

National Park Service
U.S. Department of the Interior

Padre Island National Seashore
Texas



Environmental Assessment

HOUSTON PIPELINE CORPORATION

Installation of 50' Communications Tower at Six Pigs Facility

Kleberg County, Texas

December 2007

In 1916, Congress created the National Park Service in the Department of the Interior to:

...promote and regulate the use of the Federal areas know as national parks, monuments, and reservations...by such means and measures as to conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.
(NPS Organic Act, 16 U.S.C. § 1)

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Summary

In accordance with National Park Service (NPS) regulations for nonfederal oil and gas rights, Houston Pipeline Corporation (HPL) has submitted a supplementation of plan of operations (supplement) to the NPS to install a 50-foot tall, free-standing communications tower at the HPL Six Pigs pipeline pigging facility (Six Pigs) to replace outdated analog monitoring equipment with updated digital communications. This would allow for remote monitoring of the facility, decreasing the need for Gulf Beach vehicle access to the site.

This Environmental Assessment evaluates two alternatives for HPL to place the tower within the park. Alternative A, No Action, evaluates baseline conditions in which the tower would not be installed; therefore, there would be no new impacts on the environment. Under Alternative A, vehicle access would continue every week to access along the Gulf beach, resulting in rutting beach sand, and disrupting shorebirds and visitor uses. Alternative B, Proposed Action, evaluates HPL's supplement, as submitted, to install the 50-foot free-standing tower. Because the tower would be installed on an existing foundation within the existing pigging facility, there would be no new ground disturbance. As a result, there would be no impacts to geology and soils, vegetation, water resources, wetlands, natural soundscapes, wildlife and cultural resources. Impacts on floodplains, species of management concern, and visitor use and experience would be localized, short- to long-term, with direct and indirect, adverse and beneficial impacts ranging from negligible to moderate. Alternative B is the environmentally preferred alternative.

Public Comment

The Environmental Assessment and draft Floodplain Statement of Findings will be published on the NPS Planning, Environment, and Public Comment website (<http://parkplanning.nps.gov>). If you wish to comment on the documents, you may mail comments to the name and address below or post comments online at <http://parkplanning.nps.gov/>. These documents will be available for public review for 30 days from the date of posting on the website. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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1.0 PURPOSE AND NEED

This environmental assessment has been prepared to comply with the National Environmental Policy Act of 1969 and will be used as a framework for agency decision-making to approve the use of parklands for HPL to install a 50' communications tower at its Six Pigs facility, while protecting and preventing impairment to park resources and values, and allowing for a safe visitor experience. It evaluates the environmental impacts of the No Action alternative and HPL's supplement to install a 50-foot free-standing communications tower within Padre Island National Seashore (the park) to replace outdated analog monitoring equipment with digital communications to allow for remote monitoring of the facility.

When Congress authorized the establishment of the park on September 28, 1962 (16 U.S.C. §459d, *et seq.*), the U.S. Government acquired surface ownership within the area. Private entities or the State of Texas retained the subsurface mineral interests on these lands. Thus, the Federal Government does not own any of the subsurface oil and gas rights in the park, yet the NPS is required by its laws, policies, and regulations to protect the park from any actions, including gas operations, that may adversely impact or impair park resources and values. The park was created "in order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped" The park is located along the southeastern Texas coast and comprises 130,473 acres (Figure 1).

On May 1, 2007, HPL submitted to the park a scope of work for review that would serve as a supplement to their existing plan of operations. The NPS must decide whether to approve the supplement and if so, if additional mitigation measures are needed.

The analysis area for evaluating impacts in this EA includes:

- The direct area of impact would include the existing access route from the park entrance south via the paved Park Road 22, then south approximately 3.3 miles along the Gulf beach, and then west approximately 1 mile on Six Pigs Road to the Six Pigs facility that occupies approximately 1.5 acres. The direct area of impact also includes the distance that the communications tower would be seen and modify the natural setting.
- The indirect area of impact for each park resource or value could vary for each impact topic; but generally would not extend 1,500 feet beyond the construction area at the Six Pigs facility, and access routes.
- The analysis area for evaluating cumulative impacts on park resources and values may extend beyond the boundaries of the park.

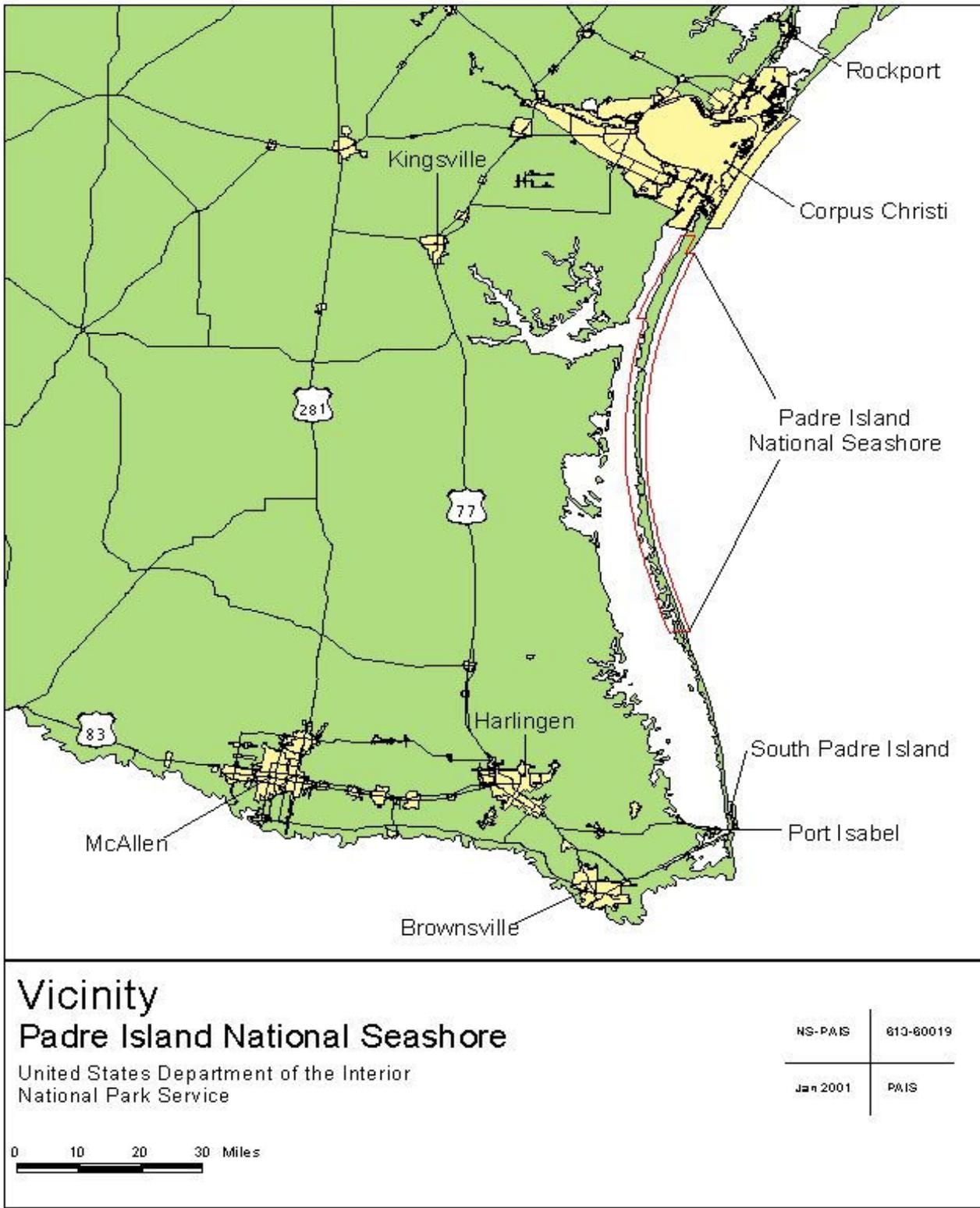


Figure 1. Region/Vicinity map depicting the location of Padre Island National Seashore in relation to the Gulf of Mexico coastline.

1.1 Objectives of Taking Action

The objectives of taking action are to:

- avoid, minimize, or mitigate impacts on park resources and values, visitor use and experience, and human health and safety;
- prevent impairment of park resources and values; and
- provide HPL reasonable access to make improvements to existing permitted pipeline facilities.

1.2 Special Mandates and Direction

The NPS evaluates project-specific proposals for oil and gas exploration and development on a case-by-case basis by applying a variety of current legal and policy requirements before issuing a permit under the general regulatory framework of the NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B). The following discussion is a summary of the basic management direction the NPS follows for permitting nonfederal oil and gas operations in units of the National Park System.

1.2.1 NPS Organic Act and General Authorities Act - Prevention of Impairment, and Consideration of Appropriate Use and Unacceptable Impacts

The NPS Organic Act of 1916 (16 U.S.C. § 1, *et seq.*) provides the fundamental management direction for all units of the National Park System. Section 1 of the Organic Act states, in part, that the NPS shall:

“...promote and regulate the use of the Federal areas known as national parks, monuments, and reservations... by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” 16 U.S.C. §1.

The National Park System General Authorities Act of 1970 (16 U.S.C. § 1a-1 *et seq.*) affirms that while all National Park System units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The Act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Subsequently, the 1978 Redwood Act Amendments to the General Authorities Act further clarified Congress' mandate to the NPS to protect park resources and values. The Amendments state, in part: “[t]he authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.” 16 U.S.C. § 1a-1.

Current laws and policies require the analysis of potential effects to determine whether actions would impair park resources. While Congress has given the NPS the managerial discretion to allow

certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the Federal courts) that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise (2001 Management Policies, § 1.4).

These authorities all prohibit an impairment of park resources and values. Not all impacts are impairments. An **impairment** is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. The NPS Management Policies explain that an impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- 1) Necessary to fulfill a specific purpose identified in the establishing legislation or proclamation of the park;
- 2) Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- 3) Identified as a goal in the park's general management plan or other relevant NPS planning documents.

NPS Management Policies explain that “resources and values” mean the full spectrum of tangible and intangible attributes for which the parks are established and are being managed, including the Organic Act's fundamental purposes (as supplemented), and any additional purposes as stated in a park's establishing legislation. Park resources and values that are subject to the no impairment standard include: the biological and physical processes which created the park and that continue to act upon it; scenic features; natural visibility; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures and objects; museum collections; and native plants and animals. Additional resources and values that are subject to the non-impairment standard include the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the National Park System.

In analyzing impairments in conjunction with the NEPA analysis for this project, the NPS takes into account the fact that if an impairment were likely to occur, by operation of the CEQ's regulations at 40 CFR, such impacts would be considered to be major or significant. This is because the context and intensity of the impact would be sufficient to render what would normally be a minor or moderate impact to be major or significant. Taking this into consideration, NPS guidance documents note that, “Not all major or significant impacts under a NEPA analysis are impairments. However, all impairments to NPS resources and values would constitute a major or significant impact under NEPA. If an impact results in impairment, the actions should be modified to lessen the impact level. If the impairment cannot be avoided by modifying the proposed action, that action cannot be selected for implementation” (“Interim Technical Guidance on Assessing Impacts and Impairment to Natural Resources,” National Park Service, Natural Resource Program Center, July 2003). The Environmental Consequences section of this EA provides an analysis of the potential for impairment for each park resource or value carried forward for further evaluation.

Management Policies 2006 also require the NPS to consider whether a proposed use is suitable, proper, or fitting, and applies the stricter standard of “unacceptable impacts” which *Management Policies* 2006, describes as “impacts that fall short of impairment but are still not acceptable within a particular park’s environment.” This EA considers whether HPL’s proposal is an appropriate use as per §§ 1.5 and 8.1.2, and if the proposal could result in unacceptable impacts as per § 1.4.7.1 of the NPS’ *Management Policies* 2006.

1.2.2 Padre Island National Seashore Enabling Act

Congress established Padre Island National Seashore on September 28, 1962 (16 U.S.C. § 459d, *et seq.*)

“In order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped. . .”

In this statute, Congress included provisions allowing the original owners of oil and gas rights to retain these rights within the park. As a result, the mineral estate underlying the park is either owned by private entities or by the State of Texas. Mineral owners have the right to reasonable access of the surface over their mineral estate.

Access to nonfederal oil and gas which requires access on, across, or through federally-owned or controlled lands or waters within the park is subject to the NPS’s Nonfederal Oil and Gas Rights Regulations (36 CFR 9B).

The park occupies the central 66 miles of the approximately 113-mile long Padre Island in South Texas. Stretching from just south of the Nueces County line on the north to the northern end of Willacy County on the south, the park includes portions of Kleberg, Kenedy, and Willacy Counties, with the majority of the park in Kenedy County. It is one of 10 NPS units designated as National Seashores. It is the longest section of undeveloped barrier island in the world, protecting rare coastal prairie; a complex, dynamic dune system; and the Laguna Madre, one of five hypersaline lagoon environments remaining in the world.

The park is a dynamic system. It was formed and is continually being reshaped by the action of wind and water. Waves and currents move along the gulf shore in shifting patterns, defining the character of different beaches. Beach dunes are stabilized by vegetation, and eroded and reformed by storm events. Major storms have at times leveled the protective foredunes, changing the character and dynamics of this barrier island ecosystem. The general atmosphere of the island is one of undisturbed isolation and seemingly endless expanses of flat, sparsely vegetated beach land.

North Padre Island and surrounding waters provide important habitat for marine and terrestrial plants and animals, including a number of threatened and endangered species. The park is involved in a major, international research and recovery effort to save the most endangered of all sea turtles, the Kemp’s ridley. Situated along the Central Flyway, the park is a globally important area for over 350 migratory, over-wintering, and resident bird species and has been designated as a Western Hemisphere Shorebird Reserve Network site of international importance, which is the first in the NPS. This stretch of relatively undeveloped barrier island also provides visitors an

opportunity to experience quiet and solitude where the beauty of a night sky is undiminished by ambient light from nearby urban centers.

Terrestrial systems within the park include a mixture of upland grasslands, vegetated dunes, and extensive wetland environments. More than 60 percent of the park consists of wetlands comprised of freshwater marshes, inland waters, wind-tidal flats, and seagrass beds. Marine environments include the Gulf of Mexico along the length of the park to a depth of two fathoms and the hypersaline estuary of the Laguna Madre.

The cultural resources of the park include archeological sites, cultural landscapes, and historic structures. Prehistoric sites show that Karankawa Indians inhabited the island prior to the arrival of the first Europeans, using the barrier island and gulf waters for hunting, gathering, and fishing. The park also protects remnants of historic ranching structures, a campsite dating from the Mexican-American war, and shipwrecks from the days of the Spanish fleet.

All management activities within the park are directed toward maintaining the natural and scientific values of the area, including preservation of the flora and fauna and the re-establishment of the indigenous plant and animal life as possible. Areas where historical events took place would contribute to the values of the park and are managed in a manner, which will maximize both the natural and historical values.

Construction of physical facilities of any kind would be minimized and would be limited to those developments, which are essential to the preservation and management of the area and the safety of the public. To the extent such facilities are deemed necessary and appropriate, they would be constructed in a manner which would minimize their impact on the environment and their intrusion on the natural setting.

Oil and gas exploration and development at the park is not precedent setting because it is provided for and contemplated in both statute and regulation, and is not unusual or an unexpected occurrence. Mineral exploration and development is fully in accord with the park's *General Management Plan* (PAIS, 1983), *Draft General Management Plan* (PAIS, 2007), and *Oil and Gas Management Plan* (PAIS, 2000).

1.2.3 NPS Oversight and Monitoring of Nonfederal Oil and Gas Operations

Under 36 CFR § 9.37(f) “[a]pproval of each plan of operations is expressly conditioned upon the Superintendent having such reasonable access to the site as is necessary to properly monitor and insure compliance with the plan of operations.” Park staff patrol the beach every day during turtle nesting season, and visit certain oil and gas sites several times a week. Park resource managers conduct a monitoring oversight patrol at least two times per week. In the event of an accident or spill, HPL would notify its dispatch immediately, which would then immediately notify park resource managers. All approved plans of operations have a spill contingency plan that is reviewed and approved by the NPS. HPL’s Plan of Operations that was approved in 1999 includes a spill contingency plan.

Pursuant to 36 CFR § 9.51(a) an “operator shall be held liable for any damages to federally-owned or controlled lands, waters, or resources, resulting from his failure to comply

with. . .his plan of operations.” Undertaking any operations within the boundaries of a park system unit in violation of the 9B regulations shall be deemed a trespass against the United States and shall be cause for revocation of approval of an operator’s plan of operations. If an operator violates a term or condition of its approved plan of operation the Superintendent has the authority to temporarily suspend the operation and give the operator the chance to cure the violation. Section § 9.51(c) outlines the Superintendent’s suspension authority and procedure. If an operator fails to correct any violation or damage to federally owned or controlled lands, waters, or resources the operator’s approval would be revoked. 36 CFR § 9.51(c)(3).

In addition to the remedies available to the NPS under the 9B regulations, an operator is also subject to the remedial provisions found in all applicable federal, state, and local laws. For instance, under 16 U.S.C. § 1911, commonly known as the “Park System Resource Protection Act,” any person who destroys, causes the loss of, or injures any park system resource is strictly liable to the United States for response costs and for damages resulting from such destruction, loss or injury.

1.2.4 Approved Park Planning Documents

Approved park planning documents also provide a framework for determining how nonfederal oil and gas operations are conducted within the park.

The General Management Plan (GMP) is the major planning document for all National Park System units. The GMP sets forth the basic philosophy of the unit, and provides strategies for resolving issues and achieving identified management objectives required for resource management and visitor use. The GMP includes environmental analysis and other required compliance documentation. A GMP/Development Concept Plan (GMP/DCP) was completed along with an EA for Padre Island National Seashore in 1983.

An Oil and Gas Management Plan/Environmental Impact Statement (OGMP) was completed for Padre Island National Seashore on October 12, 2000 (PAIS, 2000). The OGMP describes the overall approaches that would be implemented over the next 15 to 20 years, or longer, to manage existing and anticipated oil and gas operations, including the exploration, development and transportation of nonfederal oil and gas underlying the park, in a manner that provides for hydrocarbon development while protecting natural and cultural resources, human health and safety, and allowing for public use and enjoyment of those resources. The Oil and Gas Management Plan:

- 1) Identifies park resources and values most sensitive to oil and gas exploration and development disturbance, and defines impact mitigation requirements to protect such resources and values.
- 2) Establishes reasonable oil and gas exploration and development performance standards to protect park resources and values.
- 3) Develops reasonable alternatives for oil and gas development in the park and analyzes the impacts of those alternatives on park resources and values.
- 4) Provides pertinent information to oil and gas owners and operators that would facilitate operations planning and compliance with all applicable regulations.

HPL’s proposal is in accordance with the goals and objectives articulated in the above mentioned planning documents.

1.3 Issues and Impact Topics Evaluated

Early in the planning and development of the supplement by HPL, the NPS met with HPL to identify resources, values, and other concerns that could be potentially impacted by the installation of a 50-foot communications tower. In addition, early input from other Federal, State, and local agencies was sought. Scoping was performed with the U.S. Fish and Wildlife Service (FWS) and within the National Park Service (NPS) and involved contacts by telephone and written correspondence. Scoping involved defining appropriate alternatives, impact determinations, mitigation measures, and identification of major issues.

A public scoping notice of HPL’s intent to install a 50-foot communications tower, pursuant to 36 CFR § 9.52(a), was posted on the NPS’s planning website (<http://parkplanning.nps.gov>) on August 10, 2007 giving the public a 30-day period to submit scoping comments. No scoping comments were received by the park.

Based on scoping, the NPS identified the following park resources and values for evaluation in this EA:

- Floodplains
- Species of Management Concern
- Visitor Use and Experience

Based on the above list of park resources and values, and other concerns identified during scoping, issue statements were developed to define problems or benefits pertaining to the proposal to install a 50-foot communications tower at the Six Pigs location. The issue statements in Table 1, below, describe a cause-and-effect relationship between an activity and a resource or value. The issue statements were used in developing and evaluating alternatives.

Table 1. Issue Statements

Impact Topic	Issue Statement
Floodplains	<ul style="list-style-type: none"> • The proposed location of the 50’ tower at the existing Six Pigs facility is located within the 100-year floodplain of the coastal barrier island, and proposed operations would result in development and long-term occupancy in the floodplain, which could increase flood hazards. • Vehicle use of the access roads and Gulf of Mexico Beach could alter surface and subsurface drainage patterns; however, long-term benefits of the communications tower include the reduction of traffic on the Gulf beach and access roads. • The release of hydrocarbons and contaminating or hazardous substances from vehicles or equipment could degrade floodplain functions and values.
Species of Management Concern	<ul style="list-style-type: none"> • Installation of the communications tower would require transport of the tower components by vehicle along approximately 3.3 miles of the Gulf beach to the Six Pigs site which could interfere with turtle

Impact Topic	Issue Statement
	nesting and cause shorebirds to take flight. <ul style="list-style-type: none"> • Migrating birds could collide with the tower; while other birds could use the tower for perching. • Noise during installation could startle and displace species.
Visitor Use and Experience	<ul style="list-style-type: none"> • The communications tower would alter the natural scene. • Vehicle use could cause conflicts with visitor uses along the Gulf beach.

1.4 Issues and Impact Topics Eliminated from Further Analysis

Impact topics are dismissed from further evaluation in this EA if, for the action alternative:

- they do not exist in the analysis area,
- they would not be affected by the proposal, or
- when through the application of mitigation measures, the impacts would result in negligible or less effects and there is little controversy on the subject or reasons to otherwise include the topic.

The following topics have been eliminated from further analysis for reasons described below.

- Socioeconomics
- Environmental Justice
- Prime and Unique Farmlands
- Air Quality
- Geology and Soils
- Water Resources
- Vegetation
- Wetlands
- Wildlife
- Some Species of Management Concern
- Cultural Resources
- Natural Soundscapes
- Nonfederal Oil and Gas Development

Sections 1.5 and 8.12 of the NPS *Management Policies* 2006 underscore the fact that not all uses are allowable or appropriate in units of the National Park System. The proposal analyzed in this EA to install a 50-foot communications tower at the Six Pigs pigging facility is provided for and contemplated in both statute and regulation, and is not unusual or an unexpected occurrence. Nonfederal oil and gas exploration and development is fully in accord with the park's *General Management Plan* (1983) and most recently in the park's *Oil and Gas Management Plan* (2000). Therefore, the NPS finds that the proposal to install a communications tower is an appropriate use. Section 1.4.7.1 of the NPS *Management Policies* 2006 also addresses "unacceptable impacts." For the impact topics described below, where a resource is located within the analysis area, there would either be no effect as a result of implementing the proposal, or effects would be negligible. Because of the low intensity of impacts, NPS finds that the impacts are not unacceptable.

1.4.1 Socioeconomics

Socioeconomic issues include the effect of installing the communications tower on the local and regional economies; and the effects of the proposal on visitation in the park with associated revenues into the local and regional economies. The following description also provides supporting data to base the cumulative impact analysis for Section 1 and also for topics carried forward for further evaluation in Section 3.

The park lies within the Railroad Commission of Texas (TRRC) District 4. Between January 1, 2006, and December 20, 2006, the TRRC issued 1,894 drilling permits in the 14 counties comprising District 4. For the three counties encompassing the park, 137 drilling permits were issued, comprising 7 percent of the District-wide total.

The NPS has prepared a revised reasonably foreseeable development (RFD) scenario that projects that approximately 18 additional wells would be drilled over the next 15 to 20 years to produce the estimated 80 billion cubic feet of natural gas underlying the Seashore. The RFD provides a reasonable assumption of future development of nonfederal oil and gas for park planning purposes and to provide a basis to measure potential environmental impacts. It does not represent a benchmark or decision point for acceptable levels of activity that could occur to develop the oil and gas underlying the Seashore.

The NPS acknowledges that the RFD is based on available production data, and that more or less wells could be drilled. Under the RFD scenario, it would reasonably be anticipated that parkwide, up to 748 acres could be disturbed for geophysical exploration operations; and up to 250 acres could be developed for drilling, production, and transportation operations for a total future development of 998 acres.

Oil and gas exploration and development have been actively pursued on Padre Island since 1951. Eighty-seven operations have occurred within the current boundaries of the park. During 1998-2001, 3-D seismic surveys were conducted from the north boundary of the park to the 42-mile marker. Impacts from the source and receiver lines have been reclaimed and there are no residual impacts from the surveys. Currently, there are 18 gas operations, including 11 wells, 1 freshwater well, 1 active drilling operation, and 5 pipelines occupying 399 acres or 0.30 percent of the park. All oil and gas activities are under NPS approved plans of operations. One operation (South Sprint) has ongoing clean-up and remediation activities associated with a release of oil and gas and other contaminating or hazardous substance. Until cleanup is successfully completed, impacts on the park's resources and values persist.

Since completing the *Oil and Gas Management Plan* in 2000, 18 wells have been permitted, of which 10 wells have been drilled.

Under Alternative B, Proposed Action, the communications tower would be installed, resulting in a negligible, beneficial impact on local and regional economies from BNP contracting a local business to construct the tower components, transport to the Six Pigs facility, and assemble.

Cumulative Impacts. Increased exploratory drilling activity and new field development from 3-D seismic in and adjacent to the park would essentially be offset by the overall decline of drilling activity and production in the analysis area, resulting in an overall negligible, beneficial impact on

local and regional economies. The installation of the 50' communications towers would have a low contribution towards cumulative effects.

Because of the low intensity of impacts, this topic was dismissed from further analysis in this EA.

1.4.2 Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1997). Therefore, environmental justice was dismissed from further analysis in this EA.

1.4.3 Prime and Unique Farmlands

As a result of a substantial decrease in the amount of open farmland, Congress enacted the Farmland Protection Policy Act (FPPA) (Public Law 97-98). In August 1980, the Council on Environmental Quality directed that Federal agencies must assess the effects of their actions on prime or unique farmland soils classified by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Prime farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, timber, and oil seed. Unique farmland soils are those that produce specialty crops such as fruits, vegetables, and nuts. Prime and unique farmland soils are those that are actively being developed and could be converted from existing agricultural uses to nonagricultural purposes, as described above. Urban or built-up land, public land and water areas cannot be considered prime farmland. Soils inside the park cannot be considered prime and unique farmland soils because they are public lands unavailable for food or fiber production.

Because there are no prime or unique farmlands in the park, this topic was dismissed from further analysis in this EA.

1.4.4 Air Quality

The park is designated as a Class II airshed by the State of Texas, as authorized by the Prevention of Significant Deterioration provisions of the Clean Air Act. The park's air quality is protected by allowing limited increases over baseline concentrations of sulfur dioxide, nitrogen oxides, and particulate matter (PAIS, 2000). According to the TCEQ and the park's *Oil and Gas Management Plan 2000*, Kleberg County continues to be an attainment area for regulated pollutants. Prevailing southeast winds from March through September and north-northeasterly winds from October through February are likely to dissipate any pollutants emitted in the park.

Vehicles used to transport tower components over a 1 day period to the Six Pigs facility would emit nitrogen oxides, volatile organic compounds, carbon monoxide, sulfur dioxide, particulate matter,

and objectionable odors. Assembly of the tower using hand tools would not result in any emissions. The vehicle emissions would result in less than a negligible effect on air quality.

Cumulative Impacts. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park; routine park operations; park, commercial, and recreational vehicle uses, and visitor uses are expected to result in localized, negligible to minor, adverse impacts on air quality throughout the park, and to remain within state and federal standards. The installation of the 50' communications towers would have a low contribution towards cumulative effects.

Because of the low intensity of impact, air quality was dismissed from further analysis in the EA.

1.4.5 Geology and Soils

HPL would use an existing anchor located at the Six Pigs facility as the base for the communications tower, therefore, no excavation would be needed. Because there would be no impacts on geology and soils from the proposed project, this topic was dismissed from further analysis in this EA.

1.4.6 Water Resources

The communications tower would be located on the existing Six Pigs facility. Because there would be no impacts on water resources, this topic was dismissed from further analysis in this EA.

1.4.7 Vegetation

The communications tower would be located on the existing Six Pigs facility. Because there would be no impacts on vegetation, this topic was dismissed from further analysis in this EA.

1.4.8 Wetlands

The communications tower would be located on the existing Six Pigs facility. Because there would be no impacts on wetlands, this topic was dismissed from further analysis in this EA.

1.4.9 Wildlife

Park wildlife biologists surveyed the area around the Six Pigs facility. The species observed were the eastern meadow lark (*Sturnella magna*), and signs of the coyote (*Canis latrans*) and white-tailed deer (*Odocoileus virginianus*). The diverse vegetation adjacent to the Six Pigs facility offers habitat for a wide variety of birds and other wildlife, as described below.

Mammals likely to utilize habitat in the general project area include the kangaroo rat (*Dipodomys spp.*), south Texas pocket gopher (*Geomys personatus*), short-tailed grasshopper mouse (*Onychomys leucogaster*), eastern mole (*Scalopus aquaticus*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), and the eastern cottontail (*Sylvigus floridanus*) (CSA, 1985) and (PAIS, 2000).

Reptiles likely to utilize habitat in the general project area include the keeled earless lizard (*Holbrookia propinqua propinqua*), whiptail lizard (*Cnemidophorus sp.*), glass snake (*Ophisaurus attenuatus*), western massasauga rattlesnake (*Sistrurus catenatus*), hog-nosed snake (*Heterodon*

nasicus), glassy snake (*Arizona elegans*), Marcy's gartersnake (*Thamnophis marcianus*), diamondback water snake (*Nerodia rhombifer*), Texas coral snake (*Micrurus fulvis*), red-eared turtle (*Trachemys scripta*), yellow mud turtle (*Kinosternon flavescens*) and slender glass lizard (*Ophisaurus vantralis*) (Chapman, 1988; CSA, 1985; PAIS, 2000). The ornate box turtle (*Terrapene ornata ornata*) has also been reported on the island (CSA, 1985).

The installation of the communications tower would result in no additional loss of wildlife habitat because HPL would utilize existing access roads to transport the tower components to the Six Pigs facility and would assemble the tower using an existing anchor on the Six Pigs facility pad as the base.

Vehicle access along the Gulf beach to transport the tower components to the Six Pigs facility and for accessing the site to assemble the tower could temporarily cause birds to take flight. Construction of the tower over approximately several days could increase noise levels in the vicinity of the Six Pigs facility that could startle and cause wildlife to be temporarily displaced. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants that could harm wildlife. Installation of the tower would allow for remotely monitoring HPL's pipelines, thereby reducing vehicle use and associated impacts along access roads to the Six Pigs facility. Once assembled, the tower could create a collision hazard for birds that could result in injury or mortality of a few birds per year. Collisions of birds with tall structures have been well documented since 1949 (Aranoff 1949). It is estimated that over 500 million birds are killed annually in the US due to anthropogenic sources such as collisions with buildings, towers, vehicles, powerlines, and wind turbines (Erickson et al. 2005). Birds flying in poor visibility conditions do not see the structure in time to avoid it. Collisions can occur during the day in low light conditions, when obscured by fog, or at night, especially with unlighted towers. Taller towers cause more bird mortality than shorter ones. The American Bird Conservancy recommends following several guidelines to minimize the avian collision hazard with towers including: the tower height being below 199 feet, minimizing the tower footprint, allowing access to tower sites for avian monitoring, and use no lighting or only shielded lighting (Shire et al. 1979). Any temporary or permanent structure, including all appurtenance, that exceeds an over height of 200 feet above ground level should normally be marked and/or lighted (Federal Aviation Administration, Advisory Circular, AC 70/7460-1K). Because the tower would be only 50-feet high, there would be no requirement from FAA for HPL to place lighting on the tower. Installation of the tower would result in negligible, short- to long-term, direct and indirect, adverse impacts on wildlife.

Cumulative Impacts. Cumulative impacts on wildlife throughout the park would be from operations and maintenance of existing and future oil and gas developments in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor, direct and indirect, adverse impacts localized near developments. The installation of the 50' communications towers would have a low contribution towards cumulative effects.

Because of the low intensity of impacts, this topic has been dismissed from further analysis in this EA.

1.4.10 Some Species of Management Concern

To comply with the Federal Endangered Species Act, the NPS has responsibility to address impacts to federally-listed, candidate, and proposed species. Further, NPS policy requires that state-listed

species, and others identified as species of management concern by the park, are to be managed in a manner similar to those that are federally listed. Thus, Federal and State-listed species will be addressed in this EA following Federal law and NPS policy.

See Table 2, and Appendices A and B, for listings of species that may occur in the analysis area. There is no federally designated critical habitat in or near the park.

Table 2. State and federally protected species occurring or likely to occur at Padre Island National Seashore.

SPECIES	FEDERAL	STATE
(T – Threatened, E – Endangered, SOC – Species of Concern, and S/A – Similar in Appearance)		
Reptiles and Amphibians		
American Alligator (<i>Alligator mississippiensis</i>)	T (S/A)	
Texas Horned Lizard (<i>Phrynosoma cornutum</i>)	SOC	T
Texas Indigo Snake (<i>Drymarchon corais erebennus</i>) *		T
Texas Scarlet Snake (<i>Cemophora coccinea lineri</i>) *		T
Sea Turtles		
Kemp's Ridley Sea Turtle (<i>Lepidochelys kempii</i>)	E	E
Loggerhead Sea Turtle (<i>Caretta caretta</i>)	T	T
Green Sea Turtle (<i>Chelonia mydas</i>)	T	T
Atlantic Hawksbill Sea Turtle (<i>Eretmochelys imbricata</i>)	E	E
Leatherback Sea Turtle (<i>Dermochelys coriacea</i>)	E	E
Birds		
Eastern Brown Pelican (<i>Pelecanus occidentalis</i>)	E	E
Reddish Egret (<i>Egretta rufescens</i>)	SOC	T
White-faced Ibis (<i>Plegadis chihi</i>)	SOC	T
Black Tern (<i>Chlidonias niger</i>)	SOC	
Piping Plover (<i>Charadrius melodous</i>)	T	T
Bald Eagle (lower 48 states) (<i>Haliaeetus leucocephalus</i>)	T	T
Northern Aplomado Falcon (<i>Falco femoralis septentrionalis</i>)	E	E
Peregrine Falcon (<i>Falco peregrinus</i>)	Delisted	E
White-tailed Hawk (<i>Buteo albicaudatus</i>) *		T
Ferruginous Hawk (<i>Buteo regalis</i>)	SOC	
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	SOC	
Cerulean Warbler (<i>Dendroica cerulea</i>)	SOC	
Black-capped Vireo (<i>Vireo atricapillus</i>)	E	E
Tropical Parula (<i>Parula pitiayumi</i>)	SOC	T

The discussions below explain why each of these species was dismissed from further analysis in this EA.

The *American alligator* (*Alligator mississippiensis*) does not occur within the analysis area.

Texas horned lizard (*Phrynosoma cornutum*) was originally seen throughout the state, but numbers dropped dramatically in the 1950's-60 due to the pet trade, habitat loss, and introduction

of the exotic fire ant. As of 1998, Texas horned lizards are only seen in the western third of the state. Texas horned lizards have been found on Padre Island north of the park in the mid-1980's, but have not been documented within the park. A comprehensive two-year herpetological survey completed in 2004 did not document the presence of this species (Duran 2004).

Bald eagles (*Haliaeetus leucocephalus*) are considered rare occurrences at the park and were historically found in greater abundance on the mainland portion of Texas than the island (McCracken and Clark 1990). Bald eagles have not been sighted in the park based on surveys over the past 15 years. No suitable foraging, resting, or roosting habitat occurs within the analysis area, and the distance from the proposed project to possible suitable habitat is greater than 3,500 feet.

The **reddish egret** (*Egretta rufescens*) and **white-faced ibis** (*Plegadis chihi*) nest on park spoil islands in the Laguna Madre, a substantial distance from the project area. The white-faced ibis appears during the summer months, while the reddish egret is a resident species.

The **Texas Indigo Snake** (*Drymarchon corais erebennus*) ranges from southern Texas southward along the Gulf coast into Veracruz and Hidalgo, Mexico, generally inhabiting burrows in moist riparian breaks in the thorn brush woodlands and coastal mesquite savannah, but may be seen in grassy plains or on coastal sandhill habitats (Texas Memorial Museum 2000). Padre Island National Seashore has grassy plains and coastal sandhill habitats that may be suitable for this species. Only one known specimen has been documented in the park (Donna Shaver Ph.D. personal communication; Duran 2004). A herpetological survey completed in 2004 did not document the presence of the Texas indigo snake (Duran 2004).

The **Texas Scarlet Snake** (*Cemophora coccinea lineri*) is found only along the southern Texas coast in open areas with sandy or loamy well-drained soils. Padre Island National Seashore has grassy plains and coastal sandhill habitats that may be suitable for this species. Only one known specimen has been documented in the park (Donna Shaver, Ph.D., personal communication; Duran 2004). No other individuals of this species have been documented since. Individual Texas indigo snakes and Texas scarlet snakes may be displaced from utilizing the analysis area during installation of the tower, but are expected to relocate to other nearby suitable areas. Given the minimal or lack of observations for each species, it is unlikely that the Texas indigo snake or Texas scarlet snake would be impacted from the proposed project.

Five species of sea turtle utilize the park. A U.S. Fish and Wildlife Service Recovery Plan for the **Kemp's ridley sea turtle** (*Lepidochelys kempii*) defines specific park tasks in the recovery efforts, which are being conducted (patrols, monitoring, and habitat management). This is the only federally listed species in the park with Recovery Plan responsibilities assigned to this park. There is no specific Recovery Plan task assigned to the park for the **loggerhead sea turtle** (*Caretta caretta*), **green sea turtle** (*Chelonia mydas*), **hawksbill sea turtle** (*Eretmochelys imbricata*), and **leatherback sea turtle** (*Dermochelys coriacea*), the other species of sea turtle occurring in the park; however, NPS staff members and volunteers conduct, support, and assist in the daily patrols for these species to protect, document, and monitor nesting occurrence. All five species nest during the summer season, from April 1 thru August 31, and except for the Kemp's ridley sea turtle, are primarily nocturnal nesters. Due to the application of mitigation measures to limit the timing to install the communications tower outside of turtle nesting season, there would be no effect on sea turtles from the installation of the communications tower. Installation of the tower would

eliminate the need for weekly vehicle access along 3.3 miles of the Gulf beach by HPL to conduct routine monitoring of the pipelines which would result in reducing current effects on sea turtles from negligible effects to no effect.

Because these species are not found in the analysis area, these species of management concern were dismissed from further analysis in this EA.

1.4.11 Cultural Resources

The National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq.*); the National Environmental Policy Act of 1969 (42 USC 4321 *et seq.*); and the National Park Service's Director's Order #28, *Cultural Resource Management Guideline (1997)*, *Management Policies 2001* and Director's Order # 12, *Conservation Planning, Environmental Impact Analysis, and Decision Making (2001)* require the consideration of impacts on cultural resources listed in or eligible to be listed in the National Register of Historic Places. The National Park Service recognizes five categories of cultural resources: historic structures, ethnographic resources, cultural landscapes, archeological resources, and museum collections.

There are no historic structures or cultural landscapes located within several miles of the proposed project area. Because HPL would be using an existing anchor for the tower base, no excavation would be required; therefore, there would be no impacts on unknown archeological resources. Consultation was undertaken with the Tonkawa Tribe as required by Sections 106 and 110 of the National Historic Preservation Act. The Tonkawa Tribe had no concerns about natural or cultural resources in the analysis area that they could associate with ethnographic affiliation. The NPS concluded that there would be no historic properties affected. The Texas Historical Commission concurred with the determination.

Because there are no historic structures, cultural landscapes, or ethnographic resources in the project area, and unknown archeological resources would not be affected by the installation of the tower, this topic was dismissed as an impact topic in this EA.

1.4.12 Soundscapes

The natural quiet of Padre Island National Seashore contributes heavily to a positive visitor experience. Surveys in 1987 (Ditton and Gramann) and 1989 (Gramann and Ruddell) examined visitor motive for coming to Padre Island. The top motives include "to get away," "be outdoors," and "for rest and relaxation." In 1998, the NPS contracted Dr. Jim Foch of the Livermore Laboratory to record background sound measurements at various locations in the park. A useful measure of background sounds is the sound level observed 90% of the time, abbreviated L90. Although measurements were not recorded at the exact location of the project area, the relatively constant sound level of the surf (about 62 decibels) at 60 yards from the water) is considered the "background" noise level along the Gulf shoreline. The L90 levels inland fall off in a systematic manner based on the distance from the surf (Foch, 1998). The proposed project area is approximately 1 mile from the Gulf shoreline, therefore, the noise level would be estimated at 40-45 dBA.

HPL's contractor Trico Tower Service would use a 4-wheel drive pickup to transport the tower in pieces to the Six Pigs facility. They would assemble the tower and install the antenna system. Installation of the tower would result in negligible, adverse impacts on the natural soundscape during the short-term installation lasting days.

Cumulative Impacts. Routine maintenance of the pipelines during pigging operations would be heard several hundred feet away. Backcountry visitor use is uncommon, and visitors recreating on the Gulf beach would not hear these activities. Due to the predominant southeast winds, Laguna Madre visitors could hear maintenance and other types of oil and gas activities from within the park on certain days when environmental conditions favor sound movement. Existing impacts to the natural soundscape including vehicle use, recreational boating within the Laguna Madre, visitor uses, and park maintenance and oil and gas operations would result in short-term, negligible to minor, adverse impacts on natural soundscapes within and adjacent to the park. The installation of the 50' communications towers would have a low contribution towards cumulative effects.

Because of the low intensity of impacts, this topic was dismissed from further analysis in this EA.

1.4.13 Nonfederal Oil and Gas Development

HPL has committed a small amount of time and cost to prepare a supplement to its plan of operations resulting in less than a negligible, adverse impact on HPL to secure the approval from NPS to install the tower. After receiving the NPS approval and HPL installs the 50-foot communication tower, HPL would experience a time and cost savings from reducing the need for vehicular access to the Six Pigs facility and would be able to perform routine monitoring remotely. This would be a negligible, beneficial effect on HPL.

Because of the low intensity of impacts, this impact topic was dismissed from further analysis in this EA.

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2.0 ALTERNATIVES

Two alternatives are described and evaluated in this EA. Alternative locations and strategies that were considered but dismissed from further analysis are then described. An analysis for selecting the environmentally preferred alternative is also provided. This section concludes with three summary tables comparing the two alternatives.

Four pipelines converge at a pigging facility known as the Six Pigs Facility. An 8-inch pipeline owned by HPL enters the park from a point along the north boundary and continues south to the Six Pigs facility. A 12-inch pipeline owned by Duke Energy begins at the former Sun Gas facility at Yarborough Pass and extends north along the west side of the park to a point at Six Pigs, then extends west across the King Ranch. A 20-inch pipeline owned by HPL begins at a point in the Gulf of Mexico and enters the park in the vicinity of the four wheel drive sign extending to a point near the middle of the island and continues north to Six Pigs, then crosses the Laguna Madre west to the King Ranch. A 20-inch pipeline owned by Mustang Island Gathering enters the park from a point offshore in the Gulf of Mexico. Cathodic protection is provided by sacrificial anode bands attached to the pipelines.

2.1 Alternative A, No Action

The No Action Alternative is required under the National Environmental Policy Act of 1969 (NEPA) and establishes a baseline or benchmark from which to compare the environmental consequences of the action alternative. Under No Action, the communications tower would not be installed. Weekly vehicle access would continue along Park Road 22 and the Gulf Beach to monitor pipeline operations at the Six Pigs facility.

2.2 Alternative B, Proposed Action, Supplement as Submitted

Under Alternative B, Proposed Action, HPL would install the communications tower so that remote monitoring of pipelines could be performed continuously.

The proposed surface location of the communications tower would be within the approximately 1.5-acre, existing Six Pigs facility located approximately one mile west of the Gulf beach. Installation of the tower would require no excavation since HPL would utilize an existing anchor for a wind turbine to stabilize the tower. No guy wires would be necessary.

Access. HPL would use several 4-wheel drive pickup trucks and small trailers to transport the pre-fabricated tower components to the Six Pigs facility; therefore, no new roads would be constructed. HPL would enter the park via Park Road 22 and then proceed approximately 3.3 miles along the Gulf beach to the existing shell/caliche access road that extends approximately 1 mile to the Six Pigs pigging facility. Transport of the tower components would be completed in 1 day, while assembly of the tower could take up to several days to complete.

Surface Location of Communications Tower. The tower would be placed on an existing anchor previously used for a wind turbine located within the previously disturbed area on the pigging facility pad.

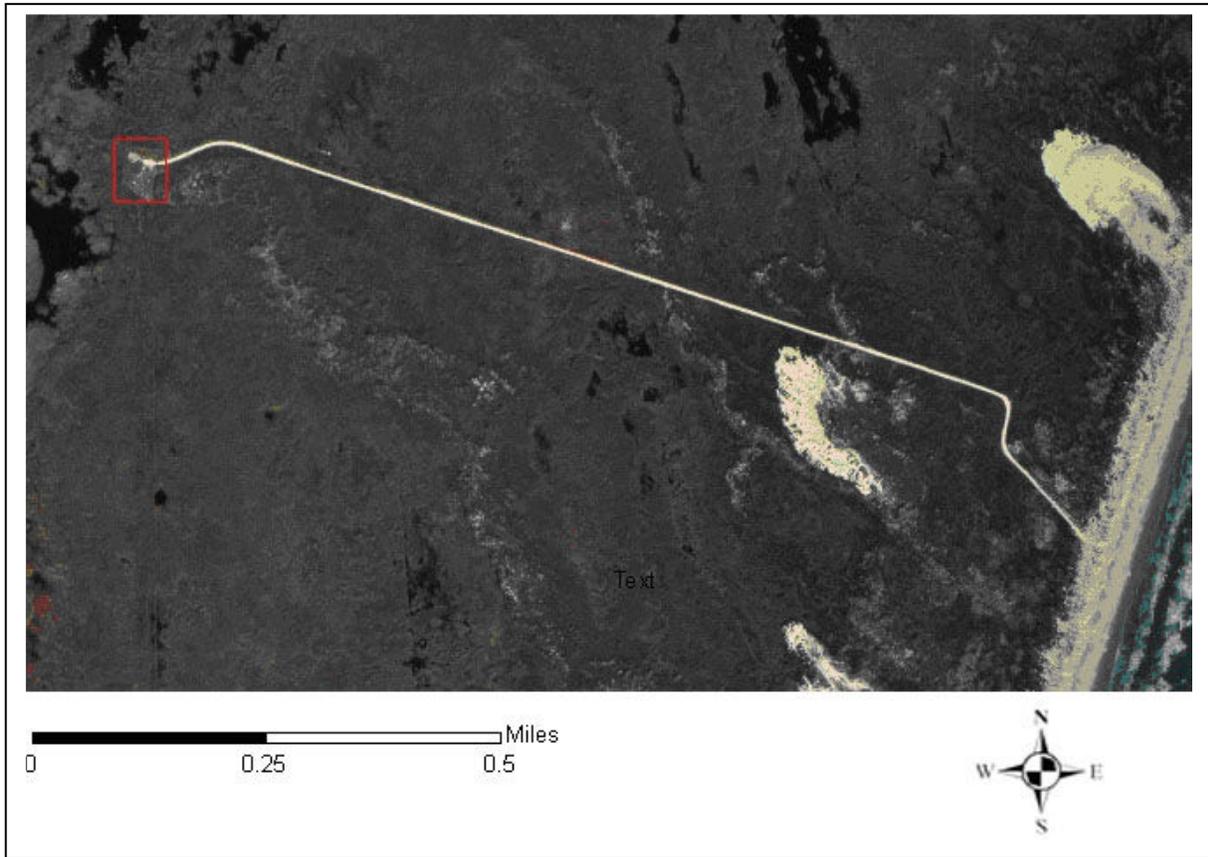


Figure 2. Existing Six Pigs Road from the Gulf of Mexico Beach to the Six Pigs facility.

Communications Tower. The communications tower would be 50-feet tall. It would be a Rohn 55 Hot Dipped Galvanized Steel structure. It would be painted a neutral, grey color or a similar NPS approved color to blend with the natural environment. Because of its short height it would not be lit (Federal Aviation Administration, Advisory Circular, AC 70/7460-1K). The communications tower would be assembled using hand-tools.

Mitigation Measures. NPS sent a letter to HPL on August 31, 2007, with a list of mitigation measures determined to be necessary during NPS’s review of HPL’s supplement. On October 4, 2007 HPL agreed to adopt the following mitigation measures listed in Table 3 to avoid or minimize potential impacts to park resources and values, and to better ensure that park resources and values are not impaired.

Table 3. Mitigation Measures for Proposed Action

Number	Mitigation Measures
1	The operator would not conduct operations during the summer season (April 1 through August 31) to avoid disturbing sea turtle nests and nesting activity.
2	The operator would have in place fire suppression equipment and maintain it in serviceable condition at all times.
3	All flammable liquids (i.e., condensate, compressor oil, etc.) would be labeled, stored in steel or fiberglass tanks, and contained inside a secondary containment box. All containers would be labeled as to their contents.
4	The operator would not be allowed to store unused equipment or debris at the site. Any

Number	Mitigation Measures
	unused or surplus equipment must be removed from the park immediately. Debris such as cardboard boxes, garbage, buckets, etc., must not be stored at the site and must be brought in on an as-needed basis.
5	For all releases of contaminating or toxic substances, the operator would promptly report the initial spill information to the park according to their Contamination or Toxic Substance Spill Control Plan within their approved Plan of Operations.
6	The operator would educate all employees and contractors regarding the need for, and ways and means of, minimizing disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore. The operator would print a list of conduct and operating procedures, approved by Padre Island National Seashore, while working within the park to be reviewed by all operation related personnel before they begin work inside the park.
7	In preparation for a hurricane event, the operator would secure all surface and sub-surface equipment in accordance with the Padre Island National Seashore Hurricane Preparedness Plan and as outlined in the operator's approved Plan of Operations.
8	Heavy equipment is limited to 20 vehicles each day, a speed limit of 15 mph or less, no traveling at night, and shall be scheduled in a manner that facilitates caravanning. The crew will utilize an operator-provided shuttle service to transport crews to and from the site to decrease vehicular traffic on the beach.
9	Consumption of alcoholic beverages or illegal drugs would not be allowed or tolerated on operations located within the park. If evidence of these activities were to be discovered during an inspection, the operator would be notified immediately and would be required to provide the National Park Service with a plan on preventing this activity in the future.
10	The operator is responsible for all damage to park paved road surfaces due to trucks carrying construction equipment because these roads were not constructed for heavy industrial equipment and loads. Typical repairs include road resurfacing, site preparation, pack coat, and seal and chip. Damages would be determined based upon wear to the road or on a per vehicle basis.
11	The permanent equipment would be painted a neutral, grey color or similar NPS approved color to blend with the natural environment.

The following mitigation measures are included in HPL's approved Plan of Operations.

Table 4. Mitigation Measures for Oil and Gas Development Operations

Number	Mitigation Measures
Natural and Cultural Resources and Visitor Experiences	
1	Heavy equipment (vehicles larger than a 1-ton pick-up truck or any size pick-up truck with a trailer) would not be operated on Holiday weekends including Memorial Day, July 4 th , and Labor Day.
2	If an unknown cultural resource is discovered during approved operations, and such resource might be altered or destroyed by the operations, the operator would immediately cease activity in the immediate area and notify the Superintendent before continuing any operations.
3	All compressors used during production operations would be equipped with hospital mufflers or similar technology and be oriented so that the exhaust faces away from the prevailing southeast wind direction.
4	The operator would plant NPS-approved native shrubs and trees around the production facility to minimize visual and audible impacts to visitors and provide habitat.

Number	Mitigation Measures
5	Vegetation growth within the facility and along the access road would be mowed frequently to a height of four to six inches to minimize threats from wildfire. Herbicide or pesticide use must be approved by the Superintendent before their use.
6	Heavy equipment and convoys would conduct all driving above the Gulf beach "wet line" to prevent excessive erosion, crushing of benthic invertebrates, impacting endangered or threatened species, and prevent disturbances to shorebirds.
7	All operations would be setback 500 feet from the Gulf Beach dune line and other light-sensitive areas. Lights would be shielded and directed at the rig work area itself to meet human safety requirements.
8	All open-topped tanks and/or secondary containment areas would be covered with netting or other covering with all seams completely enclosed and netting falling no further than 3-inches below the top of the containment. All open-vent exhaust stacks on production equipment would be constructed in a manner that prevents birds and bats from entering or perching.
9	Sea turtle awareness training would be provided by the NPS to all operation employees and contractors and would include track identification, notification protocols, and how to mark tracks or nest area if they are unable to stay on site until NPS personnel arrive.
10	The operator would hire vehicle monitors that would escort all heavy equipment (vehicles larger than a 1-ton pick-up truck or any size pickup truck with a trailer) traveling to and from the well site. They would report all violations of the mitigation measures or conditions of approval immediately to the NPS.
11	The operator would educate all employees and contractors regarding the need for, and ways and means of, minimizing disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore. Operator would print a list of conduct and operating procedures, approved by Padre Island National Seashore, while working within the park to be reviewed by all operation related personnel before they begin work inside the park.
Safety	
12	All ATV operators would be required to wear personal safety equipment identical to that which is required of all NPS staff. This includes helmet, gloves, orange safety vest, closed-toe shoes that cover the ankle, eye protection, long sleeve shirt, and long pants. Operator would provide the NPS with proof that these individuals have completed a current ATV safety Rider Course prior to operating an ATV in the park.
13	In preparation for a hurricane event, the operator would secure all surface and sub-surface equipment in accordance within PAIS Hurricane Preparedness Plan and as outlined in the operator's Plan of Operations.
14	The operator would have in place fire suppression equipment and would maintain it in serviceable condition at all times.
15	The operator would maintain the access road using a maintainer when needed to keep the road passable and minimize the potential of vehicles driving off the road and into undisturbed habitats. The use of bull rock would not be allowed on roads within the Seashore.
16	The operator would not be allowed to store unused equipment or debris at the site. Any unused or surplus equipment must be removed from the park immediately. Debris such as cardboard boxes, garbage, buckets, etc. must not be stored at the site and must be brought in on an as needed basis.
17	Heavy equipment is limited to 20 vehicles each day, a speed limit of 15 mph or less, no traveling at night, and shall be scheduled in a manner that facilitates caravanning. The drilling crew would utilize an operator-provided shuttle service to transport crews to and from the site to decrease vehicular traffic on the beach.
18	Consumption of alcoholic beverages or illegal drugs would not be allowed or tolerated on

Number	Mitigation Measures
	operations located within the Seashore. If evidence of these activities is discovered during an inspection, the operator would be notified immediately and would be required to provide the NPS with a plan on preventing this activity in the future.
Contamination	
19	Collection and sampling of soils, surface water, and ground water would be performed following NPS protocols as listed in the 2006 Operator's handbook, prior to the start of construction, to establish baseline conditions, and at the completion of operations, to determine if contaminating substances are present in concentrations that pose a threat to wildlife populations or human health, or would jeopardize reestablishment of native vegetation.
20	A Contamination or Toxic Substance Spill Control Plan shall be included as part of the Plan of Operations to describe actions to be performed in the event of an oil spill, brine spill, release of drilling fluids, blow-out, or release of any toxic substance.
21	Should contaminated soils be found, the contaminated soil would be excavated to clean soil and removed to a state-approved off-site disposal facility where applicable. The excavation would be filled with clean native soil. If necessary, contaminated soils would be remediated on-site using NPS-approved remediation methods.
22	A berm with an impermeable liner would be constructed around all tank batteries, and designed to contain 1.5 times the volume of the largest tank.
23	All produced water would be stored in closed top fiberglass tank(s). The water would be transported to an off-site, state-approved disposal facility by vacuum truck.
24	For all releases of contaminating or toxic substances, the operator would promptly report the initial spill information to Padre Island National Seashore according to their Contamination or Toxic Substance Spill Control Plan within their Plan of Operations.
Reclamation	
25	The operator would cut, bale, and store vegetation before ground-disturbing activities occur. This vegetation would be used in mulching and native seeding activities during reclamation/re-vegetation. All equipment would be washed off and cleaned of mud/soils/plant debris before entering the park to reduce potential introduction of non-native seed/pests into the park.
26	Some soils and sands from outside Padre Island National Seashore, but on Padre Island, may be hauled in to achieve pre-project contours or to restore any spill clean-up areas. Such soils and sands would be similar in character to pre-project soils and sands with regard to particle size, contaminants, certified weed-free, and approved by the Superintendent before purchase/use to minimize the potential for invasive species.
Operational	
27	Signs would be posted at the entrance of the access road, on the well tree, and on the tank battery giving operator name, lease name, well number, API Number, and Railroad Commission of Texas identification number.
28	During production, the well gauger would check the facilities daily and notify Padre Island National Seashore personnel of problems or observations. The well gauger would check supply gas pressure daily by use of a hi-lo pressure sensor. Should system pressure go above or below the safe range of operating pressure set by a technician, the sensor would trip a relay that actuates the safety valve, shutting in the well.
29	The Superintendent of Padre Island National Seashore, or his representative, should have reasonable access to the operations as necessary to properly monitor and insure compliance with the conditions of the plan of operations under the provisions of 36 CFR §9.37(f).
30	The operator is responsible for all damages to park paved road surfaces due to trucks carrying

Number	Mitigation Measures
	construction and drilling equipment because these roads were not constructed for heavy industrial equipment and loads. Typical repairs include road resurfacing, site preparation, pack coat, and seal and chip. Damages would be determined based upon wear to the road or on a per vehicle basis.

2.3 Alternatives Considered but Dismissed from Further Analysis

During the scoping process for this project, an alternative location was considered for locating the communications tower. The alternative location was discussed in consultation with the USFWS, HPL, park staff, Regional Office, and Washington Office. For the reasons described below, this alternative was dismissed from further analysis.

HPL Pipeline Corridor. HPL and NPS considered an alternative location to place the tower within the HPL pipeline corridor that runs diagonally across Park Road 22. There are no dunes to visually reduce the tower from public view and it would be within easy public access. Placement of the tower in this location would result in greater impacts to visitor use and experience, vegetation, geology and soils, wildlife, species of management concern, and cultural resources. A new access road or corridor would be needed to build and provide access for maintenance to the tower. Impacts associated with building the tower along the pipeline corridor would be greater than those associated with installation of the tower at the Six Pigs pigging facility, therefore, this alternative was dismissed from further analysis.

2.4 NPS Environmentally Preferred Alternative

Section 101 of NEPA states that “. . . it is the continuing responsibility of the Federal Government to . . . (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which would permit high standards of living and a wide sharing of life’s amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources” [42 U.S.C. § 4321 *et seq.* § 101 (b)].

The environmentally preferred alternative for installation of the communications tower is based on these national environmental policy goals. Under Alternative A, No Action, the tower would not be installed. Impacts from routine vehicle access down Park Road 22 and the Gulf beach would continue. Alternative A meets five of the six criteria (1 thru 5), but to a lesser extent than Alternative B.

Alternative B, Proposed Action, would have greater effects on Visitor Use and Experience, most notably visual quality, and on avian species (collision); but vehicle use along the Gulf beach would be reduced and monitoring of pipelines would be improved through round-the-clock remote monitoring. Alternative B meets five of the six criteria (1 thru 5). Because the communications

tower would allow for continuous monitoring of the pipelines, Alternative B would provide the greatest protection of park resources and values. Alternative B best meets criteria 1 thru 5 and would provide the greatest protection of park resources and values; therefore, the NPS selected Alternative B as the environmentally preferred alternative.

2.5 NPS Preferred Alternative

The environmentally preferred alternative is Alternative B because it surpasses Alternative A in realizing the full range of national environmental policy goals as stated in § 101 of NEPA. The NPS preferred alternative is also Alternative B, Proposed Action, because HPL holds a valid permit, which, if the communication tower was built, would not result in an impairment of park resources and values. The NPS believes this alternative would fulfill its park protection mandates while allowing HPL to renovate its pipeline operations.

2.6 Summary of Alternatives

Table 5 outlines both alternatives and how well each alternative meets the objectives of this project. The actions required for this project and to what extent park resources are impacted are summarized in Tables 6 and 7.

Table 5. Extent that Each Alternative Meets Objectives

Objectives	Does Alternative A: No Action Meet Objective?	Does Alternative B: Proposed Action Meet Objective?
Avoid, minimize, or mitigate impacts on park resources and values, visitor use and experience, and human health and safety.	Yes Vehicle access to conduct monitoring would continue. Mitigation measures would avoid or minimize impacts	Yes Installation of the tower would reduce vehicle access and allow for continuous pipeline monitoring. Mitigation measures would avoid or minimize impacts.
Prevent impairment of park resources and values.	Yes Mitigation measures would result in no impairment of park resources and values.	Yes Mitigation measures would result in no impairment of park resources and values.
Provide HPL reasonable access to make improvements to existing permitted pipeline facilities.	No Installation of the tower would not be permitted, precluding HPL from improving their existing permitted facility with remote monitoring.	Yes HPL would be provided reasonable access to improve its permitted pipeline facilities.

Table 6. Summary of Actions

Actions	Alternative A: No Action	Alternative B: Proposed Action
Access	Weekly vehicle use along Park Road 22, 3.3 miles of the Gulf beach, and 1 mile of Six Pigs Road would continue to perform routine monitoring of pipeline operations.	Installation of the tower would provide for continuous remote monitoring of pipeline operations, thereby reducing vehicle use along Park Road 22, 3.3 miles of the Gulf beach, and 1 mile of Six Pigs Road.
Tower	Routine access would continue to be required to monitor pipeline operations.	Installation of the communications tower would provide continuous remote monitoring.

Table 7. Summary of Impacts

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
Floodplains	<p>Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts. Existing impacts would continue with the continuing operation of the HPL pipelines and pigging facility, resulting in long-term occupancy in the 100-year floodplain, resulting in localized, long-term, negligible to minor, direct and indirect, adverse impacts on floodplains.</p> <p>Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to moderate, direct and indirect, adverse impacts localized near developments throughout the park.</p> <p>The continuing operation of the pipeline and pipeline pigging facility is an appropriate use and would not result in any unacceptable impacts.</p> <p>No impairment to floodplains would result from implementation of this alternative.</p>	<p>Under Alternative B, Proposed Action, the communications tower would be installed, resulting in the long-term occupancy in the 100-year floodplain, with localized, long-term, negligible to minor, direct and indirect, adverse impacts on floodplains.</p> <p>Cumulative impacts would be similar to those described under No Action, with localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts.</p> <p>The proposed installation of the communications tower is an appropriate use and would not result in any unacceptable impacts.</p> <p>No impairment to floodplains would result from implementation of this alternative.</p>

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
<p>Species of Management Concern</p>	<p>Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts. Existing impacts would continue as a result of the continuing operation of the HPL pipelines and pigging facility, and vehicle access along the Gulf beach, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on species of management concern.</p> <p>Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts.</p> <p>The continuing operation of the pipeline and pipeline pigging facility is an appropriate use and would not result in any unacceptable impacts.</p> <p>No impairment to species of management concern would result from implementation of this alternative.</p>	<p>Under Alternative B, Proposed Action, the communications tower would be installed. Vehicle access along the Gulf beach and installation of the tower would result in localized, short to long-term, negligible to minor, direct and indirect, adverse and beneficial impacts on species of management concern.</p> <p>Cumulative impacts would be similar to those described under No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts.</p> <p>The proposed installation of the communications tower is an appropriate use and would not result in any unacceptable impacts.</p> <p>No impairment to species of management concern would result from implementation of this alternative.</p>
<p>Visitor Use and Experience</p>	<p>Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts. Existing impacts would continue as a result of the continuing operation of the HPL pipelines and pigging facility, and vehicle access along the Gulf beach, resulting in localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts on visitor use and experience.</p> <p>Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short- to long-term, minor to moderate, direct and indirect adverse impacts.</p>	<p>Under Alternative B, Proposed Action, the communications tower would be installed, resulting in the long-term modification of natural scenery, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts, on visitor use and experience.</p> <p>HPL's vehicle access along the Gulf beach, installation and long-term presence of the tower would result in localized, short to long-term, minor to moderate, direct and indirect, adverse impacts on visitor use and experience.</p> <p>Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with short to long-term, minor to moderate, direct and indirect, adverse impacts.</p>

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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Methodology

During project scoping, it was determined that the following topics would be carried forward for analysis:

- Floodplains
- Species of Management Concern
- Visitor Use and Experience

This section is organized by impact topic. Under each impact topic, the affected environment is described, the methodology for assessing impacts is presented, the possible impacts under each alternative are given, a cumulative impact analysis provided and a conclusion is stated. The conclusion summarizes all major findings and includes an analysis of appropriate use, unacceptable impacts, and impairment. A description of the NPS mandate to prevent impairment to park resources and values is provided in Section 1.2.1 of this EA (pages 3 and 4), along with a description of the NPS requirement to analyze appropriate use and unacceptable impacts.

This section describes direct, indirect, and cumulative impacts under the two alternatives. Impacts are described in terms of context, duration, and intensity. The context or extent of the impact may be **localized** (affecting the project area but not extending beyond 1,500 feet from the tower construction site or access roads) or **widespread** affecting other areas of the park and/or the project area). The duration of impacts could be **short-term**, ranging from days to three years in duration, or **long-term**, extending up to 20 years or longer. Generally, short-term impacts would apply to installation activities and long-term impacts would apply to the operation of the tower. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. Where the intensity of an impact can be described quantitatively, the numerical data are presented. However, most impact analyses are qualitative.

Cumulative Impacts

This section also assesses cumulative impacts. The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7).

The following descriptions of park development and operations, and adjacent land uses provide the basis for analyzing cumulative impacts in this EA. These descriptions should be used in conjunction with the discussion under the heading "socioeconomics" in Section 1 of this EA that describes past, present, and reasonably foreseeable oil and gas development in the analysis area.

Existing Park Development and Operations

The park was established to save and preserve a portion of the diminishing seashore of the United States that remains undeveloped, for the purposes of public recreation, benefit, and inspiration. Any developments are vulnerable to the harsh corrosive salt-air atmosphere and require constant maintenance. Park developments are confined to the northernmost 10 miles of the park and consist of the minimum necessary to support park management and visitor use. The Malaquite Visitor Center and concession facility was built in 1988 to replace the older pavilion structure damaged by Hurricane Allen. In 1999, Hurricane Bret struck the park from the 32.5 to 56.8 mile markers, and created 21 washover channels. In addition to the Malaquite Visitor Center/concession facility, there is a 1,150-vehicle parking lot, a park headquarters, two park housing units, a 40-site RV campground, a wastewater treatment facility, Bird Island Basin, and Yarrowborough Pass visitor use areas, and a $\frac{3}{4}$ mile paved Grasslands Nature Trail. The paved, two-lane Park Road 22 provides access into the park, westward to Bird Island Basin, and south to Malaquite beach at which point the Gulf beach becomes the primary transportation corridor south. The beach is hard and accessible by both two and four-wheel drive vehicles for the first 5 miles of Gulf beach at which point the remaining 55 miles of beach corridor is accessible only by four-wheel drive vehicles. Access to the park is also available via boat in the Laguna Madre and Gulf of Mexico. In total, existing park development occupies 391 acres or 0.3% of the park. There are no past park developments or activities that continue to impact the park's resources or values. In 2005, construction of the new Sea Turtle Research Laboratory within the footprint of headquarters was completed. New developments that are planned in the future include the implementation of the Bird Island Basin Recreational Use Plan. Park operations that could contribute to impacts on park resources and values include prescribed fires, routine maintenance of the park roads, park future development, park and visitor vehicle use, and public recreational activities such as motor boating, and burning of campfires.

Adjacent Land Uses

Drilling and production of state-owned oil and gas is expected to continue from state tracts adjacent to the park boundaries, either on the east in the Gulf of Mexico, or on the west in the Laguna Madre. Exploration and development of federally owned oil and gas in the Gulf of Mexico's outer continental shelf would also continue. In addition, tankers transporting products through the Gulf of Mexico could potentially impact the park should there be a spill incident. These activities have the potential to impact all park resources and values. Several radio and cellular phone towers exist within 10 miles of the park boundary.

3.2 Impacts on Floodplains

Affected Environment

Padre Island National Seashore is located on a largely undeveloped barrier island in southern Texas, along the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The park's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre, back-

island dunes, and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 manmade dredge material islands in the Laguna Madre also lie within the National Seashore.

Foredunes of the park provide protection from hurricanes and tropical storms for the island's backcountry and the Texas mainland. The dunes are fragile and once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become primary dunes as vegetation stabilizes more sand, resulting in a line of dunes forming parallel to the beach that varies in height from less than 6 feet to approximately 50 feet above sea level. This primary dune line extends the entire length of Padre Island National Seashore, broken only in a few places where storm washover channels have occurred, or road cuts have been constructed.

Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water at the site is approximately 1 to 4 feet deep, depending upon the season.

According to the *Oil and Gas Management Plan 2000*, and Federal Emergency Management Agency floodplain maps, most of the park lies within the 100-year floodplain with the exception of the higher dune areas. The hurricane season begins June 1 and continues through November 30.

The Six Pigs facility is located approximately 1 mile behind the Gulf foredunes. The facility is not located in or near a washover channel or wind tidal flats.

Wind tidal flats are low areas inundated when high water conditions are created by northerly winds, and left uncovered when low-water conditions are created by southerly winds (hence the term "wind-tidal flats"). These mudflats form an almost continuous band along the Laguna Madre side of the park.

A draft Floodplain Statement of Findings is included in Appendix C and will be sent to the various State and Federal agencies for review, as required by the NPS's Director's Order and Procedural Manual #77-2: Floodplain Management.

Methodology

To analyze the impacts on floodplains, all available information on floodplains in the park was compiled, including: personal observations, consultation with other agencies, the park's *Oil and Gas Management Plan 2000*, other park documents, and landcover classification data.

The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** An action that could result in a change to floodplain functions and values or increase flood hazards, but the change would be so small that it would not be of any measurable or perceptible consequence. Operations would not require a break in the foredunes or occur in washover channels or wind tidal flats.

- Minor:** An action that could result in a change to floodplain functions and values or increase flood hazards, but the change would be small and of little consequence. Outside of hurricane season, operations would have minimal risk and have few mitigation measures. Except for seismic, operations would not occur in washover channels or wind tidal flats.
- Moderate:** An action that could result in a change to floodplain functions and values or increase flood hazards; the change would be measurable and of consequence. Within hurricane season, operations would have increased risk (such as drilling) and require extensive mitigating measures. Except for seismic, operations would not occur in washover channels or wind tidal flats.
- Major:** An action that would result in a noticeable change to a floodplain functions and values or increase flood hazards; the change would be measurable and result in a severely adverse or major beneficial impact. Within the hurricane season, operations would have extensive risks affecting large portions of the park. Because of the impossibility of successful reclamation in washover channels and wind tidal flats, any actions in these areas would cause major effects.

Impacts on Floodplains under Alternative A, No Action

Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts on floodplains. However, impacts would continue as a result of continuing operation of the pigging facility and pipelines.

There was no practicable alternative to siting the HPL pipelines and pigging facility outside the 100-year floodplains. Routine operation of the pipeline pigging facility would include accessing the pipeline corridor by truck to inspect surface equipment. The pipeline pigging facility would also be used to catch and launch pigs and gauge pipeline condition. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe or remove sand buildup from the entrance of the access road through the foredunes. These activities could cause sedimentation during times when the work area is inundated; however, it is expected that work of this nature would be scheduled during dry periods (winter months). There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating surface or groundwater. If leaks or spills occur during flood events, contaminants could be transported via surface waters great distances, thereby increasing flood hazards and degrading floodplain values. Impacts from spills could be localized to widespread, with minor to major, direct and indirect, adverse impacts on water floodplain functions and values. However, with the application of the mitigation measures in the approved plan of operations and prompt response in the event of a spill, the potential for a spill would be reduced and the intensity of impacts in the event of a spill would be reduced to negligible to minor.

Therefore, existing operations, including vehicle access along Park Road 22 and the Gulf beach, and continuing operation of the existing HPL pipelines and pipeline pigging facility would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on floodplains.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on floodplains throughout the park could result from the continuing operation of nonfederal oil and gas operations in and adjacent to the park and future drilling and production operations, park development and operations, and spills from oil and gas activities located within and adjacent to the park, including tanker traffic in the Gulf of Mexico, and park visitor uses. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Park staff and HPL currently use Park Road 22, the Gulf beach, and the Six Pigs access road to access the Six Pigs pigging facility. More than 600,000 park visitors use Park Road 22 and the Gulf beach to access the southern portion of Padre Island National Seashore. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants.

Cumulative impacts on floodplains throughout the park are expected to be localized near developments, with short to long-term, negligible to minor, direct and indirect, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, direct and indirect, adverse impacts on the park's water resources and floodplains, primarily along the park's shorelines. The continuing operation of the HPL pipelines and the pigging facility has a low contribution towards these cumulative effects.

Conclusion

Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts. Existing impacts would continue with the continuing operation of the HPL pipelines and pigging facility, resulting in long-term occupancy in the 100-yr floodplain, resulting in localized, long-term, negligible to minor, direct and indirect, adverse impacts on floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to moderate, direct and indirect, adverse impacts localized near developments throughout the park.

The continuing operation of the pipelines and pipeline pigging facility is an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies 2006*. Further, because the application of mitigation measures in the approved plan of operations would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of the NPS *Management Policies 2006*.

Because there would be no major, adverse impacts to floodplains whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's General Management Plan or other relevant National Park Service planning documents, there would be no impairment of the park's floodplain resources or values.

Impacts on Floodplains under Alternative B, Proposed Action

Under Alternative B, Proposed Action, the communications tower would be installed at the Six Pigs facility using an existing anchor for the base, resulting in no new ground disturbance within the 100-year floodplain. Transport of the pre-fabricated tower components by four-wheel trucks along the 3.3 miles of Gulf beach would compact and rut the beach sand, but due to the small size vehicles and light weight, these effects would not be measurable. The tower would be installed within the 100-year floodplain because the entire island except the highest dunes is within the floodplain. The mitigation measure that requires HPL to adhere to the park's Hurricane Preparedness Plan would enable the timely evacuation of HPL staff and its contractors in the event of a hurricane. If hurricane force winds cross the island in the vicinity of the tower, the tower could be blown over and pieces could be transported across the island by wind or floodwaters. In this event, the flood hazard could be increased, resulting in negligible to minor, direct and indirect, adverse impacts on floodplain functions and values.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on floodplains throughout the park would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized near developments throughout the park. The installation of the communications tower would have a low contribution towards these cumulative effects.

Conclusion

Under Alternative B, Proposed Action, the communications tower would be installed, resulting in the long-term occupancy in the 100-year floodplain, with localized, long-term, negligible to minor, direct and indirect, adverse impacts on floodplains. Cumulative impacts would be similar to those described under No Action, with localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts.

The proposed installation of the communications tower is an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts to floodplains whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's General Management Plan or other relevant National Park Service planning documents, there would be no impairment of the park's floodplain resources or values.

3.7 Impacts on Species of Management Concern

Methodology

Information on species of management concern within the park was gathered from the Texas Parks and Wildlife Department and the U. S. Fish and Wildlife Service, research, personal observation, consultation with specialists, and reference materials. Known impacts caused by road and beach access by visitors and existing gas operations were also considered.

The NPS has developed the following threshold definitions under the National Environmental Policy Act guidelines. The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** An action that would not affect any individuals of a species of management concern or their habitat.
- Minor:** An action that would affect a few individuals of species of management concern or have very localized impacts upon their habitat. The change would have barely perceptible consequences to the species or habitat function.
- Moderate:** An action that would cause measurable effects on: (1) a relatively small percentage of the population of a species of management concern, (2) the existing dynamics between multiple species (e.g., predator-prey, herbivore-forage, vegetation structure-wildlife breeding habitat), or (3) a relatively large habitat area or important habitat attributes. A species of management concern population or habitat might deviate from normal levels under existing conditions, but would remain indefinitely viable within the seashore.
- Major:** An action that would have drastic and permanent consequences for a species of management concern population, dynamics between multiple species, or almost all available critical or unique habitat area. A species of management concern population or its habitat would be permanently altered from normal levels under existing conditions, and the species would be at risk of extirpation from the seashore.

Affected Environment

The park has no designated critical habitat for any federally listed species. According to a November 2007, listing of federally protected species (see Appendix A) and the Texas Parks and Wildlife Department's listing of October 30, 2007 (See Appendix B retrieved from TPWD's website <http://gis.tpwd.state.tx.us/TpwEndangeredSpecies/DesktopDefault.aspx>), 16 species federally listed as endangered or threatened, 18 federally listed as species of concern, and 5 state protected species potentially occur at Padre Island National Seashore. Of these, the 23 species that have actually been documented at Padre Island National Seashore are listed in Table 2 in Section 1.4.10. The remaining 16 species have either not been documented and/or there is not suitable habitat within the park, and, therefore, would not be affected by the proposed project. Table 2 also includes the three state-protected species (*) that have been documented in the park and would be

addressed within this document because the NPS recognizes their sensitive status and provides them a high level of protection, similar to Federal listed species. Twelve species are dismissed from further analysis in Section 1.4.10 of this EA because they were not found in the project analysis area, or through the application of mitigation measures, would not be affected by the proposed action. This section describes the remaining 8 species and neotropical migratory songbirds (Cerulean Warbler, Black-capped Vireo, and Tropical Parula), and the effects under Alternatives A and B.

Eastern Brown Pelican (*Pelecanus occidentalis*) are federally and state listed as endangered. This bird's population fell to less than 100 birds between 1967 and 1974 (TPWD, <http://tpwd.state.tx.us/nature/endang/birds/bpelican.htm>). It is a coastal inhabitant whose range includes the southern United States and northern South America - from North Carolina to Venezuela and Trinidad in the Atlantic and from British Columbia to Chile on the Pacific coast.

This species is found along salt bays, beaches, and oceans. It is generally found near shallow waters adjacent to the coast, especially on sheltered bays. Occasionally Brown Pelicans are seen well out to sea. Brown Pelicans feed almost entirely on fish including menhaden, smelt, and anchovies but can occasionally feed on crustaceans.

Brown pelicans nest in colonies on isolated islands where they are safe from predators. These islands may be either bare or rocky or covered with small mangroves, shrubs, or other trees. Stray individuals may appear on freshwater lakes inland. Nests may be a simple scrape, a heap of debris with a depression on the top, or a large stick nest located in a tree. Breeding season generally begins in early March and lasting until August. After the breeding season, flocks move north along both Atlantic and Pacific coasts. These birds return southward to warmer waters by winter. Small numbers of immatures regularly wander inland in summer, especially in the Southwest (Peterson Multimedia Guides, <http://www.petersononline.com/birds/month/brpe/index.html>).

Eastern Brown Pelicans occur in the park year-round along both the Gulf and Laguna Madre sides of Padre Island. Individuals utilize the park for resting and foraging, and are typically found in the nearshore and washover habitats. Some individuals migrate south during the winter months and return during the breeding season. Brown Pelicans forage along the Gulf beach shoreline searching for fish near the surface of the water.

In 1993, Dr. Allan Chaney recorded 356 Brown Pelicans over 64 miles of beach between Yarborough Pass and Port Mansfield Channel during a 1992-1993 shorebird survey. Twelve individuals were observed on the Laguna Madre shoreline while the remaining 344 individuals were observed in the washover channels located south of the 33 mile marker. Forty-four individuals were observed between the park's north boundary and the 6.5 mile mark (Chaney *et. al.*, 1993a). In 1995, 553 birds were surveyed along the Gulf beach between the park's northern boundary and Yarborough Pass (Chaney *et. al.*, 1995b). In comparison, only one Brown Pelican was documented along the Laguna Madre shoreline between Yarborough Pass and the park's northern boundary (Chaney *et. al.*, 1995a). It is evident that Brown Pelicans prefer the Gulf beach shoreline instead of the Laguna Madre shoreline.

Brown Pelicans are generally found along the Gulf beach tide line in the morning hours and along the Laguna Madre shoreline and washover channels located in the southern portion of the park in the afternoons. When observed in the washover channels, Brown Pelicans were generally

associated with Double Crested Cormorants, gulls, and terns. Brown Pelicans are not observed in other habitats within the park.

Based on nearly thirty years of park colonial waterbird census data, Brown Pelicans have not been documented nesting within the park (TCWD, http://texascoastalprogram.fws.gov/Texas_Colonial_Waterbird_Census_2002.xls). However, they do nest on an island located in Corpus Christi Bay, which is located approximately 20 miles from the park and on islands located in the Laguna Madre outside of the park.

Black Tern (*Chlidonias niger*) is considered a species of concern at the federal level, and there is no critical habitat designated within the national seashore.

Black Terns inhabit temperate grassland, freshwater lake, freshwater rivers, prairies, lakeshores and marshes with fairly dense cattail or other marsh vegetation and pockets of open water (Null, 1997). The breeding habitat for Black Terns consists of dead canes of marsh or on floating masses of dead plants. Black Terns breed in north central United States northward into Canada and the Northwest Territories. Sporadic nesting is observed in California, Oregon, and Kansas. Wintering habitat is located along the Pacific coast of Mexico, Central and South America and the northern coast of South America. Non-breeding summer habitat consists of marine and coastal areas located along the Gulf of Mexico (Dunn and Agro, 1995).

Black Terns forage on insects such as dragonflies, moths, grasshoppers, and beetles, and freshwater fish when at the breeding grounds. Prey consists of small marine fish including anchovies and silversides, and they would eat crayfish and mollusks. Terns are seen foraging in the coastal waters off Padre Island National Seashore during the summer months. The Black Tern is a spring and fall migrant through the park, and is a common summer resident along the Gulf shore within Padre Island National Seashore. No breeding has been documented along the Texas coast (Rappole and Blacklock, 1985). Terns generally nest in colonies from March to early August.

In a 1994 – 1995 survey, 5,107 Black Terns were documented in the park, with three times as many black terns documented on the Laguna Madre side of the park than on the Gulf beach (Chaney *et. al.*, 1995b). These high totals were found in August, prior to their fall migration.

Piping Plover (*Charadrius melodus*), one of the least common members of the plover family, is considered threatened both federally and by the state of Texas. The population is currently estimated to be approximately 1,400 pairs (USFWS, <http://pipingplover.gws.gov/overview.html>).

The Piping Plover is a shorebird that migrates from Nova Scotia south to North Carolina and winters along the Gulf Coast from Florida to Mexico, along the Atlantic Coast from Florida to North Carolina, and in the Caribbean. They are found on sandy beaches, lakeshores, dunes, and often well above the water line (Sibley, 2000).

Piping Plovers breed along prairie-rivers and on alkali wetlands of the Northern Great Plains, sandy beaches along Great Lakes shorelines, and Atlantic coast beaches. These birds nest in shallow depressions built in the sand with both parents incubating the eggs and exhibiting a monogamous mating system. Breeding can occur between March and August with both fledglings and parents leaving the nest by September. It is clear that direct interference of nests by vehicles, humans, and dogs affects breeding success (Texas Parks and Wildlife Department,

<http://tpwd.state.tx.us/nature/ending/birds/piplover.htm>). Piping Plovers disturbed during nesting by flooding or other disturbance may abandon the nest and establish a second nest in the vicinity at a new location (U.S. Fish and Wildlife Service, <http://pipingplover.gws.gov/overview.html>).

Piping Plovers forage mostly on benthic invertebrates, insects, and crustaceans found within the inter-tidal areas of ocean beaches, wash over areas, mudflats, sand flats, wrack lines, and shorelines of coastal ponds, lagoons or salt marshes. Piping Plovers have been documented defending feeding territories, and foraging on benthic invertebrates and insect larvae along both the Laguna Madre and Gulf beach inter-tidal areas within the park.

Piping Plovers have been documented throughout the park as a winter and summer resident and fall/spring migrant (Chaney *et. al.*, 1993a, 1993b, 1995a, and 1995b). Piping Plovers are generally found along the Laguna Madre, Gulf beach, and washover channels within the park and occur at the park 11 months of the year with the exception of February (Chaney *et. al.*, 1993a and 1993b), with the highest concentrations occurring between August and December. September typically has the highest numbers (Chaney *et. al.*, 1995b) of Piping Plovers found in the park. Padre Island National Seashore protects substantial acreage of wintering habitat for the Piping Plover, with the most important area being the broad wind tidal flats located at the north boundary of the park. It is estimated that between 60-65% of all Piping Plovers winter in South Texas (Chaney *et. al.*, 1995a).

From 1992 – 1993, a study documented 602 plovers over the entire 60 miles of south beach, with 400 of these being found along the Gulf beach foreshore (Chaney *et. al.*, 1993a). Of the 600 birds observed, 87 Plovers occurred between the zero and 12-mile mark accounting for nearly 14% of the total number of Plovers counted (Chaney *et. al.*, 1993a). In 1994 – 1995, 150 plovers were documented between the zero and 15-mile mark on the Gulf Beach with the majority of these inhabiting the Gulf beach foreshore (Chaney *et. al.*, 1995b).

No nesting has been documented in south Texas or Padre Island National Seashore to date, and there is no critical habitat designated for this species. In 2000, the US Fish and Wildlife Service proposed 80% of the park as Piping Plover critical habitat. Final habitat designation figures did not include Padre Island National Seashore as critical habitat. Part of the reason was that the species is already protected by existing NPS regulations, policies, and management measures, and designating critical habitat would not provide a greater level of protection.

Northern Aplomado Falcon (*Falco femoralis septentrionalis*) is federally and state listed as endangered and considered a rare species at Padre Island National Seashore. Over the past ten years, sightings of individual Northern Aplomado Falcons have increased. Sightings are generally concentrated in the park along the main road, beach foredunes, and grasslands of the Northern ten miles of the park and occur primarily in winter and early spring. The most recent park sighting of a Northern Aplomado Falcon occurred in spring 2006 approximately 37 miles south of the end of Park Road 22. Individuals sighted appear to be transients, and no established adult pairs, territories, or nests have been documented within the park. The impacts to this species are similar to those for the Peregrine Falcon.

Peregrine Falcon (*Falco peregrinus*) has been federally de-listed but is still listed as endangered at the Texas state level and is a migratory species that winters along the Gulf of Mexico. They are known as common winter resident of PAIS, arriving sometime in early fall and departing mid-May (Chaney *et. al.* 1993a). They are increasingly common at the park, especially in the fall during

migration. These birds are generally concentrated in the southern portion of Padre Island National Seashore, which is unique in that it is a main component of the migration route "staging area," particularly for juveniles, during the spring and fall migration (Maechtle 1993). From actual counts, more than 2,000 Peregrine Falcons have utilized this area annually during migration (Maechtle 1993).

Peregrine Falcons forage along the Laguna Madre shoreline, and rest on any higher elevation, typically on the foredunes along the Gulf beach (Chaney *et. al.* 1995b). The Gulf beach is a very important stopover area for foraging, resting, and is a landmark guide for many migratory birds (Chaney *et. al.* 1993a). Padre Island National Seashore and South Padre Island are the only known localities in the Western Hemisphere where Peregrine Falcons can be found in such high concentrations during their spring migration. No critical habitat has been designated for this species at the park.

White-tailed Hawk (*Buteo albicaudatus*) is not federally listed but is listed as threatened by the state. There is no critical habitat designated for these species in the park.

The White-tailed Hawk occurs year round in southern Texas and are most visible in the grassland prairies near the coast, often where there are only scattered bushes, yuccas, or large cacti (Alsop 2001). White-tailed Hawks are considered common to uncommon in south Texas (Rappole and Blacklock 1994). Within the park, the White-tailed Hawk is common during the winter months and less common throughout spring, summer, and fall (McCracken and Clark 1990).

Bird surveys have indicated that White-tailed Hawks generally prefer the western portion of the park along the Laguna Madre (Chaney *et. al.* 1995b). Nesting White-tailed Hawks generally occur in trees and small shrubs in grasslands of the northern portions of the park. Between six and ten nests may be found in the park each year (Carey Haralson, Texas Tech University researcher, personal communication).

Ferruginous Hawk (*Buteo regalis*) is listed as a Federal Species of Concern. Historically this species bred in Texas but currently nesting is limited to the northwestern Panhandle of Texas between winter and mid-summer months. The Ferruginous Hawk has been documented within grassland habitats of the park but is considered rare with less than one bird sighted a year during the winter months (McCracken and Clark 1990).

Loggerhead Shrike (*Lanius ludovicianus*) is considered a species of concern at the federal level. This species is a permanent resident throughout most of the state but is uncommon to rare in southern Texas (Rappole and Blacklock 1994). Loggerhead Shrikes commonly occur in park grasslands throughout the park and black willow and small shrub habitats that occur in the northern section of the park. This species is common during the spring, fall, and winter (McCracken and Clark 1990) and considered rare in summer (Rappole and Blacklock 1994). There has been no documented nesting of Loggerhead Shrikes at Padre Island National Seashore.

Neotropical Migratory Songbirds. Padre Island National Seashore provides migratory habitat for a broad number of Neotropical migratory songbirds that occur within the park during the spring and fall migrations. Several of these species are listed as federal species of concern, threatened, endangered, or state listed as threatened or endangered. Some species that have been documented

in the park include Black-capped Vireo (*Vireo atricapillus*), Tropical Parula (*Parula pitiayumi*), and Cerulean Warbler (*Dendroica cerulea*).

Impacts on Species of Management Concern under Alternative A, No Action

Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts on species of management concern. However, impacts would continue as a result of continuing operation of the pigging facility and pipelines.

Weekly vehicle access along a 3.3 mile segment of Gulf beach displaces pelicans, terns, and Piping Plovers causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement is temporary until the vehicle passes. Operation of the pipelines and the pigging facility could continue for the long-term, for 20 years or longer.

HPL is required to confine vehicle use above the “wet-line” per their approved Plan of Operations. This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, large vehicles associated with maintenance and monitoring of the pipelines are grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph for park visitors. This helps reduce the amount of disturbance on the Eastern Brown Pelicans, Black Terns, and Piping Plovers, as reducing speed and the number of times the bird is displaced would lessen the overall impact to them. It is known that reduced speed does have less of an effect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated.

The time of year when the highest concentrations of Piping Plovers occur at the park is between September and December. Based on previous studies, approximately 14% of the total Piping Plovers occurring in the park are likely to be utilizing this segment of Gulf beach. Piping Plovers utilize both sides of the park depending on available habitat and time of day, but do not nest at the park.

Resting raptors are confined to high points, usually on the dunes, but also in limited tree habitat along the Laguna Madre shoreline. Vehicle or pedestrian traffic might on occasion displace a resting raptor from its perch. However, the distance between vehicle traffic and a resting raptor is sufficiently great not to cause raptors to normally do so.

Existing impacts would continue as the result of continuing operations of the Six Pigs Facility on approximately 1.5 acres, and vehicle access to and from the operations area along park roads and 3.3 miles of the Gulf of Mexico beach, resulting in localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on species of management concern could result from the continuing operation of nonfederal oil and gas operations within and adjacent to the park and future drilling and production operations, park development and operations, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico, and park visitor uses. As some oil and gas operations are developed in the park, others

would be plugged and abandoned, and reclaimed, and therefore, impacts would be distributed over time. Park staff and HPL currently use Park Road 22, and the Gulf beach. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants, but with the application of mitigation measures the potential for leaks and spills should be reduced. These cumulative actions could result in short to long-term, negligible to minor, direct and indirect, adverse impacts on suitable habitat, localized at developments and activities throughout the park. The continuing operation of the HPL pipelines and the pigging facility has a low contribution towards these cumulative effects.

Conclusion

Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts. Existing impacts would continue as a result of the continuing operation of the HPL pipelines and pigging facility, and vehicle access along the Gulf beach, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts.

The continuing operation of the pipelines and pipeline pigging facility is an appropriate in accordance with §§1.5 and 8.12 of the *NPS Management Policies 2006*. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of the *NPS Management Policies 2006*.

Because there would be no major, adverse impacts to species of management concern whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's General Management Plan or other relevant National Park Service planning documents, there would be no impairment of the park's species of management concern.

Impacts on Species of Management Concern under Alternative B, Proposed Action

Under Alternative B, Proposed Action, the communications tower would be installed on an existing anchor at the Six Pigs facility. Vehicle access to the pigging facility would decrease because the communications tower would eliminate the need for HPL to monitor the pigging facility on-site.

HPL would use a 3.3 mile segment of Gulf beach to access its proposed tower site to transport the pre-fabricated sections of the tower. Vehicles would displace pelicans, terns, and Piping Plovers, causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary during the installation of the communications tower. Shorebirds disturbed by vehicle traffic on the beach are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior, and this is expected to be the same for the pelicans, terns and Piping Plovers for the duration that HPL vehicles would travel along the 3.3 mile section of Gulf beach to access the Six Pigs facility to install

the communications tower. It is anticipated that it would take approximately 1 day to transport the tower components, and up to several days for the work crew to access the site to complete the assembly of the tower.

HPL would be required to confine vehicle use above the “wet-line” per their approved Plan of Operations. This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, large vehicles associated with this project would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph for park visitors. This should reduce the amount of disturbance on the Eastern Brown Pelicans, Black Terns, and Piping Plovers, as reducing speed and the number of times the bird is displaced would lessen the overall impact to them. It is known that reduced speed does have less of an effect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

The proposed project is expected to take place between February and March 2008. The time of year when the highest concentrations of Piping Plovers occur at the park is between September and December. Based on previous studies, approximately 14% of the total Piping Plovers occurring in the park are likely to be utilizing this segment of Gulf beach. Piping Plovers utilize both sides of the park depending on available habitat and time of day, but do not nest at Padre Island. Resting raptors are confined to high points, usually on the dunes, but also in limited tree habitat along the Laguna Madre shoreline. Vehicle or pedestrian traffic might on occasion displace a resting raptor from its perch. However, the distance between vehicle traffic and a resting raptor is sufficiently great not to cause raptors to normally do so.

Tower installation would have short-term, direct impacts in the grassland habitat surrounding the 1.5-acre Six Pigs facility. The grassland habitat is preferred by the White-tailed and Ferruginous Hawks. Installation activities could displace resting raptors resulting in localized, short-term, negligible to minor, direct impact on raptors. However, the proposed project is located in habitat that is void of trees and, therefore, impacts on resting raptors would be very limited. Northern Aplomado Falcons, White-tailed Hawk, and Ferruginous Hawk utilize grassland habitats for foraging and may be impacted by the proposed project. These raptors would be displaced by traffic operating along the access road and pad. The communications tower could provide a perch for raptors after installation which would provide a long-term, negligible benefit.

Collisions of birds with tall structures have been well documented since 1949 (Aranoff 1949). It is estimated that over 500 million birds are killed annually in the US due to anthropogenic sources such as collisions with buildings, towers, vehicles, powerlines, and wind turbines (Erickson et al., 2005). Birds flying in poor visibility conditions do not see the structure in time to avoid it, creating a higher threat to fast flying birds such as waterfowl or shorebirds. These collisions can occur during the day in low light conditions, when obscured by fog, or at night, especially with unlighted towers. Taller towers cause more bird mortality than shorter ones. The American Bird Conservancy recommends following several guidelines to minimize the avian collision hazard with towers including: the tower height being below 199 feet, minimizing the tower footprint, allowing access to tower sites for avian monitoring, and use no lighting or only shielded lighting (Shire et al. 1979).

Alternative B, Proposed Action, would result in localized, short- to long-term, negligible to minor, direct and indirect adverse and beneficial impacts on species of management concern.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on species of management concern would be similar to those described under No Action, with localized, short to long-term, negligible to minor, direct and indirect adverse cumulative impacts on species of management concern. Installation of the communications tower would have a low contribution towards these cumulative effects.

Conclusion

Under Alternative B, Proposed Action, the communications tower would be installed and result in localized, short to long-term, negligible to minor, direct and indirect, adverse and beneficial impacts on species of management concern. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to minor, direct and indirect adverse impacts.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed communications tower is an appropriate use in accordance with §§1.5 and 8.12 of the *NPS Management Policies 2006*. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of the *NPS Management Policies 2006*.

Because there would be no major, adverse impacts to species of management concern whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's General Management Plan or other relevant National Park Service planning documents, there would be no impairment of the park's species of management concern.

3.8 Impacts on Visitor Use and Experience

Affected Environment

Most park development is located in the northern portion of the park. Current park development includes a visitor center, entrance station, park headquarters and maintenance facilities, campground, and the Bird Island Basin recreational area. Please refer to the section "Park Development and NPS Operations" in the introduction to this section for an expanded description of park development.

Visitor use typically begins to increase in May and peaks in August, with the fewest visitors in December. Annual park visitation in 2005 was 668,380, representing a 3.5% increase from 2004. Scott and Lai's (2004) publication, "A Survey of Visitors to Padre Island National Seashore: A Final Report," in conjunction with Ditton and Gramann's (1987) publication, "A survey of Down-Island Visitors and Their Use Patterns at Padre Island National Seashore," indicated the following patterns:

1. Twenty-seven percent of visitors interviewed reported traveling no farther down-island than Milepost 0, the end of the paved road (Park Road 22).
2. Thirty-eight percent of beach users interviewed utilize the first ten miles of south beach for their visit.
3. Thirty-five percent of interviewed visitors travel south of Little Shell Beach, even though individual destinations south of Little Shell Beach do not display high visitation.
4. Visitation patterns are similar in July, August, and September.
5. More anglers use areas south of Yarborough Pass (15-mile Marker) than beach users.

The beach areas can be divided up into two-wheel drive accessible, four-wheel drive recommended, and "closed" beach (no vehicle use). The communications tower project area encompasses the northern portion of the park, from Park Road 22 to the proposed site west of the dunes, 3.3 miles south of the end of the pavement.

The Gulf shoreline is used for recreational opportunities such as surf fishing, swimming, shell collection, sunbathing, camping, and vehicle access to more remote areas of the beach, by an estimated 494,601 visitors. Padre Island National Seashore estimates that 27% (180,462) of beach users concentrate their use on the Gulf shoreline at "North beach," the Malaquite Visitor Center adjacent to "closed" beach, and the zero-mile marker of "South beach."

Extrapolating visitation figures, the park estimates approximately 253,984 people recreate on the Gulf shoreline between the zero and the 10-mile marker of South Beach each year. Of these users, 70% (177,788 visitors) utilize only the first 5 miles (denoted by "4 wheel drive only" sign). Thirty-five percent (233,933 visitors) take the opportunity to access remote beach areas south of the 10-mile marker, such as Yarborough Pass and the Mansfield Channel that are accessible only to four-wheel drive vehicles.

Use of the backcountry, the area behind the dune line, where the Six Pigs facility is located, and across the island to the Laguna Madre, is less popular than the beach in part because of the lack of access, and regulations restricting the use of the dunes and wind tidal flats found in the center of the island.

The park is a dynamic dune system that is constantly changed by weather patterns. The park is a mixture of upland grasslands, extensive wetlands environments, and vegetated dunes. The general atmosphere of the island is one of undisturbed isolation and seemingly endless expanses of flat, sparsely vegetated beach land. The topography of the island is typically flat with the highest points being few dunes that can reach 40 feet. Extensive panoramas and vistas may be viewed from higher elevations such as ridges, foredunes, and especially the view tower at Malaquite Beach. Because of the low, horizontal character of the landscape, vertical features are extremely conspicuous and tend to focus an observer's view. The Six Pigs facility is located approximately one mile behind the dune line and in an area of the park that is far from any development.

Methodology

Visitor surveys and personal observations of visitation patterns combined with an assessment of services and recreational opportunities available to visitors under current management were used to estimate the effects of the actions in the alternatives.

- Negligible:** Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative. There is no expectation for endangered visitor health and safety from this project.
- Minor:** Changes in visitor use and/or experience would be detectable, although the changes would be slight. Few visitors would be aware of the effects associated with the alternative, but the effects would be slight. There is little expectation for endangering visitor health and safety from this project with the application of mitigating measures.
- Moderate:** Changes in visitor use and/or experience would be readily apparent. Many visitors would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes. Extensive mitigation is necessary to reduce risk of endangered visitor health and safety from oil and gas operations.
- Major:** Changes in visitor use and/or experience would be readily apparent and have important consequences. Most visitors would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes. Extensive mitigating measures could not reduce risk of endangering visitor health and safety from this project.

Impacts on Visitor Use and Experience under Alternative A, No Action

Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts on visitor use and experience. However, existing impacts would continue as the result of vehicle access along Park Road 22, the Gulf beach, visitor uses, and continuing operation of the HPL pipeline and pipeline pigging facility.

HPL makes weekly trips down the beach to monitor the pigging facility. For some visitors, their enjoyment of the Gulf beach may be disrupted by the passing of vehicles, including other park visitors and HPL vehicles, and the noise and emissions from those vehicles.

Weekly HPL vehicle access along the Gulf beach to monitor the Six Pigs facility would result in localized, intermittent but long-term, negligible to minor, direct and indirect, adverse impacts on visitor use and experience along the Gulf beach.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on visitor use and experience throughout the park could result from the visual impact of human development on the natural scenery associated with the continuing operation of nonfederal oil and gas operations within and adjacent to the park and future drilling and production operations, park development and operations, spills from oil and gas activities located within and adjacent to the park, including tanker traffic in the Gulf of Mexico, vehicle uses by oil and gas operators, park staff and visitors, and park visitor uses. Cumulative impacts could also result from conflicts between visitor uses and over-use of park

resources and development. Degradation of park resources and values could affect park visitors' perception of the park and their experience. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre in the park and damage seagrass beds and fishery resources. Spills of hydrocarbons and other contaminating or hazardous substances could cause resource impacts in addition to posing serious health and safety concerns. Some oil and gas operations and park operations would introduce elevated noise and odors. With the application of mitigation measures detailed in the park's *Oil and Gas Management Plan 2000*, and incorporated into operators' plans of operations, impacts would be avoided or reduced.

Park staff, oil and gas operators, and park visitors use the Park Road 22 to enter the park. Vehicles on Park Road 22 include two and four-wheel drive cars and trucks, recreational vehicles, and on occasion, larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the primary visitor use period from May through September, peaking in August, and would be concentrated in the first five miles of Gulf beach. Vehicular traffic associated with oil and gas operations normally consists of four-wheel drive trucks, however, large vehicles, such as vacuum trucks, would travel the beach corridor approximately every 10 days to access existing oil and gas operations located throughout the park in order to perform routine maintenance.

Cumulative impacts on visitor use and experience throughout the park are expected to be localized near developments or activities, with short to long-term, minor to moderate, direct and indirect, adverse impacts. The continuing operation of the HPL pipelines and the pigging facility has a low contribution towards these cumulative effects.

Conclusion

Under Alternative A, No Action, the communications tower would not be installed, resulting in no new impacts. Existing impacts would continue as a result of the continuing operation of the HPL pipelines and pigging facility, and vehicle access along the Gulf beach, resulting in localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts on visitor use and experience.

Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine operations, and visitor uses are expected to result in short to long-term, minor to moderate, direct and indirect, adverse impacts.

Impacts on Visitor Use and Experience under Alternative B, Proposed Action

Under Alternative B, Proposed Action, the communications tower would be installed, resulting in the long-term modification of the natural scene. Impacts on the visitor from installation of the tower include the negative visual impacts on visitor experience due to the visual obstruction of the natural scene over the long-term life of the tower for 20 years or longer.

Over the period of 1 day, a few trucks will be used to transport the pre-fabricated tower components along Park Road 22 and approximately 3.3 miles of the Gulf beach to access the Six Pigs facility. However, after the installation of the tower, the weekly truck trip to the Six Pigs

facility would be reduced because the tower would provide continuous remote monitoring of the pipelines.

HPL's vehicle access, project installation, and tower would result in the long-term modification of the natural scene resulting in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts, on visitor use and experience in the area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on visitor use and experience throughout the park would be similar to those described under No Action, with short to long-term, minor to moderate, direct and indirect, adverse impacts. Installation of the communications tower would have a low contribution towards these cumulative effects.

Conclusion

Under Alternative B, Proposed Action, the communications tower would be installed, resulting in the long-term modification of the natural scenery, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts, on visitor use and experience. Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with short to long-term, minor to moderate, direct and indirect, adverse impacts.

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4.0 CONSULTATION AND COORDINATION

A Notice of Availability for the supplement, EA, and draft Floodplain Statement of Findings will be published on the NPS' Planning Environment and Public Comment System (PEPC), announcing the availability of these documents for a 30-day public review and comment period.

Following the 30-day public review and comment period, NPS will consider the written comments received. Additional mitigation measures resulting from the public involvement process may be applied by the NPS as conditions of approval of the supplement. Copies of the decision document will be sent to those who comment on the EA and draft Floodplain Statement of Findings during the public review period, or request a copy.

4.1 Individuals and Agencies Consulted

Persons and agencies contacted for information, or that assisted in identifying important issues, developing alternatives, or analyzing impacts are listed below:

Houston Pipeline Corporation

William Linnehan

Agencies

Mary Orms, U.S. Fish and Wildlife Service, Corpus Christi, TX

Debra Beene, Texas Historical Commission, Austin, TX

National Park Service

Intermountain Regional Office-Santa Fe

Jill Cowley, Historical Landscape Architect

Art Ireland, Archeologist

Washington Office, Natural Resource Program Center, Water Resources Division

Kevin Noon, Wetland Scientist, Lakewood, CO

Mike Martin, Hydrologist, Ft. Collins, CO

Padre Island National Seashore

Darrell Echols, Chief, Division of Science and Resources Management, PAIS, NPS

Mark Biel, Biologist, Division of Science and Resources Management, PAIS, NPS

4.2 List of Document Recipients

The EA and draft Floodplain Statement of Findings will be sent to the following:

Houston Pipeline Corporation

William Linnehan

Congressional Delegation

Senator Kay Bailey Hutchison

Senator John Cornyn

Honorable Ruben Hinojosa

Honorable Solomon P. Ortiz

Honorable Lamar Smith

Agencies

U.S. Department of the Interior - Office of the Solicitor

Barry Roth, Washington, DC

Robert Eaton, Santa Fe, NM

National Park Service

Mike Snyder, Director, Intermountain Region, Lakewood, CO

Linda Dansby, Regional Minerals Coordinator, Santa Fe, NM

Chris Turk, Regional Environmental Quality Coordinator, Lakewood, CO.

Carol McCoy, Geologic Resources Division, Denver, CO

Kevin Noon, Water Resources Division, Denver, CO

Mike Martin, Water Resources Division, Ft. Collins, CO

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Arlene Wimer, Lake Meredith NRA/Alibates Flint Quarries National Monument, TX

Fulton Jeansonne, Big Thicket National Preserve, TX

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Lloyd Mullins, U.S. Army Corps of Engineers, Corpus Christi, TX

Samuel Coleman, U.S. Environmental Protection Agency, Dallas, TX

District Conservationist, National Resources Conservation Service

Regional Director, Region VI, Federal Emergency Management Agency

State Government

Senator Juan "Chuy" Hinojosa

Senator Eddie Lucio

Senator Judith Zaffirini

Senator Kirk Watson

Representative Solomon Ortiz Jr.

Representative Juan Garcia

Representative Aaron Pena

Representative Juan Escobar

Representative Elliott Naishtat

Jerry Patterson, Commissioner, Texas General Land Office, Austin, TX

Debra Beene, Texas Historical Commission, Austin, TX

Texas Parks and Wildlife Department, Austin, TX

Texas Parks and Wildlife Department, Corpus Christi, TX

Sinoel Contreras, Texas Commission on Environmental Quality, Corpus Christi, TX

Fermin Munoz, Railroad Commission of Texas, Oil and Gas Division Corpus Christi, TX

Pat Alba, Texas Coastal Management Program

Tribal Interest

Anthony Street, President, Tonkawa Tribe

Environmental Interests

Phyllis Dunham, Regional Director, Sierra Club, Austin, TX

Pat Suter, Coastal Bend Sierra Club, Corpus Christi, TX

Ray Allen, Coastal Bend Bays and Estuaries Program

Coastal Bend Bays Foundation

Local Papers

Corpus Christi Caller Times

North Padre Island Moon

4.3 Preparers

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APPENDIX A – U.S. Fish and Wildlife Service Federally-Protected Species List for Kleberg County.

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
American alligator	<i>Alligator mississippiensis</i>	Reptiles	DM, SAT				P
bald eagle	<i>Haliaeetus leucocephalus</i>	Birds	DM				P
black lace cactus	<i>Echinocereus reichenbachii</i> var. <i>albertii</i>	Flowering Plants	E				P
brown pelican	<i>Pelecanus occidentalis</i>	Birds	DM, E				P
green sea turtle	<i>Chelonia mydas</i>	Reptiles	E, T				P
Gulf Coast jaguarundi	<i>Herpailurus (=Felis) yagouaroundi cacomitli</i>	Mammals	E				P
hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Reptiles	E				P
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Reptiles	E				P
leatherback sea turtle	<i>Dermochelys coriacea</i>	Reptiles	E				P
loggerhead sea turtle	<i>Caretta caretta</i>	Reptiles	T				P
northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	Birds	E				P
ocelot	<i>Leopardus (=Felis) pardalis</i>	Mammals	E				P
piping Plover	<i>Charadrius melodus</i>	Birds	E, T				P
slender rush-pea	<i>Hoffmannseggia tenella</i>	Flowering Plants	E				P
south Texas ambrosia	<i>Ambrosia cheiranthifolia</i>	Flowering Plants	E				P

APPENDIX B – Texas Parks and Wildlife Annotated County Lists of Rare Species (October 30, 2007)

KLEBERG COUNTY

AMPHIBIANS

		Federal Status	State Status
Black-spotted newt	<i>Notophthalmus meridionalis</i>		T
can be found in wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods; Gulf Coastal Plain south of the San Antonio River			
Sheep frog	<i>Hypopachus variolosus</i>		T
predominantly grassland and savanna; moist sites in arid areas			
South Texas siren (large form)	<i>Siren sp 1</i>		T
wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain; southern Texas south of Balcones Escarpment; breeds February-June			

BIRDS

		Federal Status	State Status
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	DL	E
year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.			
Arctic Peregrine Falcon	<i>Falco peregrinus tundrius</i>	DL	T
migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.			
Audubon's Oriole	<i>Icterus graduacauda audubonii</i>		
scrub, mesquite; nests in dense trees, or thickets, usually along water courses			
Brown Pelican	<i>Pelecanus occidentalis</i>	LE	E
largely coastal and near shore areas, where it roosts and nests on islands and spoil banks			
Eskimo Curlew	<i>Numenius borealis</i>	LE	E
historic; nonbreeding: grasslands, pastures, plowed fields, and less frequently, marshes and mudflats			

Mountain Plover*Charadrius montanus*

breeding: nests on high plains or shortgrass prairie, on ground in shallow depression;
 nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

Northern Aplomado Falcon*Falco femoralis septentrionalis*

LE

E

open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species

Northern Beardless-Tyrannulet*Camptostoma imberbe*

T

mesquite woodlands; near Rio Grande frequents cottonwood, willow, elm, and great leadtree; breeding April to July

Peregrine Falcon*Falco peregrinus*

DL

E T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, thus the species level shows this dual listing status; because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.

Piping Plover*Charadrius melodus*

LT

T

wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats

Reddish Egret*Egretta rufescens*

T

resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

Sennett's Hooded Oriole*Icterus cucullatus sennetti*

often builds nests in and of Spanish moss (*Tillandsia unioides*); feeds on invertebrates, fruit, and nectar; breeding March to August

Snowy Plover*Charadrius alexandrinus*

formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast

Sooty Tern*Sterna fuscata*

T

predominately 'on the wing'; does not dive, but snatches small fish and squid with bill as it flies or hovers over water; breeding April-July

Southeastern Snowy Plover*Charadrius alexandrinus tenuirostris*

wintering migrant along the Texas Gulf Coast beaches and bayside mud or salt flats

Texas Botteri's Sparrow*Aimophila botterii texana*

T

grassland and short-grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses

Western Burrowing Owl*Athene cunicularia hypugaea*

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant

lots near human habitation or airports; nests and roosts in abandoned burrows

Western Snowy Plover *Charadrius alexandrinus nivosus*

uncommon breeder in the Panhandle; potential migrant; winter along coast

White-faced Ibis *Plegadis chihi* T

prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats

White-tailed Hawk *Buteo albicaudatus* T

near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May

APPENDIX C – Draft Floodplain Statement of Findings

STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11988 (FLOODPLAIN MANAGEMENT)

HOUSTON PIPELINE CORPORATION (HPL) INSTALLATION OF A 50' COMMUNICATIONS TOWER AT PADRE ISLAND NATIONAL SEASHORE, TEXAS

INTRODUCTION

In accordance with National Park Service (NPS) regulations for nonfederal oil and gas rights, Houston Pipeline Corporation (HPL) has submitted a supplement to their 1998 Plan of Operations to the NPS to install a 50' communications tower at the Six Pigs pipeline pigging facility on Padre Island National Seashore (PAIS) (Figure 1) to allow HPL personnel to remotely monitor the site, thereby decreasing the amount of traffic within the Park necessary for accessing the site. The project includes the proposed excavation and fill of less than 0.03 acres within the pre-disturbed pipeline pigging facility located approximately 3.3 miles south of the end of Park Road 22, and 1 mile west of the Gulf beach.

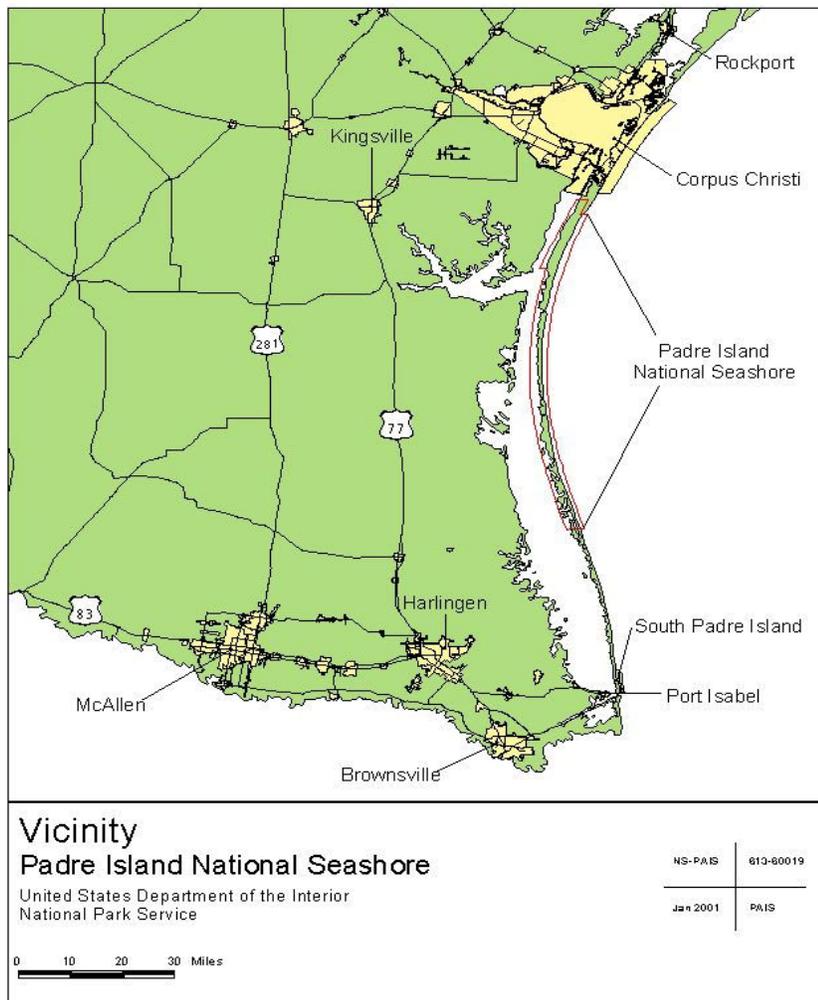


Figure 1. Vicinity Map.

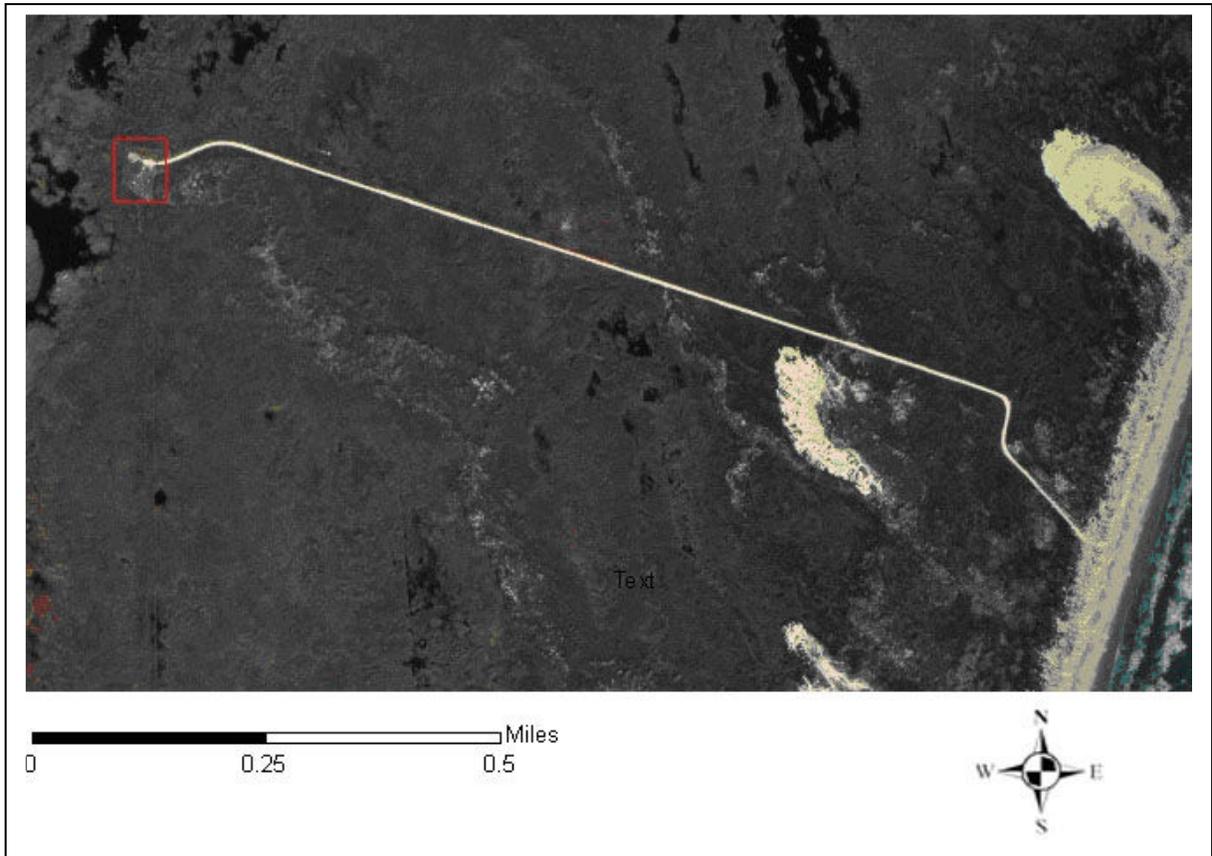


Figure 2. Existing Six Pigs Road from the Gulf of Mexico Beach to the Six Pigs facility.

Access

All vehicles used during the tower installation would enter the Park via Park Road 22 to the Gulf beach, proceed south approximately 3.3 miles, then west one mile on the Six Pigs access road.

Surface Location

HPL's 50' communications tower site was selected because it avoided impacts to undisturbed habitat, dunes, and other sensitive resource areas. The proposed anchor site is located within a previously disturbed operations area and is less than 0.03 acres.

Several 4-wheel drive pickups, short trailers, and a backhoe will be used to construct the tower and transport materials. Conventional concrete construction techniques would be used to construct the 3-5 ft³ footers. A 6 ft X 6 ft X 2.5 ft. hole will be excavated and pre-built rebar forms will be installed with stakes and bracing to hold the forms level. Pre-cast concrete blocks will be placed in the bottom of the excavation to support the rebar matting and tower base. Concrete will be mixed and installed on site and will be allowed to dry for at least 48 hours. The remaining excavation will be re-filled with the removed ground material after the forms are removed. After the foundation is ready, HPL's contractor, Trico Tower Service will install the tower and antenna system.

Site Description

PAIS is located on a largely undeveloped barrier island in southern Texas, along the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind,

gulf currents, and waves. The seashore's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore-island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre, back-island dunes, and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 man-made spoil islands in the Laguna also lie within the National Seashore.

A dune line along the Gulf beach provides protection from hurricanes and tropical storm events for the island's backcountry and the Texas mainland. The dunes are fragile and once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become primary dunes as vegetation stabilizes more sand, resulting in a line of dunes forming parallel to the beach that varies in height from less than 6 feet to approximately 50 feet above sea level. This primary dune line extends the entire length of Padre Island National Seashore, broken only in a few places where storm washover channels have occurred, or road cuts have been constructed.

Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water is typically 1-4 feet deep, depending upon the season.

According to the Final Oil and Gas Management Plan/Environmental Impact Statement and Federal Emergency Management Agency floodplain maps, most of the Park and all of the proposed project area lie within 100-year floodplains. The exception is the higher dune areas.

Nature of Flooding in the Area

Hurricanes, tropical storms, or other storm events that bring high winds and/or substantial rainfall may result in periodic flooding, due to the low elevations. Hurricanes strike the Texas coastline twice every three years for an average rate of 0.67 storms per year. The most recent hurricane to impact the Park was Hurricane Brett in 1999, which came ashore 50 miles south of park headquarters and came ashore as a Category 4 hurricane. Prior to that event, Hurricane Allen in 1980 was the last hurricane to directly impact the Park. The hurricane season begins June 1 and continues through November 30.

Justification for Use of the Floodplain

Two legislative authorities identify how non-federal oil and gas interests would be managed by the NPS and include the Park's enabling legislation and the NPS Non-federal Oil and Gas Rights Regulations, 36 CFR Part 9, Subpart B.

Park Enabling Legislation - Congress included provisions allowing the original owners of oil and gas rights to retain these rights within the Park. As a result, the mineral estate underlying the Park is owned either privately or by the State of Texas and is protected by the U.S. Constitution.

One of the primary rights associated with the mineral interest is the right of reasonable access to explore for and develop the mineral interest. If the mineral interest holder chooses to exercise its right to explore for or develop its mineral interest, the NPS must grant reasonable access to do so. However, access to nonfederal oil and gas which requires access on, across, or through federally owned or controlled lands or waters within the Park is subject to the NPS's Nonfederal Oil and Gas Rights Regulations.

Non-federal Oil and Gas Rights Regulations, 36 CFR Part 9, Subpart B - The 9B regulations apply to operations that require access on or through federally owned or controlled lands or waters in connection with non-federally owned oil and gas in all National Park System units.

These regulations assist park managers in managing oil and gas activities so they may be conducted in a manner consistent with the NPS mandate to protect park resources and values. The application and implementation of these regulations on the ground must be assessed parkwide for each site-specific oil and gas activity to determine if these activities have the potential to impair park resources and values.

As a result of legislative requirements, there is no practical alternative to locating the proposed, well pad, access road, and flowline outside of the 100-year floodplain because the entire park, with the exception of the fore dunes, is located within floodplains. The formal designation of the floodplain status of Padre Island National Seashore was initially conducted by the Federal Emergency Management Agency's National Flood Insurance Program on August 17, 1971, and revised on March 1, 1984.

Site-Specific Flood Risk

The greatest percentage of hurricanes occurs in August, September, and October. The number of tropical storms occurring during a season may vary from 4 to 12. The average for the past 40 years has been 10 storms per year within the Gulf of Mexico. The Corpus Christi area has had significant effects from only a small percentage of hurricanes, averaging one storm event every 15 years.

Under normal weather patterns, any flooding of the back island area or the beach face is of short duration. Winds associated with the passage of northern weather fronts during the winter, cause water to rise 1-3 inches and cover back island environments (wind tidal flats) until the wind returns to the southeast. This generally occurs over the course of 2-3 days. Storm events entering the Gulf of Mexico cause Gulf waters to rise, which when coupled with normal lunar tides, inundate the beach until the storm moves ashore. Normally 2-4 days are needed for water levels to recede and allow passage along the Gulf beach.

Padre Island N. S. utilizes the following four stage alert system when a tropical storm or hurricane enters the Gulf of Mexico.

- STAGE I ALERT: National Weather Service hurricane forecast and projected storm path is 72 hours from Padre Island.
- STAGE II ALERT: National Weather Service hurricane forecast and projected storm path is 60 hours from Padre Island or a Hurricane Watch has been declared.
- STAGE III ALERT: National Weather Service hurricane forecast and projected storm path is 36 hours from Padre Island, or a Hurricane Warning has been issued, or a Category 3, 4, or 5 hurricane is within 60 hours of landfall, or projected landfall is within 150 miles south of

Corpus Christi or 100 miles north of Corpus Christi, or the Superintendent deems step-up actions are warranted.

- STAGE IV ALERT will be put into effect when conditions for Stage III have occurred *and* projected hurricane landfall for the Texas Coastal Bend area is within 12 hours.

Should a storm suddenly develop in the western Gulf area, or if an approaching storm suddenly increases its forward speed, any or all of the alerts may be bypassed and the Park could immediately go under a STAGE III or IV ALERT.

Project Contingencies

Project impacts would be reduced by locating the proposed operations on existing upland areas and applying mitigation and restoration measures. As a result of applying mitigation and restoration measures, construction, drilling, and production operations would result in localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts on floodplains.

The possibility of severe or significant storm events has been taken into consideration during the planning of this project. HPL has developed hurricane preparedness and evacuation plan, which is included as appendices to HPL's Plan of Operations for the company's existing natural gas pipelines located in the Park. HPL's hurricane preparedness plan was developed in conjunction with the Park's hurricane plan.

Summary

The National Park Service concludes that there is no practical alternative for placement of HPL's 50' communications tower outside of designated floodplains. Therefore proposed installation and maintenance associated with the tower would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on water resources and floodplains. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11988: "Floodplain Management."

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