CHAPTER 12: PROPOSED PHASE III EARLY RESTORATION PROJECTS: FLORIDA (continued)

CHAPTER 12: PROPOSED PHASE III EARLY RESTORATION PROJECTS: FLORIDA (continued) i

12.70. Navarre Beach Park Coastal Access and Dune Restoration: Project Description 1

12.70.1. Project Summary 1

12.70.2. Background and Project Description 1

12.70.3. Evaluation Criteria 1

12.70.4. Performance Criteria, Monitoring and Maintenance 3

12.70.5. Offsets 4

12.70.6. Costs 4

12.71. Navarre Beach Park Gulfside Walkover Complex: Project Description 5

12.71.1. Project Summary 5

12.71.2. Background and Project Description 5

12.71.3. Evaluation Criteria 6

12.71.4. Performance Criteria, Monitoring and Maintenance 6

12.71.5. Offsets 7

12.71.6. Costs 7

12.72. Navarre Beach Park Gulfside Walkover Complex, Coastal Access and Dune Restoration: Environmental Review 8

12.72.1. Introduction and Background 8

12.72.2. Project Location 9

12.72.3. Construction and Installation 13

12.72.4. Operations and Maintenance 17

12.72.5. Affected Environment and Environmental Consequences 18

12.72.6. Noise 25

12.72.7. Summary and Next Steps 43

12.72.8. References 44

12.73. Gulf Breeze Wayside Park Boat Ramp: Project Description 48

12.73.1. Project Summary 48

12.73.2. Background and Project Description 48

12.73.3. Evaluation Criteria 49
12.73.4. Performance Criteria, Monitoring and Maintenance 49
12.73.5. Offsets 50
12.73.6. Costs 50
12.74. Gulf Breeze Wayside Park Boat Ramp: Environmental Review 51
12.74.1. Introduction and Background 51
12.74.2. Project Location 51
12.74.3. Construction and Installation 54
12.74.4. Operations and Maintenance 56
12.74.5. Affected Environment and Environmental Consequences 56
12.74.6. Summary and Next Steps 75
12.74.7. References 75
12.75. Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area: Project Description 79
12.75.1. Project Summary 79
12.75.2. Background and Project Description 79
12.75.3. Evaluation Criteria 80
12.75.4. Performance Criteria, Monitoring and Maintenance 81
12.75.5. Offsets 81
12.75.6. Costs 82
12.76. Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area: Environmental Review 83
12.76.1. Introduction and Background 83
12.76.2. Project Location 84
12.76.3. Construction and Installation 85
12.76.4. Operations and Maintenance 90
12.76.5. Affected Environment and Environmental Consequences 90
12.76.6. Public Health and Safety and Shoreline Protection5 101
12.76.7. Summary and Next Steps 103
12.76.8. References 104
12.77. Norriego Point Restoration and Recreation Project: Project Description 105
12.77.1. Project Summary 105
12.77.2. Background and Project Description 105

12.77.3. Evaluation Criteria 105
12.77.4. Performance Criteria, Monitoring and Maintenance 107
12.77.5. Offsets 107
12.77.6. Costs 107
12.78. Norriego Point Restoration and Recreation Project: Environmental Review 108
12.78.1. Introduction and Background 108
12.78.2. Project Location 109
12.78.3. Construction and Installation 109
12.78.4. Operations and Maintenance 114
12.78.5. Affected Environment and Environmental Consequences 114
12.78.6. Summary and Next Steps 134
12.78.7. References 134
12.79. Deer Lake State Park Development: Project Description 138
12.79.1. Project Summary 138
12.79.2. Background and Project Description 138
12.79.3. Evaluation Criteria 140
12.79.4. Performance Criteria, Monitoring and Maintenance 140
12.79.5. Offsets 141
12.79.6. Costs 141
12.80. Deer Lake State Park Development: Environmental Review 142
12.80.1. Introduction and Background 142
12.80.2. Project Location 143
12.80.3. Construction and Installation 146
12.80.4. Operations and Maintenance 150
12.80.5. Affected Environment and Environmental Consequences 150
12.80.6. Summary and Next Steps 178
12.80.7. References 179
12.81. City of Parker- Oak Shore Drive Pier: Project Description 183
12.81.1. Project Summary 183
12.81.2. Background and Project Description 183
12.81.3. Evaluation Criteria 184
12.81.4. Performance Criteria, Monitoring and Maintenance 184

12.81.5. Offsets 185
12.81.6. Costs 185
12.82. City of Parker- Oak Shore Drive Pier: Environmental Review 186
12.82.1. Introduction and Background 186
12.82.2. Project Location 188
12.82.3. Construction and Installation 188
12.82.4. Operations and Maintenance 189
12.82.5. Affected Environment and Environmental Consequences 189
12.82.6. Summary and Next Steps 206
12.82.7. References 206
12.83. Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks: Project Description 210
12.83.1. Project Summary 210
12.83.2. Background and Project Description 210
12.83.3. Evaluation Criteria 211
12.83.4. Performance Criteria, Monitoring and Maintenance 211
12.83.5. Offsets 212
12.83.6. Costs 212
12.84. Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks: Environmental Review 213
12.84.1. Introduction and Background 213
12.84.2. Project Location 214
12.84.3. Construction and Installation 217
12.84.4. Operations and Maintenance 217
12.84.5. Affected Environment and Environmental Consequences 217
12.84.6. Summary and Next Steps 234
12.84.7. References 235
12.85. Wakulla Mashes Sands Park Improvements: Project Description 238
12.85.1. Project Summary 238
12.85.2. Background and Project Description 238
12.85.3. Evaluation Criteria 238
12.85.4. Performance Criteria, Monitoring and Maintenance 239
12.85.5. Offsets 240
12.85.6. Costs 240

12.86. Wakulla Mashes Sands Park Improvements: Environmental Review 241
12.86.1. Introduction and Background 241
12.86.2. Project Location 241
12.86.3. Construction and Installation 244
12.86.4. Operations and Maintenance 245
12.86.5. Affected Environment and Environmental Consequences 245
12.86.6. Summary and Next Steps 266
12.86.7. References 266
12.87. Northwest Florida Estuarine Habitat Restoration, Protection and Education- Fort Walton Beach: Project Description 270
12.87.1. Project Summary 270
12.87.2. Background and Project Description 270
12.87.3. Evaluation Criteria 271
12.87.4. Performance Criteria, Monitoring and Maintenance 272
12.87.5. Offsets 272
12.87.6. Costs 273
12.88. Northwest Florida Estuarine Habitat Restoration, Protection and Education- Fort Walton Beach: Environmental Review 274
12.88.1. Introduction and Background 274
12.88.2. Project Location 275
12.88.3. Construction and Installation 278
12.88.4. Operations and Maintenance 279
12.88.5. Affected Environment and Environmental Consequences 280
12.88.6. Summary and Next Steps 300
12.88.7. References 300
12.89. Cumulative Effects 305
Chapter 12 Appendix A: Example Mitigation Measures 329

Navarre Beach Park Coastal Access and Dune Restoration: Project Description

12.70.1. 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.

12.70.2. Background and Project Description

The Trustees propose to enhance the Navarre Beach Park in Santa Rosa County (See Figure 12-1 for 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 the public's use and/or enjoyment of the natural resources by 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.

12.70.3. 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 their natural resources along Florida's Panhandle was denied or severely restricted. This project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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.

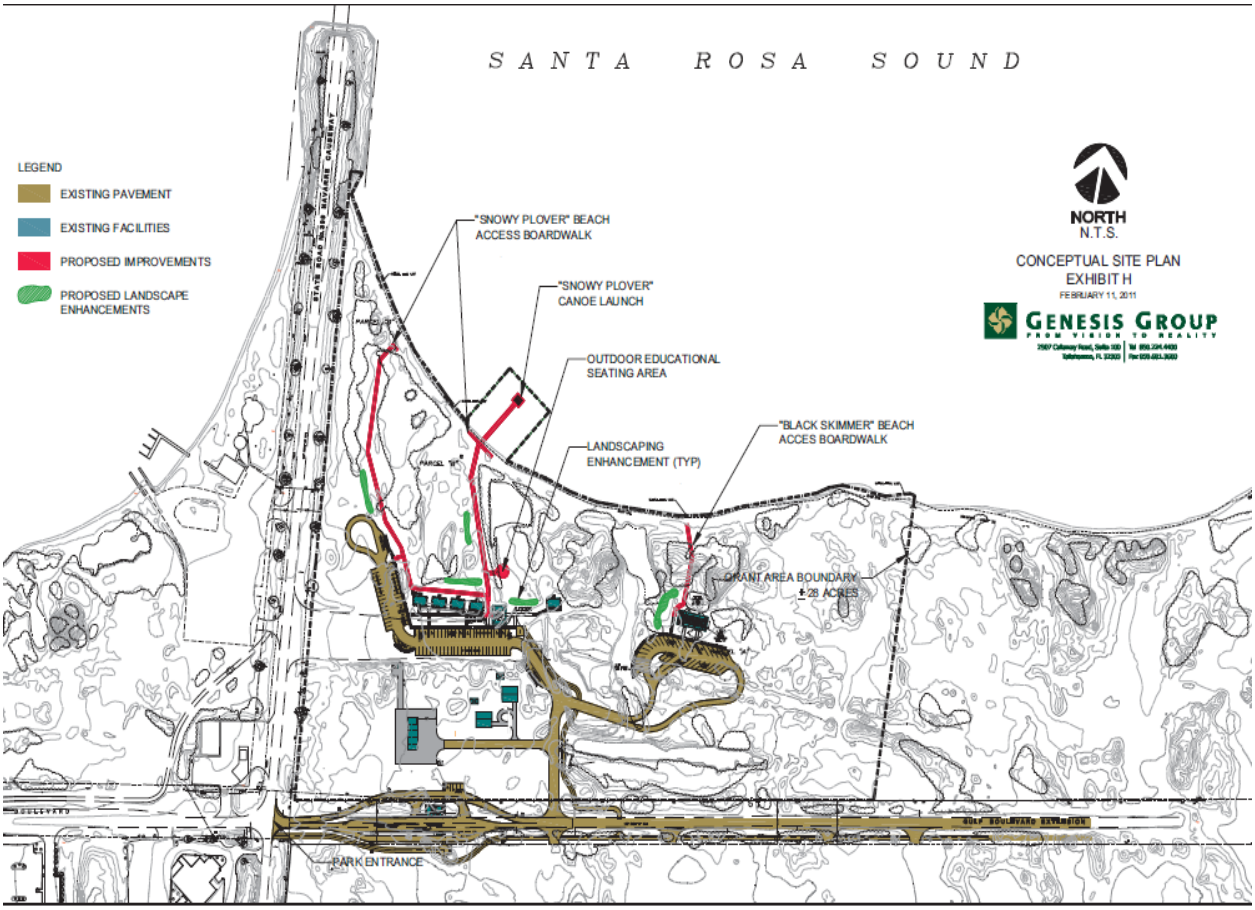


Figure 12-2. Conceptual plan for the proposed Navarre Beach Park coastal access project.

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.

12.70.4. 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 the public's use and/or enjoyment of the natural resources 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 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.

12.70.5. 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]

12.70.6. 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.

Navarre Beach Park Gulfside Walkover Complex: Project Description

12.70.7. 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.

12.70.8. 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 the public's use and/or enjoyment of the natural resources by 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.

12.70.9. 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 their natural resources along Florida's Panhandle was denied or severely restricted. This project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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.

12.70.10. 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 the public's use and/or enjoyment of the natural resources by improving beach access. Performance monitoring will evaluate: 1) the construction 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 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.

12.70.11. 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]

12.70.12. 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.

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.

12.70.13. 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 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.

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 three 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.

12.70.14. 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 12-8 show conceptual designs for the proposed improvement projects at Navarre Beach Marine Park.

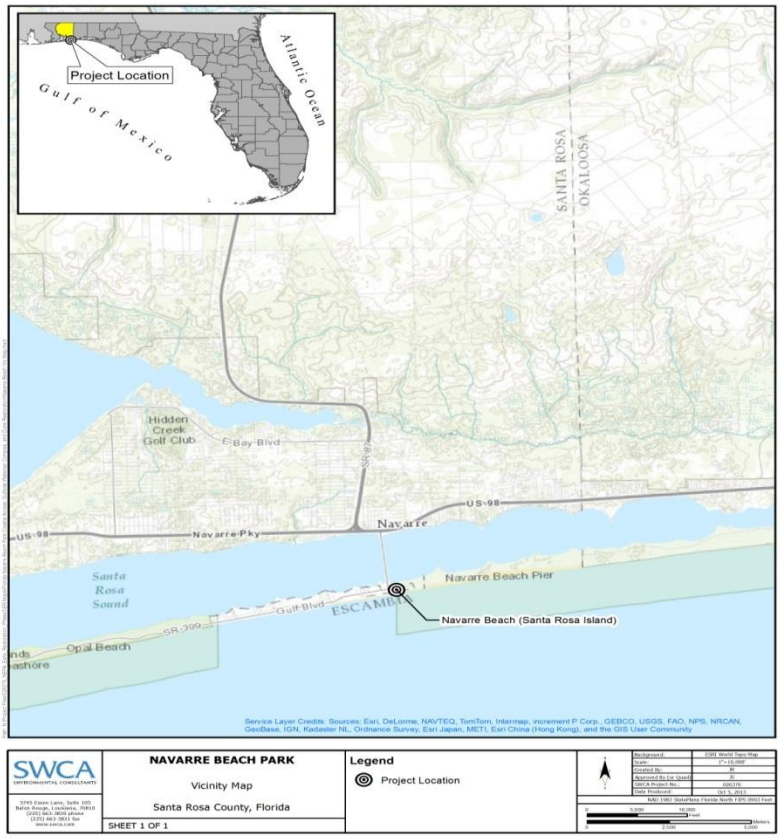
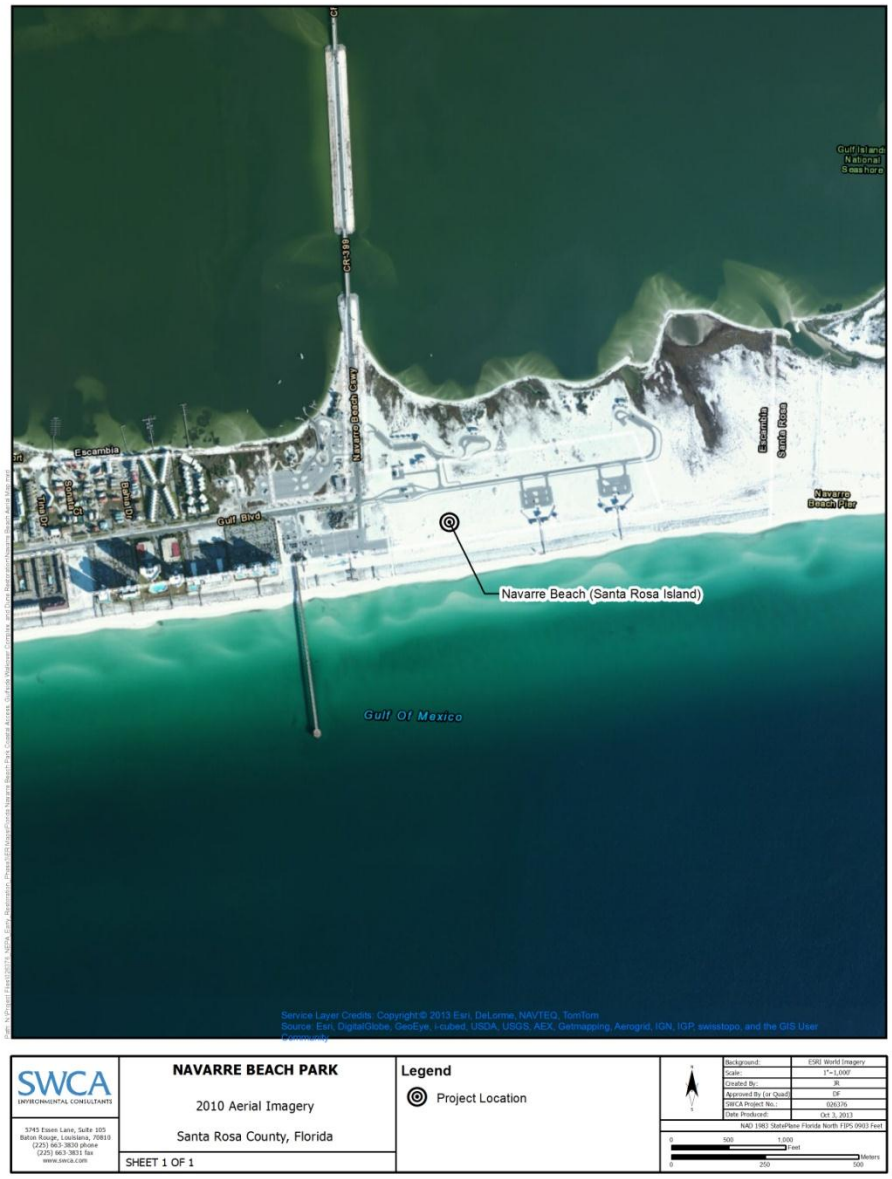


Figure 12-4. Navarre Beach Marine Park vicinity map.



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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.

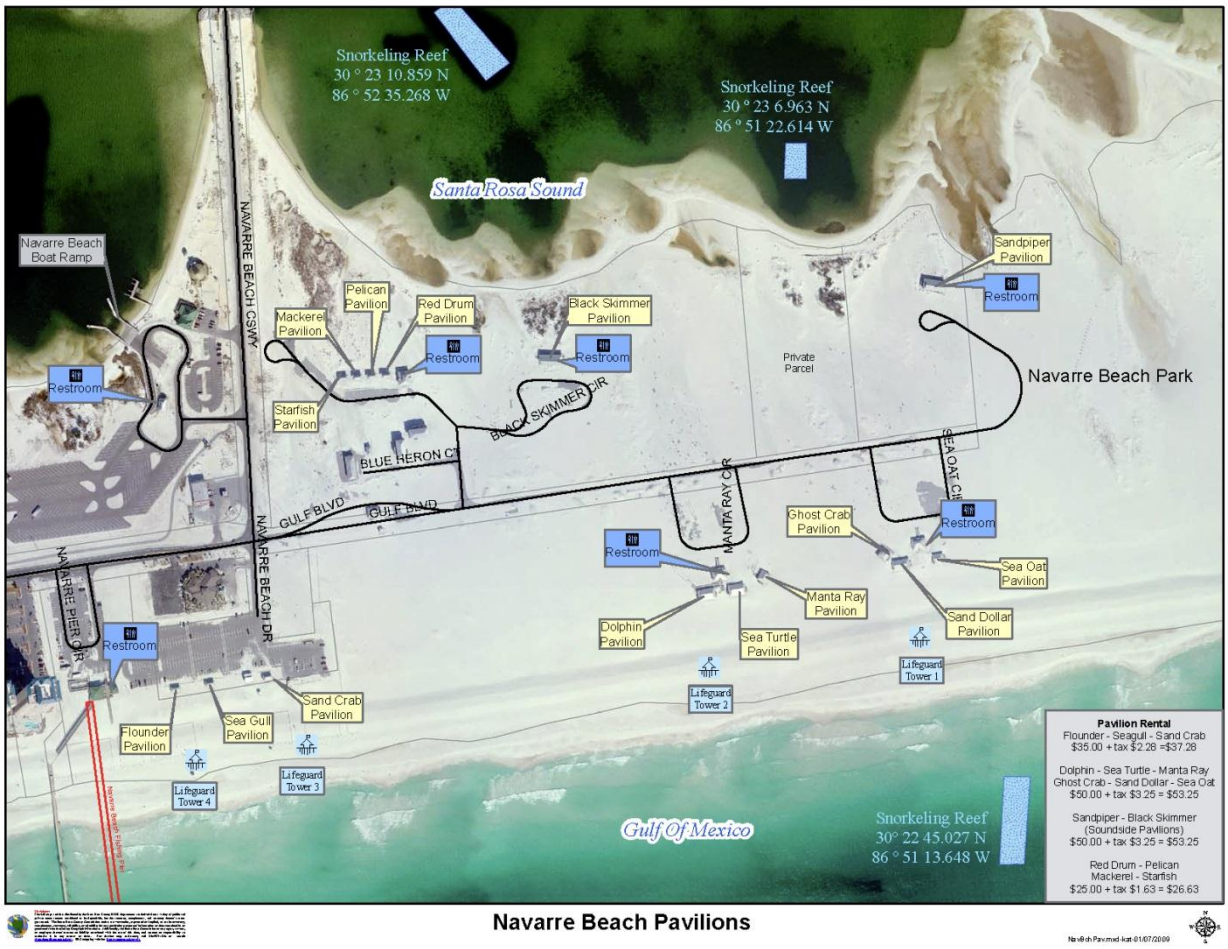

Figure 12-6. Navarre Beach Marine Park and existing facilities on Santa Rosa Island, Florida.

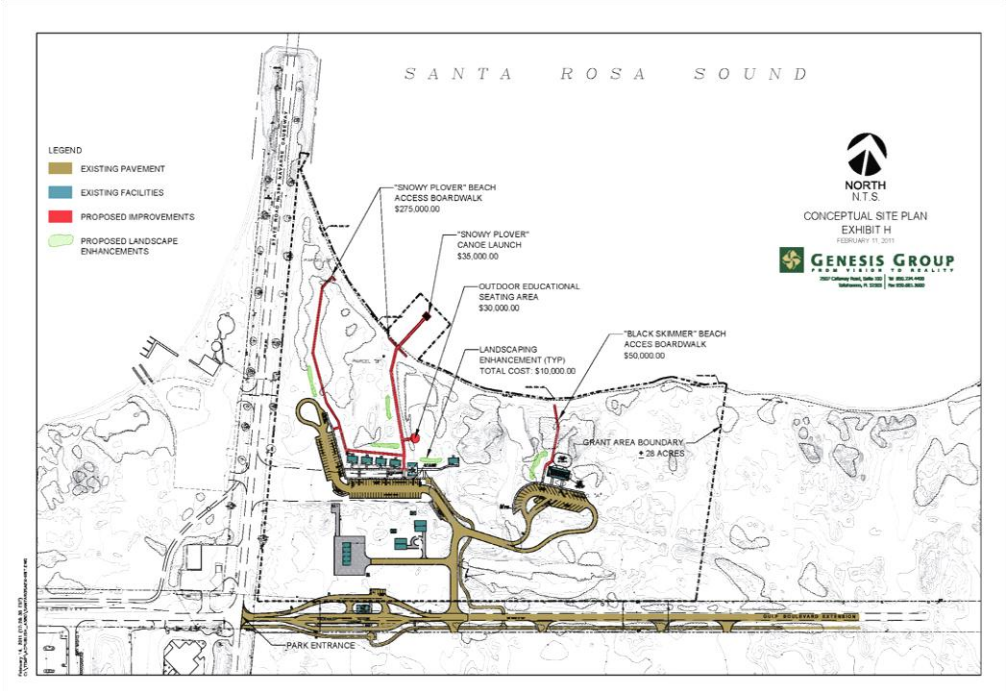

Figure 12-7. Conceptual plan for proposed soundside access improvements at Navarre Beach Marine Park on the Santa Rosa Sound.

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

12.70.15. Construction and Installation

Conceptual plans have been developed for the construction of and improvements to infrastructure described below. Most of the project would be constructed on the beach, and it includes improvements to existing facilities and addition of new facilities and infrastructure within the park footprint. Standard best management practices (BMPs) for this type of construction would be used to minimize impacts and are described below.

The project would restore approximately 1 acre of degraded dune habitat to enhance the ecological and recreational experience by helping return the area to a more natural state. This restoration would involve planting native dune vegetation where there are gaps in the existing vegetation in the project area. 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 (see Figure 12-3). 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 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 12-5 and Figure 12-6.

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.

The footprint of construction activities at most sites would remain within the footprint of the existing marine park. Construction of the dune walkover complex, including a driveway, parking area, restroom facility, lifeguard tower, pavilions, kayak/canoe launch, and beach access boardwalks, would require the disturbance of several feet of soil depth. The depth of ground disturbance would likely be up to 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. Planting dune vegetation would require some digging, likely up to several feet; the footprint of restored dune vegetation is estimated to be 1 acre.

Vegetation and soil or sand would be removed to install pilings for the boardwalk and kayak/canoe launch. No material is expected to be removed as part of dune vegetation planting. Vegetation would be planted using standard techniques and would likely include hand or mechanical auguring to create holes for plants to be placed inside.

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. Vegetation would be planted as part of the dune habitat restoration; materials and equipment associated with planting may be placed temporarily on sand near the dunes.

Construction materials would be staged for building the boardwalk and boat launch. Boardwalk materials may be permanently placed on the ground or raised above the ground surface, depending on the design. Cement, gravel, or other paving material would be permanently placed for the new kayak/canoe launch.

As work proceeds, the project area 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. 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. At most locations, construction material would be placed over asphalt or in the same location as existing structures. At undeveloped sites, paving material such as gravel, concrete, or asphalt would be placed to create the parking lot. Cement and wood would be placed to support the picnic table, and cement pilings, wood, and other construction materials may be placed to construct the dock and steps.

12.70.15.1. 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).

12.70.15.2. Construction Time Frame

Preliminary design has been completed for the dune walkovers and canoe/kayak launch. Final design, permitting, and construction of the 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: FDEP CCCL and any local permits would be obtained once funding is secured
- Contract Bid: Summer 2015
- Construction Start: Summer/Fall 2015
- Construction Compete: Summer/Fall 2016

12.70.16. 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.

12.70.17. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.17.1. No Action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.17.2. Physical Environment

12.70.17.3. 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 identifies and manages beaches of the state that are critically eroding. Navarre Beach Marine Park is identified as a state-designated critically eroded beach. A critically 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 the dune 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.

12.70.17.4. 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 Gulf side 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 short term.

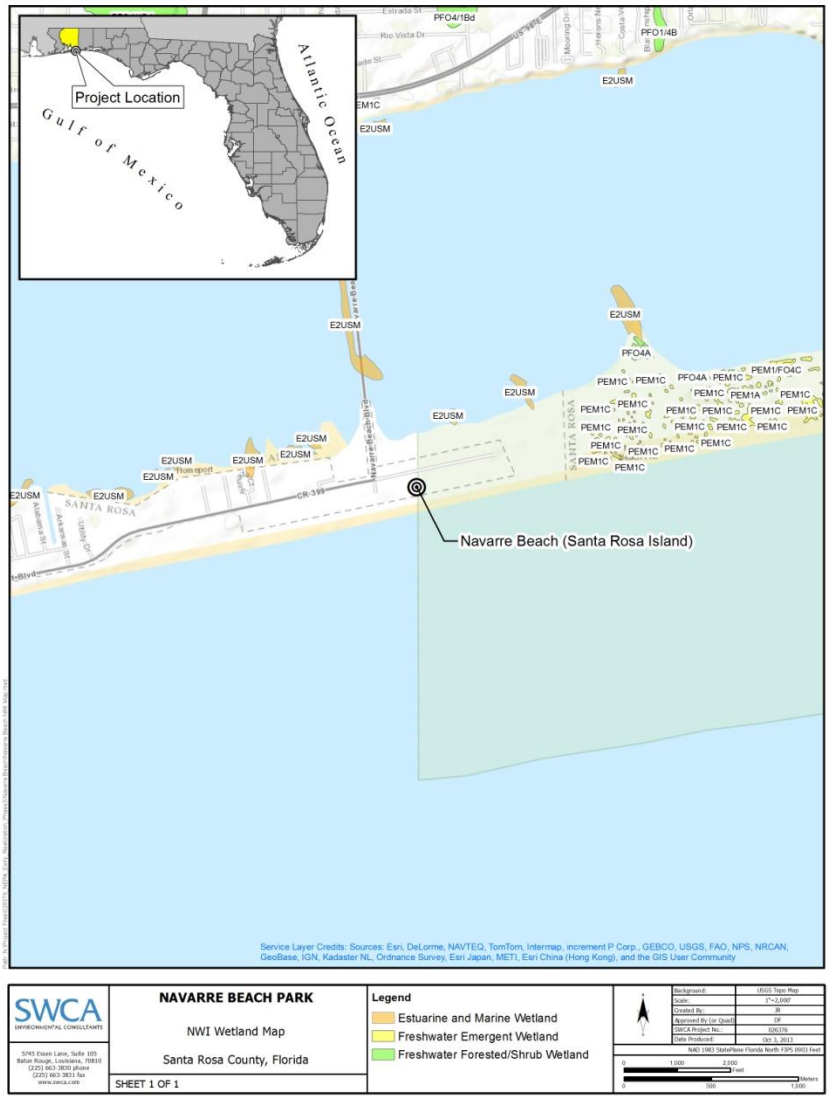

Figure 12-9. Wetlands near the Navarre Beach project site.

12.70.17.5. 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

12.70.18. 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 lawn mower 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 noise would also negatively affect tourists in areas near project construction activities.

Standard state contract provisions include restricting work to weekdays, normally from 7 am to 7 pm 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 increase in noise levels in the vicinity. Overall, long-term noise effects from traffic, beach use, boating, picnicking, and other recreational activities would remain minor.

12.70.18.1. Biological Environment

The Gulf of Mexico is 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.

12.70.18.2. 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 and federally

as “consideration encouraged.” 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-term effects 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 long term 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 Mexico provide 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 Coast beaches 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 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.

Protected species with potential to occur in the project area are listed in Table 12-5, along with their federal and state status designations and habitat descriptions.

Table 12-5. Protected species with potential to occur in the project area.

RESOURCE CATEGORY	COMMON NAME	SCIENTIFIC NAME	USFWS STATUS	STATE STATUS	NATURAL COMMUNITIES
Bird	Least tern	*Sterna antillarum*	MBTA	T	Estuarine: various Lacustrine: various Riverine: various Terrestrial: beach dune, ruderal. Nests common on rooftops. *Potential habitat present*
	Piping plover	*Charadrius melodus*	T (CH)	T	Estuarine and Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants. *Habitat present; critical habitat adjacent*
	Red knot	*Calidris canutus rufa*	P		Estuarine and Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants. *Potential habitat present*

RESOURCE CATEGORY	COMMON NAME	SCIENTIFIC NAME	USFWS STATUS	STATE STATUS	NATURAL COMMUNITIES
	Southeastern snowy plover	*Charadrius alexandrinus tenuirostris*	MBTA	T	Estuarine and Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas Breeding pairs documented at the park. *Potential habitat present*
Fish	Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T (CH)	T	Anadromous, spending part of its life in salt water but traveling upstream in freshwater rivers to spawn. Winters in the Gulf of Mexico in marine and esturine habitats. *Potential habitat present*
	Smalltooth sawfish	*Pristis pectinata*	E	E	Estuarine: various Lacustrine: river mouths and bays *Potential habitat present*
Mammals	West Indian manatee	*Trichechus manatus latirostris*	E	E	Estuarine: submerged vegetation, open water Marine: open water, submerged vegetation Riverine: alluvial stream, blackwater stream, spring-run stream *Potential habitat present*
Reptiles	Green sea turtle	*Chelonia mydas*	E	E	Terrestrial: sandy beaches; nesting *Habitat present*
	Hawksbill seat turtle	*Eretmochelys imbricata*	E	E	Marine: open water; nesting *habitat present*
	Kemp's ridley sea turtle	*Lepidochelys kempii*	E	E	Terrestrial: sandy beaches; nesting *Habitat present*
	Leatherback sea turtle	*Dermochelys coriacea*	E	E	Terrestrial: sandy beaches; nesting *Habitat present*
	Loggerhead sea turtle	*Caretta caretta*	T	T	Terrestrial: sandy beaches; nesting *Habitat present*

Source: USFWS 2013.

BGEPA=Bald and Golden Eagle Protection Act; CH=Critical Habitat; E=endangered; MBTA=Migratory Bird Treaty Act; P=proposed; SSC=species of special concern; T=threatened

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 Pearl River, 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.

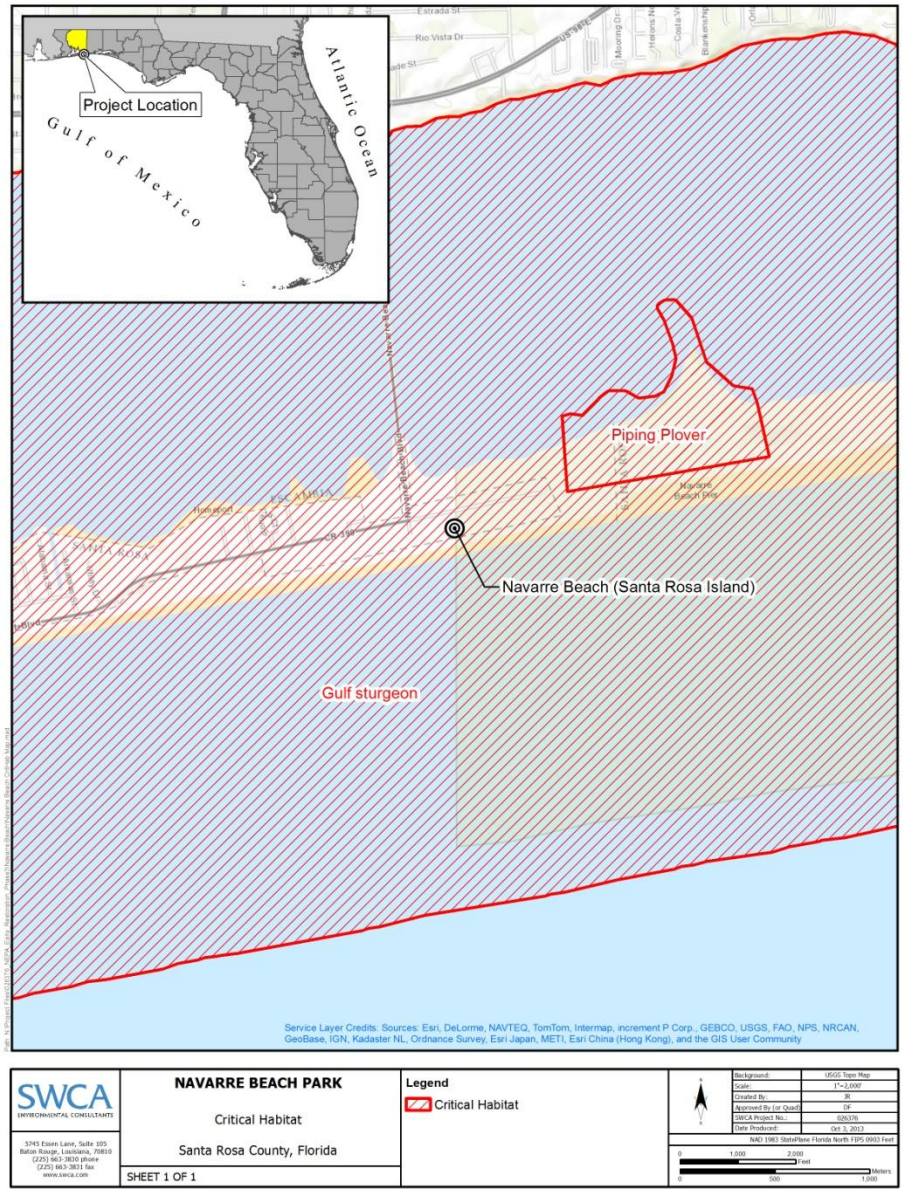

Figure 12-10. Project area Gulf sturgeon and piping plover critical habitat.

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 effects 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.

The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden. Table 12-6 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan in the vicinity of the Navarre Beach Park Coastal Access and Dune Restoration site and Santa Rosa Sound.

Table 12-6. List of species managed by NMFS in vicinity of the project study area (NMFS EFH mapper, 2013).

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Red Drum (*Sciaenops ocellatus*)	ALL	Red Drum
Highly Migratory Species		
Atlantic Sharpnose Shark	Neonate	Highly Migratory Species
Bull Shark	Juvenile, Adult	
Sandbar Shark	Adult	
Scalloped Hammerhead Shark Bull Shark	Neonate	
Silky Shark	All	
Spinner Shark	Juvenile, Adult	
Tiger Shark	Juvenile	
Shrimp		
Brown shrimp (*Penaeus aztecus*)	ALL	Shrimp
White shrimp (*Penaeus setiferus*)		
Pink shrimp (*Penaeus duararum*)		
Royal red shrimp (*Pleoticus robustus*)		
Coastal Migratory Pelagics		
King mackerel (*Scomberomorus cavalla)*	ALL	Coastal Migratory Pelagics
Spanish mackerel (*Scomberomorus maculatus*)		
Cobia (*Rachycentron canadum*)		
Dolphin (*Coryphaena hippurus*)		
Reef Fish		
Balistidae - Triggerfishes		
Gray triggerfish (Balistes capriscus)		

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Carangidae - Jacks Greater amberjack (Seriola dumerili) Lesser amberjack (Seriola fasciata) Almaco jack (Seriola rivoliana) Banded rudderfish (Seriola zonata) **Labridae - Wrasses** Hogfish (Lachnolaimus maximus) **Lutjanidae - Snappers** Queen snapper (Etelis oculatus) Mutton snapper (Lutjanus analis) Blackfin snapper (Lutjanus buccanella) Red snapper (Lutjanus campechanus) Cubera snapper (Lutjanus cyanopterus) Gray (mangrove) snapper (Lutjanus griseus) Lane snapper (Lutjanus synagris) Silk snapper (Lutjanus vivanus) Wenchman (Pristipomoides aquilonaris) Vermilion snapper (Rhomboplites aurorubens) **Malacanthidae – Tilefishes** Goldface tilefish (Caulolatilus chrysops) Blueline tilefish (Caulolatilus microps) Golden Tilefish (Lopholatilus chamaeleonticeps) **Serranidae – Groupers** Speckled hind (Epinephelus drummondhayi) Yellowedge grouper (Epinephelus flavolimbatus) Red grouper (Epinephelus morio) Warsaw grouper (Epinephelus nigritus) Snowy grouper (Epinephelus niveatus) Nassau grouper (Epinephelus striatus) Black grouper (Mycteroperca bonaci) Yellowmouth grouper (Mycteroperca interstitialis) Gag (Mycteroperca microlepis) Scamp (Mycteroperca phenax) Yellowfin grouper (Mycteroperca venenosa)	ALL	Reef Fish

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 (*Falco peregrinus tundrius*), least tern, southeastern American kestrel (*Falco sparverius paulus*), Florida sandhill crane (*Grus canadensis pratensis*), 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 March 1 to August 1. 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). 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.

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.

Sea Turtles and Marine Mammals

For projects in waters accessible to sea turtles, NFMFS has developed standardized *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS 2006). These conditions are typically applied to projects as part of the Clean Water Act Section 404 permit issued for in-water work. It is unlikely that the project site contains submerged aquatic vegetation, which is the preferred foraging habitat of sea turtles, but it cannot be ruled out entirely.

If sea turtles are present in the in-water work area, short-term disturbances from noise and turbidity would occur. Sea turtles are a highly mobile species and would be expected to move away during in-water activities. Additionally, should a sea turtle be encountered during installation of the project, the crews would allow these species to exit from the project vicinity before commencing with work activities. Therefore, potential impacts or disturbances to listed sea turtles would be short term and minor. Additionally, although Navarre Beach is in a developed area, sea turtle nesting habitat is present. Avoidance and minimization measures will be implemented to reduce impacts to nesting and hatching sea turtles, potentially including construction outside the nesting season.

Noise and other activity associated with proposed in-water construction may temporarily disturb manatees and dolphin species in the vicinity of the project area through temporary impacts on prey abundance, water quality (turbidity), and underwater noise. Dolphins are highly mobile species and would be expected to move away from the construction area during in-water activities. Standard Manatee Conditions for In-Water Work (USFWS 2011) would be implemented and adhered to during project construction. The permittee must comply with these conditions. We expect these conservation

measures would reduce impacts to marine mammals such that they are short-term and minor to manatees from the proposed project.

While it is not anticipated that any incidental harassment of marine mammals will occur as a result of this proposed project, the Trustees are conducting an evaluation of the expected magnitude and duration of underwater noise from the proposed construction techniques and their potential impacts on protected species, including marine mammals. The results of this analysis will be coordinated with NOAA's Office of Protected Resources to develop best management practices (e.g., avoidance measures, monitoring, alternate equipment) to avoid incidental harassment, or to seek incidental harassment authorization under the Marine Mammal Protection Act as appropriate. Additional coordination with NOAA under the Endangered Species Act would be conducted if any potential effects to sea turtles or other listed species are identified.

Gulf Sturgeon

The Gulf sturgeon uses Santa Rosa Sound as a migratory corridor from breeding grounds to winter foraging grounds. Minor, short-term disturbances may occur as a result of in-water work associated with the proposed project. Disturbances to the water column from in-water work would temporarily affect certain Gulf sturgeon critical habitat PCEs due to turbidity, dispersal of potential prey, and substrate disturbance. These would be limited to the area immediately surrounding the work area and would occur only during construction. Therefore, impacts to Gulf sturgeon critical habitat would be short term and minor.

Piping Plover and Red Knot

The main risks to piping plover and red knot would be from human disturbance during resting and foraging in habitats within the projectareas. The proposed project would result in short-term increases in noise, which could startle individuals, though normal activity is expected to resume within minutes; alternatively the noise is expected to cause the piping plovers and red knots to move to a nearby area as alternate available habitat is nearby. Piping plovers and red knots are highly mobile species and if disturbed by construction activities may be temporarily displaced from foraging and resting areas within normal movement patterns. These effects would be consideredshort term and minor. Conservation measures will be implemented to minimize disturbance to these species (see Chapter 12 Appendix A). Though piping plover critical habitat is nearby, the project will not change or alter PCE's; therefore, no impacts to critical habitat are expected.

Essential Fish Habitat

EFH considerations would be coordinated with the NMFS Habitat Conservation Division through a formal EFH assessment process. If necessary, species specific measures would be recommended by NMFS and would be incorporated into the project construction plan. The project would not result in adverse, direct impacts to emergent wetlands, existing oyster reefs, or Submerged Aquatic Vegetation (SAV). Most motile fauna such as crab, shrimp, and finfish will likely avoid the area of potential effect during the construction process.

The proposed canoe/kayak launch will be relatively small. A very small area of sub tidal habitat may be converted by constructing the new canoe/kayak launch; however, this will take place where recreational activities are already common and where the habitat is already likely to be disturbed as a result of those activities. The canoe/kayak launch construction may reduce shoreline habitat disturbance by providing a designated location for launching boats. Small changes to local population numbers, population structure, and other demographic factors would be unlikely to occur. Sufficient habitat would remain functional at both the local and range-wide scales to maintain the viability of the species. Therefore, the project is not likely to adversely affect EFH.

State-Listed Birds, MBTA, and BGEPA

State-listed birds such as oystercatchers or least terns may nest on beaches or mudflats in the vicinity of the project area, and miratory birds are protected under the MBTA. If restoration activities occur during the nesting season (March 1 to August 1), the birds could be disturbed by noise generated by in-water activities. 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.

In recent years, the bald eagle has been removed from the endangered species list under ESA; though it is still protected under BGEPA. In Florida, conservation measures to protect active nest sites during the nesting season must be considered to reduce potential disturbances of certain project activities.

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 bald eagle would not be impacted. All activities (staging, demolition, construction, cleanup, use of equipment, machinery, vehicles including utility terrain vehicle [UTV] and all-terrain vehicle [ATV], or boat/vessels) should avoid a bald eagle nest by a minimum of 660 feet.

Consultation with FWC concerning the proposed project and anticipated construction schedule relative to known bald eagle nest sites in the project vicinity and the nesting season in Florida (October 1 to May 15) would be required prior to commencement of project activities. To minimize potential for impacts to nesting bald eagles, the consultation protection mxxeasures may include: 1) addressing prescribed nest tree protection zones and 2) preparation of a bald eagle nest protection plan (including nesting behavior disturbance monitoring). Bald eagles have been known to tolerate certain potential disturbances in their breeding territories. Should these conservation measures be implemented for active nest sites adjacent to activities in the project area, potential impacts to the bald eagle would be short-term and minor.

Section 7 and Essential Fish Habitat Consultations

Section 7 ESA consultations with the USFWS and NMFS will be initiated for the proposed project. An EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act also would be completed to address any situations where proposed project activities may affect EFH habitat. The projects would incorporate any additional conservation recommendations provided by the NMFS and the USFWS during the consultation to avoid, minimize, mitigate, or otherwise offset the adverse effects of the proposed project on listed species or EFH.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.18.3. Human Uses and Socioeconomics

12.70.18.3.1. 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 12-7).

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 12-7. 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%
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.

12.70.18.3.2. Cultural Resources

Affected Resources

A review of the Florida Master Site File indicates that there is a single previously recorded archaeological site within 1 mile of the project area. This site, 8ES1410, is located just east of Navarre Beach and on the east side of the Navarre Beach Causeway (SR 399). The Navarre Beach Causeway was constructed in 1960. Neither the bridge nor the site has yet been evaluated for their eligibility for listing on the National Register of Historic Places (NRHP).

Environmental Consequences

A complete review of this project under Section 106 of the NHPA would be completed as environmental review continues. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.18.3.3. 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.

12.70.18.3.4. 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 area is 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.18.3.5. 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 Gulf side 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 construction due 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 a minor, 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.

12.70.18.3.6. 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 Gulf side (see Figure 12-3). 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 Gulf side 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 short term 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 Gulf side may experience a spike in use during construction on the Santa Rosa Sound side of the park. Construction of new facilities on the Gulf side of the park are not expected to divert visitors to the Santa Rosa Sound side, however, because existing facilities on the Gulf side 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 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.

12.70.18.3.7. 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.

12.70.19. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Navarre Beach Park Coastal Access project and the Navarre Beach Park Gulfside Walkover Complex project implement restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 the public's use and/or enjoyment of the natural resources by constructing new infrastructure for recreational opportunities and by improving beach access. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on these projects will be included in the final Phase III ERP/PEIS and Record of Decision.

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Gulf Breeze Wayside Park Boat Ramp: Project Description

12.70.21. 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.

12.70.22. 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 the public's use and/or enjoyment of the natural resources by improving the boat ramp area. The restoration work proposed includes repairing the existing boat ramp and seawall cap, constructing a public restroom facility, and repairing and enhancing the parking area to improve access.

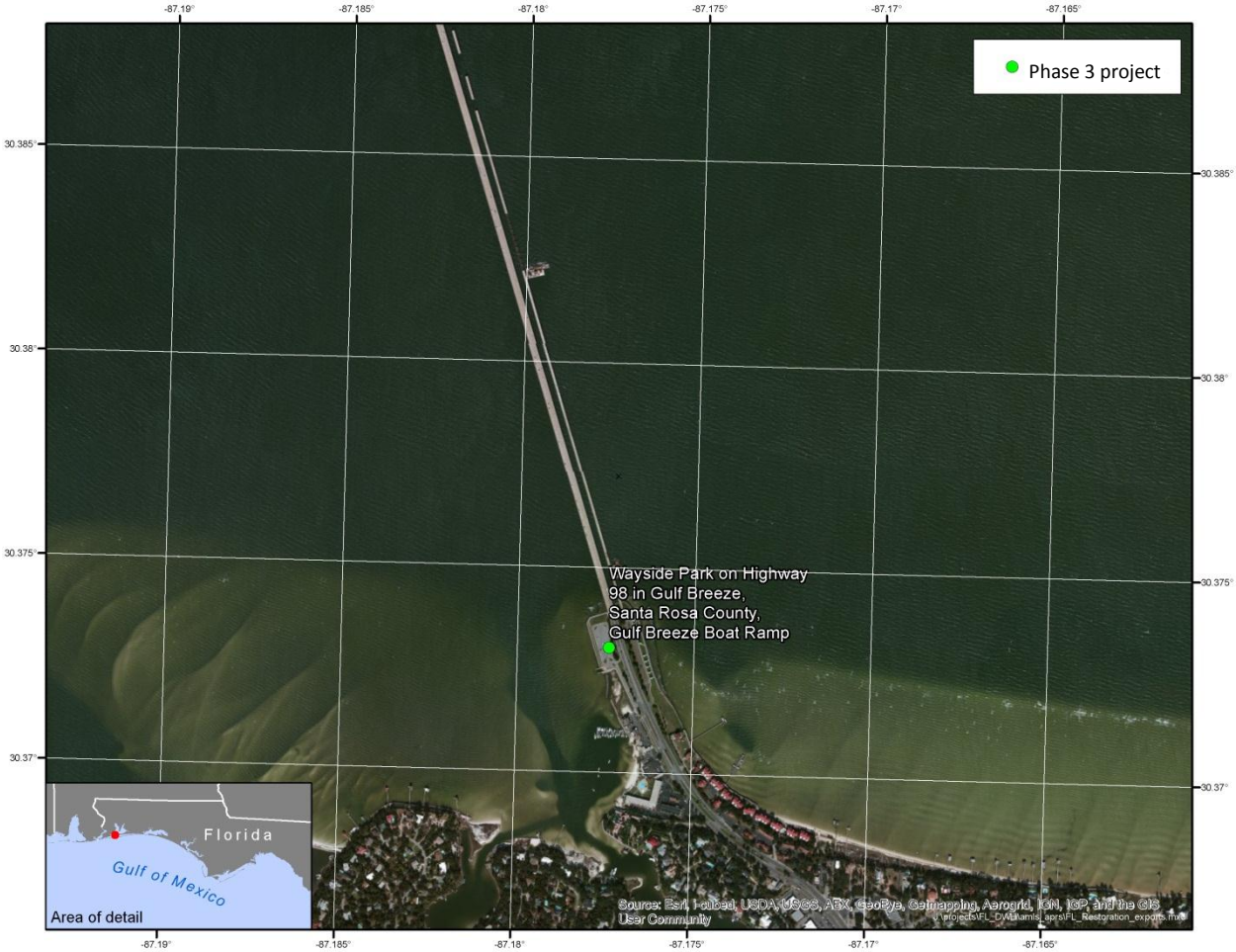

Figure 12-11. Location of Gulf Breeze Wayside Park boat ramp improvements project.

12.70.23. 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 their natural resources along Florida's Panhandle was denied or severely restricted. This project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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.

12.70.24. 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 the public's use and/or enjoyment of the natural resources 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 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 Breeze staff 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.

12.70.25. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $619,338 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.[3]

12.70.26. 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.

[3] 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.

Gulf Breeze Wayside Park Boat Ramp: Environmental Review

12.70.27. 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.

12.70.28. 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.

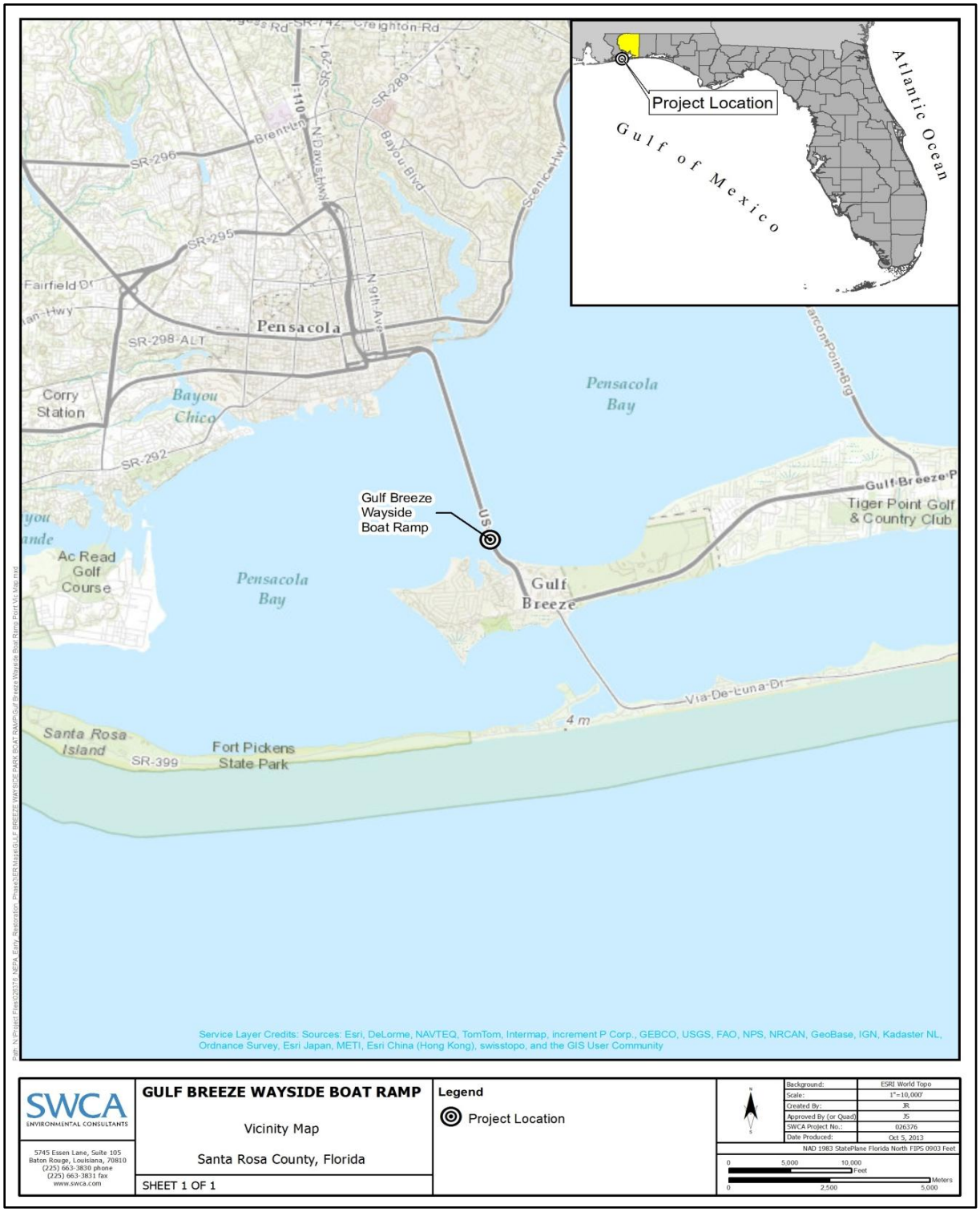

Figure 12-12. Wayside Park public boat ramp on U.S. Highway 98 in Gulf Breeze, Santa Rosa County, Florida.

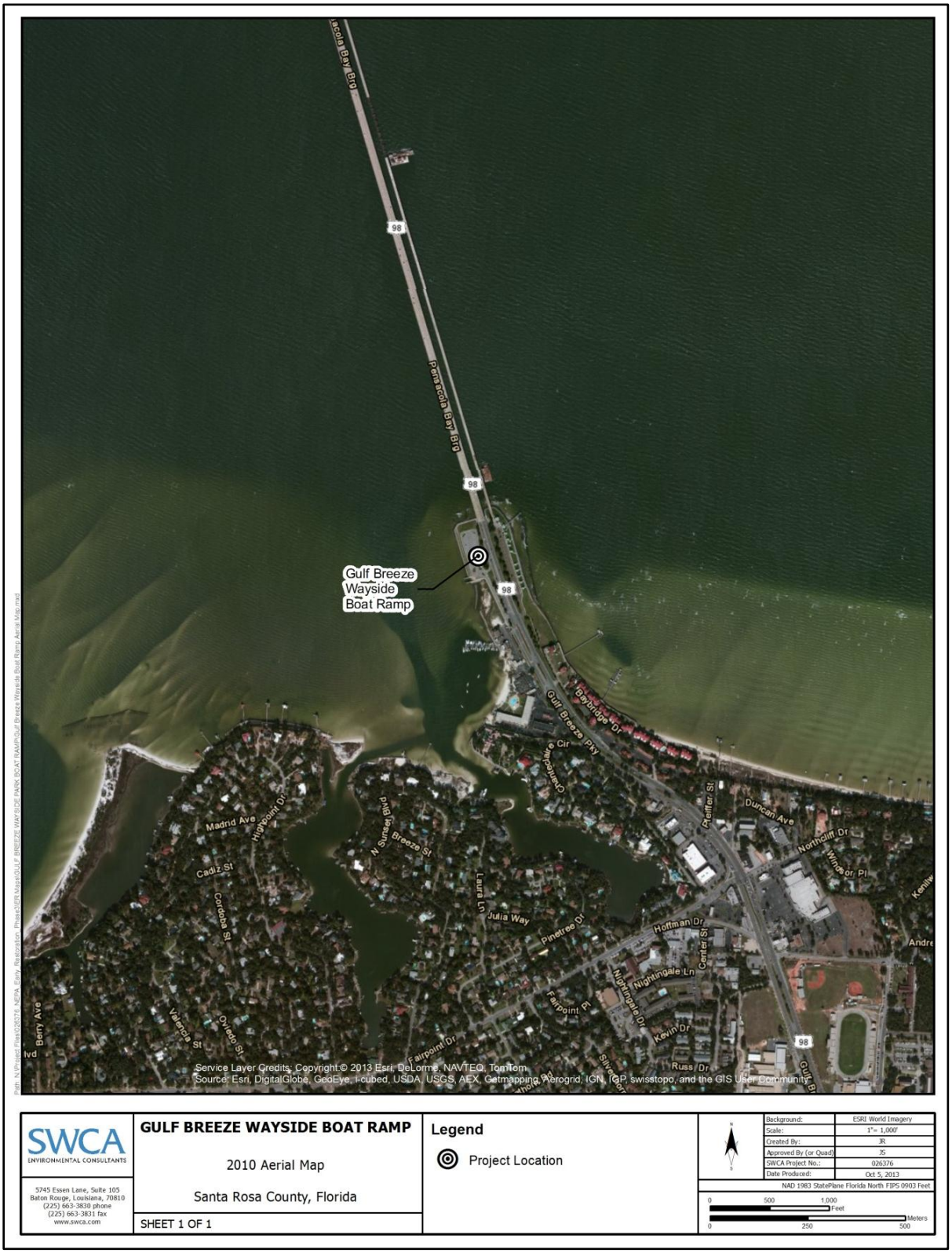

Figure 12-13. Wayside Park public boat ramp aerial map.

12.70.29. Construction and Installation

Many public boat ramps were used to stage and deploy oil spill response resources during the *Deepwater Horizon* oil spill. This use, combined with the overall public concern regarding oil pollution, resulted in loss of public use and enjoyment of local waterways

The proposed project would repair cracks and damages at the approximately 2-acre existing boat ramp site. The proposed project consists of repairing the boat ramp and seawall cap, installing a restroom facility, and repairing and enhancing the asphalt parking area for improved access and Americans with Disabilities Act (ADA) compliance.

12.70.29.1. Repairs to Boat Ramp and Seawall

The proposed project would utilize standard construction methods to repair the existing Wayside Park public boat ramp and seawall cap that were previously damaged. 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 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. 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. See Figure 12-14 for a photograph of existing boat ramp and seawall conditions.

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

Figure 12-14. Existing boat ramp and seawall.

12.70.29.2. Enhancements to Parking Area and Construction of Restroom Facilities

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. Some demolition and debris removal may be required during repairs and enhancements to the existing

structures. 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. Construction of the parking area and restroom facilities would take place completely within the footprint of the existing 2-acre developed site, and there would be no expansion outside of that area as a result of this project. See Figure 12-15 for a photograph of current parking area conditions.

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

Figure 12-15. Boat ramp parking area.

12.70.29.3. Anticipated Construction Schedule

Construction is anticipated to take between 4 and 6 months for all aspects of repairs and enhancements. A full schedule would be dependent on the date funding becomes available, contractor award, and any species-specific restrictions required from reviews pursuant to the Endangered Species Act of 1973, as amended (16 United States Code [USC] 1531 et seq.) (ESA). Species-specific issues and best management practices (BMPs) are being addressed with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) as part of separate ESA reviews.

12.70.29.4. Best Management Practices

Turbidity levels would be monitored during construction. BMPs would be implemented if turbidity levels exceed local and state regulatory/permit levels. The Florida Department of Environmental Protection (FDEP) permit conditions 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. If turbidity thresholds are exceeded, the project would stop to stabilize soils, modify work procedures and notify the FDEP. In addition to

specific measures noted above, the project would adhere to recommendations for sea turtle and smalltooth sawfish construction conditions (NMFS 2006) as well as the Standard Manatee Conditions for In-Water work (USFWS 2011)and any applicable federal and state permit conditions. In addition, BMPs recommended through the ESA consultation process to avoid impacts to Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and other protected species would be implemented.

12.70.30. 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.

12.70.31. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.31.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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

12.70.31.1.1. 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.

12.70.31.1.2. 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.

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 effects to wetlands south of the project area. If impacts to the adjacent wetlands are unavoidable during construction, detailed impact statements to wetland resources would need to be included in CWA Section 404 permits issued for this project. Short-term, minor, direct impacts could result from project implementation; however, no long-term adverse effects would be anticipated.

12.70.31.1.3. 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 12-8). 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.

Table 12-8. 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
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).

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.

12.70.31.1.4. 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 12-9 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-9. 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.

12.70.31.2. Biological Environment

12.70.31.2.1. 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 effects 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 effects 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 effects 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 federally listed threatened and endangered species that may occur in or near the project area nclude five species of sea turtles, West Indian manatee (*Trichechus manatus*), and Gulf sturgeon (*Acipenser oxyrinchus desotoi*). A list of federally designated threatened, endangered, and candidate wildlife species known or believed to occur in the vicinity of the proposed project area is below in Table 12-10.

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 Pearl River, 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 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).

Table 12-10. Protected species with potential to occur in the project area.

Resource Category	Common Name	Scientific Name	USFWS Status	State Status	Natural Communities
Birds	Least tern	*Sterna antillarum*	MBTA	T	Estuarine: various Lacustrine: various Riverine: various Terrestrial: beach dune, ruderal. Nests common on rooftops. **Potential habitat present**
Birds	Southeastern snowy plover	*Charadrius alexandrines tenuirostris*	MBTA	T	Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas **Potential habitat present**
Fish	Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T (CH)	T	Estuarine: various Marine: various habitats Riverine: alluvial and blackwater streams **Potential habitat present**
Fish	Smalltooth sawfish	*Pristis pectinata*	E	E	Estuarine: various Lacustrine: river mouths and bays **Potential habitat present**
Mammals	West Indian manatee	*Trichechus manatus latirostris*	E	E	Estuarine: submerged vegetation, open water Marine: open water, submerged vegetation Riverine: alluvial stream, blackwater stream, spring-run stream **Potential habitat present**
Reptiles	Green turtle	*Chelonia mydas*	E	E	Terrestrial: sandy beaches; no nesting habitat present **Potential marine habitat present**
Reptiles	Hawksbill turtle	*Eretmochelys imbricata*	E	E	Marine: open water; no nesting habitat present **Potential marine habitat present**
Reptiles	Kemp's ridley turtle	*Lepidochelys kempii*	E	E	Terrestrial: sandy beaches; no nesting habitat present **Potential marine habitat present**

Resource Category	Common Name	Scientific Name	USFWS Status	State Status	Natural Communities
Reptiles	Leatherback turtle	*Dermochelys coriacea*	E	E	Terrestrial: sandy beaches; no nesting habitat present **Potential marine habitat present**
Reptiles	Loggerhead turtle	*Caretta caretta*	T	T	Terrestrial: sandy beaches; no nesting habitat present **Potential marine habitat present**

CH=Critical Habitat; E=endangered; MBTA=Migratory Bird Treaty Act; P=proposed; T=threatened

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 effects 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.

The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden. Table 12-11 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 12-11. List of species managed by NMFS in vicinity of the project study area (NMFS EFH mapper, 2013).

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Red Drum (*Sciaenops ocellatus*)	ALL	Red Drum
Highly Migratory Species Atlantic Sharpnose Shark Sandbar Shark Scalloped Hammerhead Shark SpinerShark Tiger Shark	 Neonate Neonate, Adult Neonate Adult Neonate, Juvenile	Highly Migratory Species
Shrimp Brown shrimp (*Penaeus aztecus*) White shrimp (*Penaeus setiferus*) Pink shrimp (*Penaeus duararum*) Royal red shrimp (*Pleoticus robustus*)	ALL	Shrimp

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Coastal Migratory Pelagics King mackerel (*Scomberomorus cavalla)* Spanish mackerel (*Scomberomorus maculatus*) Cobia (*Rachycentron canadum*) Dolphin (*Coryphaena hippurus*)	ALL	Coastal Migratory Pelagics
Reef Fish **Balistidae - Triggerfishes** Gray triggerfish (Balistes capriscus) **Carangidae - Jacks** Greater amberjack (Seriola dumerili) Lesser amberjack (Seriola fasciata) Almaco jack (Seriola rivoliana) Banded rudderfish (Seriola zonata) **Labridae - Wrasses** Hogfish (Lachnolaimus maximus) **Lutjanidae - Snappers** Queen snapper (Etelis oculatus) Mutton snapper (Lutjanus analis) Schoolmaster (Lutjanus apodus) Blackfin snapper (Lutjanus buccanella) Red snapper (Lutjanus campechanus) Cubera snapper (Lutjanus cyanopterus) Gray (mangrove) snapper (Lutjanus griseus) Lane snapper (Lutjanus synagris) Wenchman (Pristipomoides aquilonaris) Vermilion snapper (Rhomboplites aurorubens) **Malacanthidae – Tilefishes** Goldface tilefish (Caulolatilus chrysops) Blackline tilefish (Caulolatilus cyanops) Blueline tilefish (Caulolatilus microps) **Serranidae – Groupers** Speckled hind (Epinephelus drummondhayi) Yellowedge grouper (Epinephelus flavolimbatus) Red grouper (Epinephelus morio) Warsaw grouper (Epinephelus nigritus) Snowy grouper (Epinephelus niveatus) Nassau grouper (Epinephelus striatus) Marbled grouper (Epinephelus inermis) Black grouper (Mycteroperca bonaci) Yellowmouth grouper (Mycteroperca interstitialis) Gag (Mycteroperca microlepis) Scamp (Mycteroperca phenax) Yellowfin grouper (Mycteroperca venenosa)	ALL	Reef Fish

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 March 1 to August 1.

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).

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.

Sea Turtles and Marine Mammals

For projects in waters accessible to sea turtles, NMFS has developed standardized sea turtle and smalltooth sawfish construction conditions (NMFS 2006). These conditions are typically applied to projects as part of the USACE CWA Section 404 permit issued for in-water work. It is unlikely that the proposed project site contains submerged aquatic vegetation which is the preferred foraging habitat of sea turtles, but it cannot be entirely ruled out.

If sea turtles are present in the in-water work area, short-term disturbances from noise and turbidity would occur. Sea turtles are a highly mobile species and would be expected to move away during in-water activities. Additionally, should a sea turtle be encountered during installation of the project, the crews would allow it to exit from the project vicinity before commencing with boat ramp and seawall repair activities. Therefore, potential impacts or disturbances to listed sea turtles would be short-term and minor.

Noise and other activity associated with proposed in-water construction may temporarily disturb manatees and dolphin species in the vicinity of the project area through temporary impacts on prey abundance, water quality (turbidity), and underwater noise. The Standard Manatee Conditions for In-Water Work (USFWS 2011) would be implemented and adhered to during project construction. The permittee must comply with these conditions and it is anticipated that these conservation measures would significantly reduce impacts to manatees from the proposed project such that any would be short-term and minor. Dolphins are highly mobile species and would be expected to move away from

the construction area during in-water activities. The Wayside Park Boat Ramp Project would adhere to all applicable federal, state, and local permit conditions for the protection of marine mammals and would only have short-term and minor effects on any marine mammals during construction.

Smalltooth Sawfish, Gulf Sturgeon, and Gulf Sturgeon Critical Habitat

The smalltooth sawfish is a mobile species and is relatively rare in northern Gulf waters and the immediate project area. The Gulf sturgeon utilizes Pensacola Bay as a migratory corridor from breeding grounds to winter foraging grounds. Minor short-term disturbances may occur as a result of in-water work associated with the proposed project. For projects in waters accessible to the smalltooth sawfish and Gulf sturgeon, the project would comply with NMFS smalltooth sawfish construction conditions (NMFS 2006).

Disturbances to the water column from in-water work would temporarily affect certain Gulf sturgeon critical habitat primary constituent elements due to turbidity, dispersal of potential prey, and substrate disturbance. These would be limited to the area immediately surrounding the work area and would occur only during construction. Therefore, impacts to Gulf sturgeon critical habitat would be short-term and minor.

Essential Fish Habitat

An EFH assessment will be coordinated with the NMFS Habitat Conservation Division. If necessary, species specific measures would be recommended by NMFS and would be incorporated into the project construction plan. The project would not result in adverse, direct impacts to emergent wetlands, existing oyster reefs, or Submerged Aquatic Vegetation (SAV). Most motile fauna such as crab, shrimp, and finfish will likely avoid the area of potential effect during the construction process. Following construction, there is expected to be increased habitat utilization of the breakwaters and near-shore environment by these species and a beneficial, long-term impact is anticipated. The project may result in minor, adverse short term impacts to benthic organisms and temporarily affect habitat utilization by individuals considered under EFH fishery management plans.

The proposed boat ramp and seawall cap repairs will take place within the footprint of the existing structures. Construction activities may 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. Therefore, the project is not likely to adversely affect EFH.

State-listed Birds, MBTA, and BGEPA

Migratory birds may be resting or foraging at or near the project site. 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 (March 1 to August 1), they could be disturbed by noise generated by terrestrial and in-water activities. This would be a short-term, minor adverse impact to bird species. To avoid any adverse effects, construction within 150 feet of suitable nesting habitat would be avoided during the nesting season. If construction cannot avoid the nesting season, a preconstruction survey would be conducted by a qualified biologist, and if nesting birds were to be identified within 300 feet of project activities, the FWC and USFWS would be contacted regarding setting up appropriate buffers to ensure no effects to nesting birds would occur. Therefore, impacts to migratory birds are expected to be short term and minor.

There is only one known bald eagle nest within 10 miles of the proposed project site. Based on the distance from proposed project activities, nesting of the known occurrence of bald eagle would not be impacted.

Section 7 and Essential Fish Habitat Consultations

Section 7 ESA consultations with the USFWS and NMFS will be initiated for the proposed project. An EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act also would be completed to address any situations where proposed project activities may affect EFH habitat. The project would incorporate any additional conservation recommendations provided by the NMFS and the USFWS during the consultation to avoid, minimize, mitigate, or otherwise offset the adverse effects of the proposed project on listed species or EFH.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12

Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor

12.70.31.3. Human Uses and Socioeconomics

12.70.31.3.1. 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 12-12 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 12-12. 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.

12.70.31.3.2. 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.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA would be completed as environmental review continues. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.31.3.3. 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.

12.70.31.3.4. 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 effects to land use or management and the project would be consistent with current land use.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.31.3.5. 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.

12.70.31.4. 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.

12.70.31.4.1. 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.

12.70.32. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Gulf Breeze Wayside Park Boat Ramp Improvements project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by improving the boat ramp area. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

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

12.70.34. 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.

12.70.35. 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 the public's use and/or enjoyment of the natural resources by improving and enhancing 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.

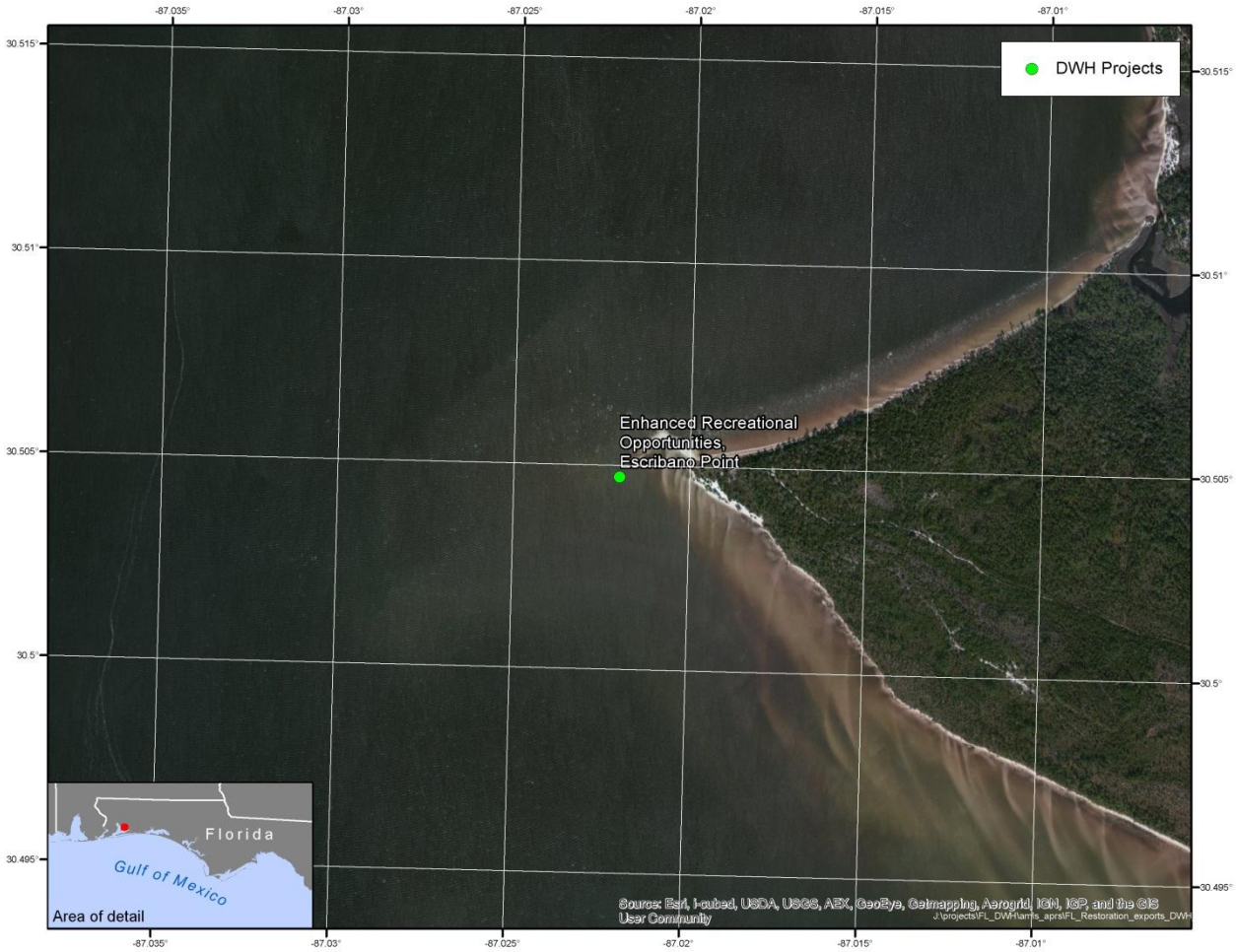

Figure 12-16. Location of developing enhanced recreational opportunities on the Escribano Point portion of the Yellow River Wildlife management area project.

12.70.36. 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 their natural resources along Florida's Panhandle was denied or severely restricted. This project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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.

12.70.37. 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 improve the public's use and/or enjoyment of the natural resources 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 construction of 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 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.

12.70.38. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $5,152,730 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.[4]

12.70.39. 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.

[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.

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, picnicking facilities, primitive camping sites, wildlife viewing areas, and bear-proof containers for trash and food storage.

12.70.40. 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.

12.70.41. 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 project location.

Figure 12-17. Project location map.

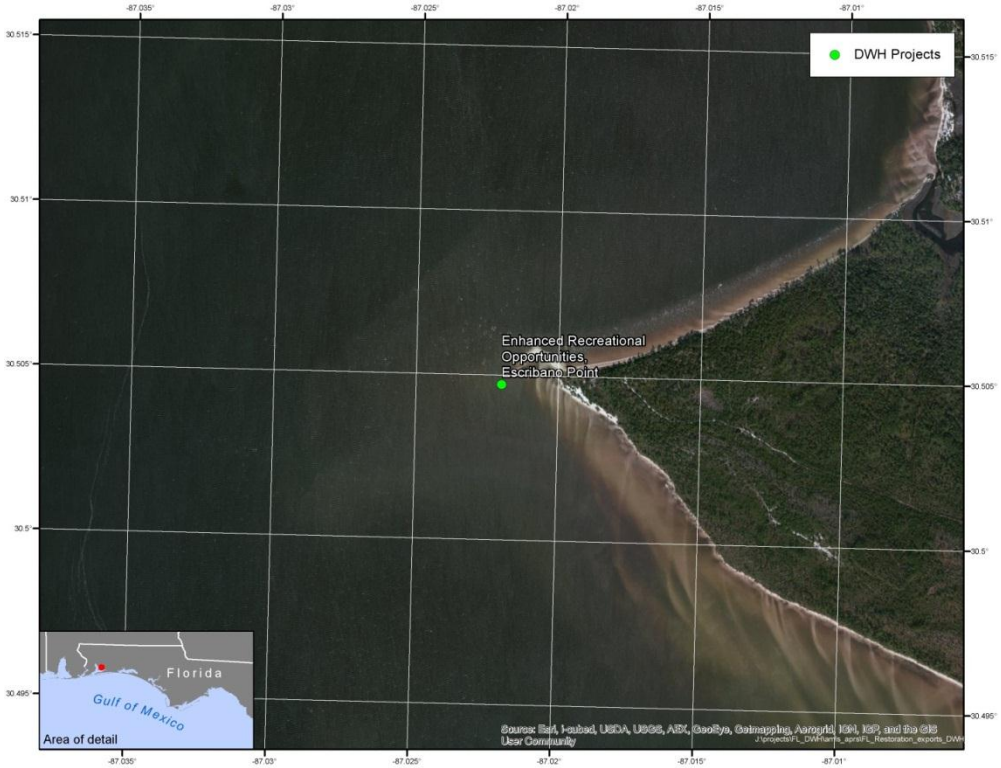

Figure 12-18. Detailed Project location map.

12.70.42. Construction and Installation

Proposed construction and installation associated with developing enhanced recreation opportunities at Escribano Point include the following:

- Construction of an entrance kiosk, information station, and parking lot and facilities. While, the design and exact location for each of the above-mentioned aspects is not yet known, the maximum footprint needed for the sum of all the projects is approximately 1 to 1.5 acres with the most likely location to be on a disturbed site, adjacent to a silviculture road. Figure 12-19 shows a prototypical design of a typical entrance package including a kiosk and sign. The proposed parking lot would be unpaved.

Construction of a parking lot, interpretive signs, and fishing and picnicking facilities at the North Beach Hammock. The proposed picnic area and unpaved parking lot would be located in a predisturbed coastal oak hammock with the entire project area being accessible by an existing silviculture road and a new unpaved road as part of this project. The total footprint of all disturbances 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.

- Construction of five primitive campsites and placement of bear-proof containers. Each campsite is expected to be approximately 400 square feet with a fire ring and bear-proof container. Sites

would be located where there are existing clearings. 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.

- Construction of a parking lot, interpretive signs, and fishing and picnicking facilities at Escribano Point. Picnicking facilities would be located in an already disturbed coastal oak hammock, and the facilities and interpretive signs would be accessible by an existing silviculture road that is part of this project. The total footprint of disturbance is anticipated to be less than 1 acre.
- The construction of wildlife viewing trails and an elevated wildlife viewing structure would be sited 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 three proposed sites for parking. Figure 12-23 shows an example of a wildlife viewing trail.
- Construction of a shop support facility would consist of a metal building and fences compound. Utilities would be provided by an on-site power generator since no existing utilities serve the site. Total project footprint is expected to be less than 2 acres. Figure 12-24 shows a typical shop.

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 12-13.

Table 12-13. 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.

12.70.43. 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

12.70.44. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.44.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.44.2. Physical Environment

12.70.44.2.1. 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.

12.70.44.2.2. 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 of special protection due to natural attributes. An OFW is designated by the Florida Department of Environmental Protection after approval of the Environmental Regulation Commission (ERC), once it is determined that the environmental, social, and economic benefits 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 for OFWs. 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 will not issue permits for direct pollutant discharges to OFWs, which would lower ambient (existing) water quality, 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 been impacted 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; 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.

12.70.44.2.3. 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 12-14, 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 12-14. 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 12-15, 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.

12.70.44.2.4. Noise

Affected Resources

Noise can be defined as unwanted sound and noise levels, and impacts are interpreted in relationship to its effects 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 12-16 presents some familiar sounds and their decibel levels.

Table 12-15. Projected project GHG emissions.

VESSEL/CONSTRUCTION EQUIPMENT5	NO. OF HOURS OPERATED6	CO_2 (METRIC TONS)7	CH_4 (CO_2E) (METRIC TONS)8	NOX (CO_2E) (METRIC TONS)	TOTAL CO_2E (METRIC TONS)
Trackhoe9	2,640	924	.26	.26	924.52
Crane	720	209	.07	.07	209.14
Grader	720	281	.22	.22	281.44
Dumptruck (2)1011	2,640	1,795	1.06	1.06	1,797.12
TOTAL					**3,212.22**

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

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

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

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

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

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

[11] 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 12-16. 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.

12.70.44.3. Biological Environment

12.70.44.3.1. 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. Based on existing literature and information provided by the USFWS 127 fish species have been known to occur in the vicinity of the project site. In addition, to fish 39 amphibian species, 46 species of reptiles, 111 bird species and 34 mammals have been known to occur in the area surrounding Escribano Point. Several of these species are classified as endangered, threatened or as species of special concern and are listed below.

Species identified include:

- Bluenose shiner *(Pteronotropis welaka);*
- Gulf sturgeon *(Acipenser oxyrinchus desotoi) and its critical habitat;*
- Saltmarsh topminnow *(Fundulus jenkisi);*
- Florida black bear *(Ursus americanus floridanus); and,*
- Bald eagle *(Haliaeetus leucocephalus)*.

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

Section 7 consultation will be initiated with the USFWS and a review will be conducted to determine if migratory birds or bald eagles would be nesting on or near the project site. The Trustees will implement any conservation measures that are recommended during theses consultations to avoid and minimize impacts to biological resources such that they are short term and minor.

Effects 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 BMPs would be followed to 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 long term 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 long term and minor. Consultation to determine potential effects 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.

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 effects 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 project is located in uplands above the mean high- tide line, therefore no EFH is located within the project footprint.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.44.4. Human Uses and Socioeconomics

12.70.44.4.1. 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 County was $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 effects 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.

12.70.44.4.2. Cultural Resources

Affected Resources

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 would be completed as environmental review continues. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.44.4.3. 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 energy consumption in the vicinity of the proposed project area. The proposed project would not prevent access to any known energy resources in the project vicinity, such as coal, oil, or natural gas. The project would have no such impacts on the availability 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.

12.70.44.5. 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

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.

12.70.44.5.1. 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 backhoes removal would temporarily obstruct the views for visitors and recreational users at the site. These short-term construction-related impacts to visual resources would be minor.

12.70.44.6. 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.

12.70.45. Public Health and Safety and Shoreline Protection5

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 12-26. 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 effects 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.

12.70.46. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River Wildlife Management Area project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by improving and enhancing the recreational use of the land. The Trustees have started coordination and

reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

12.70.47. References

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.

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.

Norriego Point Restoration and Recreation Project: Project Description

12.70.48. 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.

12.70.49. 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 the public's use and/or enjoyment of the natural resources by 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 work proposed 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.

12.70.50. 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 their natural resources along Florida's Panhandle was denied or severely restricted. The project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response activities. 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. 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.

12.70.51. 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 the public's use and/or enjoyment of the natural resources 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 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.

12.70.52. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $20,456,260 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.[12]

12.70.53. 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.

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[12] 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.

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.

12.70.54. 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.

12.70.55. 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.

12.70.56. 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 fill 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 12-30 for the layout of these improvements.

Additionally, facilities would be constructed and would include 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 adjacent to the park land. This road is to be built by a private property owner as part of the owner's development order.

Sand fill material would be placed behind the renovated and new erosion control structures; the source of the fill material would be dredge material obtained during maintenance dredging of the navigation channels in the area. 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 effects of the construction.

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. Other work would be done from uplands, possibly using the existing parking lot as a staging ground.

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

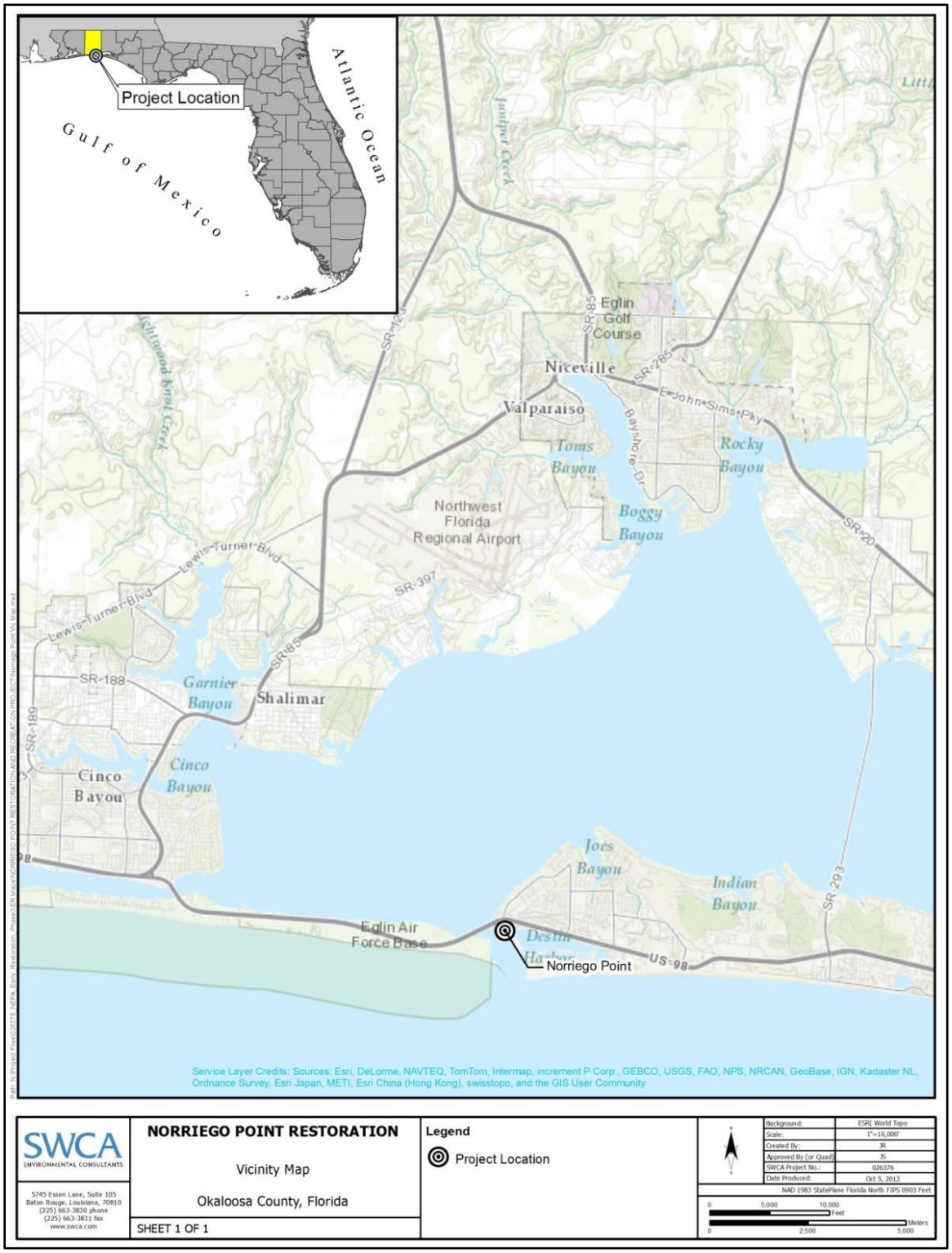

Figure 12-29. Project vicinity map.

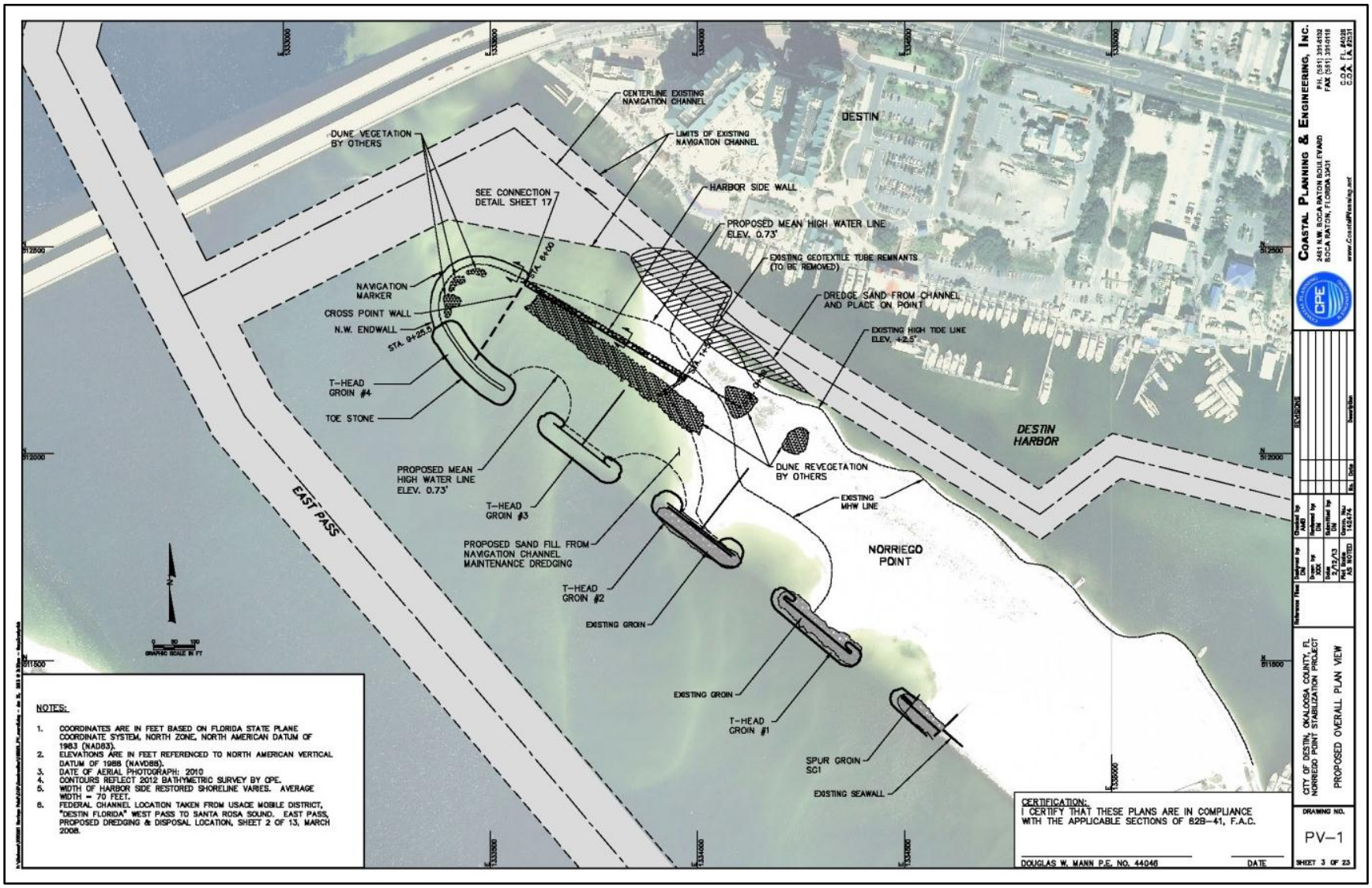

Figure 12-30. Layout of existing and proposed erosion control structures.

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. 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 steel sheet pile would be covered with a concrete cap.

The project 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.

The timing of in-water construction has not been finalized. The selected contractor would provide a construction schedule prior to beginning work. Project construction would take approximately 9 to 12 months, including in-water and upland work. All appropriate permit conditions and BMPs would be followed to ensure that potential impacts to species are adequately addressed and minimized.

12.70.57. 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.

12.70.58. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.58.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.58.2. Physical Environment

12.70.58.2.1. 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.

12.70.58.2.2. 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 area are 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.

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.

12.70.58.2.3. 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 12-17).

Table 12-17. 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 12-17 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.

12.70.58.2.4. Noise

Affected Resources

Noise can be defined as unwanted sound and noise levels, and its effects are interpreted in relation to effects 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 12-18 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-18. 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 increase in noise levels in the vicinity. Overall, long-term noise effects from boating and other recreational activities would remain minor.

12.70.58.3. Biological Environment

12.70.58.3.1. 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 effects 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 effects 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 federally listed threatened and endangered species reported for the project area in Okaloosa County include five species of sea turtles, West Indian manatee, piping plover (*Charadrius melodus*), and Gulf sturgeon (*Acipenser oxyrinchus desotoi*), and one proposed species, red knot (*Calidris canutus rufa)* (USFWS 2013b). A list of federally designated threatened, endangered, and candidate wildlife species known or believed to occur in the project area is below in Table 12-19.

Table 12-19. Protected species with potential to occur in the project area.

Resource Category	Common Name	Scientific Name	USFWS Status	State Status	Natural Communities
Birds	Least tern	*Sterna antillarum*	MBTA	T	Estuarine: various Lacustrine: various Riverine: various Terrestrial: beach dune, ruderal. Nests common on rooftops. **Potential habitat present**
Birds	Piping plover	*Charadrius melodus*	T (CH)	T	Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants **Potential habitat present**
Birds	Red knot	*Calidris canutus rufa*	P		Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants **Potential habitat present**
Birds	Southeastern kestrel	*Falco sparveriuspaulus*	MBTA	T	Estuarine: various habitats Palustrine: various habitats Terrestrial: open pine forests, clearings, ruderal, various **Potential habitat present**
Birds	Southeastern snowy plover	*Charadrius alexandrines tenuirostris*	MBTA	T	Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas **Potential habitat present**
Birds	Wood stork	*Mycteria americana*	E	E	Estuarine: marshes Lacustrine: floodplain lakes, marshes (feeding), various Palustrine: marshes, swamps, various **Potential habitat present**
Fish	Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T (CH)	T	Estuarine: various Marine: various habitats Riverine: alluvial and blackwater streams **Potential habitat present**
Mammals	West Indian manatee	*Trichechus manatus latirostris*	E	E	Estuarine: submerged vegetation, open water Marine: open water, submerged vegetation Riverine: alluvial stream, blackwater stream, spring-run stream **Potential habitat present**
Reptiles	Green turtle	*Chelonia mydas*	E	E	Terrestrial: sandy beaches, nesting **Potential marine habitat present**
Reptiles	Hawksbill turtle	*Eretmochelys imbricata*	E	E	Marine: open water, no nesting **Potential marine habitat present**
Reptiles	Kemp's ridley turtle	*Lepidochelys kempii*	E	E	Terrestrial: sandy beaches, nesting **Potential marine habitat present**
Reptiles	Leatherback turtle	*Dermochelys coriacea*	E	E	Terrestrial: sandy beaches; nesting **Potential marine habitat present**
Reptiles	Loggerhead turtle	*Caretta caretta*	T	T	Terrestrial: sandy beaches Nesting habitat present **Potential marine habitat present**

BGEPA=Bald and Golden Eagle Protection Act; CH=Critical Habitat; E=endangered; MBTA=Migratory Bird Treaty Act; P=proposed; SSC=species of special concern; T=threatened

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. 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).

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 effects 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.

The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden. Table 12-20 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 12-20. List of species managed by NMFS in vicinity of the project study area (NMFS EFH mapper, 2013).

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Red Drum (*Sciaenops ocellatus*)	ALL	Red Drum
Highly Migratory Species		
Atlantic Sharpnose Shark	Neonate	Highly Migratory Species
Bull Shark	All	
Nurse Shark	Juvenile	
Sandbar Shark	Adult	
Scalloped Hammerhead Shark	Neonate, Juvenile	
Spinner Shark	Juvenile, Adult	
Tiger Shark	Juvenile	
Shrimp		
Brown shrimp (*Penaeus aztecus*)	ALL	Shrimp
White shrimp (*Penaeus setiferus*)		

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Pink shrimp (*Penaeus duararum*) Royal red shrimp (*Pleoticus robustus*)		
Coastal Migratory Pelagics King mackerel (*Scomberomorus cavalla)* Spanish mackerel (*Scomberomorus maculatus*) Cobia (*Rachycentron canadum*) Dolphin (*Coryphaena hippurus*)	ALL	Coastal Migratory Pelagics
Reef Fish **Balistidae - Triggerfishes** Gray triggerfish (Balistes capriscus) **Carangidae - Jacks** Greater amberjack (Seriola dumerili) Lesser amberjack (Seriola fasciata) Almaco jack (Seriola rivoliana) Banded rudderfish (Seriola zonata) **Labridae - Wrasses** Hogfish (Lachnolaimus maximus) **Lutjanidae - Snappers** Queen snapper (Etelis oculatus) Mutton snapper (Lutjanus analis) Schoolmaster (Lutjanus apodus) Blackfin snapper (Lutjanus buccanella) Red snapper (Lutjanus campechanus) Cubera snapper (Lutjanus cyanopterus) Gray (mangrove) snapper (Lutjanus griseus) Lane snapper (Lutjanus synagris) Wenchman (Pristipomoides aquilonaris) Vermilion snapper (Rhomboplites aurorubens) **Malacanthidae – Tilefishes** Goldface tilefish (Caulolatilus chrysops) Blackline tilefish (Caulolatilus cyanops) Blueline tilefish (Caulolatilus microps) **Serranidae – Groupers** Speckled hind (Epinephelus drummondhayi) Yellowedge grouper (Epinephelus flavolimbatus) Red grouper (Epinephelus morio) Warsaw grouper (Epinephelus nigritus) Snowy grouper (Epinephelus niveatus) Nassau grouper (Epinephelus striatus) Marbled grouper (Epinephelus inermis) Black grouper (Mycteroperca bonaci) Yellowmouth grouper (Mycteroperca interstitialis) Gag (Mycteroperca microlepis) Scamp (Mycteroperca phenax) Yellowfin grouper (Mycteroperca venenosa)	ALL	Reef Fish

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).

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 (*Falco peregrinus tundrius*), least tern (*Sterna antillarum*), southeastern American kestrel (*Falco sparverius paulus*), Florida sandhill crane (*Grus canadensis pratensis*), 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 March 1 to August 1.

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).

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.

Sea Turtles and Marine Mammals

For projects in waters accessible to sea turtles, NFMFS has developed standardized Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS 2006). These conditions are typically applied to projects as part of the USACE CWA Section 404 permit issued for in-water work. It is unlikely that the project site contains submerged aquatic vegetation, which is the preferred foraging habitat of sea turtles, but it cannot be ruled out entirely.

If sea turtles are present in the in-water work area, short-term disturbances from noise and turbidity would occur. Sea turtles are a highly mobile species and would be expected to move away during in-water activities. Additionally, should a sea turtle be encountered during the project, crews would allow these species to exit from the project vicinity before commencing with groin placement activities. Therefore, potential impacts or disturbances to listed sea turtles would be short term and minor.

Noise and other activity associated with proposed in-water construction may temporarily disturb manatees and dolphin species in the vicinity of the project area through temporary impacts on prey abundance, water quality (turbidity), and underwater noise. The USACE CWA Section 404 permit that would be issued for the in-water work proposed as part of the project would include Standard Manatee Conditions for In-Water Work (USFWS2011). These conditions would be implemented and adhered to during project construction. The permittee must comply with these conditions, and it is anticipated that these conservation measures would significantly reduce the risk of adverse effects to manatees from the proposed project. Dolphins are highly mobile species and would be expected to move away from the construction area during in-water activities. The Norriego Point restoration project would adhere to all applicable federal, state, and local permit conditions for the protection of marine mammals and would not be expected to adversely affect West Indian manatee or other marine mammals during construction.

Smalltooth Sawfish, Gulf Sturgeon, and Gulf Sturgeon Critical Habitat

The smalltooth sawfish are mobile species and relatively rare in northern Gulf of Mexico waters and the immediate project area. The Gulf sturgeon uses Choctawhatchee Bay as a migratory corridor from breeding grounds to winter foraging grounds. Minor, short-term disturbances may occur as a result of in-water work associated with the proposed project. For projects in waters accessible to the smalltooth sawfish and Gulf sturgeon, the project would comply with NMFS Smalltooth Sawfish Construction Conditions (NMFS 2006).

Disturbances to the water column from in-water work would temporarily affect certain Gulf sturgeon critical habitat PCEs due to turbidity, dispersal of potential prey, and substrate disturbance. These would be limited to area immediately surrounding the work area and would occur only during construction. Therefore, impacts to Gulf sturgeon critical habitat would be short term and minor.

Essential Fish Habitat

An EFH assessment will be coordinated with the National Marine Fisheries Service (NMFS) Habitat Conservation Division. If necessary, species specific measures would be recommended by NMFS and would be incorporated into the project construction plan. The project would not result in adverse, direct impacts to emergent wetlands, existing oyster reefs, or Submerged Aquatic Vegetation (SAV). Most motile fauna such as crab, shrimp, and finfish will likely avoid the area of potential effect during the construction process. The project may result in minor, adverse short term impacts to benthic organisms and temporarily affect habitat utilization by individuals considered under EFH fishery management plans.

The proposed work in the EFH area is comprised of two components. New construction would include: construction of erosion control structures to dissipate wave energy; the creation of approximately 8.0 acres of emergent marsh habitat; and construction of two (2) new embayments. The project also includes the replacement of two (2) existing erosion control structures.

The conversion of sub tidal habitat to land is minor in scale compared to the size of the project area. Potential impacts to EFH due to the conversion of the subtitle habitat would be minor since the proposed conversion would occur in an area where land had historically existed. Additionally, the sub tidal habitat in the proposed conversion area is likely of poor quality due to beach erosion and the recreational use of Norriego Point by commercial and recreational boat traffic. Construction activities may have a minor, short term impact on habitat. 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. Therefore, the project is not likely to adversely affect EFH.

Piping Plover and Red Knot

The main risk to piping plover and red knot would be from human disturbance during resting and foraging during construction and later through increased visitor use. The proposed project construction would result in short-term increases in noise, which could startle individuals, though normal activity is expected to resume within minutes; alternatively the noise is expected to cause the plovers or red knots to move to a nearby area as alternate available habitat is abundant. Piping plover and red knot are highly mobile species and if disturbed by construction activities may be temporarily displaced from foraging and resting areas. However, an increase in human use may dissuade them from using the area all together. A large increase in human activity will likely cause plovers and red knots to abandon the area and not use it as habitat at all. Elliott and Teas (1996) found a significant difference in actions between piping plovers encountering pedestrians and those not encountering pedestrians. Piping plovers encountering pedestrians spend proportionately more time in non-foraging behavior. This study suggests that interactions with pedestrians on beaches cause birds to shift their activities from calorie acquisition to calorie expenditure. In wintering and migration sites, human disturbance continues to decrease the amount of undisturbed habitat and appears to limit local piping plover abundance (Zonick and Ryan 1996). These effects would be long term and moderate.

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 (March 1 to August 1), 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 effects 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.

Consultation with FWC concerning the proposed project and anticipated construction schedule relative to known bald eagle nest sites in the project vicinity and the nesting season in Florida (October 1 to May 15) would be required prior to commencement of restoration activities. To minimize potential for impacts to nesting bald eagles, the consultation protection measures may include: 1) addressing prescribed nest tree protection zones and 2) preparation of a bald eagle nest protection plan (including nesting behavior disturbance monitoring). Bald eagles have been known to tolerate certain potential disturbances in their breeding territories. Should these conservation measures be implemented for active nest sites adjacent to enhancement activities in the project area, potential impacts to the bald eagle would be short-term and minor.

Section 7 and Essential Fish Habitat Consultations

Section 7 ESA consultations with the USFWS and NMFS will be initiated for the proposed project. An EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act also would be completed to address any situations where proposed project activities may affect EFH habitat. The projects would incorporate any additional conservation recommendations provided by the NMFS and the USFWS during the consultation to avoid, minimize, mitigate, or otherwise offset the adverse effects of the proposed project on listed species or EFH.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.58.4. Human Uses and Socioeconomics

12.70.58.4.1. Socioeconomics and Environmental Justice

Affected Resources

The population of Okaloosa County is 180,822. The following table (Table 12-21) contains population/minority data for Okaloosa County and Florida (U.S. Bureau of the Census 2010).

Table 12-21. 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 12-21), 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.

12.70.58.4.2. Cultural Resources

Affected Resources

A review of the Florida Master Site File (FMSF) shows that there are no previously recorded archaeological sites or other historic properties present in the project area.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA would be completed as environmental review continues. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.58.5. 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.58.5.1. 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.

12.70.58.5.2. Aesthetics and Visual Resources

Affected Resources

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

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.

12.70.58.5.3. 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.

12.70.58.5.4. 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.

12.70.59. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Norriego Point Restoration and Recreation project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by stabilizing and re-establishing Norriego Point. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

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Deer Lake State Park Development: Project Description

12.70.61. 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, and a restroom. The total estimated cost of the project is $588,500.

12.70.62. 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 increase the public's use and/or enjoyment of the natural resources by improving the park's visitor area. The restoration work proposed includes adding a paved access road, parking, picnic shelters, and a restroom.

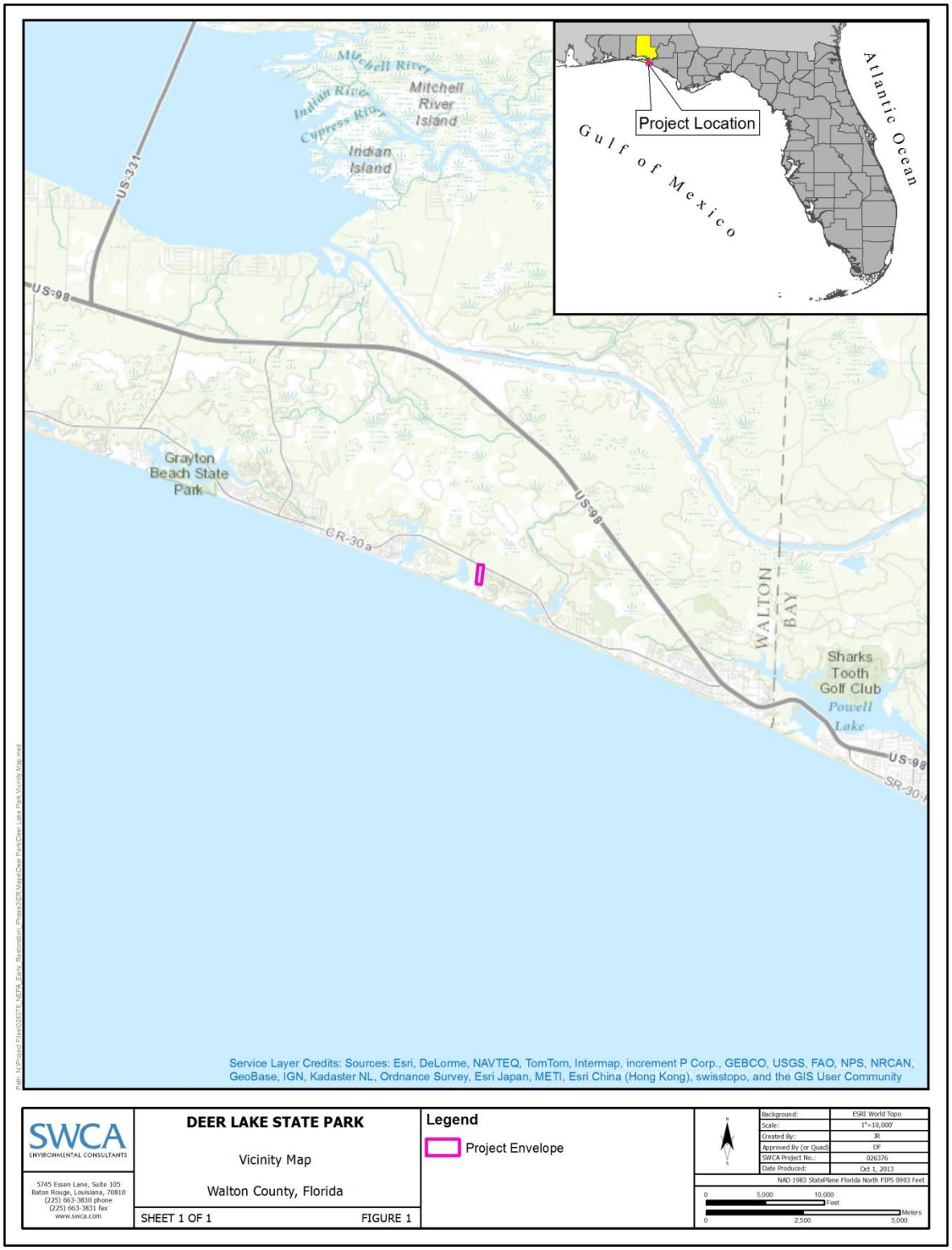

Figure 12-32. Location of Deer Lake State Park development project.

12.70.63. 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 their natural resources along Florida's Panhandle was denied or severely restricted. The project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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 Deer Lake State Park Development 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.

12.70.64. 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 the public's use and/or enjoyment of the natural resources by improving the visitor use areas at Dear Lake State Park. Performance monitoring will evaluate: 1) the addition of a paved access road and parking; 2) construction of picnic shelters; and 3) construction of restroom facilities. Specific success criteria include: 1) the completion of the construction as designed and permitted, and 2) enhanced and/or increased access is provided to 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.

12.70.65. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $1,177,000 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.[13]

12.70.66. 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.

[13] 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.

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 to the coastal areas of Deer Lake State Park.

12.70.67. 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 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 Parks system 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 that provides beach access so 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 Parks system to enhance and improve the ability of the public to utilize its resources.

12.70.68. 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). The 1,995-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.

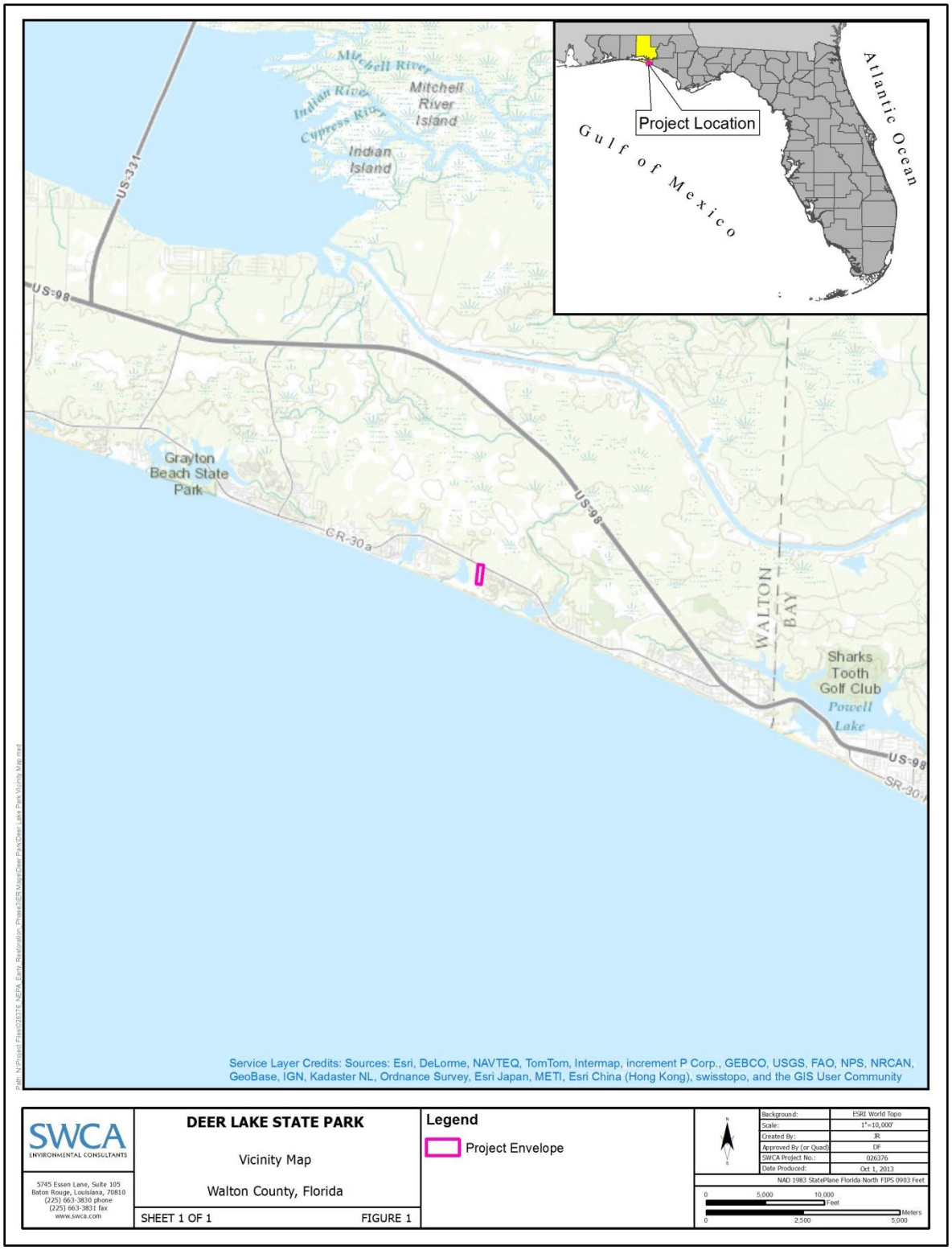

Figure 12-33. Vicinity map of Deer Lake State Park and the project area, Walton County, Florida.

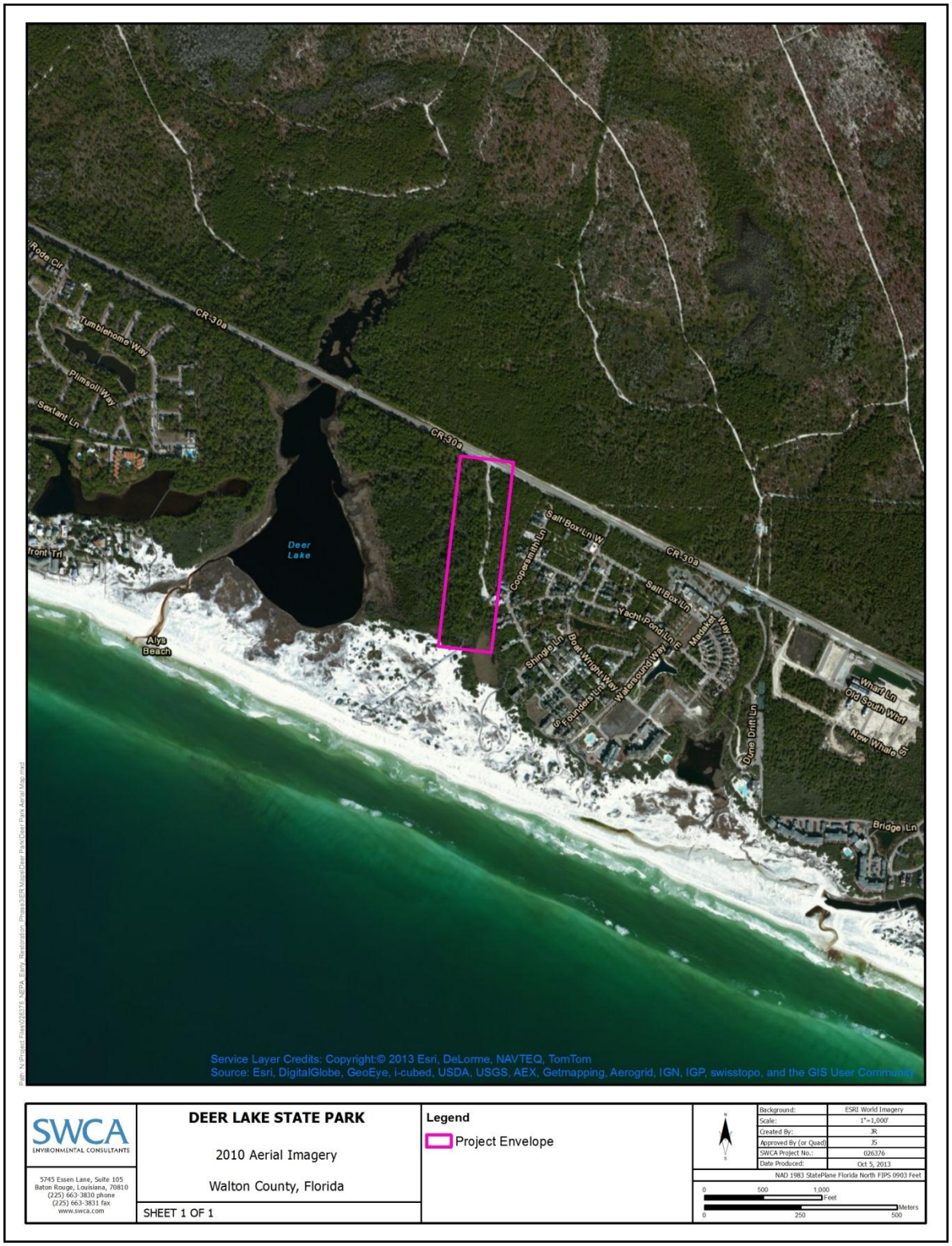

Figure 12-34. Aerial imagery of the project area in Deer Lake State Park.

12.70.69. Construction and Installation

12.70.69.1. Construction Design

Detailed construction methods and plans have been developed for the new facilities and infrastructure. The project scope includes two parking lots with approximately 100 spaces, paved access roads, various sidewalks, an entry station with associated utilities (water, sewer, power), an entrance sign with lighting, a day-use bathroom and pump station with associated utilities (water, sewer, power), an elevated picnic shelter, parking lot lighting, and underground power. Construction would require connecting the new restroom and entry 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 inTable 12-22 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.

12.70.69.2. 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 12-23.

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.

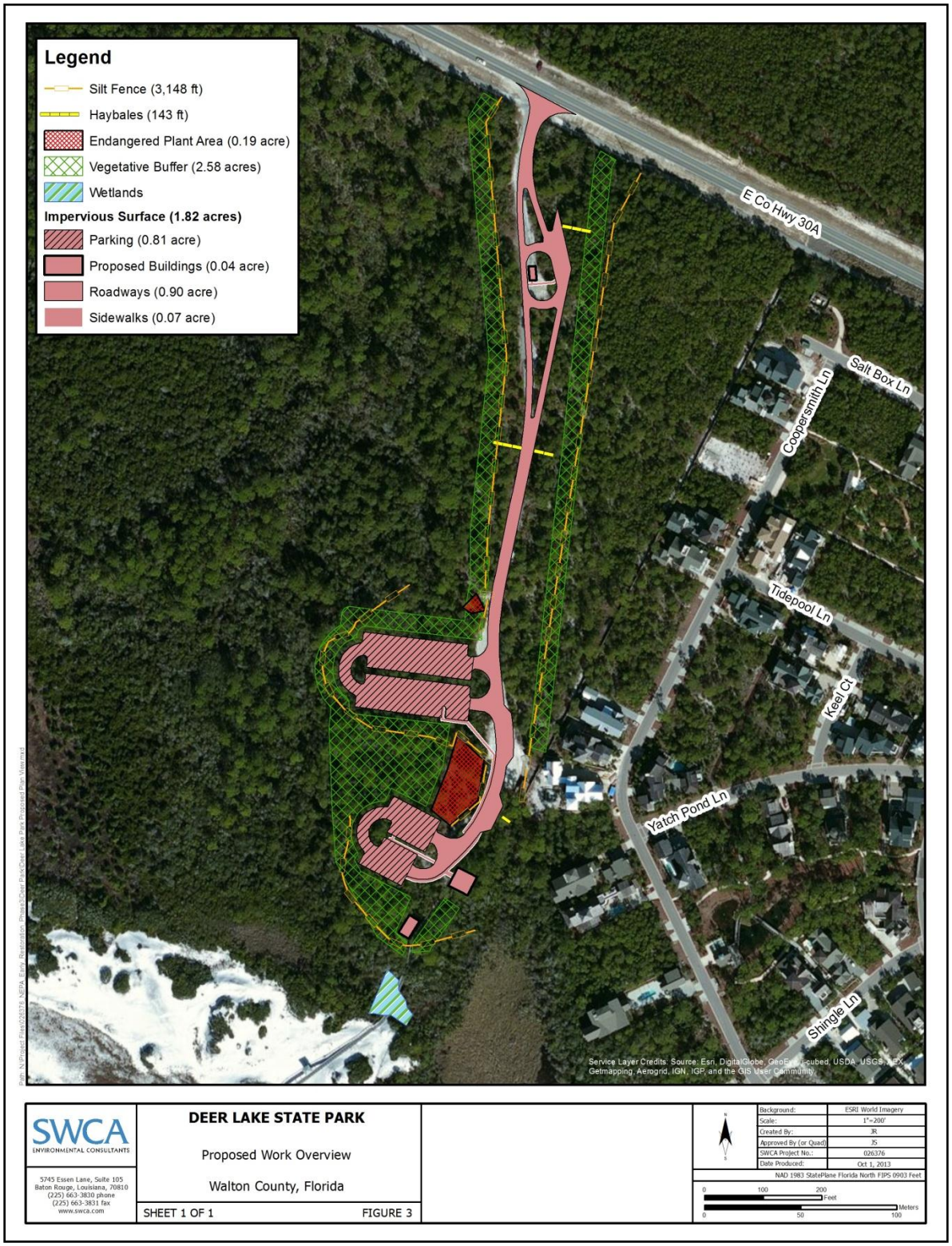

Figure 12-35. Proposed work overview in the project area in Deer Lake State Park.

Table 12-22. 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 12-23. 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 of polyvinyl 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.

12.70.69.3. 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).

12.70.69.4. 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

12.70.70. 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.

12.70.71. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.71.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.71.2. Physical Environment

12.70.71.2.1. 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).

12.70.71.2.2. 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 FDEP require 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.

12.70.71.2.3. 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 atmosphere large 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 mid 1970s. 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 mid 1970s (EPA 2013b).

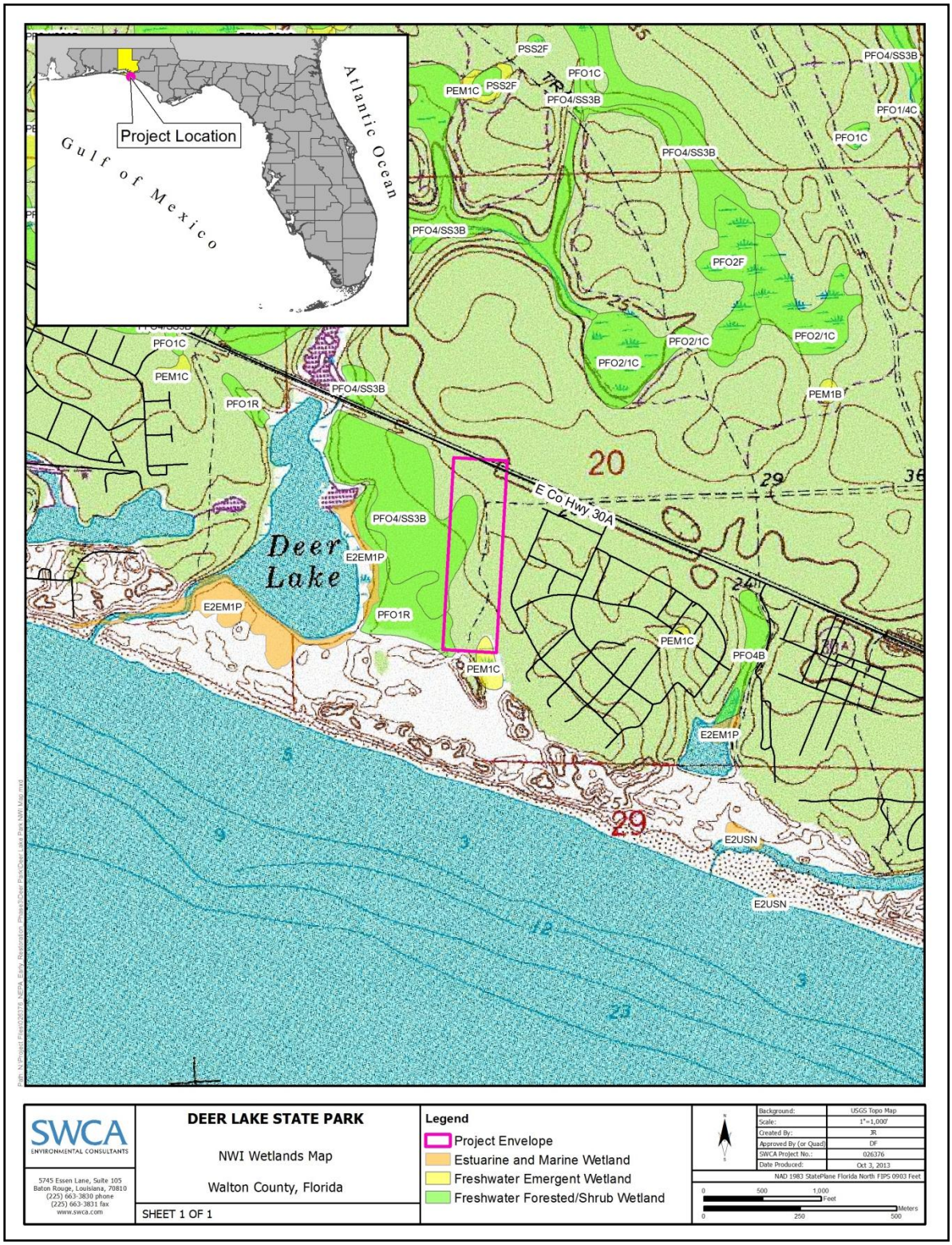

Figure 12-36. Wetlands in the project area and Deer Lake State Park.

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 12-24, 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 12-23.

Table 12-24. 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 12-24, 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.

12.70.71.2.4. 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 12-25 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. 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 effects from hiking, picnicking, and other recreational activities would remain minor.

12.70.71.3. Biological Environment

12.70.71.3.1. 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 12-26.

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Table 12-26. 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 12-27. 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 12-27. 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 (*Sapium sebiferum*) have been identified and removed when found. Also, small areas of cogon grass (*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 federally listed threatened and endangered species reported for the Park and Walton County include five species of sea turtles, the Choctawhatchee beach mouse (*Peromyscus polionotus allophrys)*, piping plover (*Charadrius melodus*), and the Gulf sturgeon (*Acipenser oxyrinchus desotoi*). One candidate species, the gopher tortoise (*Gopherus polyphemus*), was also reported for the project area. One species proposed for listing, red knot (*Calidris canutus rufa*), may also be present. A list of federally designated threatened, endangered, candidate, and other wildlife species of concern likely to occur in Walton County and the Park can be found in Table 12-28. State-listed special status species are also shown in the table.

Table 12-28. Protected species with potential to occur in the project area.

Resource Category	Common Name	Scientific Name	USFWS Status	State Status	Natural Communities
Amphibians	Reticulated flatwoods salamander	*Ambystoma bishopi*	E (CH)	E	Palustrine: Wet flatwoods, dome swamp, basin swamp Terrestrial: Mesic flatwoods (reproduces in ephemeral wetlands in this community) **Occupies habitat on the adjacent Point Washington State Forest; suitable habitat also occurs in the Park**
Birds	Bald eagle	*Haliaeetus leucocephalus*	BGEPA	–	Estuarine: Marsh edges, tidal swamp, open water Lacustrine: Swamp lakes, edges Palustrine: Swamp, floodplain Riverine: Shoreline, open water Terrestrial: Pine and hardwood forests, clearings **Observed in the Park**
Birds	Least tern	*Sterna antillarum*	MBTA	T	Estuarine: Various Lacustrine: Various Riverine: Various Terrestrial: Beach dune, ruderal. Nests common on rooftops. **Least tern nesting is largely undocumented at the Park**
Birds	Piping plover	*Charadrius melodus*	T (CH)	T	Estuarine, Marine: Exposed unconsolidated substrate Terrestrial: Dunes, sandy beaches, and inlet areas. Mostly wintering and migrants. **Seen each winter season along the beaches at the Park**
Birds	Red knot	*Calidris canutus rufa*	P		Estuarine: exposed unconsolidated substrate Marine: exposed unconsolidated substrate Terrestrial: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants **Potential habitat present**
Birds	Southeastern kestrel	*Falco sparverius paulus*	MBTA	T	Estuarine, Palustrine: Various habitats Terrestrial: Open pine forests, clearings, ruderal, various **Observed in the Park**
Birds	Southeastern snowy plover	*Charadrius alexandrinus tenuirostris*	MBTA	T	Estuarine, Marine: Exposed unconsolidated substrate Terrestrial: Dunes, sandy beaches, and inlet areas **Breeding pairs have been documented at the Park near County Road 30A lakes**
Fish	Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T (CH)	T	Estuarine, Marine: Various Riverine: alluvial and blackwater streams
Mammals	Choctawhatchee beach mouse	*Peromyscus polionotus allophrys*	E (CH)	E	Terrestrial: Beach dune, coastal scrub **Present at the Park** **Critical habitat designated in the Park**
Reptiles	Gopher tortoise	*Gopherus polyphemus*	C	T	Terrestrial: Sandhills, scrub, scrubby flatwoods, xeric hammocks, coastal strand, ruderal **Have been observed in the Park, but in very few numbers**
Reptiles	Green sea turtle	*Chelonia mydas*	E	E	Terrestrial: Sandy beaches; nesting **Observed in the Park**
Reptiles	Hawksbill turtle	*Eretmochelys imbricata*	E	E	Marine: open water, no nesting **Potential marine habitat present**
Reptiles	Kemp's ridley turtle	*Lepidochelys kempii*	E	E	Terrestrial: sandy beaches, nesting **Potential marine habitat present**
Reptiles	Leatherback turtle	*Dermochelys coriacea*	E	E	Terrestrial: sandy beaches; nesting **Potential marine habitat present**
Reptiles	Loggerhead sea turtle	*Caretta caretta*	T	T	Terrestrial: Sandy beaches; nesting **Observed in the Park**

Resource Category	Common Name	Scientific Name	USFWS Status	State Status	Natural Communities
BGEPA=Bald and Golden Eagle Protection Act; C=candidate; CH=Critical Habitat; E=endangered; MBTA=Migratory Bird Treaty Act; P=proposed; SSC=species of special concern; T=threatened Source: USFWS Panama City Ecological Services, Fish and Wildlife Conservation Office (2012),Florida Division of Recreation and Parks (2004), Florida Fish and Wildlife Commission (FWC) (2013a).					

The reticulated flatwoods salamander, an endangered species, has not been documented in the Park and will not be carried forward for analysis.

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 mouse is 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).

Gulf Sturgeon

The Gulf sturgeon, also known as the Gulf of Mexico sturgeon, is one of seven species of sturgeon in North America. It inhabits both salt and freshwater habitats in the fall/winter and spring/summer respectively. The Gulf sturgeon is a benthic feeder that feeds on organisms located in or on the bottom of the water, including crabs, grass shrimp, lancets, brachiopods, and marine worms. It typically gorges on food during the fall-to-spring period when in brackish and saltwater habitats; however, it appears to fast from spring to fall when in freshwater habitats. Gulf sturgeon usually return to their home freshwater river or stream to spawn (in the spring). Currently, the main threat to Gulf sturgeon is dams located along natal rivers, which prevent connections to historic spawning areas. Habitat destruction is also a threat, especially because the sturgeon lives in areas at risk of dredging, which destroys eggs and affects food sources. Other threats include lethal by-catch and declining water quality (FWC 2013c).

The Gulf sturgeon was federally listed as threatened on September 30, 1991, after stocks were greatly reduced or extirpated throughout much of their historic range by overfishing, dam construction, and habitat degradation. Critical habitat was designated in 14 geographic areas among the Gulf of Mexico rivers and tributaries on March 19, 2003 (NOAA FS 2013). The coastal area south of the Park is part of Critical Habitat Unit 11, Florida Nearshore Gulf of Mexico (Figure 12-37). Unit 11 includes winter feeding and migration habitat for Gulf sturgeon from the Yellow River, Choctawhatchee River, and Apalachicola River subpopulations. These subpopulations likely feed in nearshore Gulf of Mexico waters between their natal river systems. Gulf sturgeon from the Choctawhatchee River have been documented both east and west of Choctawhatchee Bay (NOAA FS 2013). PCE's for Gulf sturgeon critical habitat are listed below. The seven PCE's are listed below. PCE's numbered 1, 5, 6, and 7 are present at 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, believed necessary for minimizing energy expenditures 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 other 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 effects 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 project is located in uplands above the mean high- tide line, therefore no EFH is located within the project footprint.

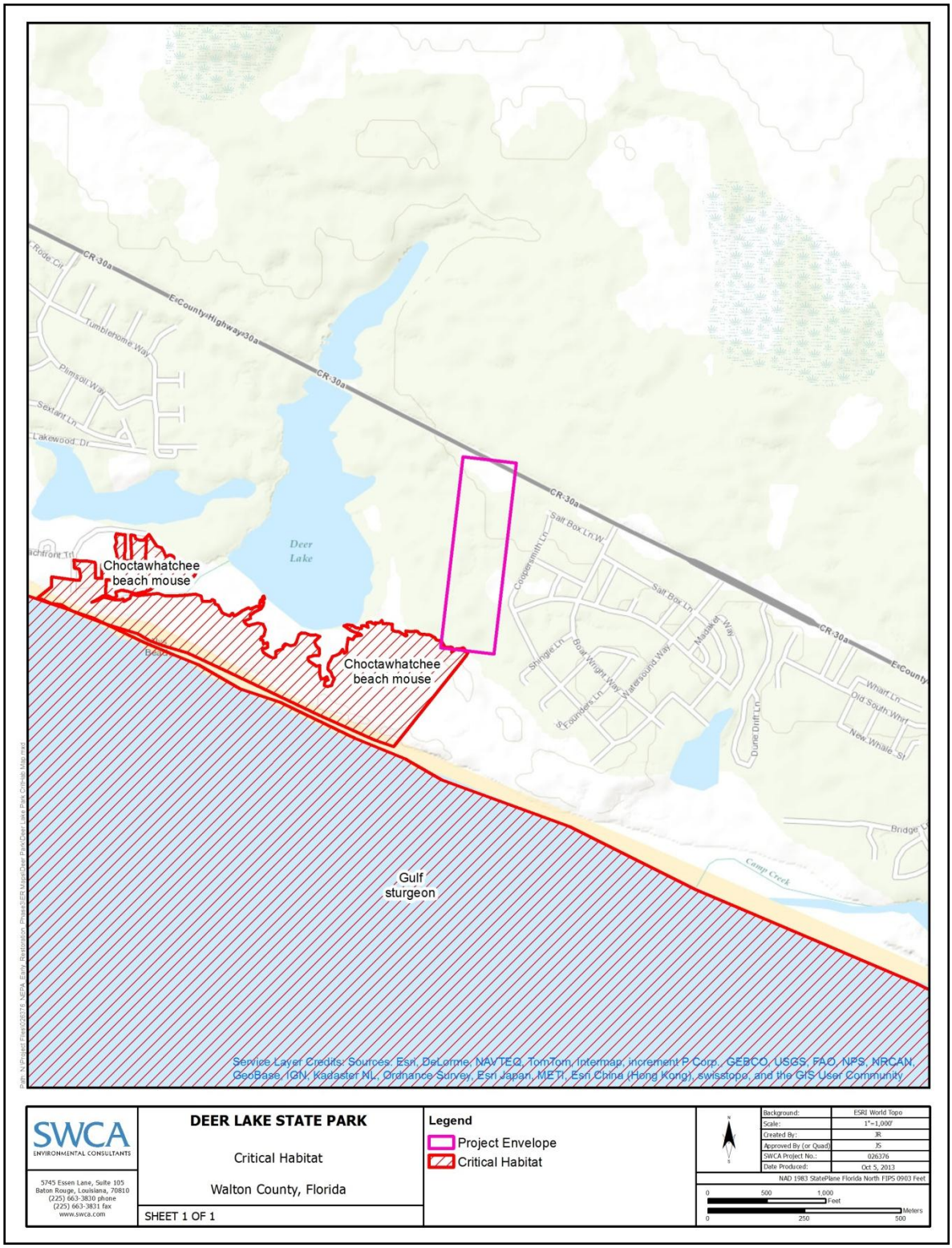

Figure 12-37. Choctawhatchee beach mouse and Gulf sturgeon critical habitat in and adjacent to Deer Lake State Park.

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).

State-Listed Birds, MBTA, and BGEPA

All migratory birds are protected under the MBTA. There are several State of Florida–listed bird species with potential for occurrence in and around the Park. These include the least tern, southeastern kestrel, southeastern snowy plover, piping plover (discussed above), and brown pelican.

There are four documented bald eagle nests in Walton County, none of which are in or near the Park. There is potential for nesting in the Park due to the presence of bald eagle habitat in the Park, such as open water, forests, clearings, and swamp edges. Bald eagles have been observed in the Park (Florida Division of Recreation and Parks 2004). 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).

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 construction plans. Descriptions of these evaluations are provided below.

Tortoises and Sea Turtles

The Park provides appropriate habitat for the Gopher tortoise. There would be short-term, minor impacts to the Gopher tortoise during construction activities if individuals were traveling or had burrows in the project area. If gopher tortoises are found to be present, BMPs as described in Florida's *Gopher Tortoise Management Plan* (FWC 2012) would be followed to avoid or minimize any impacts.

The Park improvements are anticipated to be constructed in upland areas, rather than beach areas. Assuming project activities avoid beach areas that may provide suitable sea turtle nesting habitat, there would be no effect to sea turtles.

Choctawhatchee Beach Mouse

Impacts to the Choctawhatchee beach mouse and its habitat could occur because a very small portion of the project areamay be located in beach mouse critical habitat (see Figure 12-37). Preconstruction surveys would be required and would result in the development of protections for the Choctawhatchee beach mouse if individuals or habitat are identified in the project area. Based on the development of protections for any mouse or mouse habitat found in the project area, the project is expected to have a minor, short-term effect on the Choctawhatchee beach mouse.

Gulf Sturgeon

Impacts to the Gulf sturgeon would be negligible because construction activities would occur in an upland area of the Park for a short-term period of less than 6 months, with the implementation of erosion control measures.

Essential Fish Habitat

EFH would not be impacted by the project because construction activities would take place only in upland areas. Small changes to local population numbers, population structure, and other demographic factors would not be expected to occur.

Piping Plover and Red Knot

The main risk to piping plovers and red knots would be from human disturbance while birds are resting and foraging in habitats in the vicinity of the project area. The proposed project would result in short-term increases in noise, which could startle individuals, though normal activity would be expected to resume within minutes. Noise may also cause plovers to move to a nearby area to available alternate habitat, which is abundant. Plovers are a highly mobile species and if disturbed by construction activities may be temporarily displaced from foraging and resting areas but would likely relocate to habitats nearby and within normal movement patterns. These impacts would be considered short term and minor.

State-Listed Birds, MBTA, and BGEPA

State-listed birds may use habitat in the vicinity of the project area, and all migratory birds are protected under the MBTA. If construction activities occur during the nesting season (March 1 to August 1), birds could be disturbed by noise and human activity at the project area. 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.

The Park already routinely ropes off or protects some bird nesting areas. If protected areas are clearly established with roping, etc., existing buffer zones would be considered sufficient and there would be no need to establish additional buffers (Florida Division of Recreation and Parks 2004).

In recent years, the bald eagle has been removed from the endangered species list under the ESA. In Florida, conservation measures to protect active nest sites during the nesting season must be considered to reduce potential disturbances of certain project activities.

No bald eagles are known to nest in or adjacent to the Park; therefore, no effects to bald eagles are anticipated. All activities (staging, demolition, construction, cleanup, use of equipment, machinery, vehicles including utility terrain vehicle [UTV] and all-terrain vehicle [ATV], or boat/vessels) should avoid a bald eagle nest by a minimum of 660 feet.

Consultation with the FWC concerning the proposed project and anticipated construction schedule relative to known bald eagle nest sites in the project vicinity and the nesting season in Florida (October 1 to May 15) would be required prior to commencement of project activities. To minimize potential for impacts to nesting bald eagles, the consultation protection measures may include 1) addressing prescribed nest tree protection zones and 2) preparation of a bald eagle nest protection plan (including nesting behavior disturbance monitoring). Bald eagles have been known to tolerate certain potential disturbances in their breeding territories. Should these conservation measures be implemented for active nest sites adjacent to construction activities in the project area, potential impacts to the bald eagle would be short-term and minor.

Section 7 and EFH Consultations

Section 7 (ESA) consultations with the USFWS and NMFS will be initiated for the proposed project. An EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act also would be completed to address any situations where proposed project activities may affect EFH habitat. The projects would incorporate any additional conservation recommendations provided by the NMFS and the USFWS during the consultation to avoid, minimize, mitigate, or otherwise offset the adverse effects of the proposed project on listed species or EFH.

Nesting areas of shorebirds at Deer Lake are signed and roped off to prevent nest destruction or abandonment; the management plan specifies that “extra effort” should occur to protect shorebird nests and nesting areas (Florida Division of Recreation and Parks 2004).

For all protected species discussed in this section, there is the potential for an increase in visitors to the Park due to the improved access and facilities. Increased visitor use can impact wildlife through noise and destruction and disturbance of habitat and food sources. There is a possibility for a minor to moderate, short-term or long-term effect on more vulnerable species; however, impacts to protected species would be minimized by Park management and control of visitors (e.g., limiting the number of visitors, directing activities away from protected species, and creating trails to direct use) and by species and habitat protection goals.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.71.4. Human Uses and Socioeconomics

12.70.71.4.1. 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 12-29. 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.

Table 12-29. 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%
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)

Environmental Consequences

The proposed project would create approximately 517 worker days of employment during construction (see Table 12-23). 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.

12.70.71.5. 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. Based on the location of the proposed project area and its vicinity to previously recorded archaeological sites, it is likely there are similar unrecorded sites in the area.

Environmental Consequences

The lands in the Park have been used by humans for thousands of years. The area is culturally rich and has a diversity of previously recorded archaeological sites that range from prehistoric to modern era.

The proposed construction would involve ground-disturbing activities. Project plans for the Park improvements have not been finalized. Once the project plans are finalized, the 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 would be completed as environmental review continues. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.71.6. 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.

12.70.71.7. 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.71.8. 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.

12.70.71.9. 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.

12.70.71.10. 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.

12.70.72. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Deer Lake State Park Development project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by improving the park's visitor area. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and

information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

12.70.73. References

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City of Parker- Oak Shore Drive Pier: Project Description

12.70.74. 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.

12.70.75. 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 the public's use and/or enjoyment of the natural resources by 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.

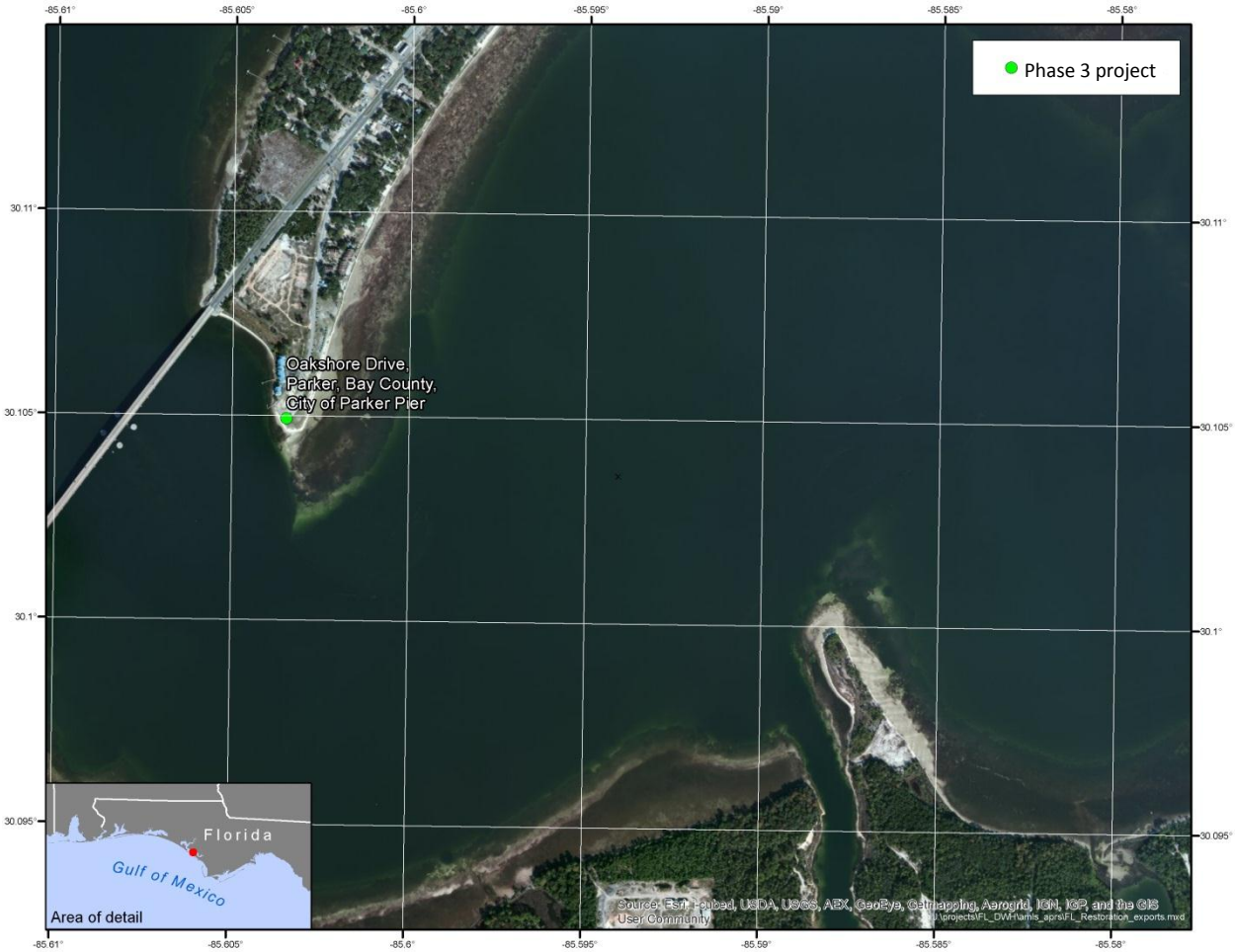

Figure 12-38. Location of City of Parker – Oakshore Drive Pier Project.

12.70.76. 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 their natural resources along Florida's Panhandle was denied or severely restricted. This project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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 Parker Oakshore 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.

12.70.77. 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 enhance and/or increase the public's use and/or enjoyment of the natural resources 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 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 Parker staff 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.

12.70.78. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $1,987,298 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.[14]

12.70.79. 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.

[14] 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.

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.

12.70.80. 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.

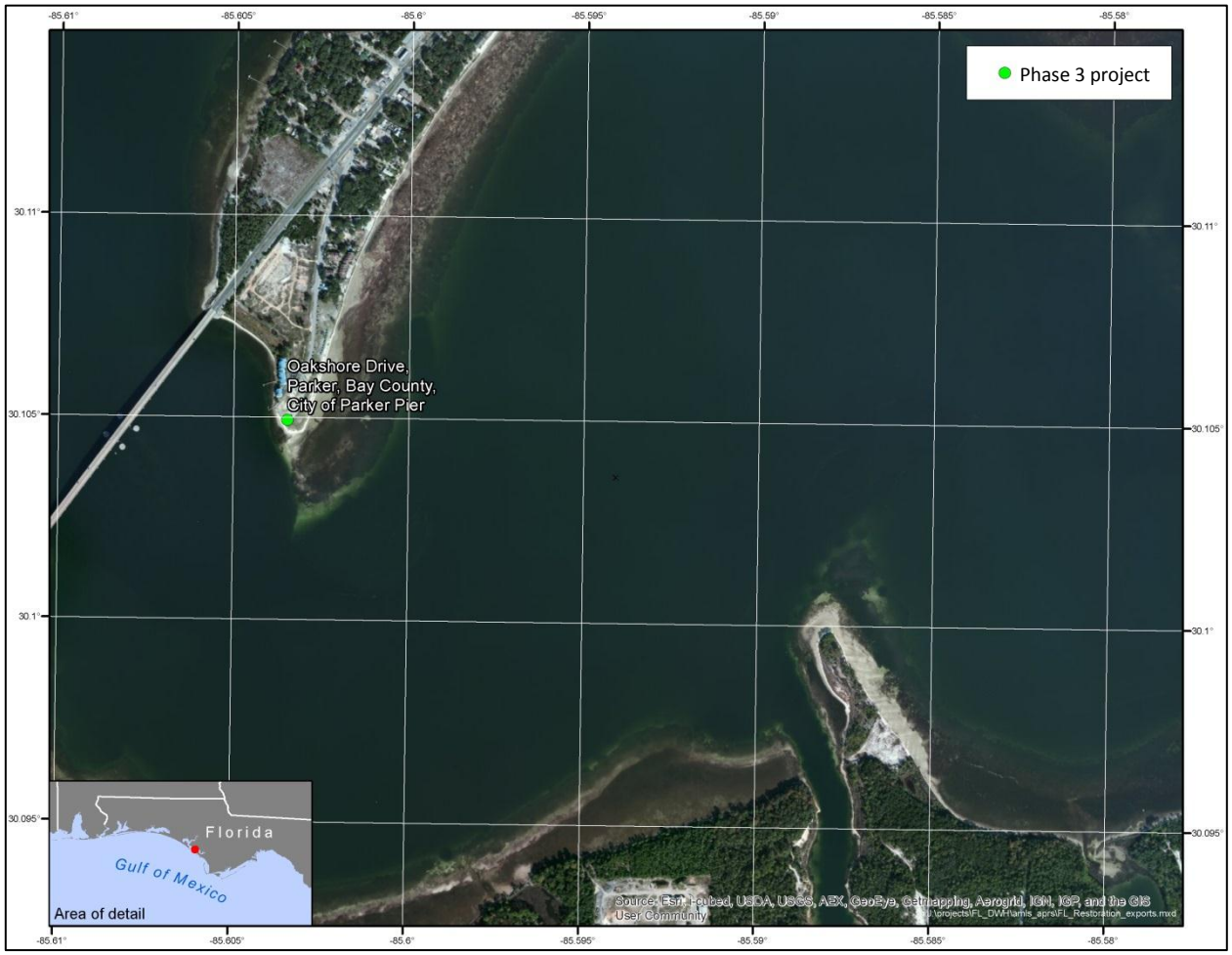

Figure 12-39. Location of the proposed Oak Shore Drive Pier in the City of Parker, Florida.

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 (Figure 12-40). 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.

12.70.81. 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.

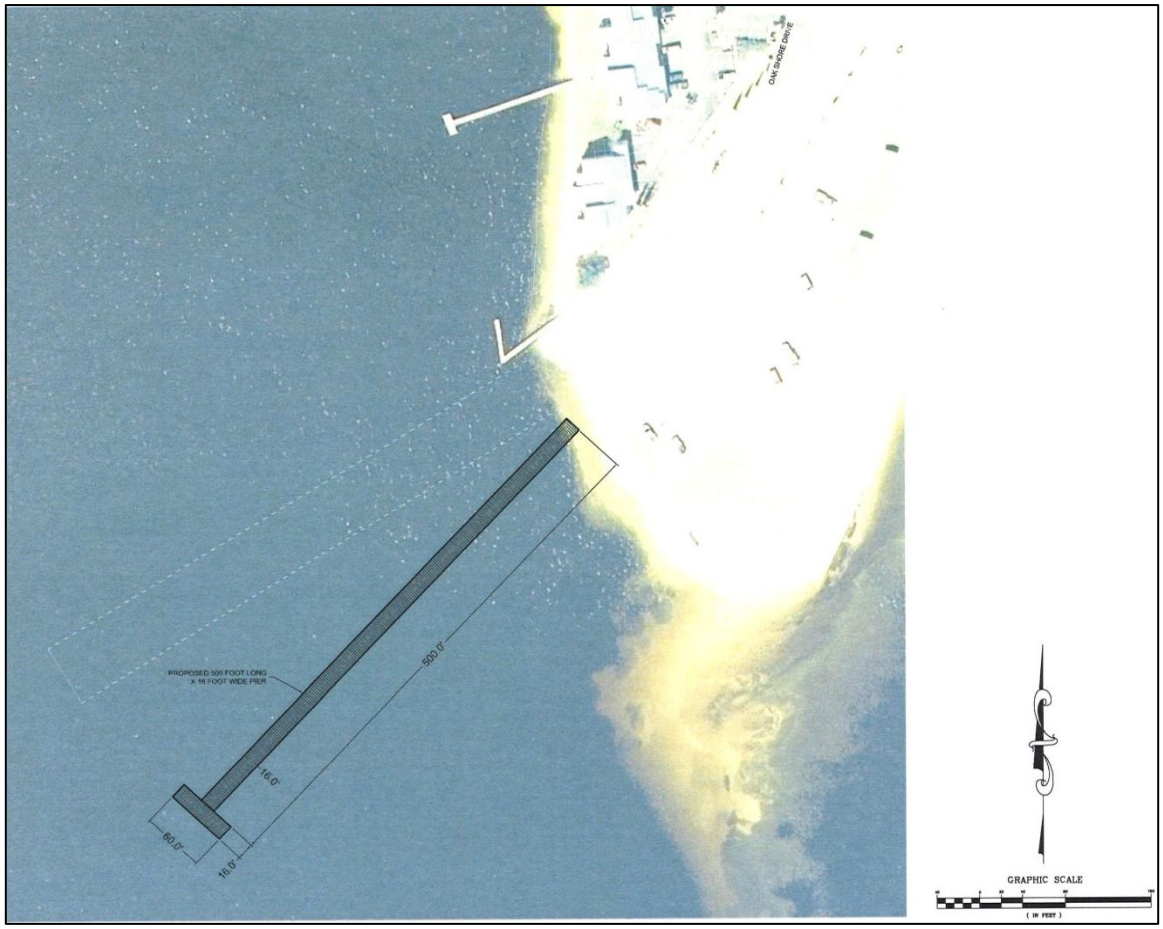

Figure 12-40. Approximate design location for the proposed fishing pier, City of Parker, Florida.

12.70.82. Construction and Installation

Prior to construction of the project, a site-specific benthic survey would be conducted to help guide the exact orientation, location, and height above mean high water (MHW) during the final design phase for the project. Construction activities for the proposed project would occur from both in-water and on land, though most of the work would take place in-water. A range of hand tools and mechanized equipment would be used to construct the pier. Pilings would need to be placed to support the new pier. The exact number, size, and material of the pilings to support the structure and the depth to which

they would be placed would be determined during the final engineering design phase for the project. Construction methodology for placement of the piling would also be determined during the final project design. In-water work would be conducted from a barge; best management practices (BMPs) such as the use of sediment curtains, would be used; and all conditions set forth in federal, state, and local permits would be followed. Staging of construction materials would occur in the parking area and would occur so as to minimize impacts to parking.

Construction is estimated to begin during the summer/fall of 2014 and take approximately 7 to 12 months, with the total duration of in-water activities some fraction of that time. To avoid impacting peak use of the boat ramp during the fishing season (April to September) construction activities would occur outside of this timeframe to the extent practicable (Pearce 2013).

12.70.83. 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.

12.70.84. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.84.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.84.2. Physical Environment

12.70.84.2.1. 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.

12.70.84.3. 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 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.

12.70.84.3.1. 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 machinery and 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 12-30) provides GHG 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. 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 GHGs of this project are measurable, but fall below 25,000 metric ton/year of CO^2 or its equivalent.

Table 12-30. Estimated greenhouse gas emissions for equipment to be used.

EQUIPMENT[15]	CO_2 (METRIC TONS)[16]	CH_4 (CO_2E) (METRIC TONS)[17]	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 Trailer18				
Fishing Pier	5.440	0.006	0.064	5.510
TOTAL	**43.140**	**0.110**	**1.104**	**44.354**

1. 15 Emissions assumptions for all equipment based on 8 hours of operation.
2. 16 CO_2 emissions assumptions for diesel and gasoline engines based on USEPA 2009.
3. 17 CH_4 and NOx emissions assumptions and CO_2e calculations based on USEPA 2011.
4. 18 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.

Based on Table 12-30, 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.

12.70.84.3.2. 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).

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.

12.70.84.4. Biological Environment

12.70.84.4.1. 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 12-41).

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 12-31).

Figure 12-41. Seagrass in the vicinity of the proposed City of Parker Fishing Pier.

Table 12-31. 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).

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. Manatees inhabit both 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 species on September 30, 1991. The Gulf sturgeon, also known as the 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, and Suwannee Rivers, and possibly others. The Gulf 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 19.8 feet or less. The fish return to breed

in the river system in 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.

FWS 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. 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 12-42).

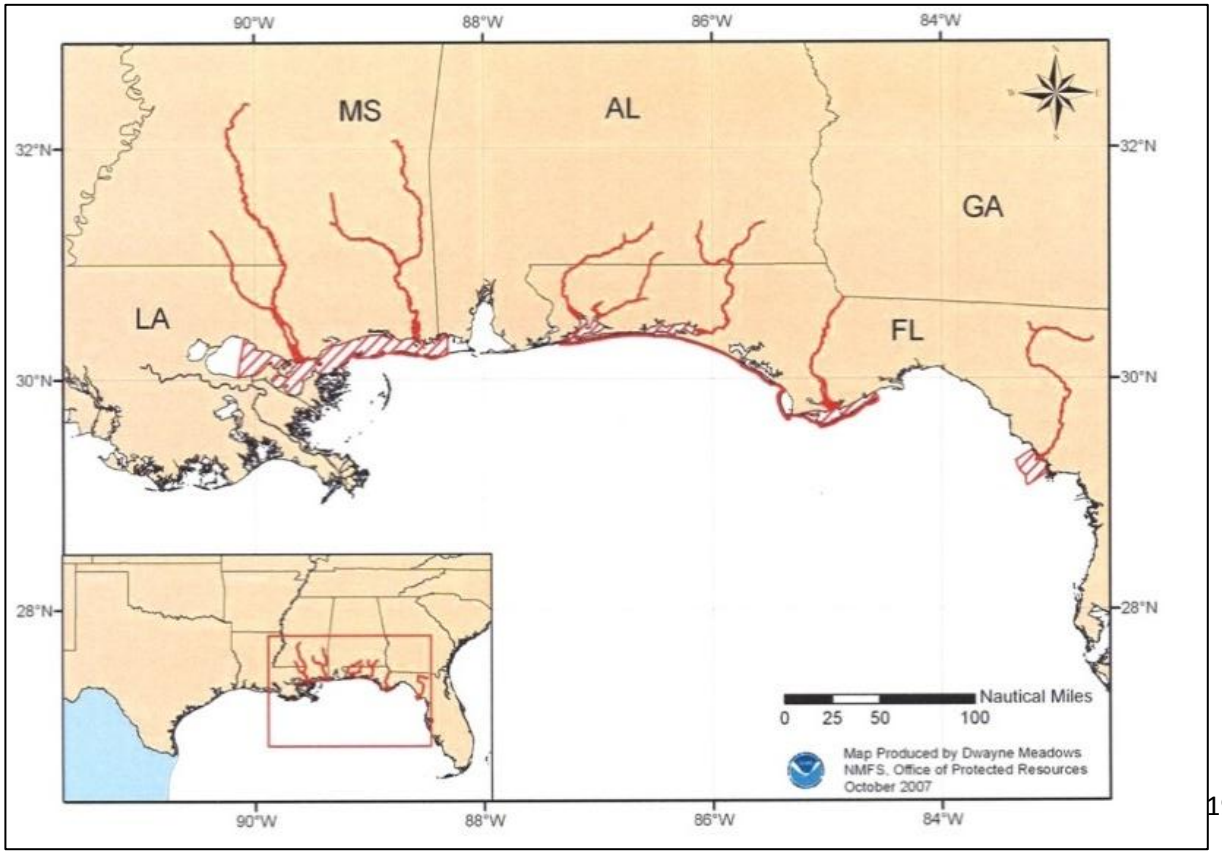

Figure 12-42. Gulf Sturgen critical habitat.

Smalltooth Sawfish:
The smalltooth 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 (NOAA 2009b). Juveniles inhabit 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 29N latitude). Adults are found with juveniles but also in deeper water habitat (NOAA 2009b). The decline of this species is mainly attributed to mortality as bycatch 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.

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 effects 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.

The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden. Table 12-32 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 12-32. List of species managed by NMFS in vicinity of the project study area (NMFS EFH mapper, 2013).

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Red Drum (Sciaenops ocellatus)	ALL	Red Drum
Highly Migratory Species		
Atlantic Sharpnose Shark	Neonate	Highly Migratory Species
Bull Shark	Juvenile	
Nurse Shark	Juvenile	
Sandbar Shark	Adult	
Scalloped Hammerhead Shark	Neonate, Juvenile	
Spinner Shark	Neonate, Juvenile	
Tiger Shark	Juvenile	
Shrimp		
Brown shrimp (*Penaeus aztecus*)	ALL	Shrimp
White shrimp (*Penaeus setiferus*)		
Pink shrimp (*Penaeus duararum*)		
Royal red shrimp (*Pleoticus robustus*)		
Coastal Migratory Pelagics		
King mackerel (*Scomberomorus cavalla)*	ALL	Coastal Migratory Pelagics
Spanish mackerel (*Scomberomorus maculatus*)		
Cobia (*Rachycentron canadum*)		
Dolphin (*Coryphaena hippurus*)		
Reef Fish		
Balistidae - Triggerfishes		
Gray triggerfish (Balistes capriscus)		
Carangidae - Jacks		
Greater amberjack (Seriola dumerili)		

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Lesser amberjack (Seriola fasciata) Almaco jack (Seriola rivoliana) Banded rudderfish (Seriola zonata) **Labridae - Wrasses** Hogfish (Lachnolaimus maximus) **Lutjanidae - Snappers** Queen snapper (Etelis oculatus) Mutton snapper (Lutjanus analis) Blackfin snapper (Lutjanus buccanella) Red snapper (Lutjanus campechanus) Cubera snapper (Lutjanus cyanopterus) Gray (mangrove) snapper (Lutjanus griseus) Lane snapper (Lutjanus synagris) Silk snapper (Lutjanus vivanus) Wenchman (Pristipomoides aquilonaris) Vermilion snapper (Rhomboplites aurorubens) **Malacanthidae – Tilefishes** Goldface tilefish (Caulolatilus chrysops) Blueline tilefish (Caulolatilus microps) **Serranidae – Groupers** Speckled hind (Epinephelus drummondhayi) Yellowedge grouper (Epinephelus flavolimbatus) Red grouper (Epinephelus morio) Warsaw grouper (Epinephelus nigritus) Snowy grouper (Epinephelus niveatus) Nassau grouper (Epinephelus striatus) Black grouper (Mycteroperca bonaci) Yellowmouth grouper (Mycteroperca interstitialis) Gag (Mycteroperca microlepis) Scamp (Mycteroperca phenax) Yellowfin grouper (Mycteroperca venenosa)	ALL	Reef Fish

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

Any potential 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 or NMFS and implemented as part of the proposed project.

Sea Turtles:
There is no nesting habitat for sea turtles in the project area so potential impacts to sea turtles would result from the risk of impact from construction activities, including physical impacts from construction materials or operating machinery. Due to these species' mobility and the implementation of NMFS' Sea Turtle and Smalltooth Sawfish Construction Conditions, to include daily surveys of the sediment curtains for "caught" species, the risk of harm from construction would be minimal. Sea turtles may be affected by being temporarily unable to use a project site due to potential avoidance of construction activities and related noise, but these effects would be insignificant.

Seagrass in the area could provide suitable foraging habitat. However the footprint of the project is relatively small compared to the seagrass available in St. Andrews and East Bays, so any loss of seagrass habitat as a result of the project would result in long-term impacts that are minor. Also any impacts from increased turbidity would be short-term and negligible due to the small footprint of the project and the use of best management practices such as sediment curtains to minimize turbidity impacts.

West Indian Manatee:
While the project area is not in 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 still be present in the open waters of East Bay in the vicinity of the project site. Given their slow-moving and low visibility nature, it is possible that manatees could wander into proximity of construction activities. To minimize contact and potential harm to manatees, the Standard Manatee Conditions for In-Water Work (USFWS 2011), would be strictly observed. By adhering to these measures and recommendations, impacts on West Indian manatee would be short-term and minor.

While it is not anticipated that any incidental harassment of marine mammals will occur as a result of this proposed project, the Trustees are conducting an evaluation of the expected magnitude and duration of underwater noise from the proposed construction techniques and their potential impacts on protected species, including marine mammals. The results of this analysis will be coordinated with NOAA's Office of Protected Resources to develop best management practices (e.g., avoidance measures, monitoring, alternate equipment) to avoid incidental harassment, or to seek incidental harassment authorization under the Marine Mammal Protection Act as appropriate. Additional coordination with NOAA under the Endangered Species Act would be conducted if any potential effects to sea turtles or other listed species are identified.

Gulf Sturgeon:
Gulf sturgeon are generally expected to move away from in-water construction. Additionally, the 500 foot fishing pier would extend out into East Bay. Depending on the spacing of the pilings, this could present an obstruction to movements of the sturgeon. Some temporary decrease in water quality could result from increased turbidity during construction, though this would be minimized through the use of best management practices such as sediment curtains. However, and there is ample habitat and unobstructed open waters for its movements in East Bay. The Sea turtle and Sawfish in-water Construction Guidelines will be implemented, which are also protective of Gulf sturgeon. Therefore, impacts to Gulf sturgeon would be short- and long-term but negligible.

Smalltooth Sawfish:

Smalltooth sawfish historically were found in and around the project area; however, the current distribution is mainly restricted to South Florida and the Keys. Critical habitat for the smalltooth sawfish lies between Charlotte Harbor and the Florida Everglades, outside and south of this project site; therefore no adverse impacts are anticipated.

Essential Fish Habitat

An EFH assessment will be coordinated with the NMFS Habitat Conservation Division. If necessary, species specific measures would be recommended by NMFS and would be incorporated into the project construction plan. The project would not result in adverse, direct impacts to emergent wetlands, existing oyster reefs, or Submerged Aquatic Vegetation (SAV). Most motile fauna such as crab, shrimp, and finfish will likely avoid the area of potential effect during the construction process. The project may result in minor, adverse short term impacts to benthic organisms and temporarily affect habitat utilization by individuals considered under EFH fishery management plans.

The proposed work in the EFH area reflects construction of new fishing and recreational use pier of approximately 8,900 square feet to be constructed adjacent to an existing boat ramp and dock. A small area of sub tidal habitat would be converted with the placing of pilings for the new pier, however, this would be 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. 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. Therefore, the project is not likely to adversely affect EFH.

Migratory Birds and Bald Eagle:

Migratory birds are likely to be foraging and resting in the general vicinity of the project site. Nesting is not expected. However, if evidence of nesting is suspected or observed, the FWC guidance to protect nesting shorebirds or rookeries will be implemented. Therefore, impacts would be short term and minor.

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.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.84.5. Human Uses and Socioeconomics

12.70.84.5.1. 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 12-33 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 12-33. 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%

FLORIDA OFFICE OF ECONOMIC DEVELOPMENT	BAY COUNTY
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.

12.70.84.6. Cultural Resources

Affected Resources

At this time, there are no known historic or archaeological sites at the project site or in close proximity to the site (NPS 2013).

Environmental Consequences

While no cultural or archaeological resources are known to occur in the area, sediments in East Bay would be disturbed. Nonetheless, a complete review of this project under Section 106 of the NHPA would be completed as environmental review continues. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.84.6.1. 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.

12.70.84.6.2. 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.84.6.3. 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.

12.70.84.6.4. 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.

12.70.84.6.5. 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.

12.70.85. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the City of Parker Oak Shore Drive Pier project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by constructing a fishing pier. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

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Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks: Project Description

12.70.87. 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.

12.70.88. Background and Project Description

The Trustees propose to improve the Panama City Marina (see Figure 12-43 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 the public's use and/or enjoyment of the natural resources by 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.

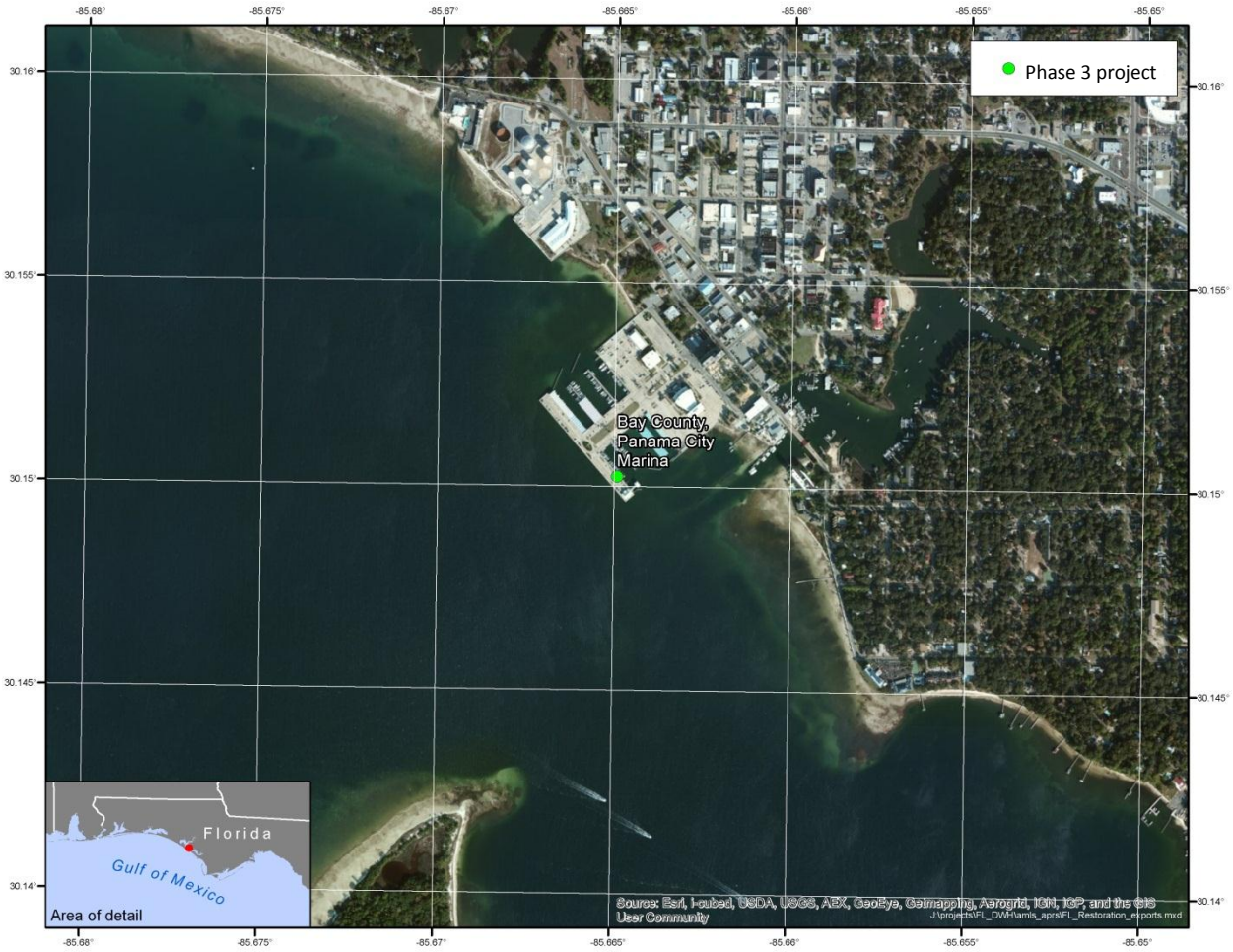

Figure 12-43. Location of Panama City Marina Project.

12.70.89. 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 their natural resources along Florida's Panhandle was denied or severely restricted. This project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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.

12.70.90. 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 the public's use and/or enjoyment of the natural resources 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 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 City will monitor the recreational use activity at the site. Panama City staff 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.

12.70.91. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $4,000,000 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.[19]

12.70.92. 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.

[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.

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 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 at the Panama City Marina.

12.70.93. 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 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 the public's use and/or enjoyment of the natural resources by 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 12-44). 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.

12.70.93.1. 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 12-45 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. 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.

12.70.93.2. 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 12-47). At the end of the boat ramp, 12-inch rip-rap would extend another 10 feet.

12.70.93.3. Staging Docks

Staging docks would be constructed on both sides and parallel the boat ramp (Figure 12-47). On the southeast side of the ramp the dock would be approximately 250 feet long by 6 feet wide (Figure 12-47). 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.

12.70.94. Project Location

The proposed project is located at the City-owned Panama City Marina in Panama City, Florida (see Figure 12-43, Figure 12-44 and Figure 12-45 for approximate location and Figure 12-46 and Figure 12-47 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 12-44. Location of Panama City Marina.

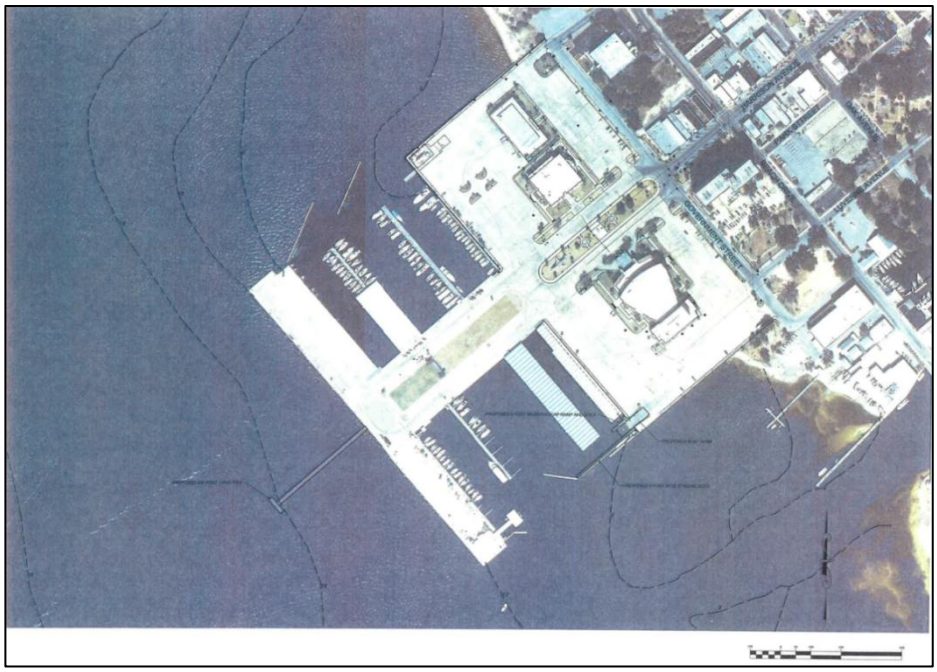

Figure 12-45. Location of proposed fishing pier, boat ramp, and staging docks as Panama City Marina.

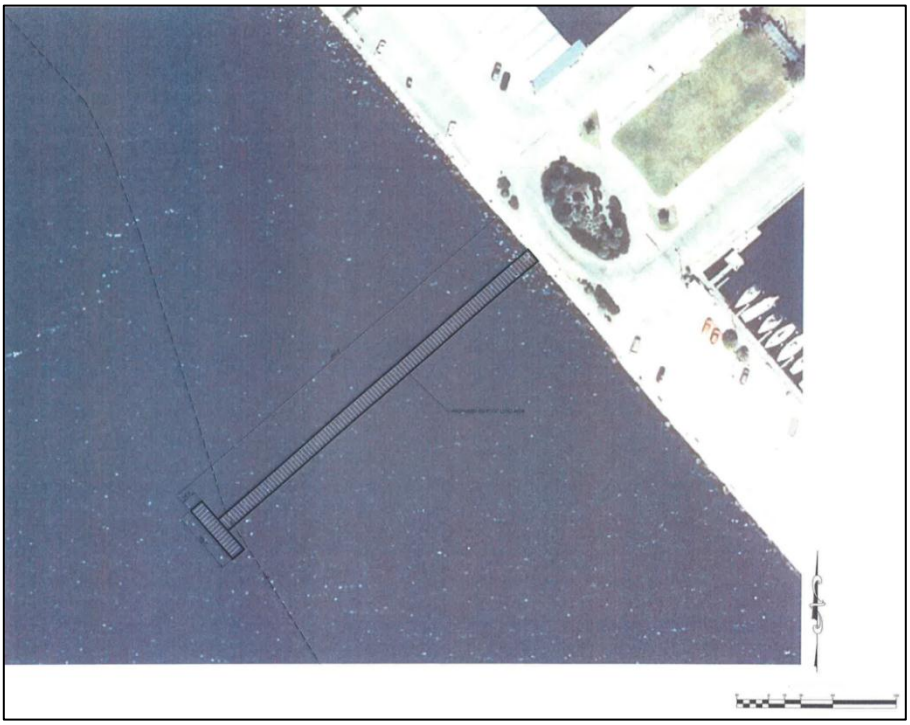

Figure 12-46. Proposed fishing pier.

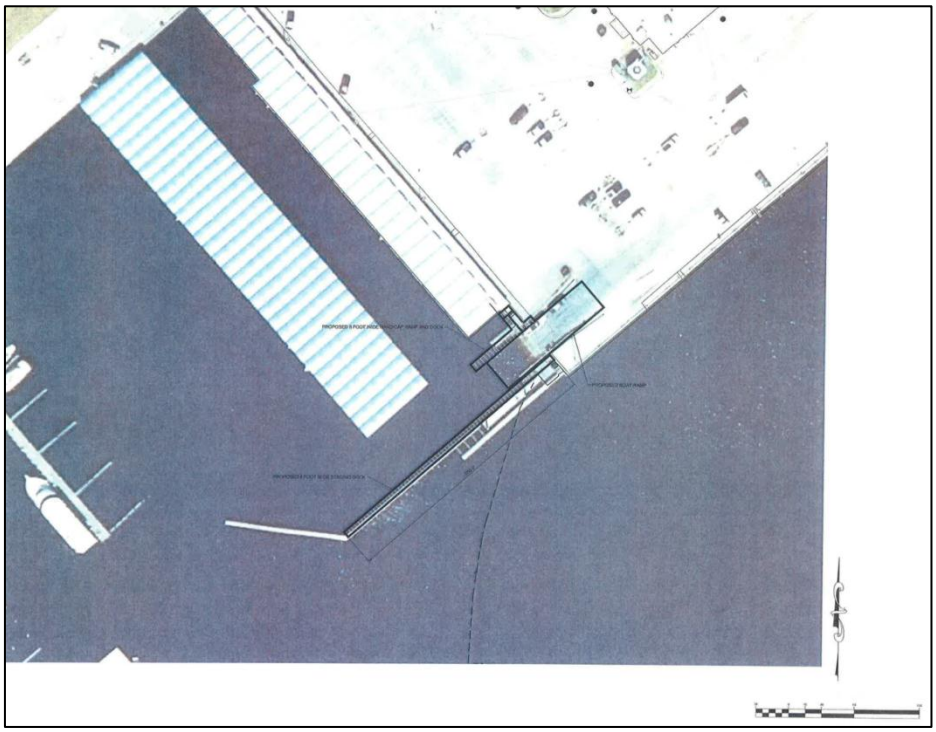

Figure 12-47. Proposed Boat Ramp and Staging Docks.

12.70.95. Construction and Installation

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. A range of hand tools and mechanized equipment would be used to construct the pier, staging docks, and boat ramp. Pilings would need to be placed to support the new pier and staging docks. The exact number of pilings to support the structures and the depth to which they are placed would be determined during the final engineering design phase for the project. The pilings would most likely be put in place by mechanically auguring holes. In-water work would be conducted from a barge, and best management practices (BMPs), such as the use of sediment curtains, would be used; all conditions set forth in federal, state, and local permits would be followed. Backhoes or other heavy equipment would be used to remove the old boat ramp and staging dock material and prepare the area for replacement structures. All materials removed would be properly disposed of in accordance with appropriate federal, state, and local regulations and guidelines. Staging of construction materials would occur in the parking lot of the Panama City Marina.

Construction is estimated to begin during the summer/fall 2014 and take approximately 12 to 24 months. Construction for the boat ramp is estimated to take less than 6 months and would likely occur outside of the fishing season (April – September) to avoid conflicts with the peak use of the boat ramp (Pearce 2013).

12.70.96. 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.

12.70.97. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.97.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.97.2. Physical Environment

12.70.97.2.1. 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. BMPs and 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.

12.70.97.2.2. 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 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.

12.70.97.2.3. 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 machinery and 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 12-34) 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 12-34. 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
Staging Docks/ Boat Ramp	6.380	0.018	0.176	6.574
Tractor Trailer23				
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 12-34, 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.

5. 20 Emissions assumptions for all equipment based on 8 hours of operation.

6. 21 CO_2 emissions assumptions for diesel and gasoline engines based on USEPA 2009.

7. 22 CH_4 and NOx emissions assumptions and CO_2e calculations based on USEPA 2011.

8. 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.

12.70.97.2.4. 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.

12.70.97.3. Biological Environment

12.70.97.3.1. 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 12-48).

Figure 12-48. 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).

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. Manatees inhabit both 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 species on September 30, 1991. The Gulf sturgeon, also known as the 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, and Swannee Rivers, and possibly others. The Gulf 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 system in 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. 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). St. Andrews Bay is not a part of the critical habitat designation (Figure 12-49).

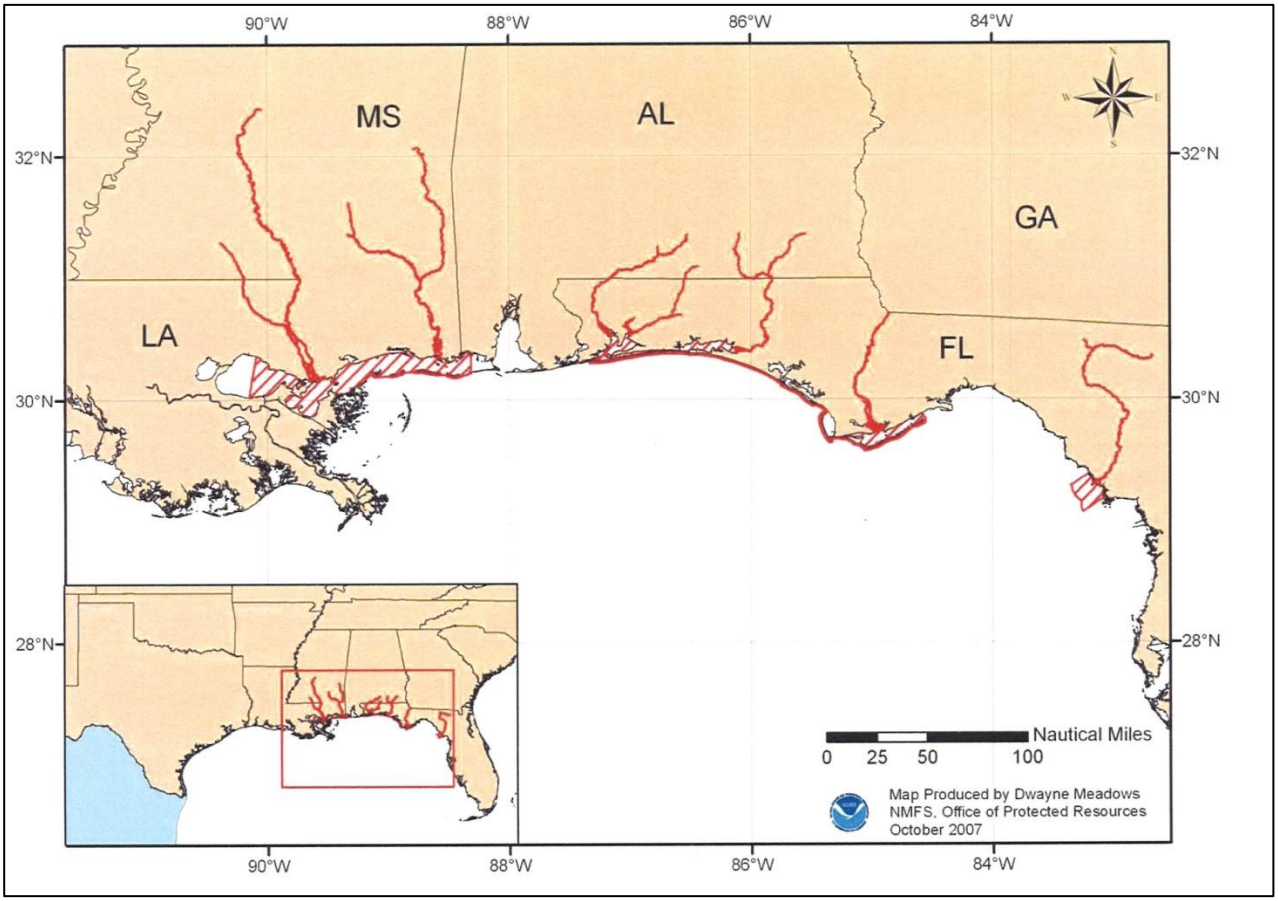

Figure 12-49. Gulf Sturgeon Critical Habitat.

Smalltooth Sawfish:

The smalltooth 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 (NOAA 2009b). Juveniles inhabit 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 29N latitude). Adults are found with juveniles but also in deeper water habitat (NOAA 2009b). The decline of this species is mainly attributed to mortality as bycatch 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 effects 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.

The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden. Table 12-35 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 12-35. List of species managed by NMFS in vicinity of the project study area (NMFS EFH mapper, 2013).

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Red Drum (Sciaenops ocellatus)	ALL	Red Drum
Highly Migratory Species		
Atlantic Sharpnose Shark	Neonate	Highly Migratory Species
Blacktip Shark	All	
Bonnethead Shark	Neonate, Juvenile	
Bull Shark	Juvenile	
Nurse Shark	Juvenile	
Sandbar Shark	Adult	
Scalloped Hammerhead Shark	Neonate, Juvenile	
Spinner Shark	Neonate, Juvenile	
Tiger Shark	Neonate, Juvenile	
Shrimp		
Brown shrimp (*Penaeus aztecus*)	ALL	Shrimp
White shrimp (*Penaeus setiferus*)		
Pink shrimp (*Penaeus duararum*)		
Royal red shrimp (*Pleoticus robustus*)		
Coastal Migratory Pelagics		
King mackerel (*Scomberomorus cavalla)*	ALL	Coastal Migratory Pelagics
Spanish mackerel (*Scomberomorus maculatus*)		
Cobia (*Rachycentron canadum*)		
Dolphin (*Coryphaena hippurus*)		
Reef Fish		
Balistidae - Triggerfishes	ALL	Reef Fish
Gray triggerfish (Balistes capriscus)		
Carangidae - Jacks		
Greater amberjack (Seriola dumerili)		
Lesser amberjack (Seriola fasciata)		
Almaco jack (Seriola rivoliana)		
Banded rudderfish (Seriola zonata)		
Labridae - Wrasses		
Hogfish (Lachnolaimus maximus)		
Lutjanidae - Snappers		
Queen snapper (Etelis oculatus)		

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Mutton snapper (Lutjanus analis)		
Blackfin snapper (Lutjanus buccanella)		
Red snapper (Lutjanus campechanus)		
Cubera snapper (Lutjanus cyanopterus)		
Gray (mangrove) snapper (Lutjanus griseus)		
Lane snapper (Lutjanus synagris)		
Silk snapper (Lutjanus vivanus)		
Wenchman (Pristipomoides aquilonaris)		
Vermilion snapper (Rhomboplites aurorubens)		
Malacanthidae – Tilefishes		
Goldface tilefish (Caulolatilus chrysops)		
Blueline tilefish (Caulolatilus microps)		
Serranidae – Groupers		
Speckled hind (Epinephelus drummondhayi)		
Yellowedge grouper (Epinephelus flavolimbatus)		
Red grouper (Epinephelus morio)		
Warsaw grouper (Epinephelus nigritus)		
Snowy grouper (Epinephelus niveatus)		
Nassau grouper (Epinephelus striatus)		
Black grouper (Mycteroperca bonaci)		
Yellowmouth grouper (Mycteroperca interstitialis)		
Gag (Mycteroperca microlepis)		
Scamp (Mycteroperca phenax)		
Yellowfin grouper (Mycteroperca venenosa)		

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).

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

Sea Turtles:

There is no nesting habitat for sea turtles in the project area so potential impacts to sea turtles would result from the risk of impact from construction activities, including physical impacts from construction materials or operating machinery. Due to these species' mobility and the implementation of NMFS' Sea Turtle and Smalltooth Sawfish Construction Conditions, to include daily surveys of the sediment curtains for "caught" species, the risk of harm from construction would be minimal. Sea turtles may be affected by being temporarily unable to use a project site due to potential avoidance of construction activities and related noise, but these effects would be insignificant.

Due to a lack of seagrasses and other suitable sea turtle foraging habitat, impacts from project installation and short-term turbidity would be insignificant for sea turtles that may occur within the project area. Additionally, any effects would be insignificant given the small footprint and short duration of the proposed project activities in relation to similar adjacent habitats available for foraging. Therefore, impacts on sea turtles would be short-term and negligible.

West Indian Manatee:
While the project area is not in 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 still be present in the open waters of St. Andrews Bay in the vicinity of the marina. Given their slow-moving and low visibility nature, it is possible that manatees could wander into proximity of construction activities. To minimize contact and potential harm to manatees, the Standard Manatee Conditions for In-Water Work (USFWS 2011), would be strictly observed. By adhering to these measures and recommendations, impacts on West Indian manatee would be short-term and minor.

While it is not anticipated that any incidental harassment of marine mammals will occur as a result of this proposed project, the Trustees are conducting an evaluation of the expected magnitude and duration of underwater noise from the pro Choctawhatchee Beach Mouseposed construction techniques and their potential impacts on protected species, including marine mammals. The results of this analysis will be coordinated with NOAA's Office of Protected Resources to develop best management practices (e.g., avoidance measures, monitoring, alternate equipment) to avoid incidental harassment, or to seek incidental harassment authorization under the Marine Mammal Protection Act as appropriate. Additional coordination with NOAA under the Endangered Species Act would be conducted if any potential effects to sea turtles or other listed species are identified.

Gulf Sturgeon:
Critical habitat features for Gulf sturgeon at or near the site include water quality, safe and unobstructed migratory pathways, sediment quality, and abundant prey items. Some temporary decrease in water quality could result from increased turbidity during construction, though this would be minimized through the use of BMPs such as sediment curtains. Additionally, the 400 foot fishing pier would extend out into St. Andrews Bay. Depending on the spacing of the pilings, this could present an obstruction to movements of the sturgeon. However, the shoreline around the marina is heavily developed, so it is unlikely that the Gulf sturgeon regularly uses the area, and there is ample habitat and unobstructed open waters for its movements in St. Andrews Bay. Therefore, impacts to Gulf sturgeon would be short- and long-term but negligible.

Smalltooth Sawfish:
Smalltooth sawfish historically were found in and around the project area; however, the current distribution is mainly restricted to South Florida and the Keys. Critical habitat for the smalltooth sawfish lies between Charlotte Harbor and the Florida Everglades, outside and south of this project site; therefore no adverse impacts are anticipated.

Migratory Birds:
Although bird species that use the waters around the marina for foraging or use the marina area itself for loafing are likely habituated to human activity, it is likely that they would experience some short-term minor adverse 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. Nesting is not known at the marina for migratory birds,

however, 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.

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.

Essential Fish Habitat (EFH)
An EFH assessment will be coordinated with the NMFS Habitat Conservation Division. If necessary, species specific measures would be recommended by NMFS and would be incorporated into the project construction plan. The project would not result in adverse, direct impacts to emergent wetlands, existing oyster reefs, or Submerged Aquatic Vegetation (SAV). Most motile fauna such as crab, shrimp, and finfish will likely avoid the area of potential effect during the construction process. The project may result in minor, adverse short term impacts to benthic organisms and temporarily affect habitat utilization by individuals considered under EFH fishery management plans.

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.

Invasive Species

Affected Resources
Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.97.4. Human Uses and Socioeconomics

12.70.97.4.1. 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 12-36 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 12-36. 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

FLORIDA OFFICE OF ECONOMIC DEVELOPMENT	BAY COUNTY
Median household income, 2009	$44,357
Persons below poverty level, percent, 2009	13.0%

12.70.97.4.2. Cultural Resources

Affected Resources

At this time, there are no known historic or archaeological sites at the project site or in proximity to the site (NPS 2013).

Environmental Consequences

Construction of the new staging docks and boat ramp is not expected to have an impact on cultural resources because none are known to be present and the work would take place with the footprint of the marina. The new fishing pier would extend 400 feet into St. Andrews Bay from the marina. While no cultural or archaeological resources are known to occur in this area, sediments would be disturbed. Therefore, a complete review of this project under Section 106 of the NHPA would be completed as environmental review continues and this project would be implemented in accordance with all applicable laws and regulations concerning the protection of the cultural and historic resources. Tribal consultations will be initiated with all interested, federally-recognized tribes. At this time, it is expected that the proposed action would have no effect on cultural resources.

12.70.97.4.3. 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.

12.70.97.4.4. 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.97.5. 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.

12.70.97.5.1. 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).

12.70.97.5.2. 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.

12.70.98. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by improving the city's marina. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

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Wakulla Mashes Sands Park Improvements: Project Description

12.70.100. 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.

12.70.101. 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 12-50 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 the public's use and/or enjoyment of the natural resources by 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.

12.70.102. 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 their natural resources along Florida's Panhandle was denied or severely restricted. This project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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. 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.

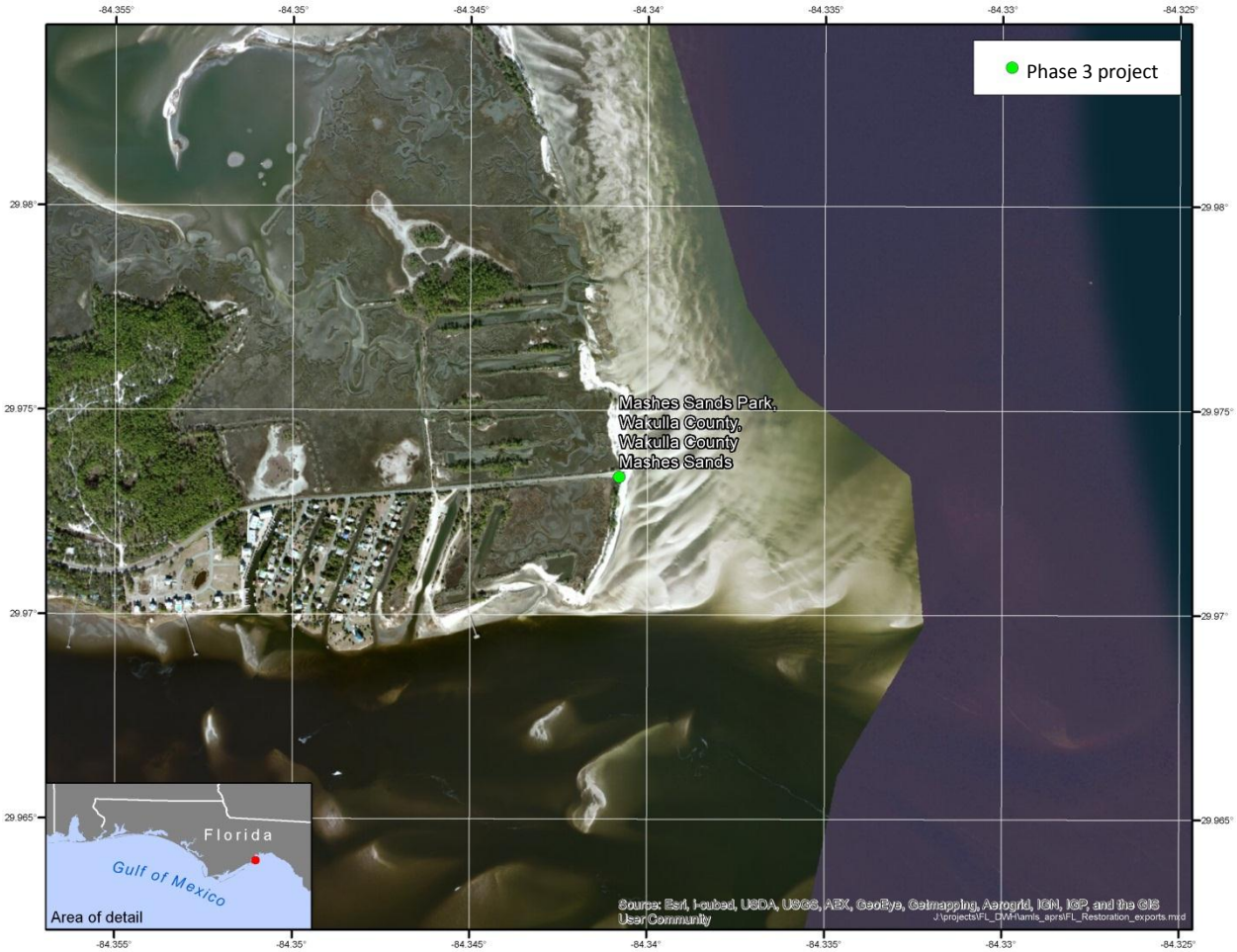

Figure 12-50. Location of Wakulla County Mashes Sands Park Improvements Project.

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.

12.70.103. 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 the public's use and/or enjoyment of the natural resources 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 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.

12.70.104. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $3,000,000 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.[24]

12.70.105. 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.

[24] 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.

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.

12.70.106. 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 increase in ecotourism would result from the addition of a new boardwalk, observation platform, and canoe/kayak launch site.

12.70.107. 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 (Figure 12-51 and Figure 12-52).

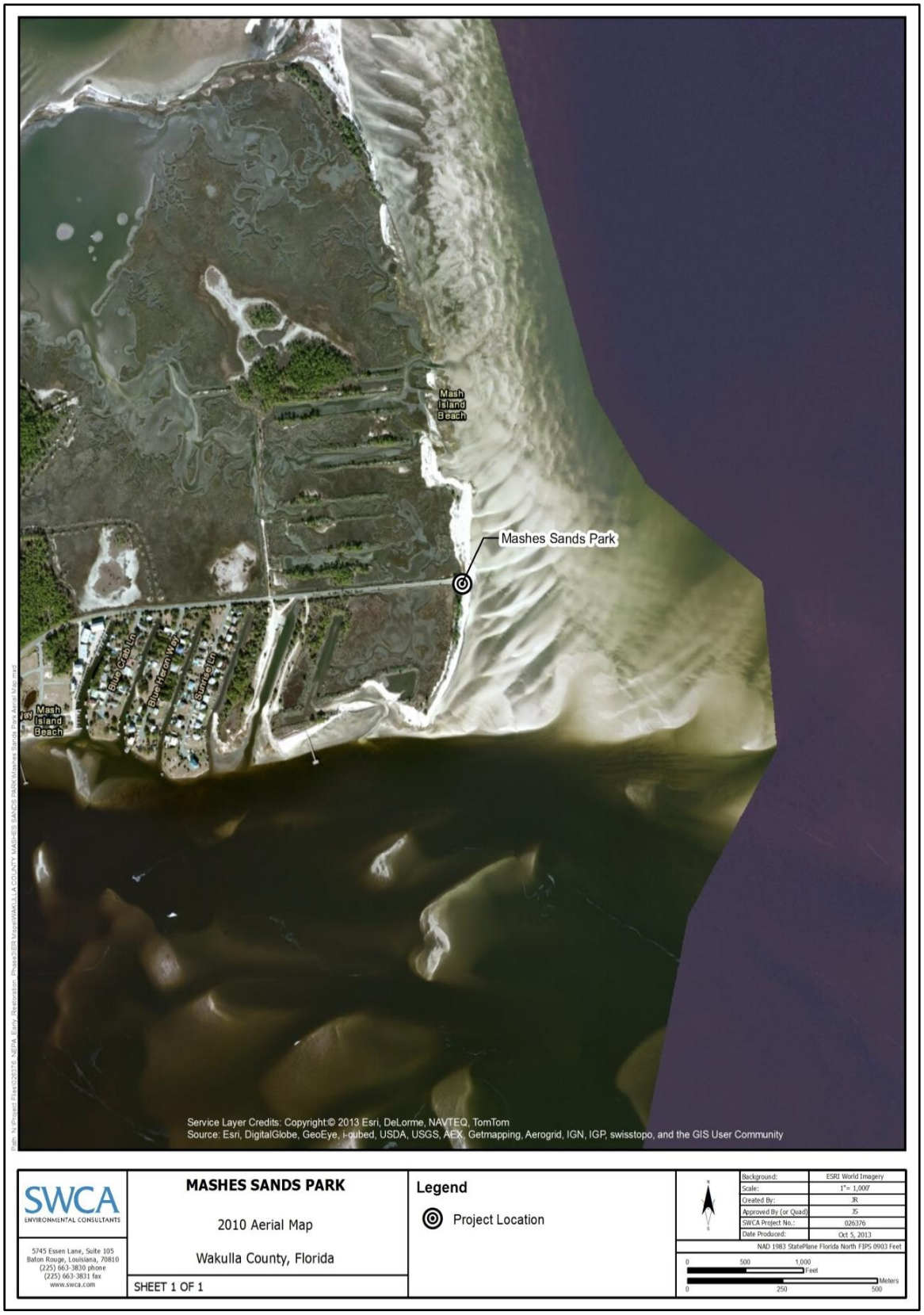

Figure 12-51. Mashes Sands Park location, Panacea, Wakulla County, Florida.

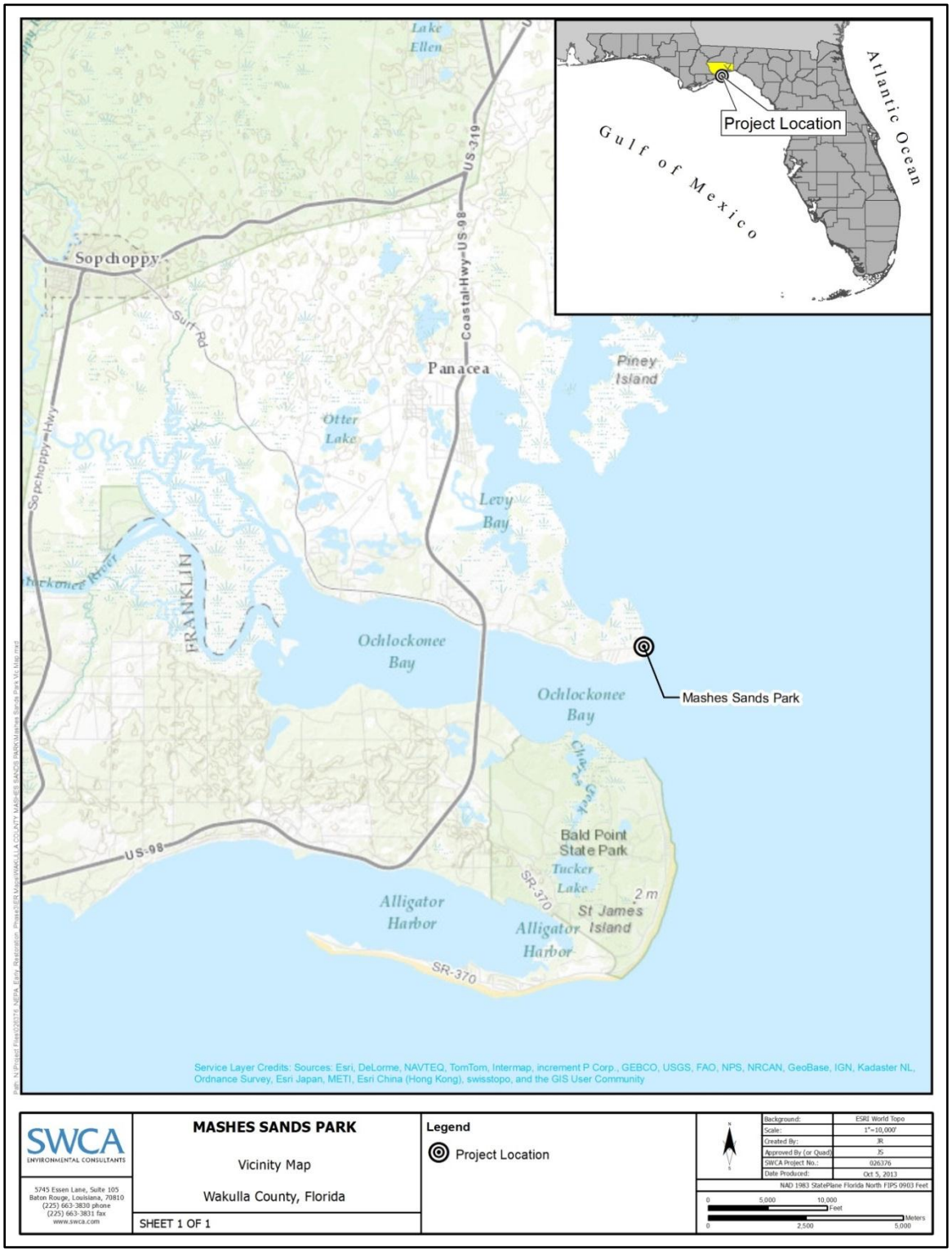

Figure 12-52. Mashes Sands Park vicinity map.

12.70.108. Construction and Installation

Detailed construction methods and plans have not yet been fully developed and would be subject to the final design and contractor approach. Proposed construction includes 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 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.

Pilings would need to be placed for observation platforms and boardwalks and, depending on the nature of repairs required to picnic areas, they 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.

Ground preparation, such as trail building and repairs to existing structures, would likely be limited to relatively shallow depths. The footprint of ground disturbance would depend on final project design, since much of the work is repairs to existing structures, and the amount of new ground disturbance would be limited to observation platforms, boardwalks, and walking paths. Material to be removed would include surface soil, vegetation, debris, and damaged material that would be removed to allow for repairs to existing facilities

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). For observation platforms and boardwalks, construction material is not expected to be permanently placed elevated over the ground surface. Walking paths would likely require gravel or paving material to provide a suitable walking surface. Other material may be placed on the ground in areas where repairs are made to existing facilities. It is not anticipated that the footprint of existing facilities would be expanded.

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.
- 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.

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

1. 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.
2. Silt fences would be of optimal design and materials for adequate sediment control.
3. 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.
4. 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.
5. Sod would be sufficiently grown and maintained to secure a dense stand of live grass.
6. 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 372).

Construction could occur at any time but would ideally take place during the time of year when recreation use is lowest to minimize impacts. Construction work is expected to be completed over a 1- to 5-year construction timeframe. The following schedule is currently planned:

- Design Complete: Summer 2015
- Permitting Complete: To be completed upon securing of funding
- Contract Bid: Summer 2015
- Construction Start: Summer 2015
- Construction Compete: Summer 2020

12.70.109. 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.

12.70.110. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.110.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.110.2. Physical Environment

12.70.110.2.1. 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.

12.70.110.2.2. 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.

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 affect emergent 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.

12.70.110.2.3. 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 12-37). 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 12-37 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.

12.70.110.2.4. 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 12-37. 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 12-38 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-38. 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 effects from renovations including increased boating, vehicle traffic, and recreational activities would remain minor.

12.70.110.3. Biological Environment4

12.70.110.3.1. 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 effects 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 federally listed threatened and endangered species reported for the project area in Wakulla County include five species of sea turtles, West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*), Gulf sturgeon (*Acipenser oxyrinchus desotoi*), and one proposed species, red knot (*Calidris canutus rufa*) (USFWS 2013b). State-listed threatened species reported to occur within the project areas are addressed below, under State-Listed Species. A list of federally designated threatened, endangered, and candidate wildlife species known or believed to occur in the project area is below in Table 12-39.

Table 12-39. Protected species with potential to occur in the project area.

RESOURCE CATEGORY	COMMON NAME	SCIENTIFIC NAME	USFWS STATUS	STATE STATUS	NATURAL COMMUNITIES
Birds	Red knot	*Caladris canutus rufa*	P	–	Intertidal marine habitats in bays and estuaries **Potential habitat present**
Birds	Piping plover	*Charadrius melodus*	T	T	Sandy beaches, sand flats, and mudflats along coastal areas **Potential habitat present**
Birds	Southeastern American kestrel	*Falco sparverius paulus*	MBTA	T	Open pine, woodland edges, prairies **Potential habitat present**
Birds	Bald eagle	*Haliaeetus luecocephalis*	BGEPA	-	Tall trees near coastal areas, bays, rivers, and lakes **Potential habitat present**
Birds	Wood stork	*Mycteria americana*	E	E	Nests in forested wetlands; forages in shallow waters of marshes, swamps, tidal creeks, and flooded pastures **Potential habitat present**
Birds	Least tern	*Sterna antillarum*	MBTA	T	Areas along the coasts including estuaries and bays **Potential habitat present**
Fish	Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T	T	Estuarine: various; marine: various habitats; Riverine: alluvial and blackwater streams **Potential habitat present**
Fish	Smalltooth sawfish	*Pristis pectinata*	E	E	Estuarine: various Lacustrine: river mouths and bays **No Potential habitat present**
Mammals	West Indian manatee	*Trichechus manatus latirostris*	E	E	Estuarine: submerged vegetation, open water; Marine: open water, submerged vegetation; Riverine: alluvial stream, blackwater stream, spring-run stream **Potential habitat present**
Reptiles	Green sea turtle	*Chelonia mydas*	E	E	Terrestrial: sandy beaches; no nesting **Potential habitat present**
Reptiles	Hawksbill sea turtle	*Eretmochelys imbricata*	E	E	Marine: open water; no nesting **Potential habitat present**
Reptiles	Kemp's ridley sea turtle	*Lepidochelys kempii*	E	E	Terrestrial: sandy beaches; no nesting **Potential habitat present**
Reptiles	Leatherback sea turtle	*Dermochelys coriacea*	E	E	Terrestrial: sandy beaches; no nesting **Potential habitat present**
Reptiles	Loggerhead sea turtle	*Caretta caretta*	T	T	Terrestrial: sandy beaches; no nesting **Potential habitat present**

BGEPA=Bald and Golden Eagle Protection Act; CH=Critical Habitat; E=endangered; MBTA=Migratory Bird Treaty Act; P=proposed; SSC=species of special concern; T=threatened

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 smalltooth sawfish (*Pristis pectinata*) 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 (NMFS 2009a). Juveniles inhabit 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 29N latitude). Adults are found with juveniles but also in deeper water habitat (NMFS 2009a). The decline of this species is mainly attributed to mortality as bycatch 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.

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) (Figure 12-40).

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 effects 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.

The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden. Table 12-40 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 12-40. List of species managed by NMFS in vicinity of the project study area (NMFS EFH mapper, 2013).

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Highly Migratory Species		
Scalloped Hammerhead Shark	Neonate, Juvenile	Highly Migratory Species
Bonnethead Shark	All	
Blacknose Shark	All	
Blacktip Shark	All	
Bull Shark	Adult	
Spinner Shark	Juvenile	
Lemon Shark	Adult	
Tiger Shark	Juvenile	
Nurse Shark	Juvenile	
Great Hammerhead Shark	All	
Atlantic Sharpnose Shark	All	
Shrimp		
Brown shrimp (*Penaeus aztecus*)	ALL	Shrimp
White shrimp (*Penaeus setiferus*)		
Pink shrimp (*Penaeus duararum*)		
Royal red shrimp (*Pleoticus robustus*)		
Coastal Migratory Pelagics		
King mackerel (*Scomberomorus cavalla)*	ALL	Coastal Migratory Pelagics
Spanish mackerel (*Scomberomorus maculatus*)		
Cobia (*Rachycentron canadum*)		
Dolphin (*Coryphaena hippurus*)		
Reef Fish		
Balistidae - Triggerfishes		
Gray triggerfish (Balistes capriscus)		

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Carangidae - Jacks Greater amberjack (Seriola dumerili) Lesser amberjack (Seriola fasciata) Almaco jack (Seriola rivoliana) Banded rudderfish (Seriola zonata) **Labridae - Wrasses** Hogfish (Lachnolaimus maximus) **Lutjanidae - Snappers** Queen snapper (Etelis oculatus) Mutton snapper (Lutjanus analis) Blackfin snapper (Lutjanus buccanella) Red snapper (Lutjanus campechanus) Cubera snapper (Lutjanus cyanopterus) Gray (mangrove) snapper (Lutjanus griseus) Lane snapper (Lutjanus synagris) Silk snapper (Lutjanus vivanus) Wenchman (Pristipomoides aquilonaris) Vermilion snapper (Rhomboplites aurorubens) **Malacanthidae – Tilefishes** Goldface tilefish (Caulolatilus chrysops) Blueline tilefish (Caulolatilus microps) Golden Tilefish (Lopholatilus chamaeleonticeps) **Serranidae – Groupers** Speckled hind (Epinephelus drummondhayi) Yellowedge grouper (Epinephelus flavolimbatus) Red grouper (Epinephelus morio) Warsaw grouper (Epinephelus nigritus) Snowy grouper (Epinephelus niveatus) Nassau grouper (Epinephelus striatus) Black grouper (Mycteroperca bonaci) Yellowmouth grouper (Mycteroperca interstitialis) Gag (Mycteroperca microlepis) Scamp (Mycteroperca phenax) Yellowfin grouper (Mycteroperca venenosa)	ALL	Reef Fish

Wood Stork

Federally listed as endangered, the wood stork (*Mycteria americana)* is a colonially nesting wading bird found year round in freshwater and estuarine wetlands in Florida, Alabama, and Mississippi (USFWS 2007a). Wood storks use a variety of freshwater and estuarine wetlands for nesting, foraging, and roosting. Nesting habitat requires medium-sized to tall trees in standing water or islands surrounded by relatively large areas of water. Wood storks feed almost exclusively on fish and are specialized feeders using a groping, tactile method to capture prey. Colonies are generally formed between January and April, and eggs are laid in late March to late May. Chicks generally fledge in late June or early July to mid-August (Coulter et al. 1999). The 2006 nesting totals indicate that the stork population has reached its highest level since it was listed as endangered in 1984 with over 11,000 nesting pairs documented in Florida, Georgia, South Carolina, and North Carolina (USFWS 2007a). Wood stork have been

documented at the project site (ebird.org), likely foraging or loafing. No nesting is known on the project site.

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.

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. These are included in Table 12-39 above.

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).

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.

Sea Turtles and Marine Mammals

Effects on sea turtles include the risk of impact from construction activities, including physical impacts from construction materials or operating construction machinery. Due to these species' mobility and the implementation of NMFS's sea turtle and smalltooth sawfish construction conditions, the risk of harm from construction would be discountable with conservation measures. Sea turtles may be affected by being temporarily unable to use the project site and surrounding area due to potential avoidance of construction activities and related noise, but these effects would not be significant.

Sea turtles would not forage in the project site given the lack of seagrass and other forage items. Due to a lack of seagrasses and other suitable sea turtle foraging habitat, impacts due to project installation and short-term turbidity effects would not be significant for sea turtles within the project area. Additionally, any effects would not be significant given the minimal in-water work located in a dredged inlet and the short duration of the proposed project activities. No documented nesting has occurred on the beaches at Mashes Sands Park, though if nesting were to occur, no project actions would take place on the sandy beaches of the park. Impacts to sea turtles would be short term and minor during project implementation.

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 populations are known to migrate into bays, estuaries, and river mouths and could be located in the proposed project area (NMFS 2013b). Marine mammals would not be anticipated to occur in the dredged inlet where the boat ramp repair work would occur, though noise and sediment disturbance during repairs may cause a minor disturbance. To minimize contact and potential harm to manatees, the Standard Manatee Conditions for In-Water Work (USFWS 2011) , would be strictly observed. By adhering to these measures and recommendations, impacts on West Indian manatee would be short-term and minor during in-water repairs to the existing boat ramp.

Smalltooth Sawfish and Gulf Sturgeon

Smalltooth sawfish historically was found in and around the project area; however, the current distribution is mainly restricted to South Florida and the Keys. Critical habitat for the smalltooth sawfish lies between Charlotte Harbor and the Florida Everglades, outside and south of the project site (NOAA 2009). Based on the lack of suitable smalltooth sawfish habitat, no impact to this species would occur as a result of the proposed project.

The USFWS and the NMFS have designated critical habitat essential to the conservation of the Gulf sturgeon, though no critical habitat is located within or adjacent to the proposed project area, it is present in the Ochlockonee River which empties into Ochlockonee Bay. The upgrades to the existing boat ramp and construction of a kayak/canoe launch would not obstruct migratory pathways between the Gulf and the Ochlockonee River or affect prey item abundance in the Bay where wintering sturgeon may feed. Gulf sturgeon are expected to avoid the area during construction due to increased noise and turbidity. Due to the fact that only minimal in-water work may be carried out within a dredged inlet, only short-term minor impacts from disturbance would be anticipated.

Essential Fish Habitat

An EFH assessment will be coordinated with the NMFS Habitat Conservation Division. If necessary, species specific measures would be recommended by NMFS and would be incorporated into the project construction plan. The project would not result in adverse, direct impacts to emergent wetlands, existing oyster reefs, or Submerged Aquatic Vegetation (SAV). Most motile fauna such as crab, shrimp, and finfish will likely avoid the area of potential effect during the construction process

The proposed canoe/kayak launch construction will take place adjacent to the existing boat ramp A very small area of sub tidal 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 disturbed as a result of both the use of the existing boat launch structure and shoreline habitat. Therefore, impacts to EFH or the natural processes sustaining them may be detectable but localized, and would not measurably alter natural conditions. Small changes to local population numbers, population structure, and other demographic factors would be unlikely to occur. Sufficient habitat would remain functional at both the local and range-wide scales to maintain the viability of the species. Therefore, the project is not likely to adversely affect EFH.

Piping Plover and Red Knot

The main risk to wintering or migrating piping plovers and red knots would be from human disturbance during resting and foraging in habitats adjacent to work areas. The proposed project would result in short-term increases in noise and foraging habitat disturbance, which could startle individuals, though normal activity is expected to resume within minutes; alternatively, the noise may cause the plovers or red knot to move to a nearby area as alternate available habitat is abundant and within two miles of the project area. Piping plover and red knot are highly mobile species and if disturbed by construction activities they may be temporarily displaced to other foraging and resting areas nearby (< 2 miles) and is within within normal movement patterns. These impacts would be considered short term and minor.

State-Listed Birds and MBTA

State-listed birds such as American oystercatchers (*Haematopus palliates*) or least terns (*Sterna antillarum*) may nest on beaches or mudflats in the vicinity of the project areas, while Marian's marsh wren (*Cistohorus palustris marianae*) and Wakulla seaside sparrow (*Ammadramus maritimus juncicola*) may nest in the tidal marsh habitat of the project area. All migratory birds are protected under the MBTA. If restoration activities occur during the nesting season (March 1–August 1), migratory birds could be disturbed by noise generated by in-water activities. 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.

Potential impacts to birds would include noise and other disturbance from construction activities that may affect birds using open water and nearby shoreline within the project area. These effects would be minor and temporary in scope. The construction of the proposed boardwalk and kayak launch in the salt marsh would create a minor temporary adverse impact to birds using marsh habitat. Potential effects to prey resources may occur during construction; however, these would be minor and temporary in scope. Given the small project footprint and the species' mobility, any species occurring within the project area during construction would be able to avoid direct impacts. The proposed project would create short-term minor adverse impact to birds in the project area.

Bald Eagle

In recent years, the bald eagle has been removed from the endangered species list under the ESA though conservation measures to protect active nest sites during the nesting season must be considered to reduce potential disturbances of certain project activities.

There is one known bald eagle nest located approximately 0.75 mile from the project site. Based on the distance from proposed project activities, nesting of the known occurrences of bald eagle would not be impacted. All activities (staging, demolition, construction, cleanup, use of equipment, machinery, vehicles including utility terrain vehicle [UTV] and all-terrain vehicle [ATV], or boat/vessels) should avoid a bald eagle nest by a minimum of 660 feet.

Consultation with the FWC concerning the proposed project and anticipated construction schedule relative to known bald eagle nest sites within the project vicinity and the nesting season in Florida (October 1–May 15) would be required prior to commencement of restoration activities. To minimize potential for impacts to nesting bald eagles, the consultation protection measures may include 1) addressing prescribed nest tree protection zones and 2) preparation of a bald eagle nest protection plan (including nesting behavior disturbance monitoring). Bald eagles have been known to tolerate certain potential disturbances within their breeding territories. Should these conservation measures be implemented for active nest sites adjacent to enhancement activities in the project areas, potential impacts to the bald eagle would be short-term and minor.

Section 7 and Essential Fish Habitat Consultations

Section 7 ESA consultations with the USFWS and the NMFS will be initiated for the proposed project. An EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act also would be completed to address any situations where proposed project activities may affect EFH. The project would incorporate any additional conservation recommendations provided by the NMFS and the USFWS during the consultation to avoid, minimize, mitigate, or otherwise offset any adverse effects of the proposed project on listed species or EFH.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.110.4. Human Uses and Socioeconomics

12.70.110.4.1. 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 12-41).

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 12-41. 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).

12.70.110.5. 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. All of these resources are of unknown eligibility for listing on the National Register of Historic Places at this time. There is one site that is located immediately adjacent to the project area. This prehistoric site (8WA516) is located on the sand dunes just east of the project area. Site 8WA516 was identified on the shoreline in 1993. Based on a review of aerial photography, the shoreline has been altered substantially since the site was originally recorded. As the site was originally sparse and eroded, the project work is not likely to have an effect to historic resources.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA would be completed as environmental review continues. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.110.5.1. 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 Consequences6

The project would have a short-term minor impact on traffic during the construction phase only. No effects 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.

12.70.110.5.2. Land and Marine Management

Affected Resources

Wakulla County has a Comprehensive Plan (Wakulla County 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.110.6. 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 effects would be long term, but would not be expected to result in a significant detraction from the overall natural viewshed.

12.70.110.6.1. 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.

12.70.110.6.2. 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.

12.70.111. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Wakulla County Mashes Sands Park Improvements project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by improving the recreational opportunities at the park. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

12.70.112. References

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Northwest Florida Estuarine Habitat Restoration, Protection and Education-Fort Walton Beach: Project Description

12.70.113. 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.

12.70.114. 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 the public's use and/or enjoyment of the natural resources 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 would also 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

12.70.115. 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 their natural resources along Florida's Panhandle was denied or severely restricted. The project would enhance and/or increase the public's use and/or enjoyment of natural resources, helping to offset adverse impacts to such uses caused by the Spill and related response actions. 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 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. 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.

12.70.116. 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 the public's use and/or enjoyment of the natural resources 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 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.

12.70.117. Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are $9,287,094 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.[25]

[25] 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:

12.70.118. 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.

- 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.

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.

12.70.119. 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.

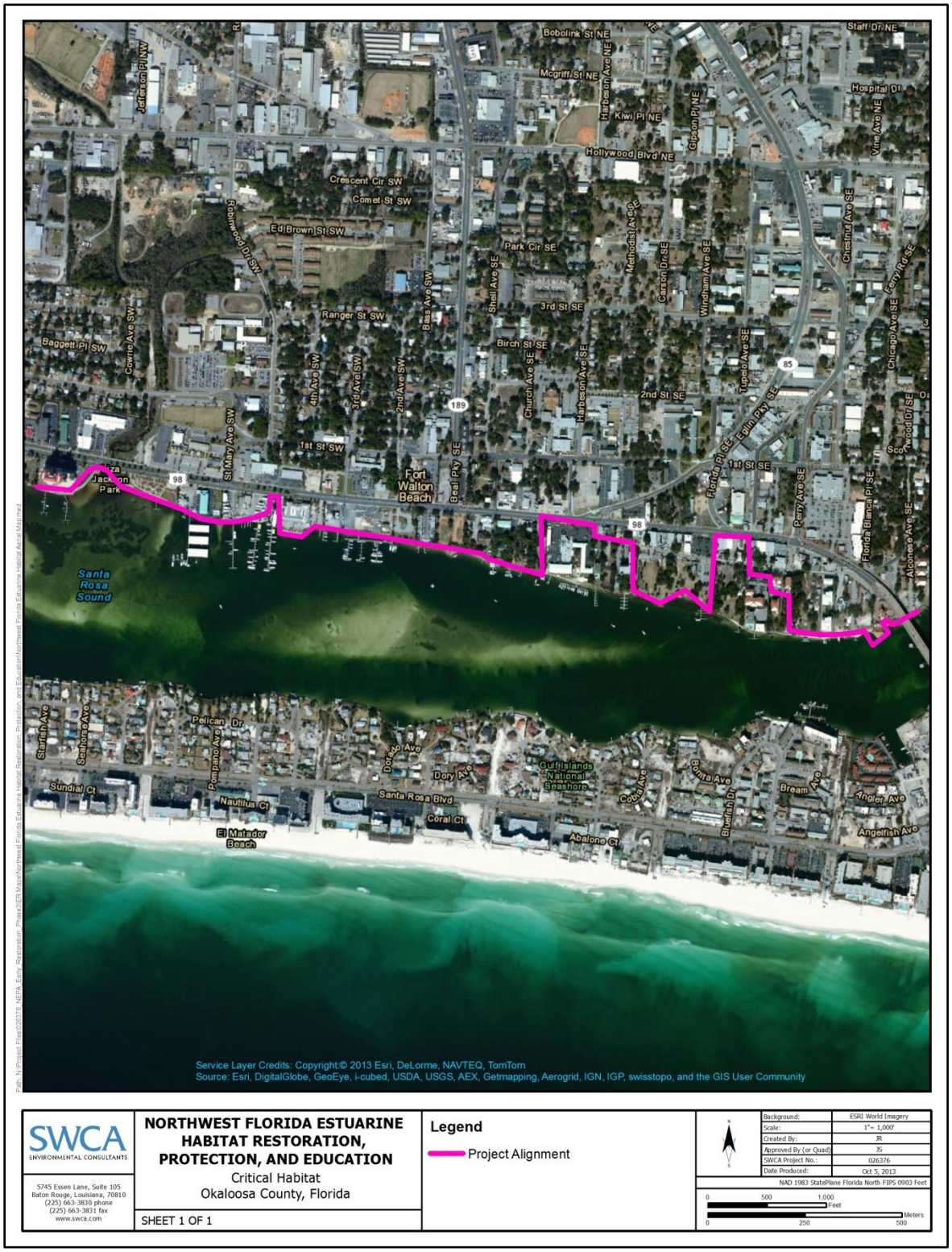
The proposed project would achieve two basic objectives: 1) educate the public on the importance of shoreline habitat and stimulating the regional economy through increased tourism by installing an educational interactive waterfront boardwalk, and 2) restore the natural estuarine shoreline using techniques 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, increasing tourism and the overall economy in the area. 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.

12.70.120. 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.



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NORTHWEST FLORIDA ESTUARINE HABITAT RESTORATION, PROTECTION, AND EDUCATION

Critical Habitat
Okaloosa County, Florida

SHEET 1 OF 1

Legend

Project Alignment

Background:	ESRI World Imagery
Scale:	1"= 1,000'
Created By:	JR
Approved By (or Quad):	JS
SWCA Project No.:	026376
Date Produced:	Oct 5, 2013

NAD 1983 StatePlane Florida North FIPS 0903 Feet

0 500 1,000 Feet

0 250 500 Meters

Figure 12-55. Illustration of the area where boardwalk construction and installation would occur.

12.70.121. Construction and Installation

Detailed construction methods and plans have not yet been developed for the entire project construction, as this would be partially determined by the contractor overseeing the construction phase. One component of the proposed project would be construction of new boardwalk structures on the existing public beach, as well as construction in developed areas of the city of Fort Walton Beach. The oyster reef construction and salt marsh restoration portions of the project would occur on the shoreline and in the waters of Santa Rosa Sound.

12.70.121.1. 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.

12.70.121.2. Oyster Reef Construction

Expansion of an existing oyster reef at the project site is proposed. Construction plans/designs of the oyster reef have yet to be finalized. Construction activities would likely include placement of a linear structure that may use artificial and/or shell-based materials. Materials such as riprap and fossilized oyster shell would be considered. The specific oyster reef elevation and technique design would be selected to maximize shoreline protection and meet state regulatory requirements. Oyster cultch would

be deployed in Santa Rosa Sound in areas that currently support oyster production with the goal of expanding an existing reef. Prior to construction, an oyster presence survey would be completed that identifies suitable areas. There are two methods in which oyster cultch is typically deployed: 1) using a barge-mounted crane with a clam shell bucket combined with a material barge loaded with oyster shells moored to the crane barge or 2) using a water cannon to jet loose shell from a material barge. The latter method is used in areas with water depth constraints. Upon completion, the deployment area would be surveyed to delineate expanded portions of the oyster reef.

12.70.121.3. Salt Marsh Restoration

Placement and plans/designs of the salt marsh restoration have yet to be finalized. Possible restoration techniques would include local, native marsh vegetation planted in sediment in areas adjacent to the newly constructed boardwalk and along Santa Rosa Sound shoreline. The created marsh areas would be monitored for natural revegetation and to determine success and identify any corrective action needed.

12.70.121.4. 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

12.70.121.5. 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).

12.70.122. 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.

12.70.123. Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects 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.

12.70.123.1. No action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP 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.

12.70.123.2. Physical Environment

12.70.123.2.1. 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.

12.70.123.2.2. 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 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.

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

12.70.123.3. 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 12-42).

Table 12-42. 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 12-42 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.

12.70.123.3.1.Noise

Affected Resources

Noise can be defined as unwanted sound and noise levels, and its effects are interpreted in relationship to effects 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 12-43 shows typical noise levels for common sources expressed in dBA. Noise exposure depends on how much time an individual spends in different locations.

Table 12-43. 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 increase in 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 effects from recreational activities and project monitoring would remain minor.

12.70.123.4. Biological Environment

12.70.123.4.1. 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 effects 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 effects 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 federally listed threatened and endangered species reported for the project area in nclude five species of sea turtles, West Indian manatee (*Trichechus manatus latirostris*), and Gulf sturgeon.

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 imbricate*), 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).

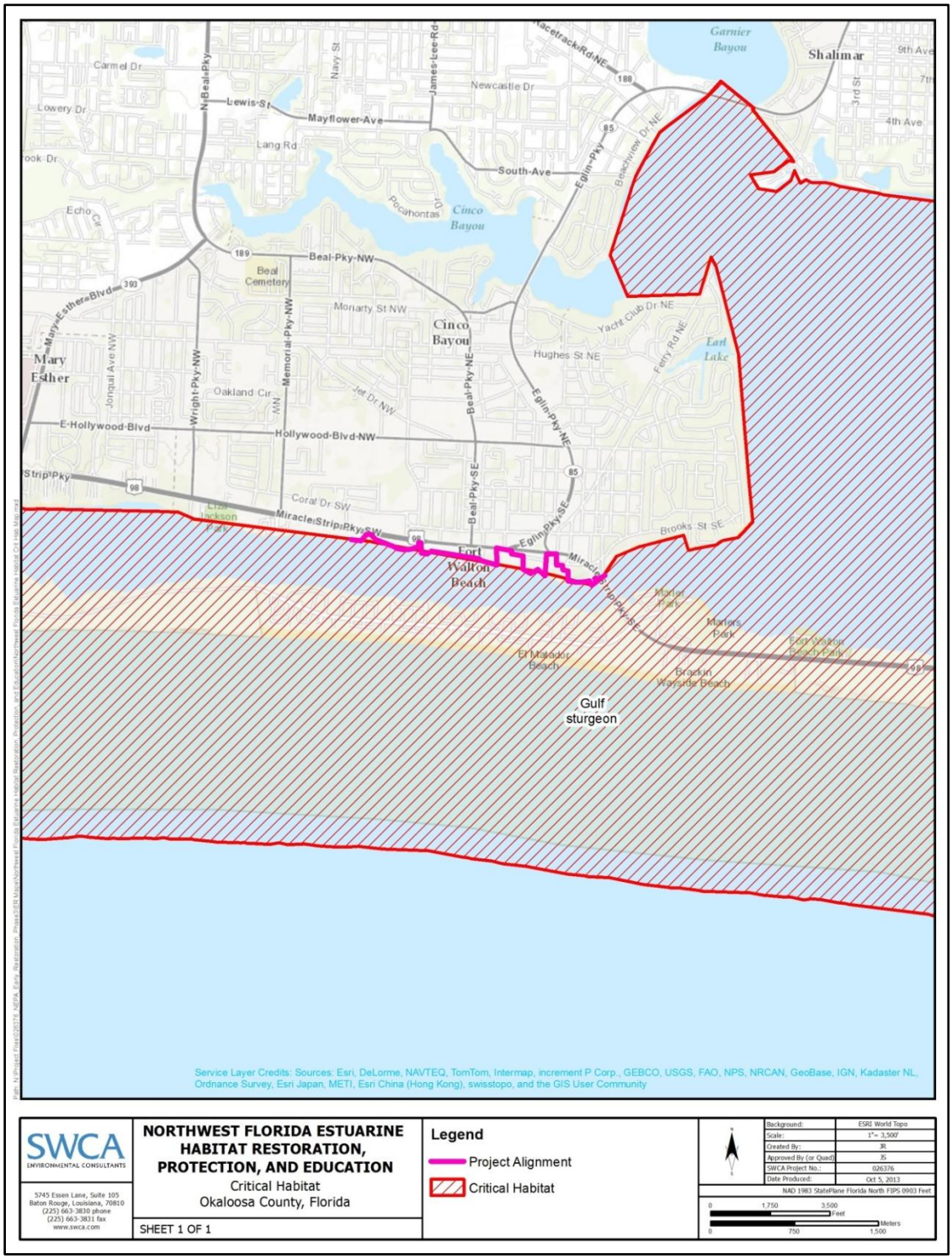

Figure 12-56. Map of Gulf sturgeon critical habitat adjacent to the proposed project area.

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 effects 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.

The area also provides habitat for prey species (e.g. Gulf menhaden, shad, croaker and spot) that are consumed by larger commercially important species. In addition, the area provides habitat for spotted seatrout, striped mullet, southern flounder, Atlantic croaker, and Gulf menhaden. Table 12-44 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 12-44. List of species managed by NMFS in vicinity of the project study area (NMFS EFH mapper, 2013).

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Red Drum (*Sciaenops ocellatus*)	ALL	Red Drum
Highly Migratory Species Atlantic Sharpnose Shark Bull Shark Nurse Shark Sandbar Shark Scalloped Hammerhead Shark Spinner Shark Tiger Shark	 Neonate All Juvenile Adult Neonate, Juvenile Juvenile, Adult Juvenile	Highly Migratory Species
Shrimp Brown shrimp (*Penaeus aztecus*) White shrimp (*Penaeus setiferus*) Pink shrimp (*Penaeus duararum*) Royal red shrimp (*Pleoticus robustus*)	ALL	Shrimp
Coastal Migratory Pelagics King mackerel (*Scomberomorus cavalla)* Spanish mackerel (*Scomberomorus maculatus*) Cobia (*Rachycentron canadum*) Dolphin (*Coryphaena hippurus*)	ALL	Coastal Migratory Pelagics
Reef Fish **Balistidae - Triggerfishes** Gray triggerfish (Balistes capriscus) **Carangidae - Jacks** Greater amberjack (Seriola dumerili)		

MANAGEMENT UNIT / SPECIES	LIFESTAGE(S) FOUND AT LOCATION	FMP
Lesser amberjack (Seriola fasciata) Almaco jack (Seriola rivoliana) Banded rudderfish (Seriola zonata) **Labridae - Wrasses** Hogfish (Lachnolaimus maximus) **Lutjanidae - Snappers** Queen snapper (Etelis oculatus) Mutton snapper (Lutjanus analis) Schoolmaster (Lutjanus apodus) Blackfin snapper (Lutjanus buccanella) Red snapper (Lutjanus campechanus) Cubera snapper (Lutjanus cyanopterus) Gray (mangrove) snapper (Lutjanus griseus) Lane snapper (Lutjanus synagris) Wenchman (Pristipomoides aquilonaris) Vermilion snapper (Rhomboplites aurorubens) **Malacanthidae – Tilefishes** Goldface tilefish (Caulolatilus chrysops) Blackline tilefish (Caulolatilus cyanops) Blueline tilefish (Caulolatilus microps) **Serranidae – Groupers** Speckled hind (Epinephelus drummondhayi) Yellowedge grouper (Epinephelus flavolimbatus) Red grouper (Epinephelus morio) Warsaw grouper (Epinephelus nigritus) Snowy grouper (Epinephelus niveatus) Nassau grouper (Epinephelus striatus) Marbled grouper (Epinephelus inermis) Black grouper (Mycteroperca bonaci) Yellowmouth grouper (Mycteroperca interstitialis) Gag (Mycteroperca microlepis) Scamp (Mycteroperca phenax) Yellowfin grouper (Mycteroperca venenosa)	ALL	Reef Fish

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 (*Falco peregrinus 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). According to the FWC Bald Eagle Nest Locater, there are no bald eagle nests within 5 miles of the project site (FWC 2012).

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.

Sea Turtles and Marine Mammals

For projects in waters accessible to sea turtles, the NMFS has developed standardized Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS 2006). These conditions are typically applied to projects as part of the Clean Water Act Section 404 permit issued for in-water work. It is unlikely that the area and project site contain submerged aquatic vegetation that is the preferred foraging habitat of sea turtles, but it cannot be ruled out entirely.

If sea turtles are present in the in-water work area, short-term disturbances from noise and turbidity would occur. Sea turtles are a highly mobile species and would be expected to move away during in-water activities. Additionally, should a sea turtle be encountered during installation of the project, the crews would allow these species to exit from the project vicinity before commencing oyster cultch placement of the artificial reef expansion activities. Therefore, potential impacts or disturbances to listed sea turtles would be short term and minor.

Noise and other activity associated with proposed in-water construction may temporarily disturb manatees and dolphin species in the vicinity of the project area through temporary impacts on prey abundance, water quality (turbidity), and underwater noise. The USACE CWA Section 404 permit that would be issued for the in-water work proposed as part of the project would include Standard Manatee Conditions for In-Water Work (USFWS 2011)). These conditions would be implemented and adhered to during project construction. The permittee must comply with these conditions and it is anticipated that these conservation measures would significantly reduce risk of adverse effects to manatees from the proposed project. Dolphins are highly mobile species and would be expected to move away from the construction area during in-water activities. The boardwalk construction and artificial oyster reef and salt marsh expansion/restoration project would adhere to all applicable federal, state, and local permit conditions for the protection of marine mammals and impacts to marine mammals during construction would be short-term and minor.

Smalltooth Sawfish and Gulf Sturgeon

The smalltooth sawfish is a mobile species and relatively rare in northern Gulf waters and the immediate project area. The Gulf sturgeon utilizes Santa Rosa Sound as a migratory corridor from breeding grounds to winter foraging grounds. Minor short-term disturbances may occur as a result of in-water work associated with the proposed project. For projects in waters accessible to the smalltooth sawfish and Gulf sturgeon, the project would comply with NMFS Smalltooth Sawfish Construction Conditions (NMFS 2006).

Disturbances to the water column from in-water work would temporarily affect certain Gulf sturgeon critical habitat PCEs due to turbidity, dispersal of potential prey, and substrate disturbance. These would be limited to area immediately surrounding the work area and would occur only during construction. Therefore, impacts to Gulf sturgeon critical habitat would be short term and minor.

Essential Fish Habitat

An EFH assessment will be coordinated with the NMFS Habitat Conservation Division. If necessary, species specific measures would be recommended by NMFS and would be incorporated into the project construction plan. The project would not result in adverse, direct impacts to emergent wetlands, existing oyster reefs, or Submerged Aquatic Vegetation (SAV). Most motile fauna such as crab, shrimp, and finfish will likely avoid the area of potential effect during the construction process. Following construction, there is expected to be increased habitat utilization of the breakwaters and near-shore environment by these species and a beneficial, long-term impact is anticipated. The project may result in minor, adverse short term impacts to benthic organisms and temporarily affect habitat utilization by individuals considered under EFH fishery management plans.

The proposed work in the EFH area is comprised of two components: the planting of approximately 0.5 acre area of estuarine salt marsh with native vegetation and the expansion of existing oyster bars by approximately 0.2 acres. 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. Construction activities may have a minor, short term impact on habitat. 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. Therefore, the project is not likely to adversely affect EFH.

State-Listed Birds, MBTA, and BGEPA

State-listed birds such as American oystercatcher or least tern may nest on beaches or mudflats in the vicinity of the project area. All migratory birds are protected under the MBTA. If restoration activities occur during the nesting season (March 1–August 1), they could be disturbed by noise generated by in-water activities. 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. All activities (staging, demolition, construction, cleanup, use of equipment, machinery, vehicles

including utility terrain vehicle [UTV] and all-terrain vehicle [ATV], or boat/vessels) should avoid a bald eagle nest by a minimum of 660 feet.

Consultation with the FWC concerning the proposed project and anticipated construction schedule relative to known bald eagle nest sites within the project vicinity and the nesting season in Florida (October 1–May 15) would be required prior to commencement of restoration activities. To minimize potential for impacts to nesting bald eagles, the consultation protection measures may include 1) addressing prescribed nest tree protection zones and 2) preparing a bald eagle nest protection plan (including nesting behavior disturbance monitoring). Bald eagles have been known to tolerate certain potential disturbances within their breeding territories. Should these conservation measures be implemented for active nest sites adjacent to enhancement activities in the project areas, potential impacts to the bald eagle would be shortterm and minor.

Section 7 and Essential Fish Habitat Consultations

Section 7 ESA consultations with the USFWS and NMFS will be initiated for the proposed project. An EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act also would be completed to address any situations where proposed project activities may affect EFH habitat. The project would incorporate any additional conservation recommendations provided by the NMFS and the USFWS during the consultation to avoid, minimize, mitigate, or otherwise offset the adverse effects of the proposed project on listed species or EFH.

Invasive Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible 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 3 described more about the regulations addressing 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 Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short term and minor.

12.70.123.5. Human Uses and Socioeconomics

12.70.123.5.1. Socioeconomics and Environmental Justice

Affected Resources

The population of Okaloosa County is 180,822. Table 12-45 contains population/minority data for Okaloosa County and Florida (U.S. Census Bureau 2010).

Table 12-45. 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 12-45), 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.

12.70.123.5.2. 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.

Environmental Consequences

There are ground-disturbing activities associated with the construction of the boardwalk. Additionally, the boardwalk would be constructed within the viewshed of numerous historic buildings that are or may be eligible for listing on the NRHP. Due to the number of historic buildings and previously recorded archaeological sites, as well as the presence of an NRHP-listed district, a cultural resources survey of the proposed project areawill be conducted as environmental review continues, and a complete review of this project under Section 106 of the NHPA will occur. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.70.123.5.3. 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.

Pursuant to the Coastal Zone Management Act of 1972, federal activities must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. Federal Trustees are submitting consistency determinations for state review coincident with public review of this document.

12.70.123.5.4. 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.

12.70.123.6. 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.

12.70.123.6.1. 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.

12.70.123.7. 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.

12.70.124. Summary and Next Steps

Per the Purpose and Need of the Draft Phase III ERP/PEIS, four alternatives are considered, including a no action (Alternative 1), selection of project types emphasizing habitat and living coastal and marine resources (Alternative 2), project types emphasizing recreational opportunities (Alternative 3), or a combination of both habitat and living coastal and marine resources and recreational opportunities (Alternative 4). As proposed, the Northwest Florida Fort Walton Beach Educational Boardwalk project implements restoration techniques within Alternatives 3 and 4.

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 Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Draft 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 public's use and/or enjoyment of the natural resources by improving the boardwalks and enhancing adjoining natural resources and habitat. The Trustees have started coordination and reviews under the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Historic Preservation Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, Coastal Zone Management Act, and other federal statutes. The Trustees will consider public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. Final determination on this project will be included in the final Phase III ERP/PEIS and Record of Decision.

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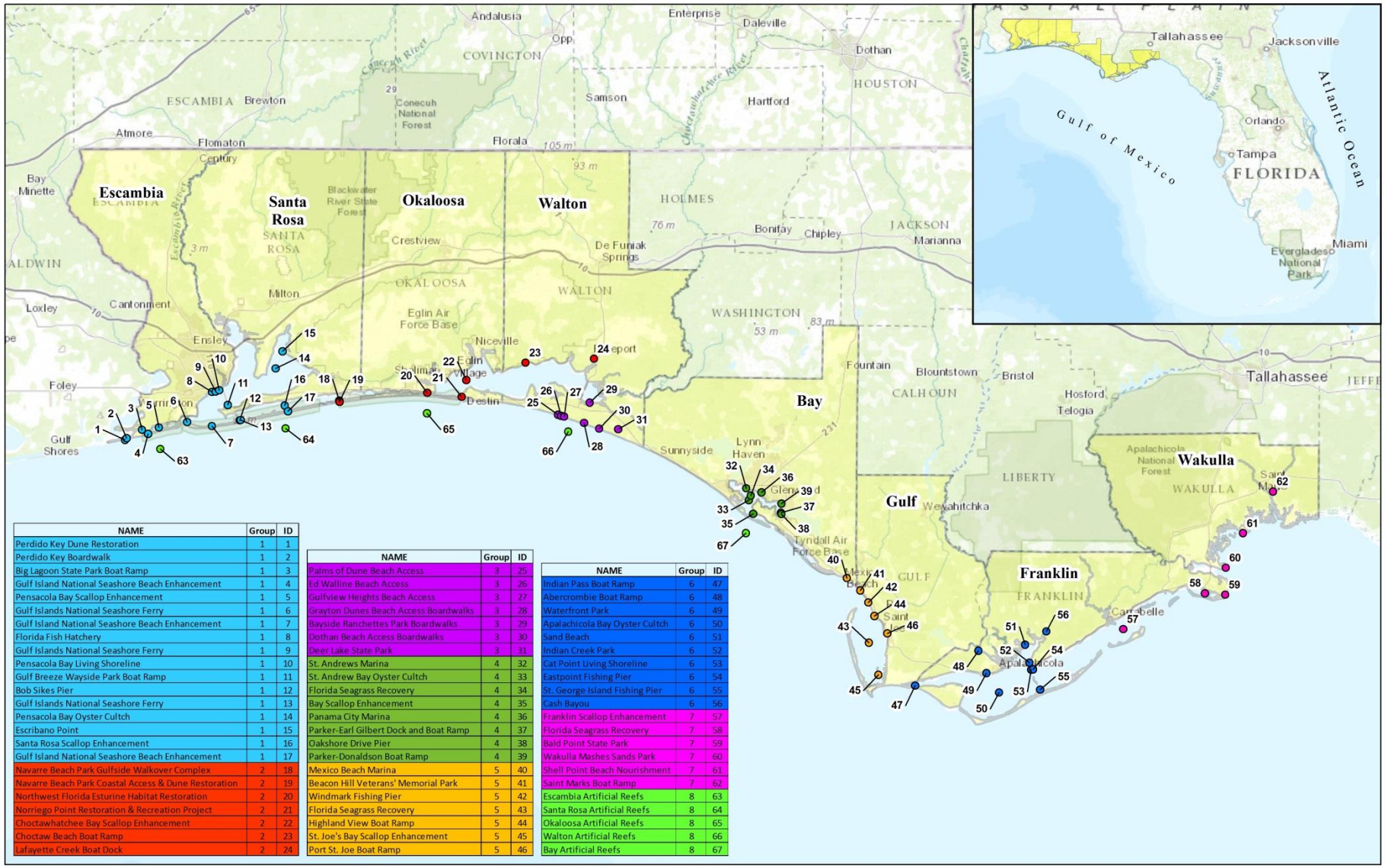
Cumulative Effects

This section analyzes the potential for cumulative impacts to resources which may occur as a result of the Phase III early restoration projects proposed in Florida. The projects 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. 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 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); Group 6 – Apalachicola Bay (Franklin County); Group 7 – Apalachicola and Apalachee Bays (Franklin and Wakulla Counties); Group 8 – Offshore Waters of Florida. Regional group were analyzed for, past, present, and reasonably foreseeable future actions which have, are, or could take place and result in cumulative impacts to the affected resource when combined with the impacts of the projects being considered (Figure 12-56) below.



NAME	Group	ID
Perdido Key Dune Restoration	1	1
Perdido Key Boardwalk	1	2
Big Lagoon State Park Boat Ramp	1	3
Gulf Island National Seashore Beach Enhancement	1	4
Pensacola Bay Scallop Enhancement	1	5
Gulf Islands National Seashore Ferry	1	6
Gulf Island National Seashore Beach Enhancement	1	7
Florida Fish Hatchery	1	8
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 Island 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 Esturine Habitat Restoration	2	20
Norriego Point Restoration & Recreation Project	2	21
Choctawhatchee Bay Scallop Enhancement	2	22
Choctaw Beach Boat Ramp	2	23
Lafayette Creek Boat Dock	2	24

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
Parker-Donaldson Boat Ramp	4	39
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
Indian Pass Boat Ramp	6	47
Abercrombie Boat Ramp	6	48
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 Mashes 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

Group 1: Pensacola Bay Area

Table 12-46 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 effects that, when combined with other past, present, and reasonably foreseeable actions in Pensacola Bay and its watershed, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-46. 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	+	+	+	+	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 Island 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	+	NE	S/+	S/+	+/-	S
Ferry Project, Gulf Island National Seashore	-	-	-	-	-	-	-	+	-	+/-	S/+	+/-	+/-
Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle	NE	S	S	S	S/+	S	S	+	NE	+	+	NE	S

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

There are two Living Shoreline projects, an oyster cultch placement project with multiple site locations, and one dune and one beach enhancement project proposed. There are also several boat ramps, a boardwalk improvement project and creation of a ferry service. Furthermore, there is a scallop enhancement project, a hatchery project, and a pier restoration project. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- The majority of the projects above would result in short term, minor adverse effects to water quality, and only a few would have water quality effects that persist beyond construction. Several of the projects contribute to improved water quality.
- The majority of the projects may have only short term, minor adverse effects to living coastal and marine resources. Only a few projects have effects that would persist beyond construction, and several would provide benefits to living coastal and marine resources.
- There would be some short term minor adverse effects habitats during construction activities associated with projects proposed in Group 1. In some cases, such as dune restoration and living shorelines, benefits to habitats are anticipated.
- All of the projects are anticipated to provide socioeconomic benefits either through improved access to recreation or improved conditions at recreational sites.

Past, present and reasonably foreseeable activities in Group 1 have contributed to adverse cumulative effects to certain resources. Group 1 projects are to occur on or around Pensacola Bay, which is fairly urbanized on the west side, but less so on the east side, particularly around the smaller East Bay where Eglin Air Force Base is located. The greater Pensacola Bay area provides abundant recreation opportunities as well as terrestrial and marine habitats for species, including protected species. Ongoing activities such as military operations that are located nearby (Eglin Air Force Base, Pensacola Navy Station, etc.) have contributed to cumulative adverse effects to air quality, water quality and habitats in the region. Eglin Air Force Base and Pensacola Naval Air Station also contribute noise from aircraft, operations and tactical maneuvering in the immediate vicinity of the bases. Other activities such as coastal development, recreational boating and other human induced effects have also contributed to cumulative adverse impacts to sensitive habitats and protected species. The population in the Pensacola region is anticipated to increase by approximately 48 percent by 2025 (Florida Department of Transportation, 2004), which indicates that the contribution of human related effects to cumulative adverse impacts is likely to continue. Additionally, Florida Department of Transportation (FDOT) is proposing to replace the bridge between Gulf Breeze and Pensacola (Highway 98 Bridge) for which a NEPA EA is anticipated in 2013. The proposed Highway 98 Bridge Replacement could result in adverse effects to numerous resources including water quality, air quality, living coastal and marine resources, habitats, transportation, recreation and public safety during construction. Some of these effects may persist beyond construction and could contribute to cumulative adverse effects.

There are also many environmental stewardship and restoration activities that have occurred, are underway or proposed for the Group 1 region. Other restoration projects in Group 1 include living shoreline placement in numerous Pensacola Bay locations, oyster cultch placement activities, scallop enhancements and beach restoration activities. These activities would provide an incremental benefit to Gulf Coast habitats and species as well as water quality through reductions in erosion. Group 1 projects

include both restoration and enhancement activities as well as several boat ramps and creation of a ferry service. Overall, the projects proposed in the Group 1 region would not have a substantial contribution to cumulative adverse effects in the Group 1 region and could provide an incremental contribution to beneficial effects.

Overall, the projects in Group 1 would result in minor incremental contributions to effects on water quality and living coastal and marine resources in the Pensacola Bay coastal region, but would not substantially contribute to adverse cumulative impacts in the region. Cumulatively, a benefit to water quality, living and coastal marine resources, habitats and recreation is anticipated.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. Two Oyster Restoration Projects FWCC
2. FDEP/FWCC 10 Living Shoreline Projects proposed or underway
3. 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
4. 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
5. FDOT Pensacola Bay Bridge Replacement (Environmental Study Phase, NEPA EA anticipated in 2013)
6. Pensacola Naval Air Station (U.S. Navy)
7. University of West Florida Master Plan Update 2011-2021
8. Pensacola Beach, FL, and Perdido Key Beach Restoration Project Phase 2 (FDEP Beach Erosion Control Program)

Group 2: Choctawhatchee Bay Projects

Table 12-47 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 effects that, when combined with other past, present, and reasonably foreseeable actions in Choctawhatchee Bay and the nearby vicinity, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-47. 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	+	+	+	+	NE	S/+	S/+	NE	+
Navarre Beach Park Gulfside Walkover Complex	S	S	S	S	S/+	S/+	S/+	+	NE	+	+	NE	+
Northwest Florida Fort Walton Beach Educational Boardwalk	S	S	S	S	+	+	+	+	NE	+	+	NE	+
Norriego Point Restoration and Recreation Project	S	S	S	S	+	+	+	+	NE	+	+	NE	+
Choctawhatchee Bay Scallop Enhancement	NE	S	S	S	S/+	S	S	+	NE	+	+	NE	S
Choctaw Beach Boat Ramp	S	S	S	S	S	S	S	+	NE	S	S/+	+/-	S
Lafayette Creek Boat Dock	S	S	S	S	S	S	S	+	NE	S	S/+	+/-	S

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

There is one scallop enhancement project, an educational boardwalk project, a coastal access project, and a recreational enhancement project proposed. There are also two boat ramps, and a boardwalk enhancement project. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- The majority of the projects above would result in short term, minor adverse effects to water quality, and only a few would have water quality effects that persist beyond construction. Projects such as Northwest Florida Fort Walton Beach Educational Boardwalk project would contribute to improved water quality.
- Some of the projects may have short term, minor adverse effects to living coastal and marine resources. Only a few projects have effects that would persist beyond construction, and several would provide benefits to living coastal and marine resources.
- The majority of the projects would have both short and long-term minor adverse impacts to soils, resulting from the loss of soil productivity from construction activities as well as from the long-term placement of structures.
- There would be some short term minor adverse effects to habitats during construction activities associated with projects proposed in Group 2. In some cases, such as dune restoration and habitat restoration, benefits to habitats are anticipated.

- All of the projects are anticipated to provide socioeconomic benefits either through improved access to recreation or improved conditions at recreational sites.

Past, present and reasonably foreseeable activities in Group 2 have contributed to adverse cumulative effects to certain resources. Group 2 projects occur on or around the Choctawhatchee Bay, which has urbanized areas mainly around the cities of Destin and Fort Walton Beach. Choctawhatchee Bay is also surrounded by large tracts of undeveloped state parks and forests and open space managed by the Northwest Florida Water District. Many of Choctawhatchee Bay's tributaries run though these park, forest and water district lands, which provide contiguous riparian corridors that connect to the Bay. There are multiple recreation opportunities and sites throughout the Group 2 region that help provide high quality habitat for terrestrial and aquatic species, including protected species. Ongoing activities such as military operations that are located nearby (Eglin Air Force Base and Fort Walton Beach Airport and Hurlburt Navy Field) have contributed to cumulative adverse effects to air quality, water quality and habitats in the region. Eglin Air Force Base, Fort Walton Beach Airport and Hurlburt Navy Field also contribute noise from aircraft, operations and tactical maneuvering (for the military operations) in the immediate vicinity of the base and airport. Other activities such as coastal development, recreational boating and other human induced effects have also contributed to cumulative adverse impacts to sensitive habitats and protected species. The population in Santa Rosa County is predicted to rise 98 percent between 2007 and 2030 (University of West Florida,
Haas Center for Business Research and Economic Development 2007), which indicates that the contribution of human related effects to cumulative adverse impacts is likely to continue.

There are also many environmental stewardship and restoration activities that have occurred, are underway or proposed for the Group 2 region. The Choctawhatchee Basin Alliance of Northwest Florida State College (CBA) has constructed eight living shorelines within Choctawhatchee Bay and also has an oyster shell recycling program (CBA, www.basinalliance.org, accessed November 23, 2013). Projects in Group 2 include dune and estuarine habitat restoration and dune walkovers intended to restore habitats or minimize effects to sensitive resources such as coastal dunes and still provide recreational access. These activities would provide an incremental benefit to Gulf Coast habitats and species as well as water quality through reductions in erosion. Overall, the projects proposed in the Group 2 region would not have a substantial contribution to cumulative adverse effects in the Group 2 region and could provide an incremental contribution to beneficial effects.

Overall, the projects in Group 2 would result in minor incremental contributions to effects on water quality and living coastal and marine resources in the Choctawhatchee Bay coastal region, but would not substantially contribute to adverse cumulative impacts in the region. Cumulatively, a benefit to water quality, living and coastal marine resources, habitats and recreation is anticipated.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. Two Oyster Restoration Projects FWCC
2. FDEP/FWCC 10 Living Shoreline Projects (proposed or underway)

3. 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
4. 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
5. Navarre Beach Master Plan
6. Naval Air Station Whiting Field, Santa Rosa County
7. Multiple living shorelines & oyster recycling program (CBA, Northwest Florida State College)
8. Navarre Beach Berm and Dune Restoration Project (FDEP Beach Erosion Control Program)

Group 3: Walton County Florida Recreational Enhancement and Access Projects

Table 12-48 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 effects that, when combined with other past, present, and reasonably foreseeable actions in southeast Walton County and the nearby vicinity, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-48. 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	+	+	S	+	+	+
Ed Walline Beach Access	S	S	S	S	S	S	S	+	+	S	+	+	+
Gulfview Heights Beach Access	S	S	S	S	S/+	S/+	S/+	+	+	S/+	+	+	+
Grayton Dunes Beach Access Boardwalks	S	S	S	S	S/+	S/+	S/+	+	NE	+	+	NE	+
Bayside Ranchettes Park Boardwalks	S	S	S	S	S/+	S/+	S/+	+	NE	+	+	NE	+

	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
Dothan Beach Access Boardwalks	**S**	**S**	**S**	**S**	**S/+**	**S/+**	**S/+**	**+**	**NE**	**+**	**+**	**NE**	**+**
Deer Lake State Park	**S**	**NE**	**S**	**S**	**S/+**	**S/+**	**S/+**	**+**	**NE**	**+**	**+**	**NE**	**+**

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

All of the Group 3 projects are centered on enhancing visitor experience and recreational opportunities. These projects focus on improving facilities at beach access points, boardwalk improvements, and enhacing visitor facilities. Most occur entirely in upland habitats. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- The majority of the projects above could result in short term, minor adverse effects to water quality, and only a few would have water quality effects that persist beyond construction. Several of the projects contribute to improved water quality.
- These projects may have only short term, minor adverse effects to living coastal and marine resources. Only a few projects have effects that would persist beyond construction, and several would provide benefits to living coastal and marine resources.
- The majority of the projects would have short-term minor adverse impacts to soils, resulting from disturbance during construction.
- There would be some short term minor adverse effects habitats during construction activities associated with projects proposed in Group 3. In some cases, where the prohibition of visitors on natural areas is discouraged benefits to habitats are anticipated.
- All of the projects would have beneficial impacts to public health and safety and shoreline protection as a result of providing the public safe access to recreational sites.
- All of the projects are anticipated to provide socioeconomic benefits either through improved access to recreation or improved conditions at recreational sites.

Past, present and reasonably foreseeable activities in Group 3 have contributed to adverse cumulative effects to certain resources. Group 3 projects are occur on or around the shoreline of southeast Walton County, which is somewhat urbanized, but also provides recreation opportunities terrestrial and marine habitats for species, including protected species. Ongoing activities such as military operations that are located nearby (Eglin Air Force Base) have contributed to cumulative adverse effects to air quality, water quality and habitats in the region. Eglin Air Force Base also contributes noise from aircraft, operations and tactical maneuvering in the immediate vicinity of the base. The recently opened Northwest Florida Beaches International Airport in Panama City (2010) has also contributed to cumulative adverse effects to air quality, water quality, noise, habitats and living and coastal marine resources. The new airport also provides an incremental benefit to infrastructure for residents and visitors in the Group 3 region.

Other activities such as coastal development, recreational boating and other human induced effects have also contributed to cumulative adverse impacts to sensitive habitats and protected species. The population in Walton County is anticipated to increase by approximately 22 percent by 2030 (BEBR, 2012), which indicates that the contribution of human related effects to cumulative adverse impacts is likely to continue.

A large transportation corridor project is planned to connect portions of Walton, Bay and Washington Counties to one another and the new Panama City Airport. Segment 1 of the proposed West Bay Parkway runs along the coastline adjacent to all but one of the Group 3 projects, Deer Lake Park and is anticipated to be approved with a final EIS issued in October 2014. The corridor improvement project could benefit recreational users in Group 3 by providing improved access (infrastructure improvements) to the boardwalk, boat ramp and beach improvement projects proposed in the Group 3 region over the long-term. However, this is a large transportation project and there could be temporary effects to transportation, air quality, noise, water quality, habitats and wildlife during, some of which would likely persist and may provide an incremental contribution to a cumulative adverse effect to the resources listed above.

A major beach restoration and erosion control project is proposed to run approximately 18 miles along the same shoreline as the projects proposed in Group 3. This could provide an incremental contribution to beneficial effects for habitats, species, water quality, geology and recreation. Projects in Group 3 while primarily focusing on providing increased or improved recreational opportunities, include some restoration techniques that address issues in sensitive habitat areas. By directing public use to concentrated sites, especially where current recreation may be diffuse, could provide an incremental benefit to Gulf Coast habitats and species. Overall, the projects proposed in the Group 3 region would not have a substantial contribution to cumulative adverse effects in the Group 3 region and could provide an incremental contribution to beneficial effects.

Overall, the projects in Group 3 would result in minor incremental contributions to effects on living coastal and marine resources in the southeast Walton County region, but would not substantially contribute to adverse cumulative impacts in the region. Cumulatively, a benefit to, living and coastal marine resources, habitats, recreation and socioeconomics is anticipated.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. Walton County Coastal Storm Damage Reduction Project
2. Implementation of Total Maximum Daily Loads for Fecal Coliform Adopted by the Florida Department of Environmental Protection for the Choctawhatchee/ St. Andrew Bay
3. 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
4. FDOT West Bay Parkway Highway Project (Walton, Washington & Bay Counties)
5. Northwest Florida Beaches International Airport
6. Walton County Hurricane & Storm Damage Reduction Project (FDEP Beach Erosion Control Program)

Group 4: Panama City and St. Andrews Bay Projects

Table 12-49 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, two marinas, scallop enhancement and a pier. 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 effects that, when combined with other past, present, and reasonably foreseeable actions in Panama City and St. Andrews Bay and the nearby vicinity, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-49. 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	+	+	S	+	+	+
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	+

	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
Bay Scallop Enhancement	**NE**	**S**	**S**	**S**	**S/+**	**S**	**S**	**+**	**NE**	**+**	**+**	**NE**	**S**
Panama City Marina	**S**	**-**	**S**	**S**	**S**	**S**	**S-**	**+**	+	**S/+**	**+**	**+**	**+**
Parker-Earl Gilbert Dock and Boat Ramp	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**+**	**NE**	**S/+**	**S/+**	**+/-**	**S**
Oakshore Drive Pier	**S**	**-**	**S**	**S**	**S**	**S**	**S**	**+**	**NE**	**S/+**	**S/+**	**+**	**+**
Parker-Donaldson Boat Ramp	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**+**	**NE**	**S/+**	**S/+**	**+/-**	**S**

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

There is a one oyster cultch and one seagrass recovery project as well as recreational and visitor enhancement and access projects including two boat ramps, two marinas, a scallop enhancement project, and a pier. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- The majority of the projects above would result in short term, minor adverse effects to water quality, and only a few would have water quality effects that persist beyond construction. Several of the projects contribute to improved water quality.
- Some of the projects may have only short term, minor adverse effects to living coastal and marine resources, with three having long-term impacts. Only a few projects have effects that would persist beyond construction, and several would provide benefits to living coastal and marine resources.
- The majority of the projects would have short-term minor adverse impacts to soils, resulting from disturbance during construction activities.
- There would be some short term minor adverse effects habitats during construction activities associated with projects proposed in Group 4. In some cases, projects guiding human would have long-term beneficial impacts as a result of limiting potential future impacts.

- All of the projects would have beneficial impacts to public health and safety and shoreline protection as a result of providing the public safe access to recreational sites.
- Some of the projects would have long-term beneficial impacts to infrastructure as a result of increased access stemming from marinas, boat ramps and the pier.
- All of the projects are anticipated to provide socioeconomic benefits either through improved access to recreation or improved conditions at recreational sites.

Past, present and reasonably foreseeable activities in Group 4 have contributed to adverse cumulative effects to certain resources. Group 4 projects occur within Panama City and St. Andrews Bay, all in central Bay County, which is primarily urbanized, but also provides recreation opportunities terrestrial and marine habitats for species, including protected species. Ongoing activities such as military operations that are located nearby (Tyndall Air Force Base) have contributed to cumulative adverse effects to air quality, water quality and habitats in the region. Tyndall Air Force Base also contributes noise from aircraft, operations and tactical maneuvering in the immediate vicinity of the base. A Notice of Intent was issued for preparation of an EIS for Tyndall Air Force Base in August 2013. The proposed action would increase on the ground maneuvers at Tyndall and utilize surrounding Florida State Forest lands and FWCC land for training and helicopter landings. This action would include moving some of these tactical trainings from Eglin and Hurlburt Air Force Bases to Tyndall. The Scoping Notice indicates that air quality, water quality, noise, cultural, biological, transportation, socioeconomics and hazards will be evaluated. Expansion of Tyndall into current undeveloped Florida State lands may provide an incremental contribution to cumulative adverse effects to the resources listed above. Other activities such as coastal development, recreational boating and other human induced effects have also contributed to cumulative adverse impacts to sensitive habitats and protected species.

There are also many environmental stewardship and restoration activities that have occurred, are underway or proposed for the Group 4 region. These include multiple beach erosion projects (both nourishment and living shoreline placement) and water quality improvements in St. Andrews Bay. Projects in proposed in Group 4 include seagrass enhancement, oyster cultch placement activities and scallop enhancements. These activities would provide an incremental benefit to Gulf Coast habitats and species as well as water quality through reductions in erosion. Group 4 projects also include several boat ramps and two marinas intended to enhance and improve public access to recreation. Overall, the projects proposed in the Group 4 region would not have a substantial contribution to cumulative adverse effects in the Group 4 region and could provide an incremental contribution to beneficial effects.

Overall, the projects in Group 4 would result in minor incremental contributions to effects on living coastal and marine resources in the Panama City and St. Andrews Bay region, but would not substantially contribute to adverse cumulative impacts in the region. Cumulatively, a benefit to, living and coastal marine resources, habitats, recreation and socioeconomics is anticipated.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. Implementation of Total Maximum Daily Loads for Fecal Coliform Adopted by the Florida Department of Environmental Protection for the Choctawhatchee/ St. Andrew Bay
2. On-going CERCLA Remediation at Tyndall Air Force Base
3. On-going Beach Nourishment and Erosion Control and Storm Damage Reduction Projects
4. Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative EIS, Tyndall Air Force Base
5. Northwest Florida Water Management District St. Andrews Bay Stormwater Improvements
6. Northwest Florida Water Management District St. Andrews Bay Drainage Stabilization Project
7. Bay County Long Range Beach Management and Erosion Control Plan for the Panama City Beaches (FDEP)
8. St. Andrews Inlet Management Plan Implementation
9. Gator Lake Shoreline Stabilization and Beach Access Improvement Project (Florida State Parks)
10. Pirate's Cove Marina Expansion
11. Harris Cove Marina Expansion & Boat Ramp
12. Bayview Boardwalk and Signage Enhancement Project (City of Panama City)
13. Oyster Reef Habitat Restoration in the Saint Andrew Bay (Wildlife Foundation of Florida, Inc.) St.
14. Restoring shorelines, wetlands, seagrasses in St. Andrew Bay Andrew Bay Resource Management Association, Inc.
15. Spatial overlap of fishing and turtles in St. Andrew Bay (US Geological Survey, Southeast Ecological Science Center)
16. St. Andrews and St. Joseph Bay Aquatic Preserve Program (FDEP)

Group 5: St. Joseph Bay (Gulf County and a small portion of Bay County)

Table 12-50 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 effects that, when combined with other past, present, and reasonably foreseeable actions in St Joseph's Bay and its watershed, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-50. 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	NE	S	S	S	NE	NE	S	+	NE	S/+	S/+	S/+	NE
Beacon Hill Veterans' Memorial Park	S	S	S	S	NE	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
Highland View Boat Ramp	S	S	S	S	S	S	NE	S/+	NE	S	S/+	+	NE
St. Joe's Bay Scallop Enhancement	NE	S	S	-	S/+	S	+	NE	NE	+	+	NE	S
Port St. Joe Boat Ramp	S	S	S	S	S	S	NE	NE	NE	NE	S/+	S/+	NE

Beneficial effect: +
Short term adverse effect: S
Adverse effect: -
No effect: NE

There are several boat ramp projects, a marina, fishing pier, scallop enhancement and seagrass restoration proposed in Group 5. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- The majority of the projects above would result in short term, minor adverse effects to water quality, and only a few would have water quality effects that persist beyond construction.
- The majority of the projects may have only short term, minor adverse effects to living coastal and marine resources. Only a few projects have effects that would persist beyond construction, and several would provide benefits to living coastal and marine resources.
- There would be some short term minor adverse effects habitats during construction activities associated with projects proposed in Group 1. Seagrass restoration is anticipated to benefit to habitats.
- All of the projects are anticipated to provide socioeconomic benefits either through improved access to recreation or improved conditions at recreational sites.

Past, present and reasonably foreseeable activities in Group 5 have contributed to adverse cumulative effects to certain resources. Group 5 projects occur on or around St. Joseph Bay in Gulf County Florida (a small portion of the Bay is in Bay County Florida) which is a fairly rural area with several parks and open space/conservation areas around it. St Joseph's Bay is also a 55,000 acre Aquatic Preserve. Recreation

opportunities are abundant including fishing, boating and beach going. Group 5 region also provides high quality terrestrial and marine habitats for species, including protected species. Ongoing activities such as military operations that are located nearby (Tyndall Air Force Base) have contributed to cumulative adverse effects to air quality, water quality and habitats in the region. Tyndall Air Force Base also contributes noise from aircraft, operations and tactical maneuvering in the immediate vicinity of the base. A Notice of Intent was issued for preparation of an EIS for Tyndall Air Force Base in August 2013. The proposed action would increase on the ground maneuvers at Tyndall and utilize surrounding Florida State Forest lands and FWCC land for training and helicopter landings. This action would include moving some of these tactical trainings from Eglin and Hurlburt Air Force Bases to Tyndall. The Scoping Notice indicates that air quality, water quality, noise, cultural, biological, transportation, socioeconomics and hazards will be evaluated. Expansion of Tyndall into current undeveloped Florida state lands may provide an incremental contribution to cumulative adverse effects to the resources listed above. Other activities such as coastal development, recreational boating and other human induced effects have also contributed to cumulative adverse impacts to sensitive habitats and protected species. Estimated population growth for Bay County is approximately 26 percent and only 2 percent for Gulf County between 2010 and 2030 (BEBR, 2012). Most of the Group 5 proposed projects occur in Gulf County and most of St Joseph's Bay is located in Gulf County.

There are also environmental stewardship and restoration activities that have occurred, are underway or proposed for the Group 5 region. St. Joseph's Bay provides unique and important distinctions as the only sizeable protected water in the eastern Gulf of Mexico that is not significantly influenced by freshwater flows, having clear waters support an abundant and biologically diverse ecosystem, as well as extensive Seagrass coverage and saltmarsh habitat. Seagrass provides a fundamental piece of this important ecological area. Therefore, Seagrass conservation, enhancement and restoration is a priority for the Bay and Aquatic Preserve area. Group 5 Projects include scallop enhancement and Seagrass recovery projects, but also several boat ramps, a marina and a fishing pier project, which could result in adverse effects to habitats. Overall, the projects proposed in the Group 5 region would not have a substantial contribution to cumulative adverse effects in the Group 5 region and could provide an incremental contribution to beneficial effects for Seagrass.

Overall, the projects in Group 5 would result in minor incremental contributions to effects on water quality, habitats and living coastal and marine resources in the St. Joseph Bay coastal region, but would not substantially contribute to adverse cumulative impacts in the region. Cumulatively, a benefit to water quality, living and coastal marine resources, habitats and recreation is anticipated.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. On-going CERCLA Remediation at Tyndall Air Force Base
2. Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative EIS, Tyndall Air Force Base
3. St. Joseph Peninsula Beach Restoration Project, Gulf County, Florida (Gulf County Project)

4. 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
5. St. Andrews and St. Joseph Bay Aquatic Preserve Program (FDEP)

Group 6: Apalachicola Bay (Franklin County)

Table 12-51 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 effects that, when combined with other past, present, and reasonably foreseeable actions in Apalachicola Bay and its watershed, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-51. 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													
Abercrombie Boat Ramp	S	S	S	S	S	S	S	+	NE	S	S/+	S/+	NE
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/+	NE
St. George Island Fishing Pier	S	S	S	S	S	S	S	+	NE	S	S/+	S/+	NE
Apalachicola Bay Oyster Cultch	NE	S/+	S	S	S/+	S/+	S/+	NE	+	S	NE	NE	NE
Cash Bayou	S	NE	S	-	NE	NE	NE	NE	NE	S	S/+	+	NE
Sand Beach	S	NE	S	-	NE	NE	NE	NE	NE	S	S/+	+	NE
Cat Point Living Shoreline	S/+	S	S	S	S/+	S	S/+	S/+	NE	S	+	S/+	+
Indian Pass Boat Ramp	S	S	S	S	S	S	NE	S/+	NE	S	S/+	+	NE

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

Group 6 includes boat ramps, fishing piers, wildlife viewing platforms and trails, a boardwalk, a living shoreline project and facility and infrastructure improvements and oyster cultch placement. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- The majority of the projects above would result in short term, minor adverse effects to water quality.
- The majority of the projects would have short term impacts to geology and substrates.
- Some of the projects may have only short term, minor adverse effects to living coastal and marine resources and several would provide benefits to living coastal and marine resources.
- There would be some short term minor adverse effects habitats during construction activities associated with projects proposed in Group 6. In some cases, such as the living shoreline and oyster cultch placement projects, t, benefits to habitats are anticipated.
- All of the projects are anticipated to provide socioeconomic benefits either through improved access to recreation or improved conditions at recreational sites.

Past, present and reasonably foreseeable activities in Group 6 have contributed to adverse cumulative effects to certain resources. Group 6 projects occur on or around Apalachicola Bay which is mostly rural and provides abundant recreation opportunities as well as quality terrestrial and marine habitats for species, including protected species.

Other activities such as timber harvesting in Tate Hell State Forest, coastal development, recreational boating and other human induced effects have also contributed to cumulative adverse impacts to water quality, sensitive habitats and living and coastal marine resources, including protected species. Although not adjacent to adjacent to Group 6, a Notice of Intent was issued for preparation of an EIS for Tyndall Air Force Base in August 2013 and has identified Tate's Hell State Park as part of the proposed action. The proposed action would increase on the ground maneuvers at Tyndall and utilize Florida State Forest lands and FWCC land for training and helicopter landings. This action would include moving some of these tactical trainings from Eglin and Hurlburt Air Force Bases to Tyndall. The Scoping Notice indicates that air quality, water quality, noise, cultural, biological, transportation, socioeconomics and hazards will be evaluated. Expansion of Tyndall into current undeveloped Florida State lands may provide an incremental contribution to cumulative adverse effects to the resources listed above and may be effect the overall water quality and hydrology restoration planned by Northwest Florida Water management District for the state forest.

Other activities such as coastal development, recreational boating and other human induced effects have also contributed to cumulative adverse impacts to sensitive habitats and protected species. The population in Franklin County is anticipated to increase by approximately 3 percent by 2030 (BEBR, 2012), which indicates that the contribution of human related effects, especially development effects, to cumulative adverse impacts would continue, but may not be a substantial contribution to cumulative adverse effects.

There are also environmental stewardship and restoration activities that have occurred, are underway or proposed for the Group 6 region, especially due to the proximity of the Apalachicola River Wildlife

and Environmental Area, Apalachicola National Estuarine Research Reserve, and Julian D. Bruce St. George Island State Park, all of which surround the Group 6 waters. Management goals of parks and other conserved lands typically align with maintaining the health and welfare of the natural environment, while also providing recreational opportunities. Group 6 projects are similarly oriented with goals of enhancing and improving recreational access and opportunities coupled with restoration and enhancement through placement of a living shoreline and oyster cultch materials. These activities would provide an incremental benefit to Gulf Coast habitats and species stabilizing erosion and creating shallow water area on the shore side of the living shoreline and providing for a more diverse ecosystem. Group 6 projects also include boat ramps, fishing piers, wildlife viewing opportunities and several park improvements intended to enhance and improve public access to recreation. Overall, the projects proposed in the Group 6 region would not have a substantial contribution to cumulative adverse effects in the Group 6 region and could provide an incremental contribution to beneficial effects.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. Water quality in improvements, storm water retrofits in Apalachicola Bay (Northwest Florida Water Management District)
2. Big Bend Scenic Byway (FDOT)
3. Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative EIS, Tyndall Air Force Base
4. Tates Hell State Forest Hydrologic Restoration Plan (Northwest Florida Water Management District)

Group 7: Apalachee Bays (Wakulla County)

Table 12-52 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 effects that, when combined with other past, present, and reasonably foreseeable actions in Apalachicola and Apalachee Bays and the nearby vicinity, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-52. 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	+	+	NE	+	+	NE	S
Florida Seagrass Recovery	S	S	S	S	S/+	S/+	S/+	NE	NE	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	S/-	S/+	S/+	S
Shell Point Beach Nourishment	S	+	S	S	S/+	S	S	+	NE	S/+	S/+	S/+	+
Saint Marks Boat Ramp	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

Thereis a seagrass recoveryproject 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), a scallop enhancement project, and a dock. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- The majority of the projects above would result in short term, minor adverse effects to water quality, and none would have water quality effects that persist beyond construction.
- Some of the projects may have short term, minor adverse effects to living coastal and marine resources, with one having potential for long-term minor impacts. Only a few projects have effects that would persist beyond construction, and several would provide benefits to living coastal and marine resources.
- Some of the projects would have short-term minor adverse impacts to soils, resulting from disturbance during construction activities.

- Some of the projects would have long-term beneficial impacts to infrastructure as a result of increased access from park improvements, dock placement and a boat ramp.
- Many of the projects are anticipated to provide socioeconomic benefits either through improved access to recreation or improved conditions at recreational sites.

Past, present and reasonably foreseeable activities in Group 7 have contributed to adverse cumulative effects to certain resources. Group 7 projects occur on or around Apalachee Bay, located in Wakulla County, which is very rural. Apalachee Bay provides recreation opportunities as well as terrestrial and marine habitats for species, including protected species.

There are also many environmental stewardship and restoration activities that have occurred, are underway or proposed for the Group 7 region, especially due to the proximity of the St. Marks Wildlife Refuge, Ochlockonee River State Park and Bald Point state Park, which surround the Group 7 waters. Management goals of parks and refuges are typically aligned with maintaining the health and welfare of the natural environment. Group 7 projects are similarly oriented with goals of enhancing and improving recreational access and opportunities coupled with restoration and enhancement of Seagrass and scallops. These activities would provide an incremental benefit to Gulf Coast habitats and species by expanding foraging and refugia habitat (Seagrass) and diversity in marine habitats by scallop enhancement. Group 7 projects also include a boat ramp and several park improvements intended to enhance and improve public access to recreation. Overall, the projects proposed in the Group 7 region would not have a substantial contribution to cumulative adverse effects in the Group 7 region and could provide an incremental contribution to beneficial effects. The population in Franklin County is anticipated to increase by approximately 3 percent by 2030 (BEBR, 2012), which indicates that the contribution of human related effects, especially development effects, to cumulative adverse impacts would continue, but may not be a substantial contribution to cumulative adverse effects.

Overall, the projects in Group 7 would result in minor incremental contributions to effects on living coastal and marine resources and habitats in the Apalachee Bay region, but would not substantially contribute to adverse cumulative impacts in the region. Cumulatively, a benefit to, living and coastal marine resources, habitats, recreation and socioeconomics is anticipated.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. Wakulla County Bicycle, Pedestrian and Blueways Master Plan (Wakulla County)
2. Big Bend Scenic Byway (FDOT)
3. Wakulla Land Tract Acquisition (Wakulla Aquatic Association)
4. Big Bend Maritime Center (Wakulla County)

Group 8: Artificial Reef Placement Gulf Coast Waters

Table 12-53 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 effects, have been grouped together. Therefore, Group 8 Projects are evaluated together to determine if they have any cumulative effects that, when combined with other past, present, and reasonably foreseeable actions in the Gulf waters off of the Florida coast, may result in cumulative effects to resources. Cultural resource investigations and consultations would be completed for all the proposed projects as environmental review continues. 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 12-53. 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/+	S/+	+	NE	S/+	S/+	NE	NE
Santa Rosa Artificial Reefs	S	S/+	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	NE
Okaloosa Artificial Reefs	S	S/+	S	S	S/+	S	S/+	+	NE	S/+	S/+	NE	NE
Walton Artificial Reefs	S	S/+	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	NE
Bay Artificial Reefs	S	S/+	S	S	S/+	S/+	S/+	+	NE	S/+	S/+	NE	NE

Adverse effect: -
Beneficial effect: +
Short term adverse effect: S
No effect: NE

These habitat restoration 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 Counties. Combined impacts of these projects that are most relevant to consider for assessment of cumulative impacts are:

- Group 8 projects would result in short term, minor adverse effects to water quality, and have minor long term benefits to the local area due to natural filtering capacities of reef organisms.
- Group 8 projects would have only short term, minor adverse effects to living coastal and marine resources during construction. Artificial reef placements would provide additional habitat for living coastal and marine resources.
- Group 8 would have minor, short-term impacts to the geology and substrates associated with the conversion of relatively small areas of similar sandy habitat to areas with hard substrate.
- Group 8 would have minor short term minor adverse effects habitats during construction, but ultimately, habitats would benefit from additional reef areas.
- All of the projects are anticipated to provide socioeconomic benefits through improved access to recreation and increased tourism.

Past, present and reasonably foreseeable activities in Group 8 have contributed to adverse cumulative effects to certain resources. Group 8 projects occur in Escambia, Santa Rosa, Okaloosa, Walton and Bay Counties and are intended to augment FWCC's existing Artificial Reef Program in the Panhandle. Ongoing activities such as military operations that are located nearby (Tyndall Air Force Base) have contributed to cumulative adverse effects to air quality, water quality and habitats in the region. Tyndall Air Force Base also contributes noise from aircraft, operations and tactical maneuvering in the immediate vicinity of the base. Other activities such as coastal development, recreational boating, marine transportation (for further offshore reef locations) and other human induced effects have also contributed to cumulative adverse impacts to sensitive habitats and protected species.

Group 8 projects include multiple artificial reef projects in multiple locations over a five county area. Overall, the projects proposed in the Group 8 region would not have a substantial contribution to cumulative adverse effects in the Group 8 region and could provide an incremental contribution to beneficial effects.

Overall, the projects in Group 4 would result in minor short term incremental contributions to effects on living coastal and marine resources, geology and substrates, air quality and water quality, but would not contribute to adverse cumulative impacts in the region. Cumulatively, a benefit to, living and coastal marine resources, habitats, recreation and socioeconomics is anticipated.

List of past, present and reasonably foreseeable actions that have been considered as part of this analysis:

1. FWCC Artificial Reef Program

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. X 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

The NFWF projects were recently announced. The Trustees will consider the implications of these projects as they relate to the assessment of the potential cumulative impacts of the proposed Phase III actions in Mississippi. As part of the comments on this Draft ERP III/PEIS, the public is invited to comment on how the proposed projects may contribute to cumulative impacts.

Chapter 12 Appendix A: Example Mitigation Measures

Site-specific mitigation measures are numerous and varied. For this reason, specific mitigation measures would need to be evaluated and implemented on a project-by-project basis. The following additional mitigation measures were developed as potential examples:

Upland Geology and Substrates

Nearshore Coastal Geology and Substrates. A comprehensive spill management plan would be developed to address any fuel spills or spills of other hazardous substances during construction or operation activities. The plan would address storage locations of hazardous wastes, spill prevention measures, training requirements, waste-specific spill response actions, spill response kits, and notifications to authorities.

Hydrology and Water Quality

Freshwater Environments. A comprehensive spill management plan would be developed to address any fuel spills or spills of other hazardous substances during construction or operation activities. The plan would address storage locations of hazardous wastes., spill prevention measures, training requirements, waste-specific spill response actions, spill response kits, and notifications to authorities.

Saltwater Environments. A comprehensive spill management plan would be developed to address any fuel spills or spills of other hazardous substances during construction or operation activities. The plan would address storage locations of hazardous wastes, spill prevention measures, training requirements, waste-specific spill response actions, spill response kits, and notifications to authorities.

Habitats

Wetlands

Any equipment or construction materials that would be used or placed in aquatic habitats would be made available for inspection for invasive species by the appropriate state agency prior to use.

All equipment that would be used in the water would be cleaned prior to entering the water. The equipment would be sealed to ensure that fluids and chemicals were not leaked into the water.

An engineering design and post-construction inspection would be required for projects where geomorphic elevations would be restored in wetlands, marshes, and shallow water habitats to ensure the success of the restoration project. Elevation of fill material would be carefully managed to ensure projected consolidation rates were accomplished and that habitat suitable for wetland and marsh vegetation is developed.

An engineering design and post-construction inspection would be required for projects where breakwaters or other hard structures would be constructed. Proper planning should also integrate local and regional sediment management plans and programs, and include a complete understanding of the sediments and physical processes in the area.

Only suitable borrow sites that did not contain wetlands would be used as dredging sites for sediment.

Placement of dredged or fill material in wetlands would be avoided and minimized to the maximum extent practicable.

Construction equipment corridors would be designed to avoid and minimize impacts to wetlands to the maximum extent practicable.

Propagated or transplanted vegetation would be inspected and certified as pest and disease free prior to planting in restoration project areas.

Infrastructure projects that could increase recreational uses in SAV areas would have protective warnings signs and buoys around at-risk SAV habitats.

Barrier Islands

Placement of sediment to minimize impacts to existing vegetation or burrowing organisms would be implemented to the maximum extent possible.

Any equipment or construction materials that would be used or placed in aquatic habitats would be made available for inspection for invasive species by the appropriate state agency prior its use.

To prevent the spread of invasive species, all construction equipment and in-water equipment would be cleaned before moving between sites.

All equipment used in the water would be cleaned prior to entering the water. The equipment would be sealed to ensure that fluids and chemicals are not leaked into the water.

An engineering design and post-construction inspection would be required for projects where geomorphic elevations are restored within wetlands, marshes, and shallow water habitats to ensure the success of the restoration project.

Only suitable borrow sites would be used as dredging sites for sediment. Sediments used should be obtained by beneficially using dredged material from navigation channels or by accessing material from approved offshore borrow areas, and would closely match the chemical and physical characteristics of sediment at the restoration site. Additionally, target borrow areas would be within reasonable proximity to suitable sites for sediment placement.

Beaches

Placement of sediment to minimize impacts to existing vegetation or burrowing organisms would be implemented to the maximum extent possible.

Any equipment or construction materials that would be used or placed in aquatic habitats would be made available for inspection for invasive species by the appropriate state agency prior its use.

To prevent the spread of invasive species, all construction equipment and in-water equipment would be cleaned before moving between sites.

All equipment used in the water would be cleaned prior to entering the water. The equipment would be sealed to ensure that fluids and chemicals are not leaked into the water.

An engineering design and post-construction inspection would be required for projects where geomorphic elevations are restored within wetlands, marshes, and shallow water habitats to ensure the success of the restoration project.

Only suitable borrow sites would be used as dredging sites for sediment. Sediments used should be obtained by beneficially using dredged material from navigation channels or by accessing material from approved offshore borrow areas, and would closely match the chemical and physical characteristics of sediment at the restoration site. Additionally, target borrow areas would be within reasonable proximity to suitable sites for sediment placement.

- All projects that will be constructing or repairing dune walkovers shall implement the Conservation Measures for Dune Walkover Construction (USFWS 2013):
    - Dune walkover shall be constructed at a height (minimum three feet above grade) to accommodate natural dune growth and associated vegetation.
    - No storage of equipment or materials shall occur on the beach or dunes throughout the entire year.
    - No activity, except as needed to build or repair the walkover, shall occur on existing healthy dunes during any time of the year. If dunes are impacted, they should be restored by planting the appropriate vegetation or installing sand fence. Limit activities within this area to maintenance and restoration of the habitat. Use appropriate signs to designate and indicate the purpose of the conservation area, if necessary.
    - Minimal use of sand fence is encouraged. When used, the fence must be used for restoration of dune blowouts. Post and rope is preferred for beach visitor access, pedestrian traffic control, and wildlife

exclusion zones (i.e., bird wintering areas). If used for dune restoration, the fence shall be placed in a sea turtle compatible design and be made of biodegradable material.

- 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 Service. A native plant list and a nursery supplier list have been provided for your information.
- 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 created dune; however, 24-inch centers may be acceptable depending on the area to be planted. No irrigation lines or pipes shall be installed.
- Install and maintain sturdy animal-proof garbage containers to prevent the invasion of house mice and predators (cats, raccoons, fox, coyotes).
- No lighting shall be utilized on the dune walkover.

- Beach driving BMPs:
  - Enter the beach only at designated access points and proceed directly to the hard-packed sand near or below the high tide line. Avoid driving on the upper beach whenever possible, and never drive over any dunes or over beach vegetation. If beach conditions require driving above the high tide line, avoid those areas with known sea turtle nests or shorebird breeding areas.
  - Avoid the wrack line or areas of dense seaweed, which may contain sea turtles hatchlings or birds.
  - Minimize ruts on the dry sandy beach by lowering tire pressure and using 4WD, particularly in front of sea turtle or bird nests. Restore topography daily.
  - Drive slowly. Movement should be slow enough to observe any bird eggs, chicks, or sea turtle hatchlings in the vehicle's line of travel. Please be aware that recently hatched chicks often feed along the water's edge. They may freeze in place rather than run away with vehicles approach.
  - Do not drive on the beach at night.
  - Do not park vehicles adjacent to nests or posted areas.

Submerged Aquatic Vegetation

Any equipment or construction materials be used or placed in aquatic habitats would be made available for inspection for invasive species by the appropriate state agency prior its use.

All equipment used in the water would be cleaned prior to entering the water. The equipment would be sealed to ensure that fluids and chemicals are not leaked into the water.

An engineering design and postconstruction inspection would be required for projects where geomorphic elevations are restored within wetlands, marshes, and shallow water habitats to ensure the success of the restoration project.

Only suitable borrow sites that do not contain SAV populations would be used as dredging sites for sediment.

Propagated or transplanted vegetation would be inspected and certified as pest and disease free prior to planting in restoration project areas.

Infrastructure projects that could increase recreational uses in SAV areas would place protective warnings signs and buoys around at-risk SAV habitats.

Terrestrial, Coastal, and Riparian Habitat

Provide additional stability to overall coastal, estuary, and riparian ecosystems by reducing erosion and scour while using proper remediation and engineering techniques to eliminate or minimize impact to riparian areas and freshwater/tidal exchange from the placement of human-made structures.

Placement of sediment to minimize impacts to existing vegetation or burrowing organisms would be implemented to the maximum extent possible.

Any equipment or construction materials that would be used or placed in aquatic habitats would be made available for inspection for invasive species by the appropriate state agency prior its use.

To prevent the spread of invasive species, all construction equipment and in-water equipment would be cleaned before moving between sites.

All equipment used in the water would be cleaned prior to entering the water. The equipment would be sealed to ensure that fluids and chemicals are not leaked into the water.

An engineering design and post-construction inspection would be required for projects where geomorphic elevations are restored within wetlands, marshes, and shallow water habitats to ensure the success of the restoration project.

Only suitable borrow sites would be used as dredging sites for sediment. Sediments used should be obtained by beneficially using dredged material from navigation channels or by accessing material from approved offshore borrow areas, and would closely match the chemical and physical characteristics of sediment at the restoration site. Additionally, target borrow areas would be within reasonable proximity to suitable sites for sediment placement.

Living Coastal and Marine Resources

Nearshore Benthic Communities

When local conditions indicate the likely presence of contaminated soils and sediments, soil samples would be tested for contaminant levels, and precautions would be taken to avoid disturbance of (or to provide for) proper disposal of contaminated soils and sediments.

Prior to dredging, methods would be evaluated to reduce the potential for impacts from turbidity.

Maintenance of generators, cranes, and any other stationary equipment operated within 150 feet of any natural or wetland area would occur, as necessary, to prevent leaks and spills from entering the water.

Fueling, maintenance, and storage of construction vehicles and equipment would occur within a designated vehicle staging area removed from any natural surface water resource or wetland. Vehicles and equipment would be inspected daily prior to leaving the storage area to ensure that no petroleum or oil products are leaking.

Any equipment or construction materials used or placed in aquatic habitats would be made available for inspection for invasive species by the appropriate state agency prior its use.

All in-water construction equipment and equipment would be cleaned before moving between sites to prevent spread of invasive species.

An engineering design and post-construction inspection would be required for projects where geomorphic elevations are restored within wetlands, marshes, and shallow water habitats to ensure the success of the restoration project.

Upon completion of construction activities, all disturbed areas would be restored as necessary to allow habitat functions to return. Public access developments to enhance recreational experience and educational awareness would be sited, constructed, and managed to minimize effects to habitat within wetland and shallow water areas and to the long-term health of related biological communities.

Oysters

Any equipment or construction materials used or placed in aquatic habitats would be made available for inspection for invasive species by the appropriate state agency prior its use.

All equipment that used in the water would be cleaned prior to entering the water. The equipment would be sealed to ensure that fluids and chemicals are not leaked into the water.

An engineering design and post-construction inspection would be required for projects where geomorphic elevations are restored within wetlands, marshes, and shallow water habitats to ensure the success of the restoration project.

Only suitable borrow sites that do not contain oyster populations or other suitable substrate would be used as dredging sites for sediment.

Propagated or transplanted vegetation would be inspected and certified as pest and disease free prior to planting in restoration project areas.

Infrastructure projects that could increase recreational uses in oyster areas would use protective warnings signs and regulation advisory buoys around at risk oyster habitats.

Projects using marsh creation or other barrier island restoration would incorporate containment levees for their fill cells. These containment levees would be degraded after construction to allow for the restoration of nature tidal exchange.

Silt fencing would be used where appropriate to reduce increased turbidity and siltation in the project vicinity. This would apply to both on land and in water work.

Continue oyster and clam shell recycling programs to provide natural material for creating additional oyster reefs

Implement monitoring of restored oyster beds to evaluate success

Shells introduced for reef creation would be subjected to depuratation in a secure open air area for a period of not less than 6 months

Pelagic Microfaunal Communities

Sargassum:

Borrow sites and related sediment dredging in deepwater areas would avoid occurrences of *Sargassum* mats.

Finfish:

Cleaning all construction equipment and equipment in the water before moving between sites would occur to prevent spread of invasive species.

All equipment used in the water would be cleaned prior to entering the water. The equipment would be sealed to ensure that fluids and chemicals are not leaked into the water.

An engineering design and post-construction inspection would be required for projects where geomorphic elevations are restored within wetlands, marshes, and shallow water habitats to ensure the success of the restoration project.

Construction BMPs

Noise BMPs

- Efforts to reduce the peak sound level and exposure levels of fish would reduce the potential impact of sound on fish present in the project areas.
- Use of vibratory hammer whenever possible would reduce peak sound pressure levels in the aquatic environment.
- Use of sound attenuation devices where practicable for pulse-noise (impact hammers) would reduce peak sound pressure levels in the aquatic environment.

Water Quality

- The use of BMPs to reduce turbidity, such as turbidity blankets, may greatly reduce the potential impact of turbidity of finfish.

Timing stipulations to avoid impacts to spawning fish and eggs/larvae

Aquaculture BMPs

Water withdrawal pipes would be screened to minimize potential entrainment of fish from the withdrawal area.

Project proponents would coordinate with NMFS to create an intake screen that would minimize potential impingement of fish.

Effluent from aquaculture facilities would be treated to avoid dispersal of potential pathogens into receiving waters.

All aquaculture facilities and fish raised in those facilities would meet fish health standards and be screened for pathogens prior to release into receiving waters.

A genetics management plan would be implemented that ensures maintenance of genetic diversity of native stocks of finfish in the Gulf of Mexico.

A stocking management would be developed and implemented prior to the release of hatchery-reared finfish.

Beach Mice:

- All projects that will be constructing or repairing dune walkovers shall implement the Conservation Measures for Dune Walkover Construction (USFWS 2013).
- Work will occur in daylight hours only.
- A qualified biologist with beach mouse surveying experience will conduct pre-operational surveys to identify burrows and tracks which will be avoided.
- Enhance and protect on-site and adjacent habitats to the maximum extent possible.
- Minimize development footprints.
- Maximize connectivity of beach mouse habitat.
- Elevate pedestrian walkways to allow for dune growth.
- Construct pedestrian walkways top down.
- Limit all activities within dune habitat.
- Use fences that allow mice movement.
- Landscape with only native plants.
- Store construction equipment, vehicles, and materials out of beach mouse habitat, preferably in already disturbed areas.
- Leave no debris on or around mouse habitat.
- Restore habitat to original condition.
- Use sturdy animal-proof garbage containers to collect refuse and prevent attraction of predators.
- Prohibit pesticide or pest control use in outside areas.

Sea Turtles:

Do not conduct restoration activities on Gulf Coast beaches during the sea turtle nesting season (May to October).

- For activities that must be taken on or near nesting beaches during nesting or hatching season:
    - In Florida and Alabama, all actions shall observe a 10-foot buffer from marked sea turtle nests. Between May 1 and August 31[26], actions with mechanized equipment or vehicles shall not begin prior to 9:00 am to ensure sea turtle monitoring surveys are completed for the day.
    - If a sea turtle (either adult or hatchling) is observed, maintain at least 200 feet between the turtle and response personnel.

9. 26 Turtle *nesting* season is May 1 to August 31, while turtle *hatching* continues until October 31. Crawl protection is necessary during nesting season only. The remaining turtle BMPs should be implemented May 1 through October 31.

- If altered, beach topography shall be restored in all areas to the natural beach profile by 20:00 hours each day. Restoring beach topography includes raking of tire ruts, filling pits or holes where oil was removed or examined, etc.

Conduct surveys for sea turtle presence prior to dredging and other in-water work.

Use only dredging equipment that does not entrain sea turtles.

- For all in-water activities, the Sea Turtle and Smalltooth Sawfish [and Gulf Sturgeon] Construction Conditions (NOAA 2006) shall be followed.
    - The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
    - The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
    - Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
    - All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
    - If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
    - Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
    - Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Marine Mammals:

BMPs would be implemented to minimize disturbance to marine mammals. Typically, these would include use of a marine mammal observer and an exclusion area, where if mammals are observed within a designated radius from the noise-producing work area, work is stopped until the marine mammal moves beyond the radius. The size of the radius depends on the sound levels that are anticipated for the project and the sound attenuation potential of receiving waters. A hazard radius would be determined upon further coordination with the appropriate jurisdictional agencies.

- For all in-water activities, the Standard Manatee Conditions for In-Water Work (USFWS 2011) shall be followed.
    - All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The

permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

- All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- Any collision with or injury to a manatee shall be reported immediately to the appropriate authority.

Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project.

Piping Plover and Red Knot

- If actions are necessary in piping plover optimal habitat (as inlets, bayside mud flats, tidal pools, and wrack lines) and piping plovers are present, other optimal habitat features must be present nearby (within 2 miles) prior to disturbance.
- Minimize the amount of time working around resting and feeding birds. For example, if you must vehicles or equipment on site and these species are present, where possible avoid the birds by minimum of 150 feet. If work/rest cycles are necessary, breaks should be taken at least 150 feet away from these species.
- If possible complete work when piping plovers and red knots are not expected to be present.

Migratory Birds:

Avoiding construction during nesting season, which for most bird species along the Gulf coast is from approximately March 1 to August 15 in areas/habitat where nesting birds are likely to be active. Coordination with state agencies, local Audubon chapters, and others can provide information on where birds are nesting. In most cases, breeding sites for species such as the snowy plover are well documented and can be avoided by planning construction until after nesting has completed.

Where construction during the breeding season could not be avoided, preconstruction surveys should be conducted to determine whether any migratory birds are nesting at the project site. If birds are nesting, then avoidance buffers, protective of the species, will be established. No work will occur within these buffers until chicks have fledged.

Conservation areas may already be marked to protect bird nesting areas. Stay out of existing marked areas.

Bald Eagles

- Bald eagles are protected under the Bald and Golden Eagle Protection Act. The recommended protective buffer zone is 660 feet from the nest tree, depending on what activities or structures are already near the nest.
- Determine if your project may disturb nesting bald eagles using an online tool at http://www.fws.gov/southeast/es/baldeagle/. If bald eagle breeding or nesting behaviors are observed or a nest is discovered or known, all activities (walking, construction, equipment or machinery use, vehicle use including UTV and ATV and boats) should avoid the nest by a minimum of 660 feet. If the nest

is protected by a vegetated buffer where there is *no* line of sight to the nest, then the minimum avoidance distance is 330 feet. This avoidance distance shall be maintained from the onset of breeding/courtship behaviors until any eggs have hatched and eaglets have fledged (approximately 6 months).

  - If a similar activity (like driving on a roadway) is closer than 660 feet to a nest, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
  - If a vegetated buffer is present and there is no line of sight to the nest and a similar activity is closer than 330 feet to a nest, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
  - In some instances activities conducted within 660 feet of a nest may result in disturbance, particularly for the eagles occupying the Mississippi barrier islands. If an activity appears to cause initial disturbance, the activity shall stop and all individuals and equipment will be moved away until the eagles are no longer displaying disturbance behaviors.

- The Service's Migratory Bird Permit Office shall be contacted to determine how to avoid impacts or if a permit may be needed.

Terrestrial Wildlife:

Consult with the appropriate state agency or local experts on locations of sensitive wildlife species.

Conduct species-specific surveys where listed wildlife are likely to occur to determine presence/absence or distribution to assist in developing plans and designs that will minimize adverse impacts.

Protected Plants

- Survey to determine if protected plants (or suitable habitat) are on or adjacent to the project site. Surveys should be conducted by qualified individuals using suitable survey protocols. Conduct plant surveys during appropriate survey periods (usually flowering season).
- Design projects to avoid known locations and associated habitat to the extent possible.
- Enhance and protect plant on-site and adjacent habitats to the maximum extent possible.
- As a last resort, "temporary" removal of plants and soil profile plugs (which include the A and B horizons) with the intent to replace to original location post construction;
- Transplanting and seed banking may be considered only after all other options are exhausted.
- Use only native plants for post project restoration efforts.

Invasive Species Prevention:

- Develop and implement a HACCP plan to prevent and control invasive species. Use (ASTM E2590 - 08) or other version of HACCP or other similar planning tool.
- Implement and IPM approach to facility design, sanitation, and maintenance to prevent and control invasive and pest species.
- All staging areas should be inspected (prior to staging) for common invasive species. These species should be removed in an appropriate manner.
- Any equipment or construction materials that would be used or placed in terrestrial or aquatic habitats would be made available for inspection or would be inspected for invasive species by the appropriate state agency prior to staging and use. These species should be removed in an appropriate manner.
- Construction equipment, machinery, vehicles, vessels, and gear will be free of invasive species prior to moving to or between sites to prevent spread of invasive species. Equipment and personnel should be prepared to respond to a detection by having a response plan already in place.
- Sites and buffer areas will be inspected for invasive species prior to the onset of work. Any invasive species detected will be mapped and qualitative or quantitative measures regarding abundance will be noted. A control plan will be implemented, if necessary, to ensure these species don't increase in distribution or abundance at a site due to project implementation.
- Any application of herbicide during land-based activities would be in accordance with the direction and guidance provided on the appropriate Environmental Protection Agency (EPA) labels and State statues.

- Propagated or transplanted vegetation would be inspected and certified as pest and disease free prior to planting in restoration project areas.
- Install and maintain sturdy animal-proof garbage containers to prevent the invasion of house mice and predators (cats, raccoons, fox, coyotes).