

***Deepwater Horizon* Oil Spill Louisiana
Trustee Implementation Group Draft
Supplemental Restoration Plan and
Environmental Assessment for the
Elmer's Island Access Project
Modification**



May 2018

Table of Contents

Section 1 Introduction/Background	1-1
Section 2 Proposed Modification to Elmer’s Island Access Project and Alternatives Considered.....	2-1
Section 3 Supplemental OPA Evaluation	3-1
Section 4 Supplemental Environmental Impacts Analysis	4-1
4.1 Physical Environment.....	4-1
4.1.1 Geology and Substrates	4-2
4.1.2 Hydrology and Water Quality.....	4-2
4.1.3 Air Quality and Greenhouse Gas Emissions.....	4-3
4.1.4 Noise.....	4-3
4.2 Biological Environment.....	4-4
4.2.1 Habitats	4-4
4.2.2 Wildlife Species.....	4-5
4.2.3 Marine and Estuarine Fauna, Essential Fish Habitat, and Managed Fish Species.....	4-7
4.2.4 Protected Species	4-8
4.3 Socioeconomic Environment.....	4-10
4.3.1 Socioeconomics and Environmental Justice.....	4-11
4.3.2 Land and Marine Management.....	4-11
4.3.3 Tourism and Recreational Use	4-11
4.3.4 Aesthetics and Visual Resources	4-12
4.3.5 Public Health and Safety, Including Flood and Shoreline Protection	4-12
4.4 Cumulative Impacts	4-13
Section 5 Operation, Best Management Practices, Monitoring and Adaptive Management	5-1
5.1 Behind-the-Dune Boardwalk.....	5-1
5.2 Beach Shuttle Service.....	5-1
Section 6 Summary.....	6-1
Section 7 Next Steps	6-1
Section 8 List of Preparers.....	8-1
Section 9 References	9-1

List of Figures

Figure 2-1	Elmer’s Island Access, Project Elements (Original from Draft RP/EA #2)	2-2
Figure 2-2	Alternative A Boardwalk.....	2-4
Figure 2-3	Alternative B Boardwalk	2-6
Figure 2-4	Alternative C Beach Shuttle Service.....	2-8

Acronyms

BMPs	best management practices
CZM	coastal zone management
DWH	Deepwater Horizon
EPA	United States Environmental Protection Agency
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
iPAC	USFWS Information for Planning and Consultation
LA TIG	Louisiana Trustee Implementation Group
LDWF	Louisiana Department of Wildlife and Fisheries
NEPA	National Environmental Policy Act of 1969
NOAA	National Oceanic and Atmospheric Administration
OPA	Oil Pollution Act of 1990
O&M	Operations and Maintenance
PDARP/PEIS	Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement
RP/EA	restoration plan/environmental assessment
USDA	United States Department of Agriculture
DOI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service

Section 1

Introduction/Background

This document, *Louisiana Trustee Implementation Group Draft Supplemental Restoration Plan and Environmental Assessment for the Elmer's Island Access Project Modification* (Supplemental RP/EA), was prepared by the Louisiana Trustee Implementation Group (LA TIG) to assess the environmental impacts from the modification of a proposed project that was included in the "Draft Restoration Plan/ Environmental Assessment #2: Provide and Enhance Recreational Opportunities¹" (Draft RP/EA #2), which was released in December 2017 for public comment

The LA TIG is responsible for restoring the natural resources and services within the Louisiana Restoration Area that were injured by the April 20, 2010, *Deepwater Horizon* (DWH) oil spill and associated spill response efforts. The LA TIG includes five Louisiana state trustee agencies and four federal trustee agencies: Louisiana Coastal Protection and Restoration Authority; Louisiana Department of Natural Resources; Louisiana Department of Environmental Quality; Louisiana Oil Spill Coordinator's Office; Louisiana Department of Wildlife and Fisheries (LDWF); United States Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); United States Department of the Interior (DOI), represented by the United States Fish and Wildlife Service (USFWS) and National Park Service; United States Department of Agriculture (USDA); and United States Environmental Protection Agency (EPA).

The Draft RP/EA #2 was prepared pursuant to the Oil Pollution Act of 1990 (OPA) and the National Environmental Policy Act of 1969 (NEPA) and is consistent with the DWH Trustees' findings in the *Deepwater Horizon* Oil Spill Final Programmatic Damage Assessment and Restoration Plan/Programmatic Environmental Impact Statement (PDARP/PEIS) and Record of Decision and the 2016 Consent Decree resolving civil claims by the DWH Oil Spill Trustees against BP arising from the DWH Oil Spill². Details on the background and settlement can be found in the PDARP/PEIS. The opening of the public comment period for the Draft RP/EA #2 was publicized in the Federal Register on December 20, 2017, the Louisiana Register on December 20, 2017, and announced on the LA TIG website. A public meeting was held on January 24, 2018, in New Orleans, Louisiana. The public comment period closed February 2, 2018.

Project Change Evaluation Criteria and Rationale for this Supplemental RP/EA

In response to the public comments received on the Elmer's Island Access alternative in the Draft RP/EA #2, the LA TIG modified the project scope and design. Two alternatives to the original scope and design are described in Chapter 2. As a result, and in compliance with NEPA, the LA TIG prepared this Supplemental RP/EA to describe those changes and their environmental effects.

¹ Link to Draft RP/EA #2 -

<http://www.gulfspillrestoration.noaa.gov/sites/default/files/LA%20TIG%20Draft%20Rec%20Use%20Plan%20508%20Complete%20Document%20December%202017.pdf>

² Link to PDARP/PEIS, ROD and CD -<http://www.gulfspillrestoration.noaa.gov/restoration-planning/gulf-plan/>

The LA TIG also evaluated whether the project's proposed changes would affect its analysis under OPA. The OPA analysis for the Elmer's Island Access project is found in Section 3.1 of the Draft RP/EA # 2, incorporated herein by reference and summarized in Section 3 of this document. This document provides an OPA analysis for the two alternatives being considered in light of public comment.

Therefore, the LA TIG has prepared this Supplemental RP/EA in accordance with OPA and NEPA to address environmental impacts from a project modification that differ from the original impacts analysis identified in the Draft RP/EA #2. This Supplemental RP/EA will inform the LA TIG's decision on whether to select the Elmer's Island Access project in the Final RP/EA #2. Any alternative(s) carried forward from this Supplemental RP/EA will be included in the Final RP/EA #2.

Lead and Cooperating Agencies

In accordance with 40 CFR Section 1508.12, the LA TIG designated EPA as the lead federal agency responsible for NEPA compliance for the Draft RP/EA #2 and this Supplemental RP/EA. The federal and state agencies participating on the LA TIG are acting as cooperating agencies for the purposes of compliance with NEPA in the development of Final RP/EA #2 and this Supplemental RP/EA. Each federal cooperating agency on the LA TIG intends to adopt, if appropriate, the NEPA analyses in both documents. In accordance with 40 CFR Section 1506.3(a), each of the three federal cooperating agencies (DOI, NOAA, and USDA) participating on the LA TIG will review the documents for adequacy in meeting the standards set forth in its own NEPA implementing procedures and decide whether to adopt the NEPA analysis.

Public Involvement

The LA TIG has prepared this Supplemental RP/EA to inform the public about the Elmer's Island Access project modification and seeks public comment on this Supplemental RP/EA. Additional information regarding the public comment period and associated public meeting can be found in Section 7 of this Supplemental RP/EA.

Purpose and Need

The purpose and need for the Elmer's Island Access project as modified remains the same and is consistent with the purpose and need described in Section 1.5 of the Draft RP/EA #2, which is incorporated herein by reference. For the purpose of restoring natural resources and services injured as a result of the DWH Oil Spill, the DWH Trustees need to address the associated recreational loss that occurred in Louisiana. The project as modified continues to meet the purpose and need.

Preliminary Finding of No Significant Impact (FONSI)

The Draft RP/EA #2 included a preliminary FONSI in Section 4.9. The Federal Trustees of the LA TIG have evaluated the environmental consequences of the proposed alternatives in this Supplemental RP/EA and the preliminary findings indicate that no significant environmental impacts are anticipated, consistent with the preliminary FONSI³ findings in the Draft RP/EA #2.

³ EPA's NEPA implementing procedures at 40 CFR 6.203(b)(1).

Section 2

Proposed Modification to Elmer's Island Access Project and Alternatives Considered

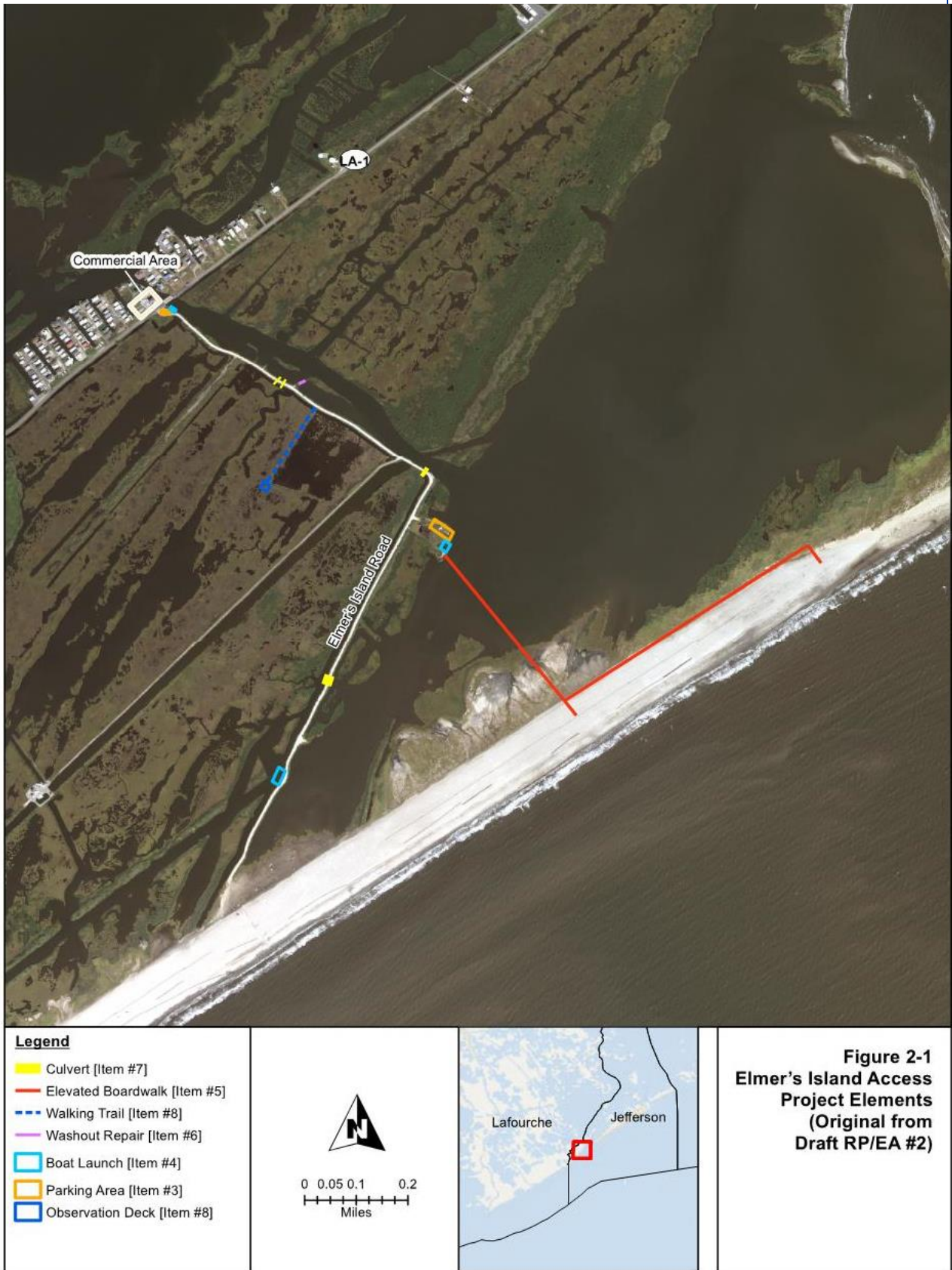
Original Project Scope

The originally proposed Elmer's Island Access project in the Draft RP/EA #2 included the following features:

- Cost to complete engineering and design (E&D) to allow for project construction
- Improvement of aquatic hydrology through the installation of culverts under the access road
- Enhancement of access features by improvements to currently improvised parking areas and small-boat launches
- Construction of elevated boardwalk to facilitate beach access points
- Repair of breach/washout location to allow foot traffic to additional fishing areas
- Improvements to dedicated birding area, including walking paths and observation area
- Outreach and educational materials to complement the Proposed Alternative
- Long-term (15 years) operational costs, including routine trash collection and removal
- Long-term (15 years) maintenance costs associated with project upkeep, including routine and emergency road repairs
- Long-term monitoring of recreational usage of Elmer's Island (pre- and post-Proposed Alternative)

During the public comment period for the Draft RP/EA, the LA TIG received more than 20 comment submissions from private citizens, businesses, federal, state, and local agencies, and non-government organizations. While comments on whole were favorable toward the Draft RP/EA, particular concerns were raised regarding the elevated lagoon boardwalk component of the proposed Elmer's Island Access project (**Figure 2-1**). As proposed, this feature originated near Elmer's Island Road, crossed the lagoon, and ran eastward approximately 0.75 miles, providing access to Caminada Beach. Several public comments voiced concern that the boardwalk would be a permanent obstruction across the lagoon, interrupting the natural landscape, disturbing habitat, and preventing access to the entire length of the lagoon for kiteboarding and kayaking. Other comments raised concern for the sustainability of an elevated boardwalk given the inevitability of hurricanes and tropical storms. It also was stated that previously existing elevated boardwalks in the area were not reconstructed because the posts, beams, and structural components led to accelerated erosion of the adjacent beach and dune. Other concerns included trash and debris removal with increased public access and the need for signage to increase

environmental awareness and environmental stewardship. Public comments in support of the elevated boardwalk were enthusiastic about gaining access to the beach area



Service Layer Credits: Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

Figure 2-1
Elmer's Island Access
Project Elements
 (Original from
 Draft RP/EA #2)

and nearer to Caminada Pass for recreational fishing because public driving on the beach was eliminated during construction, and after completion of the Caminada Headland Beach and Dune Restoration project. Some commenters also provided alternative boardwalk alignments for easier public access and a shorter walking distance to the beach.

Based on these public comments, the LA TIG decided to evaluate additional boardwalk alignments and a beach shuttle service at Elmer’s Island.


Alternative A: Boardwalk Alignment 1

One alternative boardwalk alignment suggested by the public, Alternative A (**Figure 2-2**), included a boardwalk originating from the same vicinity as the original proposal, crossing the lagoon and running east and west to provide access to the beach, and would considerably shorten the walk to the beach. This alignment would connect with Elmer’s Island farther east down the beach than the original alignment and allow for more space on the western side of the lagoon for recreational activities such as kiteboarding and kayaking. While providing greater public access, this boardwalk alignment would counter the aesthetic effects of the recently restored Caminada Headlands project and associated wildlife by introducing a permanent structure and interrupting the natural surroundings. Notably, this boardwalk alignment would be compatible with the primary purpose of the refuge, which is to protect wildlife and wildlife-related recreation. However, the impacts for this boardwalk alignment would generally be the same as the original alignment in the Draft RP/EA #2, and bifurcation of the lagoon would still, although to a lesser extent, limit kiteboarding and kayaking. For these reasons, Alternative A is not further evaluated within this document.



Legend

- Culvert
- Alternative A Boardwalk
- Walking Trail
- Washout Repair
- Boat Launch
- Parking Area
- Observation Deck



0 0.05 0.1 0.2
Miles



**Figure 2-2
Alternative A
Boardwalk**

Service Layer Credits: Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

Alternative B: Boardwalk Alignment 2

Another alternative boardwalk alignment, Alternative B, (**Figure 2-3**) proposed by the public to improve public access to and along the beach would originate from the existing parking area at the intersection of Elmer’s Island Road and Caminada Beach and would run eastward behind the dune, parallel to the lagoon, approximately 1.5 miles. The behind-the-dune boardwalk would allow pedestrian traffic to access Caminada Pass and include dune cross-over walkways at different points on the beach. Alternative B would not bifurcate the lagoon; therefore, impacts to kiteboarding and kayaking would not occur.



Legend

- Culvert
- Alternative B Boardwalk
- - - Walking Trail
- Washout Repair
- Boat Launch
- Parking Area
- Observation Deck



**Figure 2-3
Alternative B
Boardwalk**

Service Layer Credits: Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

Alternative C: Beach Shuttle (Preferred)

Another access alternative, Alternative C (**Figure 2-4**), is a beach shuttle service. Instead of constructing a pedestrian boardwalk, the public would be allowed to access the beach via a beach shuttle service that would transport the public eastward from the west end parking area to beach locations nearer Caminada Pass and also westward from the parking area. Total length of the beach shuttle service west to east would extend the full 2.6 miles along Refuge property. The beach shuttle service is the LA TIG’s preferred alternative and is proposed for modification of the Elmer’s Island Access project.



The Elmer’s Island shuttle service would provide a means of transportation along the 2.6-mile beachfront, which will remain closed to public vehicular traffic. While the shuttle would service the entire beachfront, it is expected that majority of the service would be to the Caminada Pass area along the easternmost portion of the beach. Visitation at Elmer’s Island is highest during the summer months, between May and Labor Day. Peak holidays include Easter (outside of the summer season), Memorial Day, Fourth of July, and Labor Day. As stated in the Louisiana Administrative Code, Title 76, Elmer’s Island is open for visitation from 30 minutes before sunrise to 30 minutes after sunset.

This shuttle service would be contracted to a third party through the state bidding process and each contract term would be for a maximum of 3 years. As such, each 3-year contract would provide the opportunity to employ an adaptive management strategy to routinely evaluate the effectiveness of the shuttle service and address any adverse environmental impacts. This would allow contracts to be flexible and adaptable so that the scope of future contracts would most efficiently use the available funds while balancing the service’s effectiveness based on the number of visitors (as identified through utilization monitoring), public feedback, contract monitoring, and environmental impact. Facilities, storage, fueling and maintenance operations associated with the third-party contractor would all be located off-site, eliminating the need to evaluate any environmental consequences and/or impacts associated with these type features. A third party would also eliminate insurance requirements and liabilities for LDWF and the Refuge.

The total amount of restoration funds to be used for the shuttle service is approximately \$2 million. Initial projections allocate \$150,000 per year for 15 years; however, it is unknown at this time exactly how much this service would cost until bids are received. Therefore, three operational scenarios presented in the following paragraphs provide a range of coverage based on relative effort outputs. Scenario 1 is the highest coverage rate with up to four vehicles in simultaneous operation during the traditionally busiest times of year. Scenario 2 represents a medium coverage rate. Scenario 3 represents the lowest relative coverage by eliminating service during the slowest times of the year (December and January). Once the service bidding process begins, there will be a much better estimate of annual costs; the long-term plan will be consequently adapted. Service time frames may be adjusted based on cost estimates received. The following shuttle service alternatives are an example of operational frequencies; however, the annual plan may vary based on cost and need (i.e., number of users).



Examples of vehicles that may be used for shuttle service: crew-size UTV/ATV (driver plus 5 seats) on left and modified truck (driver plus 8 to 10 seats) on right. Vehicles must abide by best management practices (BMPs) for beach driving (Section 5.2), including weight and tire

restrictions, speed limits, driving only on or adjacent to the wet sand area of the beach, and at no time disturbing nesting birds, sea turtles, or other wildlife.

Operations Scenario 1: Utilizing a six-person UTV/ATV with a trailer attachment (High Coverage)

January/February:

- 1 shuttle from 8:00 AM to 5:00 PM on weekends (Friday through Sunday)

March/April:

- 2 shuttles from open to close on weekends (Friday through Sunday), excepting Easter weekend
- Easter weekend, 4 shuttles from open to close, Friday through Sunday

May:

- 2 shuttles, from open to close on weekdays (Monday through Thursday), excepting Memorial Day
- 4 shuttles from open to close on weekends (Friday through Sunday)
- 4 shuttles on Memorial Day

June/July/August:

- 4 shuttles from open to close, daily

September:

- 4 shuttles from open to close through Labor Day, daily
- 2 shuttles from open to close on weekdays (Monday through Thursday) after Labor Day
- 4 shuttles from open to close on weekends (Friday through Sunday) after Labor Day

October/November:

- 2 shuttles from open to close on weekends (Friday through Sunday)

December:

- 1 shuttle from 8:00 AM to 5:00 PM on weekends (Friday through Sunday)

Number of hours open with an operating shuttle	
Jan	108
Feb	108
Mar	180
Apr	179
May	446
Jun	445
Jul	449
Aug	433
Sep	394
Oct	147
Nov	148
Dec	126
Total	3160

Number of man-hours (shuttle operations only - 1 person, 1 shuttle)	
Jan	108
Feb	108
Mar	360
Apr	437
May	1265
Jun	1775
Jul	1794
Aug	1730
Sep	1181
Oct	294
Nov	297
Dec	126
Total	9474

Operations Scenario 2: Utilizing a six-person UTV/ATV with a trailer attachment (Medium Coverage)

January/February:

- 1 shuttle from 8:00 AM to 5:00 PM on weekends (Friday through Sunday) March/April:
- 2 shuttles from open to close on weekends (Friday through Sunday)

May:

- 4 shuttles from open to close on weekends (Friday through Sunday)
- 4 shuttles on Memorial Day

June/July/August:

- 4 shuttles from open to close, daily

September:

- 4 shuttles from open to close through Labor Day, daily
- 4 shuttles from open to close on weekends (Friday through Sunday), after Labor Day

October/November:

- 2 shuttles from open to close on weekends (Friday through Sunday)

December:

- 1 shuttle from 8:00 AM to 5:00 PM on weekends (Friday through Sunday)

Number of hours open with an operating shuttle	
Jan	108
Feb	108
Mar	180
Apr	179
May	187
Jun	444
Jul	449
Aug	433
Sep	197
Oct	147
Nov	148
Dec	126
Total	2704

Number of man-hours (shuttle operations only - 1 person, 1 shuttle)	
Jan	108
Feb	108
Mar	360
Apr	357
May	748
Jun	1775
Jul	1794
Aug	1730
Sep	786
Oct	294
Nov	297
Dec	126
Total	8483

Operations Scenario 3: Utilizing a six-person UTV/ATV with a trailer attachment (Low Coverage)

January:

- No operations

February:

- 1 shuttle from 8:00 AM to 5:00 PM on weekends (Friday through Sunday)

March/April:

- 1 shuttle from open to close on weekends (Friday through Sunday)

May:

- 2 shuttles from open to close on weekends (Friday through Sunday)
- 4 shuttles on Memorial Day weekend (Friday through Sunday) and Memorial Day

June/July/August:

- 4 shuttles from open to close, daily

September:

- 4 shuttles from open to close through Labor Day
- 2 shuttles from open to close on weekends (Friday through Sunday) after Labor Day

October/November:

- 2 shuttles from open to close on weekends (Friday through Sunday)

December:

- No operations

Number of hours open with an operating shuttle	
Jan	0
Feb	108
Mar	180
Apr	179
May	187
Jun	444
Jul	449
Aug	433
Sep	197
Oct	147
Nov	148
Dec	0
Total	2470

Number of man-hours (shuttle operations only - 1 person, 1 shuttle)	
Jan	0
Feb	108
Mar	180
Apr	179
May	432
Jun	1775
Jul	1794
Aug	1730
Sep	474
Oct	294
Nov	297
Dec	0
Total	7262

The original boardwalk configuration across and parallel to the lagoon was intended to provide public access to Caminada Pass, the most popular location for recreational fishing on Elmer's Island. The goals and objectives of the original proposed boardwalk feature would be realized by the reconfigured lagoon crossing boardwalk (Alternative A), the behind-the-dune boardwalk (Alternative B) and the shuttle service option (Alternative C), as all would still provide the public access to the beach for purposes of recreational fishing and other outdoor activities. However, only Alternatives B and C would minimize the concerns raised by the public in comments on the Draft RP/EA #2. Both the proposed beach shuttle service alternative and the behind-the-dune boardwalk alternative are evaluated in this Supplemental RP/EA. Because the impacts of Alternative A would be similar to those associated with the original boardwalk alignment and would not reduce or minimize concerns raised by the public, Alternative A was not carried forward for further analysis in this Supplemental RP/EA.

For purposes of this Supplemental RP/EA, Operations Scenario 1: High Coverage will be used to analyze impacts associated with the proposed beach shuttle service alternative, as it is considered to be of highest intensity with respect to environmental impacts analysis. The other two operational scenarios have fewer numbers of hours operating the shuttle and fewer number of man-hours. All other features that were proposed as part of the original Elmer's Island Access project analyzed in the Draft RP/EA #2 would remain unchanged, with the exception of the parking area and kayak launch located at the original boardwalk origination point. Because these amenities were associated with the original boardwalk configuration, which is no longer proposed by the LA TIG, these features would be eliminated, and the cost savings would be put toward the modified project, if selected in the Final RP/EA #2.

Section 3

Supplemental OPA Evaluation

The LA TIG continues to propose the selection of the Elmer's Island Access project, as modified, under OPA in the Draft RP/EA #2. Under 15 CFR 990.54, Trustees are to evaluate the proposed alternative on, at minimum, (1) the cost to carry out the alternative; (2) the extent to which each alternative is expected to meet the trustees' goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses; (3) the likelihood of success of each alternative; (4) the extent to which each alternative will prevent future injury as a result of the incident and avoid collateral injury as a result of implementing the alternative; (5) the extent to which each alternative benefits more than one natural resource and/or service; and (6) the effect of each alternative on public health and safety. The proposed project modifications, Alternative B (behind-the-dune boardwalk) and Alternative C (beach shuttle service), still meet the evaluation criteria established for OPA and are described in the following sections.

Alternative B: Boardwalk Alignment 2

The cost to implement the alternative. The cost to implement the Alternative B boardwalk would be costlier than the original lagoon boardwalk proposed in the Draft RP/EA #2, Cost estimates for the original lagoon boardwalk were approximately \$1.5 million of the total project cost of \$6 million (Table 3-1 in the Draft RP/EA #2), and the Alternative B boardwalk would cost approximately \$4.5 million. Implementing the Alternative B boardwalk would come at the expense of other access and recreational features proposed for Elmer's Island Access in the Draft RP/EA #2. However, no land acquisition costs would be associated with Alternative B because the state already owns the property.

All work would be awarded in compliance with Louisiana's public bid laws and regulations, ensuring that the project is constructed at current market rates. Operation and maintenance costs (15 years), for the public access features would be funded per costs included in Table 3-1 of the Draft RP/EA #2. Projections of operating costs, utilization, were based on other similar projects managed by LDWF.

The extent to which each alternative is expected to meet the LA TIG's goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses.

Nexus to Injury. Alternative B has a strong nexus to the DWH recreational injury. As mentioned previously, the majority of the recreational use loss in Louisiana, as a result of the spill, was to recreational fishing. During the spill, the island received extensive oil impacts that limited recreational fishing. Alternative B is designed to enhance public access to the beach and recreational fishing experiences, both by increasing visitation and enhancing the quality of future recreational visits to the area. As such, Alternative B's goal of creating and enhancing visitor access to recreational fishing at Elmer's Island Refuge, has a strong nexus to the public's lost recreational fishing. The recreational opportunities that would be created by Alternative B are

the same shoreline uses that were lost due to the DWH Oil Spill (i.e., lost user-days of fishing, wildlife viewing). Visitors to Elmer's Island Refuge, the same user population that the DWH Oil Spill affected, would benefit from Alternative B. The Alternative B represents "in-place, in-kind" restoration and is fully consistent with OPA objectives for compensatory restoration.

Benefit to Injured Resources

- *Component Benefits:* The Proposed Alternative's location and amenities are within the geographical footprint of the DWH injury. The Elmer's Island Refuge recreational amenities are designed to be used by recreational fisherman, birdwatchers and to aid/enhance their ability to access and enjoy fishing, wildlife viewing and natural resources educational opportunities within the Refuge. The proposed boardwalk infrastructure is expected to serve the public for at least several decades.
- *Scope of Benefits:* The scope of benefits for the Elmer's Island Refuge Alternative B would be a direct function of capacity utilization along the access road, designated parking areas, etc.
- *Public Access:* The recreational benefits of this Alternative B would be broadly available to the public. However, because of a lack of public transportation in the area, benefits would likely accrue primarily to individuals who own vehicles and have sufficient disposable income to drive to the site. No users would be actively excluded by the Alternative B. During the peak summer season, parking capacity and crowding would limit the total benefits available.
- *Location:* Elmer's Island Refuge has limited public shore fishing opportunities in an area where recreational fishing is a popular activity. This implies a high marginal value for this Alternative B. The Alternative B is close to Grand Isle, a highly visited tourist destination and would be available to a large potential visitor/recreational fishing population.
- *Additional Benefit Considerations:* Given experience at Elmer's Island Refuge, it is expected that there would be sufficient demand for recreational fishing and wildlife viewing at the site, and that it would operate at full capacity during at least part of the year.

The likelihood of success of each alternative. Alternative B's goal of enhancing public recreational fishing and enjoyment of coastal areas at Elmer's Island Refuge has a high likelihood of success. No land acquisition is required, and LDWF has successfully implemented similar recreational projects as part of its day-to-day natural resource management responsibilities at other state-owned properties within coastal Louisiana.

The extent to which each alternative would prevent future injury as a result of the incident and avoid collateral injury as a result of implementing the alternative. Alternative B is not expected to play a role in preventing future injury from the spill. The Final PDARP/PEIS indicates that recreational uses have recovered (DWH Trustees 2016). The purpose of the Alternative B is only to provide compensatory restoration for losses that occurred between April 2010 and November 2011, after which the Final PDARP/PEIS studies conclude that recreational use returned to baseline levels.

Implementation of the Alternative B is not expected to cause any net collateral damage to the environment. Siting, design and construction of the boardwalk would be conducted in a manner that would avoid impacts to existing environmental resources to the maximum extent practicable.

The extent to which each alternative benefits more than one natural resource and/or service. The primary NRDA benefit of Alternative B would be to provide and enhance recreational fishing use services. Benefits would also be provided through the addition of new or enhanced wildlife viewing opportunities at the site.

The effect of each alternative on public health and safety. Adverse impacts on public health and safety are not expected from Alternative B. No changes to historic parking and traffic patterns are anticipated. Alternative B would result in ADA-accessibility to the beach and fishing areas near Caminada Pass.

Alternative C: Beach Shuttle (Preferred)

The cost to implement the alternative. The cost to implement the Alternative C beach shuttle service would be approximately \$150,000 per year for a total cost of \$2 million over 15 years. Compared to the original lagoon boardwalk proposed in the Draft RP/EA #2, Cost estimates for the original lagoon boardwalk were approximately \$1.5 million of the total project cost of \$6 million (Table 3-1 in the Draft RP/EA #2), and implementation of Alternative C would not come at the expense of other access and recreational features proposed for Elmer's Island Access in the Draft RP/EA #2.

For Alternative C, all of the remaining five OPA criteria evaluated are the same as described for Alternative B.

Summary

Because of the *Deepwater Horizon* oil spill and related response actions, the public's access to and enjoyment of the natural resources at the Elmer's Island Wildlife Refuge was denied or severely restricted. The proposed project modifications would enhance and/or increase recreational opportunities by improving public access within the refuge. The proposed project modifications also would enhance and/or increase opportunities for the public's use and enjoyment of the natural resources, helping to offset the previous restrictions on public use caused by the DWH Oil Spill.

The proposed project modifications are technically feasible and use proven techniques with established methods and documented results. Further, the proposed project modifications can be implemented with minimal delay pending completion of USFWS and National Marine Fisheries Service biological consultations. The proposed project modifications do not result in any material net change to the original project's estimated costs, as identified in the Draft RP/EA #2, and so the project still would be implemented at a reasonable cost.

An environmental review indicates that adverse impacts resulting from the proposed project modifications would be minor, localized, and short-term. In addition, BMPs and measures to avoid or minimize adverse impacts described in Section 5 of this Supplemental RP/EA would be

implemented. As a result, collateral injury would be avoided and minimized during project implementation.

Section 4

Supplemental Environmental Impacts Analysis

The Elmer's Island Access project includes multiple project features as described in the Draft RP/EA #2. However, this analysis is only applicable to impacts associated with two alternatives to the originally proposed Elmer's Island boardwalk feature crossing the lagoon. The other Elmer's Island Access project features discussed in the Draft RP/EA #2 would remain, with exception of the parking area and kayak launch associated with the original boardwalk configuration. The two alternatives are (1) Alternative B, a behind-the-dune boardwalk constructed for approximately 1.5 miles from the existing parking area to Caminada Pass (see **Figure 2-3**) and (2) Alternative C, a proposed shuttle service located in the intertidal wet sand area of the beach along a 2.6-mile stretch of the beach (see **Figure 2-4**). The project locations for Alternative B and Alternative C are in the same general location as the original Elmer's Island Access project identified in the Draft RP/EA #2. Therefore, the Affected Environment will largely remain the same, as originally presented in Section 4 of the Draft RP/EA #2, except for the effects that Alternative C could potentially have on the intertidal zone. The proposed shuttle service would operate in the intertidal zone – the “wet sand” area above water at low tide and occasionally under water at high tide. The following subsections describe the environmental consequences of the proposed modifications to the Elmer's Island Access project.

This Supplemental RP/EA incorporates by reference information contained within the Environmental Consequences analyses in Section 4.4 of the Draft RP/EA #2, including the criteria for impacts determinations, as appropriate. Four resource topics were not re-evaluated for this Supplemental RP/EA because the new evaluated alternatives resulted in no change in the potential effects to these resource categories. Resource topics not included herein include the following: Cultural Resources, Infrastructure, Fisheries and Aquaculture, and Marine Transportation. Additionally, the No Action alternative is not evaluated herein since no change in impacts would occur for the No Action as described in the Draft RP/EA #2. For Alternative C, impacts were evaluated based on the most robust shuttle operations schedule (Operations Scenario 1), as described in Section 2 of this Supplemental RP/EA.

4.1 Physical Environment

The project locations for Alternative B and Alternative C are in the same general location as the original Elmer's Island Access project (i.e., Alternative A) identified in the Draft RP/EA #2. Therefore, the Affected Physical Environment will largely remain the same, as originally presented in Section 4.4.1 of the Draft RP/EA #2, except for the effects that Alternative C could potentially have on the intertidal zone. The proposed shuttle service would operate in the intertidal zone – the “wet sand” area above water at low tide and occasionally under water at high tide. A brief summary of the physical resources originally presented in the Draft RP/EA #2 and any significant changes and/or new impacts from Alternatives B and C are the focus of the discussions in the following subsections.

4.1.1 Geology and Substrates

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B would include the construction of a boardwalk on the dune and adjacent marsh habitat. Therefore, the environmental consequences to geology and substrates include short- and long-term, moderate adverse impacts. Adverse impacts would include localized soil disturbance and displacement due to construction activities, including barging in construction equipment via an access channel across the lagoon to access the beach. Additionally, long-term moderate adverse impacts include increased foot traffic near dune areas and potential scour and washout around the boardwalk pilings. Under high energy wind and wave conditions, localized turbulence and wave focusing also have the potential to scour dunes recently (~2017) restored under the Caminada Headland Beach and Dune Restoration project.

BMPs that could be implemented to minimize construction impacts associated with a dune boardwalk, such as staging equipment in previously disturbed areas and erosion and sediment control measures, are described in Section 4.4 of the Draft RP/EA #2 and are incorporated by reference.

Alternative C: Shuttle Service

Alternative C would include vehicle traffic along the intertidal wet sand area of the beach. Therefore, impacts to geology and substrates include long-term moderate adverse impacts due to increased vehicle access and foot traffic contributing to compaction/rutting along beach areas, vehicle-induced seaward displacement of sand, and the potential for increased beach erosion as a result. Additional long-term moderate adverse impacts include potential impacts to dunes from increased recreational use from access points and/or creation of social trails. This increased use could lead to reduction in dune stability (lowered height, reduced vegetation, weakened low points).

BMPs that could be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that would be implemented to minimize adverse impacts to geology and substrates include restricting the vehicular traffic to the intertidal wet sand area of the beach, vehicle weight limits, tire restrictions, and speed limits.

4.1.2 Hydrology and Water Quality

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B would include construction of the boardwalk, an elevated impervious surface that would modify local hydrology. Therefore, the environmental consequences to hydrology and water quality include short- and long-term, minor adverse impacts. Adverse impacts would include localized potential erosion and sedimentation due to construction activities and an increase in impervious surface.

BMPs that could be implemented to minimize construction impacts associated with a behind-the-dune boardwalk are described in the Section 4.4 of the Draft RP/EA #2 and are incorporated by reference.

Alternative C: Shuttle Service

Alternative C would not result in significant changes to local hydrology. However, vehicular traffic could result in water quality impacts. Adverse impacts would include rutting during shuttle operation, and potential contamination due to fluid/fuel leaks from shuttle service vehicles. Therefore, the environmental consequences to water quality include short- and long-term, minor adverse impacts.

BMPs that could be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that would be implemented to minimize adverse impacts to water quality include using multi-passenger vehicles to minimize the number of shuttles and trips.

4.1.3 Air Quality and Greenhouse Gas Emissions*Environmental Consequences***Alternative B: Behind-the-Dune Boardwalk**

Alternative B would include the short-term use of various construction equipment and vehicles to construct the boardwalk. Engine exhaust from bulldozers, excavators, trucks, backhoes, and other vehicles would contribute to an increase in criteria pollutants, GHGs, and other air pollutants. However, because of the small scale and short duration of the construction portion of the project, predicted emissions would be short-term and minor. Long-term, ongoing adverse impacts include a slight increase in emissions due to the increase in recreational use of the site, but, based on the current and anticipated number of visitors per year, the increase is expected to be minimal.

BMPs that could be implemented to minimize construction impacts associated with a behind-the-dune boardwalk are described in Section 4.4 of the Draft RP/EA #2 and are incorporated by reference.

Alternative C: Shuttle Service

Alternative C would include continued use of vehicular shuttles along the beach. The environmental consequences to air quality and greenhouse gas (GHG) emissions include long-term, minor adverse impacts associated with intermittent emissions during shuttle operation along the beach. Engine exhaust from the shuttles would contribute to an increase in criteria pollutants, GHG emissions, and other air pollutants. However, vehicles would comply with EPA exhaust emission standards and BMPs would be implemented, including emission reduction measures to mitigate for air quality impacts associated with the shuttle service. BMPs could include using multi-passenger vehicles to minimize the number of shuttles and trips, as described in detail in Section 5 of this Supplemental RP/EA. Given the low number of vehicles in operation, intermittent use, compliance with emission standards, and implementation of BMPs, Alternative C would have a long-term, minor adverse impact on air quality and GHG emissions.

4.1.4 Noise*Environmental Consequences***Alternative B: Behind-the-Dune Boardwalk**

Alternative B would include temporary noise associated with various construction equipment and vehicles to construct the boardwalk. Therefore, the environmental consequences to noise

include short-term, moderate adverse impacts during construction. Additionally, long-term, minor adverse impacts are expected due to an increase in recreational activities.

BMPs that could be implemented to minimize construction impacts associated with a dune boardwalk are described in the Draft RP/EA #2, Section 4.4 and are incorporated by reference.

Alternative C: Shuttle Service

Alternative C would include recurring, intermittent noise associated with vehicular shuttles driving along the beach. These vehicular noises, while not continuous and likely limited to one or two vehicles in operation at once, would occur in a setting devoid of similar noises. Therefore, the environmental consequences include long-term, minor adverse noise impacts due to intermittent shuttle operations and increase in recreational activities.

BMPs that could be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that could be implemented to minimize adverse impacts include using multi-passenger vehicles to minimize the number of shuttles and trips.

4.2 Biological Environment

The project locations for Alternative B and Alternative C are in the same general location as the original Elmer's Island Access project (i.e., Alternative A) identified in the Draft RP/EA #2. Therefore, the Affected Biological Environment will largely remain the same, as originally presented in Section 4.4.2 of the Draft RP/EA #2, except for the effects that Alternative C could potentially have on biological resources in the intertidal zone. The proposed shuttle service would operate in the intertidal zone – the “wet sand” area above water at low tide and occasionally under water at high tide. The intertidal zone provides important habitat for breeding shorebirds, such as Wilson's plover and least tern, and overwintering shorebirds, including the federally threatened piping plover and red knot. Invertebrates such as crabs and clams also inhabit the intertidal zone. A brief summary of the biological resources originally presented in the Draft RP/EA #2 and any significant changes and/or new impacts from Alternatives B and C are the focus of the discussions in the following subsections.

4.2.1 Habitats

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

While Alternative B would discourage the random foot traffic across vegetated dunes that currently occurs, construction of the boardwalk would include long-term, moderate adverse impacts associated with a permanent wooden structure and habitat fragmentation to approximately 1.8 acres of sensitive dune and wetland habitats (e.g., mangroves and cordgrass marsh). Prior to implementation of the State's Caminada Headland Beach and Dune Restoration Project, the public had complete access to Elmer's Island, including vehicle use. Currently, the State restricts access across the dune to foot traffic only at three specified crossovers to prevent vehicular damage to and random vegetation trampling across the newly constructed Restoration Project. The proposed boardwalk also would afford the public easier and more extensive access to the entire island, which would likely have greater adverse impacts on habitats from increased

public use (e.g., trampling, trash, etc.). Therefore, overall, the environmental consequences to habitats include long-term, moderate adverse impacts.

BMPs that could be implemented to minimize construction impacts associated with a dune boardwalk are described in the Draft RP/EA #2, Section 4.4 and are incorporated by reference.

Alternative C: Shuttle Service

Alternative C would include recurring, minor impacts to intertidal wet sand habitats on the beach due to vehicular traffic. This includes vehicle-induced seaward displacement of sand and the potential for increased beach erosion as a result. The shuttle service would result in greater impacts to these habitats from noise/vibration, compaction/rutting, and potential small petroleum/vehicle fluid spills. There also would be impacts from increased foot traffic and public use (trampling, trash, etc.). These impacts would increase during the summer season when the shuttle service would run more frequently. Therefore, the environmental consequences to habitats include short- and long-term, minor to moderate adverse impacts.

BMPs that could be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that could be implemented to minimize adverse impacts include restricting vehicular traffic to the area on or adjacent to the wet sand weight limits, tire restrictions, and speed limits to minimize impacts to habitats. Additionally, impacts to habitats could be minimized by using multi-passenger vehicles to reduce the number of shuttles and trips.

4.2.2 Wildlife Species

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B would include long-term, adverse impacts to approximately 1.8 acres of sensitive dune and wetland habitats (e.g., mangroves and cordgrass marsh) that would have adverse impacts on the local wildlife populations that depend on these habitats. It should be noted that different species may inhabit the dune and wetland habitats compared to the beach front including rails, plovers, skimmers (*Rynchops niger*), terns, and terrapins. Species that primarily use the beachfront habitats are less likely to experience adverse impacts due to activities in the dune and wetland habitats.

The construction of the boardwalk could potentially impact sessile or less mobile wildlife species through direct mortality or destruction of nests located in the construction area. Mobile wildlife species (e.g., birds) could temporarily move to adjacent habitats during boardwalk construction (provided suitable habitats exist nearby) and then return when construction is complete. Impacts on mobile species due to boardwalk construction would therefore be minor and short-term impacts. The boardwalk also would result in easier and more extensive access by the public to the entire island, which would likely have greater adverse impacts on wildlife from increased public use (disturbance, trash, etc.). Therefore, the environmental consequences to wildlife include short- and long-term, moderate adverse impacts.

BMPs that could be implemented to minimize construction impacts associated with a behind-the-dune boardwalk are described in the Draft RP/EA #2, Section 4.4 and are incorporated by

reference. Longer term impacts would be managed using current BMPs found within the Elmer's Island Refuge Management Plan (LDWF 2016).

Alternative C: Shuttle Service

Alternative C would include long-term impacts to intertidal wet sand habitats on the beach due to vehicular traffic and increased public use (trash, trampling, etc.), which could impact the wildlife species that use these habitats. More than 170 species of birds are believed to use Elmer's Island and the surrounding beach and marsh during some point in their life cycle. Almost 40 of these species are listed as bird species of conservation concern in Louisiana. Common nesting species include clapper rail (*Rallus crepitans*), least tern (*Sternula antillarum*), seaside sparrow (*Ammodramus maritimus*), and Wilson's plover (*Charadrius wilsonia*). Wintering birds include dunlin (*Calidris alpina*), sedge wren (*Cistothorus platensis*), snowy plover (*Charadrius nivosus*), and short-billed dowitcher (*Limnodromus griseus*). All of these species are protected under the Migratory Bird Treaty Act of 1918. Threatened and endangered species protected by the Endangered Species Act are discussed in Section 4.2.4 Protected Species. Additional wildlife species observed at Elmer's Island are listed in Table 4-1 of the Draft RP/EA #2.

A breeding population of diamondback terrapins (*Malaclemys terrapin*) has been documented on and around Elmer's Island. Terrapin nesting begins in May and continues until late July. The female terrapin leaves the marsh waters and comes ashore to nest at the sandy edges of marshes and dunes. The nest incubates in the sand without any further parental care. After 60 to 120 days, hatchling terrapins emerge and head toward the nearest body of water. Hibernation generally occurs within and below the intertidal zone of the salt marsh, singly or in groups, and lasts from November through March. Threats affecting this species include commercial take, collection for the pet trade, habitat loss, nest disturbance, and mortality due to derelict crab traps (LDWF 2016).

The intertidal habitats and wrack (i.e. debris line) are highly dynamic and unstable but provide important foraging habitat for wintering and breeding shorebirds. Some inhabitants of intertidal habitats are somewhat adapted to disturbance, while others are disturbed by activities within this intertidal zone. Wildlife species such as birds may be flushed more frequently from foraging and nearby nesting areas due to the shuttle service. Newly hatched chicks may also be at risk as they are hard to see and may not avoid danger. Impacts from Alternative C would also have the potential to impact abundance, species richness, habitat, behavior, and energy use by breeding and overwintering shorebirds and prey species in the wrack and littoral zone (Forgues 2010; Tarr et al. 2010; Burger and Gochfield 1991; Cestari 2015; Schlacher et al. 2013). Repeated flushing of shorebirds in response to disturbance may cause birds to expend energy on short flights and limit energy necessary for migration and/or breeding (Nudds and Bryant 2000; Lafferty 2001). Schlacher et al. (2013) found that off-road vehicles displaced birds from their preferred feeding and roosting sites and, in some cases, were killed after being run over. Because shorebird chicks are camouflaged to avoid predation, they are difficult to avoid when driving on the beach.

Several studies have shown that vehicle access has minimal impacts on invertebrates that occupy the intertidal zone (Leatherman and Godfrey 1979; Godfrey et al. 1980). Samples taken inside and outside vehicle tracks showed that crab and clam species were not damaged and could be

protected by burrows as shallow as 5 cm (Walcott and Walcott 1984). Another study found no significant differences between damage to intertidal, macrofaunal species at low-intensity use (5 passes/day) versus high-intensity use (50 passes/day) and concluded that the intertidal animals appeared to be safe from damage by vehicles, even at the higher intensities proposed under Alternative C, provided they were buried and the sand was reasonably compact (van der Merwe and van der Merwe 1991). The New Zealand Department of Conservation (1999) recommended that impacts to intertidal fauna could generally be avoided by driving on wet, compacted sand, seaward of the drift/wrack line during daylight hours (Stephenson 1999). Despite these findings, more recent studies have documented that crushing of crabs and other invertebrates can occur as the result of driving on beaches (Moss and McPhee 2006; Schlacher et al. 2007; Schlacher et al. 2008; Knisley and Hill 1990).

Therefore, because the proposed shuttle service would be restricted to on or adjacent to the intertidal wet sand area of the beach, the environmental consequences to wildlife would be short-term and long-term, minor impacts to bird species that forage in wrack and in the intertidal zone and would be long-term, minor adverse impacts to animals (e.g., crabs or clams) that occupy the intertidal zone and to a small number of diamondback terrapins that may be present on the Gulf side of the island.

BMPs that could be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that could be implemented to minimize adverse impacts to wildlife include restricting the vehicular traffic to on or adjacent to the intertidal wet sand area of the beach, avoiding the wrack line when possible, weight limits, tire restrictions, limited hours, restrictions during certain times of year and for certain weather conditions, and speed limits.

4.2.3 Marine and Estuarine Fauna, Essential Fish Habitat, and Managed Fish Species

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B would include construction in sensitive dune and wetland areas (e.g., mangroves and cordgrass marsh) that could temporarily increase sedimentation in aquatic habitats and increase disturbance in wetland nursery habitats important to marine and estuarine fauna. Additionally, the boardwalk also would afford the public easier and more extensive access to the entire island, which would likely have greater adverse impacts on aquatic fauna from increased public use (e.g., fishing pressure, trash, etc.). Therefore, the environmental consequences to marine and estuarine fauna, essential fish habitat, and managed fish species include short- and long-term, minor to moderate adverse impacts (specific species listed in the Draft RP/EA #2, Section 4.4.2.3).

BMPs that could be implemented to minimize construction impacts associated with a dune boardwalk are described in the Draft RP/EA #2, Section 4.4 and are incorporated by reference.

Alternative C: Shuttle Service

Alternative C would include temporary, minor impacts to intertidal wet sand habitats on the beach due to vehicular traffic, which could impact marine fauna in the surf zone. Additionally,

there would be long-term, minor adverse impacts due to increased access by the public (fishing pressure, discarded fishing gear, trash, etc.). Minor fluid/fuel leaks from shuttle service vehicles could also have short- and long-term, minor adverse impacts on marine fauna in the intertidal zone. As discussed in Section 4.2.2, Wildlife Species, studies have shown that vehicle access has minimal impacts on species that occupy the intertidal zone (Leatherman and Godfrey 1979; Godfrey et al. 1980). However, more recent studies indicate some invertebrates in the shuttle service path footprint may be crushed. Therefore, because the proposed shuttle service will be restricted to on or adjacent to the intertidal wet sand area of the beach, the environmental consequences to marine and estuarine fauna would be short- and long-term, minor adverse impacts. These impacts would primarily be associated with increased human use and vehicular fluid/fuel leaks.

BMPs that could be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that could be implemented to minimize adverse impacts include restricting the vehicular traffic to the intertidal wet sand area of the beach, weight limits, tire restrictions, and speed limits. Additionally, impacts could be minimized by using multi-passenger vehicles to minimize the number of shuttles and trips.

4.2.4 Protected Species

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B would include construction in sensitive dune areas that provide overwintering habitat for the federally threatened piping plover and red knot. Piping plovers, which are federally listed as threatened, forage on Louisiana's beaches, including Elmer's Island, up to 9 months out of the year. Elmer's Island has been federally designated as Critical Habitat for the piping plover. Red knots, also listed as threatened, use Elmer's Island as a stopover point during their long migratory route, during both their fall and spring migration. ESA consultation will only be initiated for the preferred alternative, which is currently the shuttle service; ESA consultation will only be initiated for the boardwalk if the boardwalk becomes the preferred alternative.

As mentioned in Section 4.2.2, Elmer's Island also provides habitats for many nesting and overwintering shorebirds protected under the Migratory Bird Treaty Act such as nesting least terns and Wilson's plover and overwintering dunlins, snowy plovers, and short-billed dowitchers, among others. Potential impacts to non-listed birds protected under the Migratory Bird Treaty Act are discussed in Section 4.2.2.

Currently, public access is restricted to foot traffic at three designated crossovers, which limits public access to areas within walking distance of the designated parking zone. Alternative B would increase public use across the island by allowing greater access to most, if not all of the island, and thus, would also increase the potential to disturb listed birds (e.g., unleashed dogs, human presence, etc.). Construction of the boardwalk would also impact 1.8 acres of dune and marsh habitats on the bayside of the island where listed birds often forage on exposed sand and mudflats at low tide. Alternative B would have long-term, moderate adverse impacts to federally designated critical habitat (Unit LA-5) for the piping plover. The loss of critical habitat along the 8,100-linear foot boardwalk would be approximately 1.8 acres. As noted earlier, because of their statuses as listed species, interfering with a piping plover or red knot or disturbing them

constitutes a violation of both state and federal laws. The disturbance to red knots would be within migratory stopover and foraging habitats. Other protected overwintering and breeding shorebirds would experience short-term impacts associated with the construction of the boardwalk. Once construction would be completed, many of these species may acclimate to the presence of the boardwalk, but the increase in human disturbance may urge birds to avoid the area. It should be noted that piping plovers and red knots would be present in the fall and winter when public use of the area is limited.

The USFWS Information for Planning and Consultation (IPaC) system includes four federally listed sea turtle species for Elmer's Island (USFWS 2018). These are the hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*). There are three sea turtle species that are known to occur in Louisiana waters in large numbers. These are the federally threatened loggerhead sea turtle and green sea turtle (*Chelonia mydas*) and the federally endangered Kemp's Ridley sea turtle. In 2015, two loggerhead nests were identified on Grand Isle Beach (less than 1 mile east of Elmer's Island), and nesting attempts [commonly referred to as "false crawls" where a sea turtle emerges onto the beach (presumably to search for a nest site) and returns to the water without constructing a nest] were noted on Elmer's Island. Other "false crawls" have been noted in recent years. It is plausible that sea turtles may eventually use Elmer's Island as a nesting area. In the event that this occurs, nests would be protected and monitored. Interfering with a nesting sea turtle or disturbing a nest constitutes a violation of both state and federal laws. Impacts to listed sea turtle nesting habitat is expected to be minor and limited to the construction period of the boardwalk. Management of sea turtles would be consistent with the Elmer's Island Refuge Management Plan (LDWF 2016).

BMPs that could be implemented to minimize construction impacts associated with a dune boardwalk are described in the Draft RP/EA #2, Section 4.4 and are incorporated by reference.

Alternative C: Shuttle Service

Alternative C would include vehicular traffic in the intertidal area used as overwintering foraging habitat for the federally threatened piping plover and red knot. The overwintering period when piping plovers are present on Elmer's Island can be from late July through mid-May. The shuttle service would be operated less frequently from December through February. However, it would be more frequently used from July through November and March through May. In addition to disrupting the wrack and intertidal foraging area habitats, Alternative C would also afford the public easier and more extensive access to the entire island than exists currently, which would likely have greater adverse impacts on piping plovers and red knots from increased public use and disturbance. As mentioned in Section 4.2.2, impacts from Alternative C would have the potential to affect overwintering and nesting shorebirds in various ways. All shorebirds are protected under the Migratory Bird Treaty Act, and the piping plover and red knot are protected under the Endangered Species Act. Moreover, Elmer's Island is within a federally designated Critical Habitat (Unit LA-5) for piping plovers. Impacts include more frequent flushing of foraging birds; decrease in abundance and species richness of shorebirds and/or prey; alteration of foraging habitats; changes in behavior; higher energy expenditure by breeding, migrating, and overwintering shorebirds; alteration of prey species in the wrack and littoral zone; and potential mortality of camouflaged chicks. Therefore, with the implementation of the BMPs listed below,

this alternative would have short- and long-term minor adverse impacts to overwintering and breeding shorebirds, overwintering and foraging piping plovers, and, to a lesser extent, migratory red knots.

Consultation with the USFWS is necessary, as the shuttle would be running within foraging habitats for wintering piping plovers within federally designated piping plover Critical Habitat (Unit LA-5) on Elmer's Island. Because of its status as a listed species, harassment or disturbing piping plovers constitutes a violation of both state and federal laws. This also is true for other listed species, such as sea turtles. ESA consultation will be initiated for the preferred alternative only, which is currently Alternative C.

Loggerhead sea turtle nesting activity has been recently noted on Grand Isle Beach (less than 1 mile east of Elmer's Island) and on Elmer's Island. The activity observed on Elmer's Island has been limited to false crawls that did not result in active nests, but it is plausible that sea turtles may eventually use Elmer's Island as a nesting area. If this occurs, nests will be protected and monitored. Interfering with a nesting sea turtle or disturbing a nest constitutes a violation of both state and federal laws. Management of sea turtles would be consistent with the Elmer's Island Refuge Management Plan (LDWF 2016).

BMPs that could be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that would be implemented to minimize adverse impacts to protected species (including piping plover, red knot, and shorebirds protected under the Migratory Bird Treaty Act) include restricting the vehicular traffic to the intertidal wet sand area of the beach; weight limits (1,250 lbs. per axle); tire restrictions (5 psi); a speed limit of 15 mph; and at no time intentionally disturbing nesting birds, nesting sea turtles, or other wildlife. Additionally, impacts could be minimized by using multi-passenger vehicles to minimize the number of shuttles and trips.

All shuttle operators and employees would be trained in BMPs as a condition of the contract, including knowledge of potential protected species that may occur on Elmer's Island. LDWF would continue to follow the Elmer's Island Refuge Management Plan to protect nesting shorebirds (LDWF 2016). Signage could be posted to inform the public of environmental issues and would include contact information (i.e. phone numbers) to report any issues. Management actions used to protect nesting shorebirds include the following: monitoring, posting signage and roping off colonies, using decoys and least tern call playback to encourage nesting in remote areas, and educating or providing outreach to visitors. LDWF would monitor and take actions during the nesting season, April 15th to September 1st. The posted areas would alert the public to the nesting birds, inform them of their protected status, and provide a phone number for reporting violations to LDWF. Weekly monitoring of birds during any construction and/or sensitive periods (e.g., nesting and overwintering) will also be completed under the oversight of LDWF.

4.3 Socioeconomic Environment

The project locations for Alternative B and Alternative C are in the same general location as the original Elmer's Island Access project (i.e., Alternative A) identified in the Draft RP/EA #2. Therefore, no additional resources in the Affected Socioeconomic Environment are present

beyond those addressed in Section 4.4.3 of the Draft RP/EA #2. A brief summary of potential effects from Alternatives B and C on the Socioeconomic Environment are provided in the subsections below.

4.3.1 Socioeconomics and Environmental Justice

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B is not expected to contribute to short-term or long term, adverse impacts. Construction is expected to employ temporary workers, leading to short-term, beneficial impacts to the local economy.

Alternative C: Shuttle Service

Alternative C would include operation of the shuttle service that is expected to employ approximately 12 temporary and seasonal workers each year, leading to long-term, beneficial impacts.

4.3.2 Land and Marine Management

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B would result in an increase of the boardwalk footprint (compared to the Draft RP/EA #2 boardwalk across the lagoon), leading to an increase of adverse impacts to dune and wetland areas and potential impacts to beach stabilization. Any such impacts would need to be checked for consistency with the established goals in the State's approved coastal zone management (CZM) program. Overall, Alternative B would likely have long-term, minor adverse impacts on land and marine management.

Alternative C: Shuttle Service

Alternative C would result in an increase of pedestrian traffic leading to an increase of adverse impacts to beach and other natural areas. Any such impacts would need to be checked for consistency with established goals in the State's approved coastal zone management program. A supplement to the CZM consistency determination is currently being prepared to reflect the change in the preferred alternative. Overall, Alternative C would likely have long-term, minor adverse impacts on land and marine management.

4.3.3 Tourism and Recreational Use

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Compared to the existing condition which requires the public to walk the length of the island from the west parking area, Alternative B would enhance user access to the 2.6-mile beachfront toward and along Caminada Pass. The proposed boardwalk does not permanently obstruct the lagoon or limit access and recreational opportunities for water/wind sports and kiteboarding activities. Therefore, Alternative B would likely have long-term, moderate beneficial impacts on tourism and recreational use.

Alternative C: Shuttle Service

Compared to the existing condition which requires the public to walk the length of the island from the west parking area, Alternative C would enhance user access to the 2.6-mile beachfront toward and along Caminada Pass. The proposed shuttle service does not permanently obstruct the lagoon or limit access and recreational opportunities for water/wind sports and kiteboarding activities. It would provide educational opportunities for bird and wildlife tours. Therefore, Alternative C would likely have long-term, moderate beneficial impacts on tourism and recreational use.

4.3.4 Aesthetics and Visual Resources

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B could impact the current aesthetics and visual resources. The boardwalk structure itself may interrupt the natural viewshed, which could be minimized during advanced siting and design. Like Alternative C, increased public access is often associated with an increase in deposition of trash and human waste that would require mitigation and increased operations and maintenance (O&M). Therefore, Alternative B would likely have long-term, minor adverse impacts to aesthetics and visual resources.

Alternative C: Shuttle Service

The geographic features of the lagoon and dune would remain visually unimpacted under Alternative C. The aesthetic of motorized vehicles regularly traversing a natural landscape may affect the visual resources to some users. Increased public access is often associated with an increase in deposition of trash and human waste that would require mitigation and increased O&M. By changing the distribution of visitors along the beach, there may be increased need for restrooms and trash collection points and associated maintenance. Therefore, Alternative C would likely have long-term, minor adverse impacts to aesthetics and visual resources. Potential BMPs to minimize and manage these potential impacts are included in Section 5 of this Supplemental RP/EA.

4.3.5 Public Health and Safety, Including Flood and Shoreline Protection

Environmental Consequences

Alternative B: Behind-the-Dune Boardwalk

Alternative B would include additional mitigation measures to ensure shoreline protection both during and following construction. The boardwalk would include handrails to enhance public safety access and would provide safer and more consistent access than the public meandering across shifting dunes. In the event of severe weather damage and partial or whole destruction of the boardwalk, public safety could be compromised and could require temporary or prolonged closures to public access along the beach. Severe weather events could result in higher than anticipated maintenance to ensure safe access to the boardwalk. Sediment may wash over the existing dune and cover the boardwalk, which could require extensive maintenance to clear. However, overall, Alternative B would provide safer and more consistent access, resulting in long-term, minor beneficial impacts to public health and safety.

Alternative C: Shuttle Service

Alternative C would provide the public with a safer and more consistent access to beach areas compared to the existing condition of walking 2.6 miles over shifting sands. However, Alternative C would also reduce shoreline protection due to minor erosion in the intertidal zone and could result in minor petroleum spills. Overall, Alternative C would likely result in long-term, minor beneficial impacts to public health and safety. Impacts to public health and safety during shuttle operations would be mitigated via rules/restrictions during shuttle operations. Additional mitigation measures and BMPs would be employed to ensure shoreline protection both during and following shuttle service operations. BMPs that would be implemented to minimize impacts associated with the shuttle service are described in Section 5 of this Supplemental RP/EA. Specific BMPs that could be implemented to minimize adverse impacts include the shuttle service being halted due to unsafe environmental conditions (localized weather systems with lightning) or other emergency closures. Additionally, signs would be removed and stored at the LDWF Fisheries Research lab when a named storm enters the Gulf of Mexico. Elmer's Island closure protocols would be instituted to minimize public health risk.

4.4 Cumulative Impacts

The Draft RP/EA #2, Section 4.4.4 describes cumulative impacts of the originally Proposed Alternative (i.e., Alternative A), including the lagoon boardwalk feature for the Elmer's Island Access project. In this section, cumulative impacts were considered, cumulative impact methodologies were discussed, and guidance on cumulative impact assessment was provided. Resource areas identified as those that could potentially be affected by cumulative environmental impacts from the Proposed Alternative of Elmer's Island Access included:

- Geology and Substrates
- Hydrology and Water Quality
- Habitats
- Wildlife Species
- Protected Species
- Marine and Estuarine Fauna, Essential Fish Habitat, and Managed Fish Species
- Infrastructure
- Land and Marine Management
- Tourism and Recreational Use
- Aesthetics and Visual Resources
- Public Health and Safety, including Flood and Shoreline Protection

The spatial boundaries that defined the cumulative impact area included those areas where the Proposed Alternative would occur and surrounding areas, focusing on actions occurring adjacent to, on, or near Elmer's Island (Draft RP/EA #2).

Based on information obtained from permitting databases, past and potential future activities near the project area included beach nourishment, road maintenance, additional recreational

improvements, and pipeline installation. LDWF would have the authority to close areas or restrict public access and use if and when beach nourishment or other facilities improvements activities are scheduled to occur.

The cumulative impact assessment contained in the Draft RP/EA #2 accounted for the Proposed Alternative, along with projects that have been completed or are planned for Elmer's Island and vicinity. Resource areas identified that could potentially be affected by short-term adverse cumulative impacts included Geology and Substrates; Hydrology and Water Quality; Habitats; Wildlife Species; Marine and Estuarine Fauna, Essential Fish Habitat, and Managed Fish Species; and Protected Species. However, the Draft RP/EA #2 found that the proposed project and completed and planned projects for Elmer's Island also would create long-term benefits for those same resource areas.

The new Alternative B (i.e., behind-the-dune boardwalk) would be expected to have similar short-term adverse cumulative impacts as the originally proposed project related to construction of the boardwalk, for resources such as Geology and Substrates, Habitats, Wildlife Species, and Protected Species. However, many of these would be of a relatively short duration. The exception would be the permanent loss of some sensitive dune and wetland habitats due to boardwalk construction. The Alternative B boardwalk also would be consistent with positive long-term cumulative impacts of completed and planned projects for Elmer's Island for resources areas including Infrastructure, Land and Marine Management, and Tourism and Recreational Use. The combined loss of some habitat and the overall increased access for the public to Elmer's Island are potential adverse cumulative impacts to wildlife and protected species; however, those impacts would be minimized with the implementation of specific BMPs.

When combined with other past, present, and future activities, the new Alternative C (i.e., Elmer's Island beach shuttle service) would introduce additional potential short- and long-term adverse cumulative impacts. These impacts involve increased activities in the intertidal zone from the operation of the shuttle, and would include shuttle traffic disruptions, sand compaction, increased noise, impedance of shorebird foraging habitat along the wrack line, flushing of foraging shorebirds, disturbance of nesting birds and terrapins, and increased access to the public. As listed above from the Draft RP/EA #2, long-term, positive cumulative impacts would be expected for Tourism and Recreational Use. Short- and long-term adverse cumulative impacts would include impacts to Habitats, Wildlife Species, Protected Species, Land and Marine Management, and Aesthetics and Visual Resources.

Potential cumulative environmental impacts identified for the new Alternatives B and C would be minimized with the implementation of BMPs for each resource area as discussed in Section 5 of this document.

Section 5

Operation, Best Management Practices, Monitoring, and Adaptive Management

5.1 Behind-the-Dune Boardwalk

No operations are involved with the behind-the-dune boardwalk. BMPs associated with the behind-the-dune boardwalk could include use of marine-grade construction materials and clean construction methods/practices to minimize short-term impacts during construction processes. The behind-the-dune boardwalk, once constructed, would be open for public access year-round, except for closures due to inclement weather or at the discretion of the LDWF management per the Elmer's Island Wildlife Refuge Management Plan. LDWF would perform inspections of the boardwalk regularly throughout the year and following inclement weather events to ensure boardwalk integrity and public safety. Repairs would be made on an as needed basis. As a permanent structure, the boardwalk would not have an adaptive management plan.

5.2 Beach Shuttle Service

LDWF Elmer's Island Current Management Practices

LDWF acquired Elmer's Island Refuge in 2008, although vehicular access to the beach was not possible until 2009, when the access road was repaired. At that time, vehicles were allowed on the beach for fishing access. The refuge was closed to the public for oil spill activities from May 2010 through May 2011, and all vehicular access by contractors or agency employees followed strict BMPs. All public vehicular access was eliminated with initiation of the Camanida Headlands Project in 2010. In June 2011, USFWS and LDWF met with representatives of the Town of Grand Isle to discuss the Migratory Bird Treaty Act and nesting birds on Elmer's Island Refuge. LDWF monitored and posted nesting areas, mostly least terns, to prevent the public from damaging or destroying least tern colonies or other nests. Since then, LDWF Office of Fisheries has consulted with USFWS, LDWF Office of Wildlife, Louisiana Audubon, and other nonprofit organizations interested in nesting shorebirds. Volunteers have assisted with monitoring and posting nesting areas, using metal fence posts, various signage, rope, and other materials. For several years, LDWF monitored all oil spill cleanup activities on the refuge, which provided information on nesting or foraging birds. Consistent nesting areas led to closure of these areas to all vehicular traffic (washover area near the back bay).

During the construction of the Caminada Headland Beach and Dune Restoration Project, areas of Elmer's Island were closed for safety reasons due to the presence of heavy equipment and dredging operations. Post-construction, vehicular access to the beach was prohibited on the restored beach, and nesting patterns were expected to change. In 2017, least tern nesting increased significantly at Elmer's Island Refuge

(http://www.nola.com/environment/index.ssf/2017/05/beach_restoration_helps_nestin.html).

Using volunteer efforts, LDWF and Louisiana Audubon posted nesting areas to prevent the public from walking through nesting colonies. LDWF used decoys and a playback call speaker system to

promote nesting in areas away from the public. Louisiana Audubon experimented with electric fencing materials to prevent coyote predation. These techniques required monitoring for nests, maintenance, and the ability to remove materials in an emergency (incoming storms, etc.).

Volunteer efforts also are used for litter abatement and debris removal. Organizations such as Barataria-Terrebonne National Estuary Program (BTNEP), Nichols State University, and Friends of Grand Isle have organized and participated in large and small events to remove trash and debris from the beach. Both Nichols State University and BTNEP have assisted LDWF during post-storm cleanup events, removing fencing materials, fishing gear, and other materials. BTNEP receives funding to research the marine debris on Elmer's Island and removes trash from the beach monthly with volunteers from area high schools and colleges.

Elmer's Island Refuge is regulated through the Louisiana Wildlife and Fisheries Commission. Louisiana Administrative Code, Title 76, Part III, Ch. 3

Visitor Regulations for Elmer's Island Wildlife Refuge

1. Use of the refuge will be permitted from 30 minutes before official sunrise to 30 minutes after official sunset. This includes any land access routes to the refuge. No person or vehicle shall remain on the Elmer's Island Wildlife Refuge or any land access routes during the period from 30 minutes after official sunset to 30 minutes before sunrise.
2. No person shall possess any glass bottles, glass drink containers, or other glass products on Elmer's Island Wildlife Refuge.
3. The secretary of the department may restrict access to the refuge whenever circumstances exist such that restrictions are necessary to protect the refuge or the public from harm. No person shall enter onto or be on the grounds of Elmer's Island Wildlife Refuge during a restricted access period, or alternatively shall do so only in accordance with restrictions set forth by the secretary.
4. No person shall discharge or fire any firearms, including muzzleloaders, or bows and arrows or crossbows on Elmer's Island.
5. No person shall commercially fish, conduct any guiding service, hunt, pursue, kill, molest, or intentionally disturb any type of wildlife on the refuge, except for the legal recreational harvest of living aquatic resources.
6. No person shall be in areas marked as restricted by signs posted by the department.
7. No person shall operate any vehicles in a restricted area. No person shall operate a vehicle in an unsafe or careless manner as to endanger life or property or at any speed exceeding 5 mph. For Alternative C to move forward, CPRA working with LDWF and others will negotiate and prepare an agreement for operation of a beach shuttle service.
8. The requirement of a Wild Louisiana Stamp on Elmer's Island Wildlife Refuge is hereby waived, and the secretary is directed to take all necessary steps to accomplish this waiver.

Closure of Elmer's Island Refuge will occur periodically due to storm warnings, construction, oil spills or other emergency events. The following protocol will be followed prior to and during closure events:

Hurricanes

Signs will be removed and stored at the LDWF Fisheries Research lab as soon as a named storm enters the Gulf of Mexico or is within 600 miles of Elmer's Island. This includes tropical storms and storms classified Category 1 through 5. Elmer's Island will be closed to the public once a storm equal to or above a Category 1 reaches within 500 miles of Elmer's Island and within the Gulf of Mexico. Closure will be determined on direction, strength, and speed of each storm; safety of the public and preservation of public resources are paramount to leaving the refuge open. Closure protocols include making public announcement 24 hours in advance through a press release, patrolling the area to verify that all visitors have been notified and exited the area, and locking the entrance gate on Elmer's Island access road. Reopening of the refuge will be determined as soon as it is safe to allow the public into the Grand Isle area and will be announced through press release.

Construction

Construction events occur during times of restoration activities, maintenance of the access road, or emergency repairs. Heavy equipment on the road and the beaches pose hazards to the public. Announcements will be made through a press release for closures and re-openings of the area.

Oil Spills or Other Emergencies

Elmer's Island Refuge will close due to large oil spills, if public safety is in question.

Other emergency events may arise to cause closures, which will be at the discretion of the assistant secretary for the LDWF Office of Fisheries.

Beach Debris

The sudden appearance of numerous dead fish on the beach (fish kill or spill) will be recorded and investigated through LDWF fisheries biologists. A fish kill can result from commercial and recreational fishing activity or environmental factors such as poor water quality. Fish will be allowed to decompose naturally and will not be removed from the area unless the situation poses a public health threat, as determined by the responsible state agency (Department of Health and Hospitals, Department of Environmental Quality, Department of Wildlife and Fisheries, etc.).

Sargassum, a macro-algae or seaweed, normally washes ashore during times of continued southerly winds, along with man-of-war jellyfish and other tropical or sub-tropical species. In 2014, the large amount of sargassum on the beaches of Grand Isle and Elmer's Island exceeded all previous records. The Louisiana National Guard remediated the beaches by removing the sargassum from the shoreline and used it to create dunes in the dry sandy areas of the beach. Other vegetation that appears as wrack on the beach includes water hyacinth, especially during high water events in the Mississippi River. Marine debris and litter can either wash up from the Mississippi River or from offshore and inshore sources. LDWF does not collect litter in receptacles on the beach. All visitors should haul out all materials, supplies, and refuse created while visiting the refuge.

Proposed Elmer's Island Shuttle Service Best Management Practices

Controlled Operations/Path. Controlled driving could be allowed only in the area above the water's edge or on or adjacent to the wet sand. Under this BMP, driving would be strictly prohibited near or on the dune habitat. This policy would minimize impacts to foraging, loafing, and nesting birds and other wildlife that use these areas. This policy also would protect dune vegetation and minimize impacts (e.g., increased erosion, reduce dune stability).

Studies have shown that vehicle access has minimal impacts on species that occupy the intertidal zone (Leatherman and Godfrey 1979; Godfrey et al. 1980). Samples taken inside and outside vehicle tracks showed that crab and clam species were not damaged and could be protected by burrows as shallow as 5 cm (Walcott and Walcott 1984). Another study found no significant differences between damage to intertidal macrofaunal species at low-intensity use (5 passes) versus high-intensity use (50 passes) and concluded that the intertidal animals appeared to be safe from damage by vehicles, even at high intensity, provided they were buried and the sand was reasonably compact (van der Merwe and van der Merwe 1991). The New Zealand Department of Conservation (1999) recommended that impacts to intertidal fauna could generally be avoided by driving on wet, compacted sand, seaward of the drift/wrack line during daylight hours (Stephenson 1999).

Through the monitoring and adaptive management of this project, shuttles would be outfitted with GPS units, so that tracks can be plotted along with stop (drop-off/pick-up) locations to better illustrate the shuttle service footprint and relative areas of utilization. This information would be included as part of the monitoring reports. Likewise, shuttle operators would be advised to minimize impacts by driving only on the wet sand and avoiding the wrack line when possible. Adherence to these BMPs would be a requirement for any contractor operating the shuttle service, and the contract award/revocation would be contingent on these conditions.

Depending on the time of the year and the corresponding need for the service, the number of shuttles operating at any one time will vary, but no more than four vehicles would be used at any one time. When multiple shuttles are in service, efforts would be made to operate in caravans to minimize the frequency of shuttle service impacts to birds and other wildlife present.

In addition, LDWF reserves the right to suspend the shuttle service at any time for any reason, including unfavorable driving conditions. For example, LDWF can temporarily suspend shuttle operations during a high-water event, where the water is pushed against dune habitat. In this scenario, the shuttles would have to drive on the dunes, which is not allowed, due to high water. In this instance, the shuttle service would be suspended until appropriate driving conditions return. In addition, shuttle service could be suspended or altered due to other conditions as deemed appropriate by LDWF (e.g., minimizing impacts to wildlife, etc.).

Shuttle Vehicle Requirements. The shuttle service could only be allowed to use multi-passenger UTV/ATV style vehicles or four-wheel drive vehicles customized for carrying multiple passengers in an effort to reduce the number of shuttles and trips. One trailer per vehicle would be attached for carrying additional gear. Operational protocols would reflect the following BMPs and other pertinent guidelines set forth during the planning stage and over time through adaptive management. Additional restrictions on vehicles could include the following:

- Weight limitations
- Tire restrictions/requirements – Reducing tire pressure and using four-wheel drive reduces ruts on the sand, minimizing damage to intertidal species and to the beach
- Limited operating hours – Elmer’s Island is open during daytime hours (closed at night); operating vehicles strictly during the day would reduce impacts to the nocturnal wildlife that use the beach
- Speed limits – Driving slowly would allow the operator/driver to notice any animals within the vehicles line of travel

Contractual Requirements. The shuttle service would be contracted to an independent third party, subject to the standard terms and conditions of Louisiana state contracts. Maintaining the contract would depend upon complying with all terms and conditions. LDWF would be responsible for monitoring the terms of the contract, adhering to all policies and restrictions. State contracts can span from 1 to 3 years (maximum); thus, every iterative contract would evaluate the successful implementation of the shuttle service and would be adaptively managed to provide the best recreational access opportunities while minimizing negative impacts to the environment and natural resources that occur on Elmer’s Island.

State Oversight. Per the management plan and the BMPs, LDWF would continually monitor Elmer’s Island Refuge for nesting birds, sea turtle nests, and other protected resources. LDWF would inform the shuttle operators of any issues, so that they can adhere to the LDWF management plan and all state and federal laws. The LDWF enforcement division has agents monitoring Elmer’s Island Refuge, who have the ability to enforce state and federal laws if needed.

Beach Raking. Beach raking (i.e., the removal of drift/wrack) is prohibited without permission from LDWF, as such activity would destroy habitat and could adversely impact the beach profile through mechanical disturbance. This restriction helps prevent loss of foraging habitat for birds and loss of cover habitat for smaller animals such as invertebrates.

Emergency Management. The shuttle service would not be responsible for public safety measures at Elmer’s Island. Visitors to Elmer’s Island would be responsible for their own health and safety. Emergency services can be obtained through 911 phone calls. Likewise, the shuttle service may be halted due to unsafe environmental conditions (localized weather systems with lightning) or other emergency closures.

Personnel Training. All shuttle operators and employees would be trained in the BMPs as a condition of the contract. LDWF would continue to follow the Elmer’s Island management plan to protect nesting shorebirds. Sea turtle nesting has not been documented on Elmer’s Island; some false crawls have been observed by LDWF biologists. All shuttle operators and employees would be required to meet with wildlife personnel to learn what sea turtle tracks/crawls look like and would be required to call the Louisiana sea turtle strandings coordinator if a sighting occurred. BMPs would be initiated if a turtle is sighted (e.g., all vehicles must stop until nesting is completed and the turtle has returned to water). Contractors would be required to alert LDWF to any marine mammal or sea turtle stranding.

Signage. Signage could be posted to inform the public of environmental issues and include phone numbers to call to report any issues. There also could be signage stating where the public could report disturbance to nesting birds or sea turtles.

Litter Abatement. This plan provides funding for litter abatement, scheduled weekly during the summer seasons.

Adaptive Management

Adaptive management would play a large part in the shuttle service operations. This shuttle service would be contracted out through the state bidding process, according to which each contract would span a maximum of 3 years. As such, each 3-year contract would provide the opportunity to employ an adaptive management strategy to routinely evaluate the effectiveness of the shuttle service. Each cycle of the iterative contract bidding process would take into account the lessons learned from the previous shuttle service contract. As a result, every subsequent contract would be adaptable to reflect knowledge gained and address the needs that may arise from increased utilization rates of the shuttle service or adverse environmental effects.

Throughout the life of the service, new technologies may become available that could increase the effectiveness of the shuttle system while improving the end product result. Likewise, the evaluation of each selected contractor would be based on performance metrics including effectiveness, efficiency, adherence to BMPs, and meeting the goals of enhanced recreational access opportunities. Should the scope of the shuttle service program change or any unanticipated effects to trust resource species arise (e.g., sea turtles are seen or begin nesting), coordination and/or consultation with the USFWS Louisiana Ecological Services Field Office would occur immediately.

The goal and intent is to allow contracts to be flexible and adaptable so that the scope of future contracts would most efficiently use the available funds while balancing the service's effectiveness based on the number of visitors (as identified through utilization monitoring), user feedback, and contract monitoring observations. Furthermore, over the course of a year the number of shuttles running each day would initially correspond with historic visitor usage rates (i.e., more shuttles during summer months and less during winter months). Initially, the beach shuttle service would be operated under the low coverage scenario described in Section 2 of this document. This relative shuttle service effort level also would be reviewed from an adaptive management perspective and adjusted as necessary to efficiently use available funds in a manner that provides the most impactful results for the users of this recreational access service.

Coordination with the appropriate resource agencies would occur at minimum on an annual basis or as often as adjustments are made to the shuttle service program.

Section 6

Summary

Based on comparison of environmental impacts between Alternative C (beach shuttle service) and Alternative B (behind-the-dune boardwalk) and the alternative incorporated herein from Section 4-4 of the Draft RP/EA #2, the beach shuttle service is the preferred alternative.

The beach shuttle service would meet the purpose and need of the Draft RP/EA #2, which allows the LA TIG to implement restoration projects that would provide the public with additional and enhanced recreational use services in Louisiana in a manner consistent with the Final PDARP/PEIS.

Environmental impacts of the behind-the-dune boardwalk would be short- and long-term, minor to moderate adverse impacts to the physical and biological environment. Impacts to the physical environment include localized soil/sediment disturbances during construction, potentially increased risk of dune scouring, and impacts from increased recreational activities. Impacts on the biological environment include long-term, moderate adverse impacts to 1.8 acres of sensitive dune and wetland habitats and potential disturbance of wildlife nesting, foraging, and overwintering habitats that may occur in the dune and wetland areas. This includes long-term, moderate adverse impacts to habitats, wildlife, and protected species such as the piping plover and red knot.

Given the dynamic nature of the shoreline in this area and potential impacts from hurricanes, building a hard structure such as a boardwalk is less favorable. While the behind-the-dune boardwalk alignment would not bifurcate the lagoon and impact recreational activities such as kiteboarding and kayaking, many of the same concerns would remain due to the construction of a hard structure (i.e., sustainability, engineering concerns, etc.). It should be noted that similar elevated boardwalks and dune crossovers were common on Grand Isle prior to Hurricanes Katrina, Rita, Gustav, and Ike. Following these hurricanes, the U.S. Army Corps of Engineers (USACE) undertook a rehabilitation project on the dunes on Grand Isle, and, in the USACE project information report dated October 2008, noted that “many of the breaches were eroded around wooden walkway structures leading to the beach. These structures caused localized turbulence and scour.” When the beach and dunes were restored on Grand Isle following these hurricanes, the wooden boardwalks, which previously provided pedestrian access over the dunes, were not reconstructed.

In addition, storm events could result in higher than anticipated maintenance on the boardwalk. Sediment may wash over the existing dune and cover the boardwalk, which could require extensive maintenance to remain clear. Strong storms could result in damage to boardwalk pilings and other features.

Environmental impacts associated with the beach shuttle service would be short- and long-term, minor adverse impacts to the physical and biological environment. Impacts on the physical environment include compaction or displacement of sand along vehicle paths, localized impacts

on water quality due to vehicle fluid/fuel leaks, intermittent noise, and impacts from increased recreational activities. Impacts on the biological environment include recurring minor impacts to intertidal wet sand habitats on the beach due to vehicular traffic and potential disturbance of wildlife nesting, foraging, and overwintering habitats that may occur in the intertidal and beach front areas (which includes some protected species). These adverse impacts would be minimized through the implementation of BMPs and adaptive management of the beach shuttle service operation. The beach shuttle service would enhance and/or increase recreational opportunities by improving access to the beach.

Based on the above analysis, the LA TIG finds that the project change does not affect the LA TIG's proposed selection of the modified project under OPA. This analysis remains subject to the results of additional consultations and reviews as required for compliance with all other laws (e.g., Endangered Species Act [ESA], Essential Fish Habitat [EFH], etc.), including consideration of any significant new circumstances or information presented as part of those processes.

Section 7

Next Steps

Following public notice, this Supplemental RP/EA will be available to the public for a 30-day comment period. The public is encouraged to review and comment on this Supplemental RP/EA. The deadline for submitting written comments is specified in the public notices published in the Federal Register and Louisiana Register as well as on the NOAA Gulf Spill web portal. Comments provided on this Supplemental RP/EA will be considered along with comments previously received on the Draft RP/EA #2. A summary of comments received on this Supplemental RP/EA and the Draft RP/EA #2 and the LA TIGs' responses, where applicable, will be included in the Final Restoration Plan/Environmental Assessment #2: Provide and Enhance Recreational Opportunities.

Comments on the Supplemental RP/EA can be submitted during the comment period by one of the following methods:

Online: <http://www.gulfspillrestoration.noaa.gov/restoration-areas/louisiana>

By mail (hard copy), addressed to:

U.S. Fish and Wildlife Service
P.O. Box 49567
Atlanta, GA 30345

Please note that personal identifying information included in submitted comments (e.g., address, telephone number, email address, etc.) may be made publicly available.

In Person:

The LA TIG will hold a public meeting to facilitate the public review and comment process. Meeting location, date, and time are noted below.

May 22, 2018: Open House 5:30 p.m., Meeting 6:00 p.m.; Tulane River and Coastal Center; 1370 Port of New Orleans Place, New Orleans, LA 70130.

Section 8

List of Preparers

Agency/Firm	Name	Position
State of Louisiana		
Louisiana Department of Wildlife and Fisheries	Todd Baker	Assistant Chief
Louisiana Department of Wildlife and Fisheries	Brady Carter	Program Manager of Fisheries Habitat Section
Louisiana Department of Wildlife and Fisheries	Craig Gothreaux	Fisheries Program Manager
Louisiana Department of Wildlife and Fisheries	Julia Lightner	Fisheries Biologist DCL-A
Louisiana Coastal Protection and Restoration Authority	Annie Howard	Coastal resources scientist, project manager
Louisiana Coastal Protection and Restoration Authority	Matt Mumfrey	Attorney
National Oceanic and Atmospheric Association		
NOAA Restoration Center	Christina Fellas	DWH Environmental Compliance Coordinator/Biologist
NOAA Restoration Center	Ramona Schreiber	DWH NEPA Coordinator
NOAA Restoration Center/Earth Resources Technology, Inc.	Courtney Schupp	Marine Habitat Resource Specialist
U.S. Department of Agriculture		
USDA-NRCS	Ronald Howard	Program Specialist
USDA-NRCS	Mark Defley	Biologist
U.S. Environmental Protection Agency		
EPA Office of Water	Tim Landers	Environmental Protection Specialist
EPA Region 6	Doug Jacobson	Environmental Protection Specialist, Louisiana Team Leader
EPA Office of General Counsel	James Bove	Attorney Advisor
EPA Assessment and Watershed Protection Division	Gale Bonanno	Associate Division Director
U.S. Department of the Interior		
DOI	David Reeves	Science Policy Fellow
DOI	Robin Renn	DWH NEPA Coordinator
DOI	Kevin Reynolds	Designated Natural Resource Trustee Official – Louisiana Trustee Implementation Group
DOI	John Tirpak	Louisiana Restoration Area Coordinator
Contractor Team		
CDM Smith	Jamie Bartel	Senior Project Manager, Geologist
CDM Smith	Murray Wade	Senior Biologist
CDM Smith	Brendan Brown	Biologist/Ecologist Specialist
CDM Smith	Matt Petty	Biologist/Ecologist Specialist

Agency/Firm	Name	Position
CDM Smith	Adam Khalaf	Biologist/Ecologist
CDM Smith	Traci Mordell	Technical Editor
CDM Smith	Melissa Vagi	Technical Editor
CDM Smith	Kim Brotzge	Administrative

Section 9

References

- Burger, J. and M. Gochfeld. 1991. Human activity influence and diurnal and nocturnal foraging of Sanderlings (*Calidris alba*). *The Condor* 93: 259-265.
- Cestari, C. 2015. Coexistence between Nearctic-Neotropical migratory shorebirds and humans on urban beaches of the Southern Hemisphere: a current conservation challenge in developing countries. *Urban Ecosystems* 18: 285–291.
- Forgues, K. 2010. The effects of off-road vehicles on migrating shorebirds at a barrier island in Maryland and Virginia. M.S. Thesis Trent University Peterborough, Ontario, Canada.
- Godfrey, P.J.; Leatherman, S.P.; Buckley, P.A. 1980. ORVs and barrier beach degradation. *Parks* 5 (2): 5-11.
- Knisley, C.B. and J.M. Hill. 1990. Distribution and abundance of two tiger beetles *Cicindela dorsalis media* and *C. lepida* at Assateague Island, Maryland, 1990. Final report to Maryland Department of Natural Resources, Natural Heritage Program, Annapolis, MD.
- Lafferty, K.D. 2001. Disturbance to wintering Western Snowy Plovers. *Biological Conservation* 101: 315-325.
- Leatherman, S.P. and P.J. Godfrey. 1979. The impact of off-road vehicles on coastal ecosystems in Cape Cod National Seashore: an overview. University of Massachusetts/National Parks Service Cooperative Research Unit Report No 34. 34 pages.
- Louisiana Department of Wildlife and Fisheries (LDWF). 2016. Elmer's Island Refuge Management Plan. December 15.
- Moss, D. and D.P. McPhee. 2006. The impacts of recreational four-wheel driving on the abundance of the ghost crab (*Ocypode cordimanus*) on a subtropical sandy beach in SE Queensland. *Coastal Management* 34: 133-140.
- Nudds, R.L. and D.M. Bryant. 2000. The energetic cost of short flight in birds. *Journal of Experimental Biology* 203: 1561-1572.
- Schlacher, T.A., Thompson, L., and S. Price. 2007. Vehicles versus conservation of invertebrates on sandy beaches: mortalities inflicted by off-road vehicles on ghost crabs. *Marine Ecology* 28:354-367.
- Schlacher, T.A., Thompson, L., and S.J. Walker. 2008. Mortalities caused by off-road vehicles (ORVs) to a key member of sandy beach assemblages, the surf clam *Donax deltoids*. *Hydrobiologica* 610(1): 345-350.

Schlacher, T.A., T. Nielsen, and M.A. Weston. 2013. Human recreation alters behavior profiles of non-breeding birds on open-coast sandy shores. *Estuarine, Coastal, and Shelf Science* 118: 31-42.

Stephenson, G. 1999. Vehicle impacts on the biota of sandy beaches and coastal dunes. Department of Conservation, Wellington, New Zealand.

United States Army Corps of Engineers (USACE). 2008. Project Information Report PL 109-148 Rehabilitation of Damaged Hurricane/Shore Protection Projects, Grand Isle and Vicinity, Louisiana.

Tarr, N.M., T.R. Simons, and K.H. Pollock. 2010. An experimental assessment of vehicle disturbance effects on migratory shorebirds. *Journal of Wildlife Management* 74(8): 1776-1783.

U.S. Fish and Wildlife Service (USFWS). 2018. IPaC resource lists for Elmer's Island. Accessed 3/12/2018. <https://ecos.fws.gov/ipac/>

Van der Merwe, D. and van der Merwe, D. 1991. Effects of off-road vehicles on the macrofauna of a sandy beach. *South African Journal of Science* 87: 210-213.

Wolcott, T.G. and D.L. Wolcott. 1984. Impact of off-road vehicles on macroinvertebrates of a mid-Atlantic beach. *Biological Conservation* 29: 217-240.

Photo Credits

Cover: <http://www.wlf.louisiana.gov/refuge/elmers-island>

Page 2-10 (left): <https://ranger.polaris.com/en-us/ranger-crew-570-4>

Page 2-10 (right): <http://ww2.onvacations.co/copley-motor-cars-land-rover>