilings are driven into to the substrate.

1b. Ferry Purchase (and Interim Dock Facilities) would have no impact on geology and substrates since no pilings would be installed.

The lack of any other past, present, and reasonably foreseeable future actions noted in this Alternative or in Alternative 1 means that there are only impacts from the project itself and that there are no cumulative impacts on this resource.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same action as described in Alternative 3 above would be likely to impact the geology and substrates of the area; no other actions impacting this resource are anticipated. Therefore, there are only impacts from the project itself and there are no cumulative impacts on this resource.

12.92.2.2 Potential Impacts to Hydrology, Water Quality, and Floodplains

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's Hydrology, Water Quality, and Floodplains as follows:

1. FDOT Pensacola Bay Bridge Replacement would have short-term minor adverse impacts on water quality when equipment and pile-driving (or other foundation-building) activities disturb sediment and cause turbidity or leak fuel into the water of Pensacola Bay.
2. FDEP/FWC 10 Living Shoreline Projects would have short-term minor adverse impacts on water quality when equipment and activities disturb sediment and cause turbidity during project implementation. They would also have long-term beneficial impacts on water quality by providing vegetation that will help filter out any contaminants from runoff going into the Bay.

The past, present, and reasonably foreseeable future actions (#1-2, above) would result, on balance, in both short-term minor adverse and long-term beneficial cumulative impacts on the resource. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same two actions as are described above in the No Action Alternative are expected to impact the area's Hydrology, Water Quality, and Floodplains of the area. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines project would have short-term minor adverse impacts on water quality when equipment and activities disturb sediment and cause turbidity during project implementation. They would also have long-term beneficial impacts on water quality by providing vegetation that would help filter out any contaminants from runoff going into the Bay.

The cumulative impacts of Alternative 2 would be essentially the same as for Alternative 1 only slightly more pronounced: short-term minor adverse and long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-2 described in Alternative 1 above are expected to impact area's Hydrology, Water Quality, and Floodplains in the same way as stated there. Additionally under Alternative 3:

1. Scallop Enhancement for Recreational Fishing Opportunities project would have short-term minor adverse impacts on water quality by causing turbidity and possible contamination from equipment leaks or spills during project implementation.
2. Bob Sikes Pier Restoration project would have short-term minor adverse impacts on water quality by causing turbidity during project implementation. It would also have long-term beneficial impacts by improving runoff quality off of the adjacent parking lot.
3. Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center would have short-term minor adverse impacts on water quality by sediment runoff during project implementation causing

turbidity. It would also have long-term beneficial impacts by improving the quality of runoff from that area into the Bay.

4. (a) Ferry Purchase (and Dock Facility Improvements) would have short-term minor adverse impacts on water quality by causing turbidity during project implementation (i.e., pile driving in the water). It would also have long-term minor adverse impacts to water quality from fuel or oil leaks or spills from the ferries into the water around the docks.
7. (b). Ferry Purchase (and Interim Docking Facilities) would have long-term minor adverse impacts to water quality from fuel or oil leaks or spills from the ferries into the water around the docks.

The two past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-2) and the actions described immediately above (#4-6), when combined with the short-term and long-term minor, adverse impacts of implementing the complete version of the proposed project (#7a, above), would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on the resource. This project would contribute a substantial adverse increment to the short-term cumulative impact.

If the Interim version of this project (#7b, above) were implemented instead, the cumulative impacts for Alternative 3 would be, on balance, slightly less adverse than the complete project, but still short- and long-term minor adverse, and long-term beneficial. This version of the project would contribute a small adverse increment to the cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same six actions as are described in Alternative 3 above, plus the action in Alternative 2 above (#3), would be likely to impact the area's Hydrology, Water Quality, and Floodplains of the project area; no other actions impacting this resource are anticipated. When combined with the complete version of the proposed project (#7a, above), the cumulative impacts of Alternative 4 would be slightly more adverse but essentially the same as for Alternative 3: short- and long-term minor adverse, and long-term beneficial cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial short- and long-term adverse increment to this cumulative impact.

If the Interim version of the project (#7b, above) were implemented instead, the cumulative impacts would be slightly less adverse than if the complete version were done, and essentially the same as the Interim version cumulative impacts in Alternative 3 – i.e., short- and long-term minor adverse, and long-term beneficial cumulative. The Interim project would contribute a substantial long-term adverse increment to the cumulative impact.

12.92.2.3 Potential Impacts to Air Quality and Greenhouse Gas Emissions

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and

would. The following actions are impacting and will impact the project area's air quality and greenhouse gas (GHG) emissions as follows:

1. FDOT Pensacola Bay Bridge Replacement would have short-term minor adverse impacts on air quality and GHG due to emissions from construction equipment during project implementation.
2. The Pensacola Naval Air Station continued operations have long-term minor adverse impacts on the resource because of emissions from aircraft and other vehicles;
3. The Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base allows for long-term minor adverse impacts on the resource because of emissions from aircraft and other vehicles;
4. FDEP/FWC 10 Living Shoreline Projects would have short-term minor adverse impacts on air quality and GHG due to emissions from construction equipment during project implementation
5. Maintenance dredging of Intracoastal Waterways and Pensacola Harbor Gulf Entrance Channel would have short-term minor adverse impacts on air quality and GHG due to emissions from dredging equipment during dredging activities.
6. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has long-term minor adverse impacts because it re-established the roads in the area and allows vehicular traffic and their emissions back into the area.

The past, present, and reasonably foreseeable future actions (#1-6, above) would result, on balance, in short- and long-term minor adverse cumulative impacts on the resource. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same six actions as are described above in the No Action Alternative are expected to impact the air quality and GHG of the area. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines project would have short-term minor adverse impacts to air quality and GHG from vehicle and equipment emissions during project implementation.

The cumulative impacts of Alternative 2 would be slightly greater than Alternative 1 but still be essentially the same: short- and long-term minor adverse cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-6 described in Alternative 1 above are expected to impact air quality and GHG emissions in the same way as stated there. Additionally under Alternative 3:

1. The Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project would have short-term, minor adverse impacts within the project area during implementation caused by emissions from boats carrying materials to, and working at, the site;
2. Bob Sikes Pier Restoration would have short-term minor adverse impacts to air quality and GHG from vehicle and equipment emissions during project implementation.
3. Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center would have short-term minor adverse impacts to air quality and GHG from vehicle and equipment emissions during project implementation.
4. (a) Ferry Purchase (and Dock Facility Improvements) would have short-term minor adverse impacts to air quality and GHG from vehicle and equipment emissions during project implementation. It would also have long-term minor adverse impacts due to emissions from the ferries and any additional vehicles in the parking lots at the docking facilities for the length of time that the ferry service operates.
5. (b) Ferry Purchase (and Interim Dock Facilities) would have long-term minor adverse impacts due to emissions from the ferries and any additional vehicles in the parking lots at the docking facilities for the length of time that the ferry service operates.

The six past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-6) and the three actions above (#8-10), when combined with the short- and long-term minor adverse impacts of implementing the proposed project (#11a, above), would result, on balance, in both short- and long-term minor adverse cumulative impacts on the resource. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial adverse increment to both the short-term and long-term cumulative impacts.

If the Interim version of this project (#11b, above) were implemented instead, the cumulative impacts for this Alternative would be lower, but still both short- and long-term minor adverse cumulative. This Interim project would contribute a substantial long-term adverse increment to the cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same ten actions as are described in Alternative 3 above, plus the action in Alternative 2 above (#7), would be likely to impact the air quality and GHG of the project area; no other actions impacting this resource are anticipated. If the complete version of the project (#11a, above) is done, the cumulative impacts of Alternative 4 would be slightly greater than Alternative 3, but would still be essentially the same: short-term minor and long-term minor adverse cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial adverse increment to both the short- and long-term adverse cumulative impacts.

If the Interim version of the project (#11b, above) were implemented instead, the cumulative impacts would be slightly less adverse than if the complete version were done, and essentially the same as the Interim version cumulative impacts in Alternative 3 – i.e., short- and long-term minor adverse cumulative. The Interim project would contribute a substantial adverse long-term increment to the cumulative impact.

12.92.2.4 Potential Impacts to Noise/Natural Soundscape

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's noise/natural soundscape as follows:

1. FDOT Pensacola Bay Bridge Replacement would have short-term minor adverse impacts on noise/natural soundscape as construction equipment and activities make noise during project implementation.
2. The Pensacola Naval Air Station continued operations have long-term minor adverse impacts on the resource because of the noise related to any aircraft flying over or near the project area.
3. The Revised Draft Supplemental EIS for the F-35 Beddown at Eglin Air Force Base allows for long-term minor adverse impacts because of the noise related to any aircraft flying over or near the project area.
4. FDEP/FWC 10 Living Shoreline Projects would have short-term minor adverse impacts on noise/natural soundscape as construction equipment and activities make noise during project implementation.
5. Maintenance dredging of Intracoastal Waterways and Pensacola Harbor Gulf Entrance Channel would have short-term minor adverse impacts on noise/natural soundscape as dredging equipment makes noise during dredging activities.

The past, present, and reasonably foreseeable future actions (#1-5, above) would result, on balance, in both short- and long-term minor adverse cumulative impacts on the resource. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same five actions as are described above in the No Action Alternative are expected to impact the noise/natural soundscape of the area. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines would have short-term minor adverse impacts on noise/natural soundscape as construction equipment and activities make noise during project implementation.

The cumulative impacts of Alternative 2 would be slightly greater than Alternative 1 but still be essentially the same: short- and long-term minor adverse cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-5 described in Alternative 1 above are expected to impact noise/natural soundscape in the same way as stated there. Additionally under Alternative 3:

1. The Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project may have short-term minor adverse impacts on the natural soundscapes of the area due to the boat noise associated with project implementation.
2. Bob Sikes Pier Restoration would have short-term minor adverse impacts on noise/natural soundscape as construction equipment and activities make noise during project implementation. It would also have long-term minor adverse impacts on noise/natural soundscape since more visitors would presumably be visiting the area because of the pier improvements.
3. Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center would have short-term minor adverse impacts on noise/natural soundscape as construction equipment and activities make noise during project implementation.
4. (a) Ferry Purchase (and Dock Facility Improvements) would have short-term minor adverse impacts on noise/natural soundscape as construction equipment and activities make noise during project implementation. It would also have long-term minor adverse impacts due to noise made by ferries and passengers in the area for the length of time that the ferry service operates.
5. (b) Ferry Purchase (and Interim Docking Option) would have long-term minor adverse impacts due to noise made by ferries and passengers in the area for the length of time that the ferry service operates.

The five past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-5) and the three actions above (#7-9), when combined with the short-term and long-term, minor adverse impacts of implementing the proposed project (#10(a), above), would result, on balance, in both short- and long-term minor adverse cumulative impacts on the resource. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial and medium adverse increment to both the short- and long-term cumulative impacts, respectively.

If the Interim version of the project were implemented instead, the cumulative impacts would be slightly lower, but would still be short- and long-term minor adverse cumulative. The Interim project would contribute a medium adverse increment to the long-term cumulative impacts.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same nine actions as are described in Alternative 3 above, plus the action in Alternative 2 above (#6), would be likely to impact the noise/natural soundscape of the project area; no other actions impacting this resource are anticipated. If the complete version of the project (#10a, above) is done, the cumulative impacts of Alternative 4 would be slightly greater than Alternative 3, but would still be essentially the same: short- and long-term minor adverse cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial and medium adverse increment to both the short-term and long-term adverse cumulative impacts, respectively.

If the Interim version of the project (#10b, above) were implemented instead, the cumulative impacts would be slightly less adverse than if the complete version were done, but slightly greater than the Interim version cumulative impacts in Alternative 3 – i.e., short- and long-term minor adverse cumulative. The Interim project would contribute a medium adverse increment to the long-term cumulative impact.

12.92.3 Biological Environment - Living Coastal and Marine Resources

12.92.3.1 Potential Impacts to Coastal and Submerged Aquatic Vegetation

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to the project area's coastal and submerged aquatic vegetation resources to contribute cumulatively to impacts. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. As such, there are no cumulative impacts on coastal and submerged aquatic vegetation resources – adverse or beneficial – under Alternative 2.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the proposed Ferry Purchase (and Dock Facility Improvements) Project would occur but would have no effect on coastal and submerged aquatic vegetation resources; neither would the Ferry Purchase (and Interim Docking Facilities) option if it were implemented. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would impact the project area's coastal and submerged aquatic resources. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 3.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same scenario as described above in Alternative 3 would apply. As such, there are no cumulative impacts on coastal and submerged aquatic vegetation resources – adverse or beneficial – under Alternative 4.

12.92.3.2 Potential Impacts to Terrestrial Wildlife Species, Migratory Birds, Bald Eagles, Protected Terrestrial Species, and Critical Terrestrial Habitats

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following action is impacting and would impact the project area's terrestrial wildlife species, migratory birds, bald eagles, protected terrestrial species, and critical terrestrial habitats as follows:

1. FDEP/FWC 10 Living Shoreline Projects would have short-term minor adverse impacts to terrestrial species, including migratory birds, during project implementation because of the noise, activity, and disruption associated with construction. The action would also have long-term beneficial impacts to migratory birds because living shorelines improve and restore habitat for many migratory birds that could be found in the project area.

The action (#1, above) would result, on balance, in short-term minor adverse, and long-term beneficial cumulative impacts on migratory birds in the project area. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same action described above in the No Action Alternative is expected to impact the terrestrial wildlife, protected terrestrial species and critical terrestrial habitat, and migratory birds of the area. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines would have short-term minor adverse impacts to terrestrial species, including migratory birds, during project implementation because of the noise, activity, and disruption associated with construction. The action would also have long-term beneficial impacts to migratory birds because living shorelines improve and restore habitat for many migratory birds that could be found in the project area.

The cumulative impacts of Alternative 2 would be greater than Alternative 1 but still be essentially the same: short-term minor adverse, and long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future action described in Alternative 1 above (#1) is expected to impact terrestrial wildlife, protected terrestrial species and critical terrestrial habitat, and migratory birds in the same way as stated there. Additionally under Alternative 3:

1. Bob Sikes Pier Restoration would have short-term minor adverse impacts to migratory birds during project implementation because of the noise, activity, and disruption associated with construction. However, the planting of native vegetation at the end of project completion would

have a long-term benefit to birds in the project area because it would increase the habitat quality.

2. The Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project would have short-term minor adverse impacts to migratory birds during project implementation because of the noise, activity, and disruption associated with construction.
3. Ferry Purchase (and Dock Facility Improvements) would have short-term minor adverse impacts to migratory birds during project implementation because of the noise, activity, and disruption associated with construction.

The action described in Alternative 1 (#1) and the two actions above (#3-4), when combined with the short-term minor adverse impacts of implementing the proposed project (#5, above), would result, on balance, in both short-term minor adverse and long-term beneficial cumulative impacts on migratory birds. The Ferry Purchase (and Dock Facility Improvements) project would contribute a small adverse increment to the short-term cumulative impacts.

The Ferry Purchase (and Interim Dock Facilities) option would have no impacts on these resources.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same four actions as are described in Alternative 3 above, plus the action in Alternative 2 above (#2), would be likely to impact the terrestrial wildlife species, migratory birds, bald eagles, protected terrestrial species, and critical terrestrial habitats of the project area; no other actions impacting this resource are anticipated. If the complete version of the project (#5, above) is implemented, the cumulative impacts of Alternative 4 would be slightly more adverse and slightly more beneficial than Alternative 3, but would still be essentially the same: short-term minor adverse and long-term beneficial cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a small adverse increment to the short-term cumulative impacts.

The Ferry Purchase (and Interim Dock Facilities) option would have no impacts on these resources.

12.92.3.3 Potential Impacts to Marine and Estuarine Fauna, including Related Protected Species and Critical Habitats

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following past, present, and reasonably foreseeable future actions are impacting and would impact the project area's marine and estuarine fauna, related protected species and critical habitats as follows:

1. The FDEP/FWCC Living Shoreline Projects would have short-term minor adverse impacts on Gulf sturgeon and Gulf sturgeon critical habitat during project implementation because of the noise, activity, turbidity and disruption associated with construction. However, the project would have long-term beneficial impacts to these species after construction when the project improves shoreline habitat quality and water quality.

2. Two FWC Oyster Restoration Projects would have short-term minor adverse impacts on Gulf sturgeon, Gulf sturgeon critical habitat, and presumably other marine/estuarine species during project implementation because of the noise, activity, turbidity and disruption associated with construction.
3. FDOT Pensacola Bay Bridge would have short-term minor adverse impacts on Gulf sturgeon, Gulf sturgeon critical habitat, and presumably other marine/estuarine species during project implementation because of the noise, activity, turbidity and disruption associated with construction.
4. Fort Pickens Pier and Ferry Service would have long-term minor adverse impacts to manatees and sea turtles because vehicle strikes, while unlikely, could occur.
5. Maintenance Dredging of Intracoastal Waterways and Pensacola Harbor Gulf Entrance Channel would have short-term minor, adverse impacts to Gulf sturgeon and presumably other marine/estuarine species during dredging because it increases turbidity and the activity can startle animals.

The past, present, and reasonably foreseeable future actions (#1-5, above) would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on primarily Gulf sturgeon and their critical habitat and potentially other marine/estuarine species in the project area. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same action described above in the No Action Alternative are expected to impact marine and estuarine fauna, related protected species and critical habitats in the area. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines would have short-term minor, adverse impacts to marine and estuarine fauna, including Gulf sturgeon and their critical habitat, during project implementation because of the noise, activity, turbidity and disruption associated with construction. However, the project would have long-term beneficial impacts to these species after construction when the project improves the shoreline habitat quality and water quality.

The adverse cumulative impacts of Alternative 2 would be slightly greater than Alternative 1 but still be essentially the same: short- and long-term minor adverse, and long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions described in Alternative 1 above (#1-5) are expected to impact marine and estuarine fauna, related protected species and critical habitats in the same way as stated there. Additionally under Alternative 3:

1. Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project would have short-term minor adverse impacts on sea turtles, Gulf sturgeon, Gulf sturgeon critical habitat, manatees and dolphins by the noise, activity, and turbidity caused in the area during project implementation.
2. The Gulf Breeze Wayside Park Boat Ramp Project would have short-term minor adverse impacts to fish, sea turtles, manatees, dolphins, Gulf sturgeon, Gulf sturgeon critical habitat, and to EFH during the in-water construction as a result of turbidity and noise disturbance during repairs to the boat ramp and seawalls.
3. The Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project would have short-term minor adverse impacts on sea turtles, Gulf sturgeon, Gulf sturgeon critical habitat, manatees, dolphins, and EFH because of the noise, activity, and turbidity caused in the area during project implementation. It would also have long-term beneficial impacts to estuarine and marine resources by supplementing native populations of fish species.
4. Big Lagoon State Park Boat Ramp Improvements would have short-term minor adverse impacts to marine mammals because vehicle strikes, while unlikely, could occur, and would also have short-term minor adverse impacts to Gulf sturgeon, Gulf sturgeon critical habitat, and EFH because of the noise, activity, and turbidity caused in the area during project implementation.
5. Beach Enhancement Project at GUIS, which would have short-term, minor, adverse impacts to Gulf sturgeon, Gulf sturgeon critical habitat, manatee, and sea turtles because of the noise, activity, and turbidity caused in the area during project implementation.
6. (a) The Ferry Purchase (and Dock Facility Improvements) Project would cause short-term minor adverse impacts to sea turtles, Gulf sturgeon, Gulf sturgeon critical habitat, manatees, fish, and shellfish by the noise, activity, and turbidity caused in the area during project implementation. It would also have long-term minor adverse impacts to marine mammals because vessel strikes, while unlikely, could occur. It would also have long-term minor adverse impacts to EFH because of the very small benthic site which would have pilings inserted during dock construction.
7. (b) Ferry Purchase (and Interim Dock Facilities) would have long-term minor adverse impacts to marine mammals because vessel strikes near the docks, while unlikely, could occur.

The action described in Alternative 1 (#1-5) and the five actions above (#7-11), when combined with the short- and long-term minor adverse impacts of implementing the proposed project (#12a, above), would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on primarily Gulf sturgeon, Gulf sturgeon critical habitat, sea turtle and manatee, and to a lesser extent, dolphins, fish, shellfish, and EFH. The Ferry Purchase (and Dock Facility Improvements) project would contribute small short- and long-term adverse increments to the cumulative impacts.

If the Interim proposed project (#12b, above) were implemented instead, the cumulative impacts of Alternative 3 would be slightly lower because the dock facilities would not be built, but would still be

essentially the same: short- and long-term minor adverse, and long-term beneficial cumulative. The Interim project would contribute a very small long-term adverse increment to the cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same 11 actions as are described in Alternative 3 above, plus the action in Alternative 2 above (#6), would be likely to impact marine and estuarine fauna, related protected species and critical habitats of the project area; no other actions impacting this resource are anticipated. If the complete version of the project (#12a, above) is done, the cumulative impacts of Alternative 4 would be essentially the same: short- and long-term minor adverse, and long-term beneficial cumulative (and on the same species and habitat). The Ferry Purchase (and Dock Facility Improvements) project would contribute small short- and long-term adverse increments to the cumulative impacts.

If the Interim version of the project (#12b, above) were implemented instead, the cumulative impacts would be less adverse than if the complete version were done, but slightly greater than the Interim version cumulative impacts in Alternative 3 – i.e., short- and long-term minor adverse, and long-term beneficial cumulative. The Interim project would contribute a very small long-term adverse increment to the cumulative impact.

12.92.3.4 Potential Impacts because of Non-Native Species

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would impact the project area's non-native species. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. As such, there are no cumulative impacts on non-native species – adverse or beneficial – under Alternative 2.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the same scenario as described above in the No Action Alternative would apply. Additionally under Alternative 3:

1. (a) Ferry Purchase (and Dock Facility Improvements) would have short-term minor adverse impacts with regard to introducing non-native species into the project area, even though best management practices would be implemented. The risk is low but comes from bringing in the new ferries and dock materials from elsewhere.
2. (b) Ferry Purchase (and Interim Dock Facilities) would have less of an impact than the complete version of this project immediately above because the dock facilities would not be built. However, due to the new ferries, there would still be short-term minor adverse impacts.

The lack of any other past, present, and reasonably foreseeable future actions noted in this Alternative or in Alternative 1 means that there are only impacts from the project itself and that there are no cumulative impacts on this resource.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same action as described in Alternative 3 above would be likely to impact the non-native species of the area; no other actions impacting this resource are anticipated. Therefore, there are only impacts from the project itself and there are no cumulative impacts on this resource.

12.92.4 Human Uses and Socioeconomics

12.92.4.1 Potential Impacts to Socioeconomics and Environmental Justice

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's socioeconomics and environmental justice as follows:

1. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has long-term beneficial impacts on the socioeconomics of the Pensacola/Pensacola Beach area by restoring the roads through the Fort Pickens and Santa Rosa areas of the Seashore and bringing back visitors and commuters who spend money in the area.
2. The Pensacola Naval Air Station's continued operations have long-term beneficial impacts on the socioeconomics of the Pensacola/Pensacola Beach area by employing a large workforce that spends its money in the area.
3. FDEP/FWC 10 Living Shoreline Projects would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction.
4. The FDOT Pensacola Bay Bridge Replacement Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts on the socioeconomics of the area by ensuring flow of visitors (and their dollars) into the area over reliable and attractive new infrastructure.
5. Maintenance dredging of Intracoastal Waterways and Pensacola Harbor Gulf Entrance Channel has long-term beneficial impact because it allows ships to continue to use Pensacola Bay as a shipping hub, creating many local jobs and bringing goods into the area.
6. City of Pensacola, Community Maritime Park has long-term beneficial impacts on the area by attracting tourists (and their dollars) to it and to the surrounding areas. It creates many jobs in the local area.
7. Fort Pickens Ferry Support Facilities and Shuttle Service Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It

would also have long-term beneficial impacts by attracting visitors (and their dollars) to the surrounding communities and to the Seashore to use them in conjunction with the ferry service.

8. The Fort Pickens Road Realignment, Resurfacing, and Entrance Station Reconfiguration Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors (and their dollars) to the Pensacola Beach area with improved roads and visitor access to the Seashore.
9. The Fort Pickens Pier and Ferry Service Project would have long-term beneficial impacts on socioeconomics of the Pensacola/Pensacola Beach area by attracting visitors (and their dollars) to the area to ride the ferry.

The past, present, and reasonably foreseeable future actions (#1-9, above) would result, on balance, in short- and long-term beneficial cumulative impacts on socioeconomics. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same nine actions as are described above in the No Action Alternative are expected to impact the socioeconomics of the area. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction.

The cumulative impacts of Alternative 2 would be slightly greater than Alternative 1 but still be essentially the same: short- and long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-9 described in Alternative 1 above are expected to impact socioeconomics in the same way as stated there. Additionally under Alternative 3:

1. The Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting scallop fishermen (and their dollars) to the area.
2. The Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area

because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors and fishermen (and their dollars) to the area, and by creating permanent jobs in the local area.

3. The Florida Artificial Reef Creation and Restoration Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting snorkelers and scuba divers (and their dollars) to the area.
4. Bob Sikes Pier Restoration Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors and fishermen (and their dollars) to the area.
5. Gulf Breeze Wayside Boat Ramp would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors and fishermen (and their dollars) to the area.
6. The Beach Enhancement project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction.
7. (a) The Ferry Purchase (and Dock Facility Improvements) Project would have short-term beneficial socioeconomic impacts on communities surrounding the project area because workers would buy goods and services from local businesses during project construction. It would also have long-term beneficial impacts by attracting visitors (and their dollars) to the area. It may also have long-term beneficial impacts to environmental justice by providing another transportation option to travelers in the region.
8. (b) The Ferry Purchase (and Interim Dock Facilities) Project would have long-term (i.e., until the new dock facilities are built) minor adverse impacts to socioeconomics if normal marina users (i.e. boat owners/users) use the marina less or differently than they currently are due to the presence of the ferries and passengers. It would also have long-term beneficial effects in areas served by the ferry operation by attracting visitors (and their dollars) there. There may also be long-term environmental justice benefits by providing another regional transportation option.

The nine past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-9) and the six actions above (#11-16), when combined with the short-term and long-term beneficial impacts of implementing the proposed Ferry Purchase (and Dock Facility Improvements) project (#17a, above), would result, on balance, in short- and long-term beneficial cumulative impacts on the resource. The Ferry Purchase (and Dock Facility Improvements) project would contribute a small short-term and substantial long-term beneficial increment to the cumulative impacts.

If the Interim version of the proposed project (#17b, above) were implemented instead, the cumulative impacts of Alternative 3 would be: short- and long-term beneficial, and long-term minor adverse cumulative. The Interim project would contribute all the adverse increment to the cumulative impact.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same 16 actions as are described in Alternative 3 above, plus the action in Alternative 2 above (#11), would be likely to impact the socioeconomics of the project area; no other actions impacting this resource are anticipated. If the complete version of the project (#17a, above) is done, the cumulative impacts of Alternative 4 would be essentially the same: short- and long-term beneficial cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a small short-term and substantial long-term beneficial increment to the cumulative impacts.

If the Interim version of the proposed project (#17b, above) were implemented instead, the cumulative impacts of Alternative 4 would be slightly less beneficial than if the complete version were done, but slightly greater than the Interim version cumulative impacts in Alternative 3 – i.e., short- and long-term beneficial cumulative and long-term minor adverse. The Interim project would contribute all the adverse increment to the cumulative impact.

12.92.4.2 Potential Impacts to Cultural Resources

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to the project area to impact the area's known cultural resources. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. As such, there are no cumulative impacts on cultural resources – adverse or beneficial – under Alternative 2.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the proposed Ferry Purchase (and Dock Facility Improvements) Project would occur and 106 reviews will be conducted as required to determine possible impacts and any necessary mitigation; the same is true for the Ferry Purchase (and Interim Docking Facilities) option if it is implemented. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to the project area to impact the project area's known cultural resources. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 3.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same scenario as described above in Alternative 3 will apply. As such, there are no cumulative impacts on cultural resources – adverse or beneficial – under Alternative 4.

12.92.4.3 Potential Impacts to Infrastructure

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following action will impact the project area's infrastructure as follows:

1. The Fort Pickens Pier and Ferry Service Project would have a long-term, beneficial impact on the infrastructure of the area because it creates the means for an entirely new mode of transportation between Fort Pickens, Pensacola, and Pensacola Beach. The construction of the pier at the Fort Pickens Historic Area also benefits the project area's infrastructure because it makes it possible for large boats – including the ferries – to dock there.

The reasonably foreseeable future action (#1, above) would result, on balance, in long-term beneficial cumulative impacts on the resource. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same action as is described above in the No Action Alternative is expected to impact the infrastructure of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future action described in Alternative 1 above (#1) is expected to impact area's infrastructure in the same way as stated there. Additionally under Alternative 3:

1. Bob Sikes Pier Restoration would have a long-term beneficial impact on the infrastructure of the area because it would improve and restore existing infrastructure immediately adjacent to the project area.
2. (a) The Ferry Purchase (and Dock Facility Improvements) Project would have long-term, beneficial impacts to the area's infrastructure because it purchases the ferries which are an expensive and integral part of the larger ferry system infrastructure. It could also have long-term minor adverse impacts on infrastructure where capacity is not increased (e.g., water and sewer lines).

3. (b) The Ferry Purchase (and Interim Dock Facilities) Project would have long-term beneficial impacts to the area's infrastructure because it purchases the ferries which are an expensive and integral part of the larger ferry system infrastructure. It would also have long-term minor adverse impacts to the area's infrastructure because the use of the unimproved existing docks and adjacent facilities) would put a strain on existing infrastructure. It could also have long-term minor adverse impacts on infrastructure where capacity is not increased (e.g., water and sewer lines).

The reasonably foreseeable future action described in Alternative 1 (#1) and the action above (#2), when combined with the long-term minor adverse, and long-term beneficial impacts of implementing the proposed project (#3a, above), would result, on balance, in long-term beneficial and long-term minor adverse cumulative impacts on the resource. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial beneficial increment to both of the cumulative impacts.

If the Interim version of the proposed Project (#4b, above) were implemented instead, the cumulative impacts for this Alternative would still be, on balance, long-term beneficial and long-term minor adverse cumulative. The Interim project would contribute a lower, but still substantial beneficial increment to both of the cumulative impacts.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same three actions as are described in Alternative 3 above would be likely to impact the infrastructure of the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: long-term beneficial, and long-term minor adverse cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial beneficial increment to both of the cumulative impacts.

If the Interim version of the proposed (#3b, above) were implemented instead, the cumulative impacts of Alternative 4 would still be less beneficial than if the complete version were done, but the same as the Interim version cumulative impacts in Alternative 3 – i.e., long-term beneficial, and long-term minor adverse cumulative. The Interim project would contribute a lower, but still substantial beneficial increment to both of the cumulative impacts.

12.92.4.4 Potential Impacts to Land and Marine Management

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following action will impact the project area's land and marine management as follows:

1. The Fort Pickens Pier and Ferry Service Project would have long-term beneficial impacts on land and marine management by 1) improving public access to the resources at the Fort Pickens area,

2) allowing the resources there to be managed for the benefit of human enjoyment, and 3) aligning with and furthering the management goals of the Seashore.

The reasonably foreseeable future action (#1, above) would result, on balance, in long-term beneficial cumulative impacts on the resource. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same action as is described above in the No Action Alternative is expected to impact the land and marine management of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the future action #1 described in Alternative 1 above is expected to impact land and marine management in the same way as stated there. Additionally under Alternative 3:

1. (a) The Ferry Purchase (and Dock Facility Improvements) Project would have long-term beneficial impacts to the area's land and marine management because it would 1) improve public access to the resources at the Fort Pickens area, 2) allowing the resources there to be managed for the benefit of human enjoyment, and 3) align with and further the transportation management goals of the Pensacola Bay area.
2. (b) The Ferry Purchase (and Interim Dock Facilities) Project would have long-term beneficial impacts to the area's land and marine management because it would 1) improve public access to the resources at the Fort Pickens area, 2) allow the resources there to be managed for the benefit of human enjoyment, and 3) align with and further the transportation management goals of the Pensacola Bay area. However, the benefit to be derived from this Interim option would be less because appropriate facilities would not be tailored to the ferry operation.

The future action described in Alternative 1 (#1), when combined with the long-term beneficial impacts of implementing the proposed project (#2a, above), would result, on balance, in long-term beneficial cumulative impacts on land and marine management. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial beneficial increment to the cumulative impact.

If the Interim version of the proposed project (#2b, above) were implemented instead, the beneficial impacts of Alternative 4 would be less beneficial, but still, on balance, essentially the same: long-term beneficial cumulative. The Interim project would contribute a substantial beneficial increment to the cumulative impacts.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same two actions as are described in Alternative 3 above would be likely to impact land and marine management of the project area; no other actions impacting this resource are anticipated. As such, the cumulative impacts of Alternative 4 would be the same as Alternative 3: long-term beneficial cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial beneficial increment to the cumulative impact.

If the Interim version of the proposed project (#2b, above) were implemented instead, the beneficial impacts Alternative 4 would be less beneficial, but still, on balance, essentially the same: long-term beneficial cumulative. The Interim project would contribute a substantial beneficial increment to the cumulative impacts.

12.92.4.5 Potential Impacts to Aesthetics and Visual Resources

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to the project area to contribute to cumulative impact on the area's aesthetics and visual resources. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines would have short-term, minor adverse impact to aesthetics and visual resources in the area during project completion because construction would bring traffic, heavy equipment, clutter and activity. It would also have long-term minor adverse impacts due to the installation of navigational signs. It would also have a long-term beneficial impact to the aesthetics in the project area by revegetating denuded, eroded shoreline.

The cumulative impacts of Alternative 2 would, on balance, be short- and long-term minor adverse, and long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. Additionally under Alternative 3:

1. Scallop Enhancement for Increased Recreational Fishing Opportunity would have a short-term minor adverse impact to aesthetics and visual resources in the area because of boat traffic during project completion.
2. Bob Sikes Pier Restoration would have a short-term minor adverse impact to aesthetics and visual resources in the area during project completion because construction of the pier would bring traffic, heavy equipment, clutter and activity. It would have long-term beneficial impacts by improving the appearance of the pier and adjacent area.
3. (a) The Ferry Purchase (and Dock Facility Improvements) Project would have short-term minor adverse impacts to the area's aesthetics and visual resources because of the clutter and activity associated with construction. It would also have long-term minor adverse impacts for those who prefer more natural landscapes/seascapes because the new facilities would make the area even less natural. However, it is also possible that the aesthetic experience for those using the ferries in these areas would be improved, which could result in a long-term beneficial impact.
4. (b) The Ferry Purchase (and Interim Dock Facilities) Project would result in a long-term minor adverse impact for people seeing other travelers and possibly experiencing congestion in the dock area. It also would result in a long-term beneficial impact because the aesthetic experience for those using the ferries in these areas would be improved.

The two future actions described immediately above (#2-3), when combined with the short-term and long-term minor adverse, and long-term beneficial impacts of implementing the proposed project (#4, above), would result, on balance, in short- and long-term minor adverse, and long-term beneficial cumulative impacts on the resource. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial beneficial increment to all the cumulative impacts.

If the Interim version of the proposed project (#4b, above) were implemented instead, the cumulative impacts for this Alternative would be slightly less adverse, but still be, on balance, short- and long-term minor adverse, and long-term beneficial cumulative. The Ferry Purchase (and Interim Dock Facilities) project would still contribute a substantial increment to the long-term minor adverse and long-term beneficial cumulative impacts.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same three actions as are described in Alternative 3 above, plus the action in Alternative 2 above (#1), would be likely to impact the aesthetics and recreational use of the project area; no other actions impacting this resource are anticipated. If the complete version of the Ferry Purchase (and Dock Facility Improvements) project (#4a, above) is done, all the cumulative impacts of Alternative 4 would be slightly greater than Alternative 3, but would still be essentially the same: short- and long-term minor adverse, and long-term beneficial cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial beneficial increment to all the cumulative impacts.

If the Interim version of the proposed project (#4b, above) were implemented instead, the cumulative impacts of Alternative 4 would still be slightly less adverse than if the complete version were done, but

the same as the interim version cumulative impacts in Alternative 3 – i.e., short- and long-term minor adverse, and long-term beneficial cumulative. The Ferry Purchase (and Interim Dock Facilities) project would contribute a substantial increment to the long-term minor adverse and long-term beneficial cumulative impacts.

12.92.4.6 Potential Impacts to Tourism and Recreational Use

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) project would not occur; however, other past, present, and reasonably foreseeable future actions are and would. The following actions are impacting and will impact the project area's tourism and recreational as follows:

1. City of Pensacola, Community Maritime Park has long-term beneficial impacts on the area's tourism and recreational use because it provides many recreational opportunities, such as an amphitheater and baseball stadium, that draw tourists to that area.
2. The Restore Visitor Access to Fort Pickens and Santa Rosa areas at Gulf Islands National Seashore Project has a long-term beneficial impact on the area's tourism and recreational use because restoring the road increased visitor access to and use of many beach and picnic areas on Santa Rosa Island and draws tourists to that area.
3. The Fort Pickens Pier and Ferry Service Project would have long-term beneficial impacts to the area's tourism and recreational use by providing an additional tourist attraction near the project area (especially once the landside shuttle is operating) and also an additional means of transportation to take visitors to – or near – the project area.
4. Fort Pickens Ferry Support Facilities and Shuttle Service Project would have long-term beneficial impacts to the tourism and recreational use in the area by providing an additional means of transportation for visitors to use to see and recreate in the area.

The past, present, and reasonably foreseeable future actions (#1-4, above) would result, on balance, in long-term beneficial cumulative impacts on the resource. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same four actions as are described above in the No Action Alternative are expected to impact the infrastructure of the area; no other actions impacting this resource are anticipated. Therefore the cumulative impacts of Alternative 2 would be the same as for Alternative 1: long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future actions #1-4 described in Alternative 1 above are expected to impact area's tourism and recreational use in the same way as stated there. Additionally under Alternative 3:

1. Bob Sikes Pier Restoration would have a long-term beneficial impact on the tourism and recreational use in the area by improving the visitor experience for those who use Bob Sikes Pier and drawing tourists to the ferry project area.
2. The Florida Gulf Coast Marine Fisheries Hatchery/Enhancement Center Project would have a long-term beneficial impact on the tourism and recreational use in the area by increasing the availability of sport fish and drawing tourists to the ferry project area.
3. (a) Ferry Purchase (and Dock Facility Improvements) Project would have long-term beneficial impacts to tourism and recreational use because it purchases the ferries and improves dock facilities, thereby facilitating the establishment of a successful ferry service which many tourists would use.
4. (b) The Ferry Purchase (and Interim Dock Facilities) Project would have the same long-term beneficial impacts on the area's tourism and recreational use as the permanent version of this project because it would still allow the ferry service to operate and bring tourists to the area. It would also have a long-term minor adverse impact on tourism and recreational use because the existing facilities would not be as user-friendly and capable of handling the additional tourists the ferries would bring as updated facilities would be.

The four past, present, and reasonably foreseeable future actions described in Alternative 1 (#1-4) and the two actions above (#5-6), when combined with the long-term beneficial impacts of implementing the proposed project (#7a, above), would result, on balance, in long-term beneficial cumulative impacts on the resource. The Ferry Purchase (and Dock Facility Improvements) project would contribute a very substantial beneficial increment to the cumulative impacts.

If the Interim version of the proposed project (#7b, above) were implemented instead, the cumulative impacts for this Alternative would be, on balance, long-term beneficial and long-term minor adverse cumulative. The Interim project would contribute a slightly lower, but still substantial beneficial increment to the cumulative impacts.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same seven actions as are described in Alternative 3 above would be likely to impact the tourism and recreational use of the area; no other actions impacting this resource are anticipated. Therefore, the cumulative impacts of Alternative 4 would be the same as for Alternative 3: long-term beneficial and long-term minor adverse cumulative. The Ferry Purchase (and Dock Facility Improvements) project would contribute a very substantial beneficial increment to the cumulative impacts.

If the Interim version of the proposed project (#7b, above) were implemented instead, the cumulative impacts for this Alternative would be the same as the Interim version cumulative impacts in Alternative 3 – i.e., long-term beneficial and long-term minor adverse cumulative. The Ferry Purchase (and Interim Dock Facilities) project would contribute a substantial beneficial increment to the cumulative impacts.

12.92.4.7 Potential Impacts to Public Health and Safety and Shoreline Protection

Impacts of Alternative 1: No Action

Under the No Action Alternative, the proposed Ferry Purchase (and Dock Facility Improvements) Project would not occur. And, although other past, present, and reasonably foreseeable future actions are and would be occurring, none would occur in close enough proximity to the project area to contribute to its cumulative impact on the area's public health and safety and shoreline protection. As such, there are no cumulative impacts on this resource – adverse or beneficial – under Alternative 1.

Impacts of Alternative 2: Contribute to Restoring Habitats and Living Coastal and Marine Resources

Under Alternative 2, the same scenario as described above in the No Action Alternative would apply. Additionally under Alternative 2:

1. Pensacola Bay Living Shorelines would have long-term, beneficial impacts to public health and safety and shoreline protection because they help stabilize shorelines and reduce erosion, and increase shoreline resiliency in an area very close to the Plaza de Luna dock area.

The cumulative impacts of Alternative 2 would, on balance, be long-term beneficial cumulative. Since the Ferry Purchase (and Dock Facility Improvements) project would not be implemented under this Alternative, it would not contribute any increment to this cumulative impact.

Impacts of Alternative 3: Contribute to Providing and Enhancing Recreational Opportunities

Under Alternative 3, the past, present, and reasonably foreseeable future action described in Alternative 1 above (#1) is expected to impact public health and safety and shoreline protection in the same way as stated there. Additionally under Alternative 3:

1. (a) Ferry Purchase (and Dock Facility Improvements) Project would have short-term minor adverse impacts on the area's public health and safety during construction in and near the water and busy areas; long-term minor impacts due to the inherent risks associated with people using boat docks; and long-term, beneficial impacts on public safety by facilitating the establishment of a successful ferry service which would provide an alternative means of access to – and egress from – the barrier island in the event that an extreme storm destroys the road to/from the Fort Pickens Historic Area or makes it impassable.
2. (b) The Ferry Purchase (and Interim Dock Facilities) Project would have long -term (i.e., until the new dock facilities are built) minor adverse impacts on public safety (greater than the permanent Dock Facility Improvements impacts) because docking areas in particular would not be optimally sized or constructed to accommodate the greater number of people using them. There would also be a long-term beneficial impact on public health and safety by facilitating the

establishment of a successful ferry service which would provide an alternative means of access to – and egress from – the Fort Pickens area of the barrier island.

The lack of any other past, present, and reasonably foreseeable future actions noted in this Alternative or in Alternative 1 means that there are only impacts from the project itself and that there are no cumulative impacts on this resource.

Impacts of Alternative 4: Contribute to Restoring Habitats, Living Coastal and Marine Resources, and Recreational Opportunities

Under Alternative 4, the same action as described in Alternative 3 above (#2a), plus the action in Alternative 2 above (#1), would be likely to impact public health and safety and shoreline protection of the project area; no other actions impacting this resource are anticipated. As such, the cumulative impacts of Alternative 4 would be, on balance, long-term beneficial for public health and safety and also for shoreline protection. The Ferry Purchase (and Dock Facility Improvements) project would contribute a substantial beneficial increment to the cumulative impact for public health and safety.

If the Interim version of the proposed project (#2b, above) were implemented instead, the cumulative impacts of Alternative 4 would be, on balance, less beneficial than if the complete version (#2a) were done, but would still be long-term beneficial for public health and safety since the ferry operation will greatly outlast the interim (but still long-term) dock facilities option. Cumulative impacts on shoreline protection would be the same. The Interim project would contribute a substantial long-term beneficial increment to the cumulative impact for public health and safety.