Commercial Launch Site

Addendum to Wetland Mitigation Plan

Revision 2

April 25, 2017

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1.0 Project Information

1.1 Background

The Federal Aviation Administration (FAA) Office of Commercial Space Transportation (AST) prepared an Environmental Impact Statement (EIS) to evaluate the potential environmental impacts that may result from the FAA Proposed Action of issuing launch licenses and/or experimental permits that would allow Space Exploration Technologies Corp. (SpaceX) to launch the Falcon 9 and Falcon Heavy orbital vertical launch vehicles and a variety of reusable suborbital launch vehicles from a launch site on privately owned property in Cameron County, Texas. Department of the Army Permit Number SWG-2012-00381 was issued in September 2014 authorizing the placement of fill material into 3.3 acres of waters of the United States (U.S.) for the purpose of constructing Space Exploration Technologies (SpaceX)'s Commercial Launch Site.

Per Permit Special Condition #3, in order to mitigate impacts to Waters of the U.S., SpaceX agreed to transfer the ownership of a 50-acre tract of land to the U.S. Fish and Wildlife Service (USFWS). The mitigation approach was presented in the SpaceX Commercial Launch Site Wetland Mitigation Plan (Approved September 2013).

During subsequent project design, SpaceX determined that potential wetland impacts will exceed the previously estimated and permitted 3.3 acres of fill material. SpaceX therefore revised the mitigation plan to account for this increased fill. The modification, which was approved by USACE in January 2016, includes a direct wetland impact of 5.55 acres (3.3 acres plus the additional 2.25 acres) plus an indirect impact to an additional 0.6 acres for a total of 6.15 acres of impact.

Mitigation for the additional 2.25 acres of impacts included a 19.125-acre land donation between the USFWS and TPWD. The TPWD donation, which has been completed, consisted of three parcels of land, 1.42 acres, 0.85 acres and 2.29 acres for a total of 4.56 acres.

At the time Space proposed to utilize an additional 14.625 acres Port of Brownsville owned land *(or SpaceX Additional Port Mitigation Land as described in December 2016 Mitigation Plan Addendum, Revision 11)*. Since the approval of the Addendum, SpaceX has not been able to secure ownership of the 14.625 acres of port-owned land. SpaceX is therefore proposing to further amend the Mitigation Plan to replace the port-owned land with an alternative mitigation property, also 14.625 acres, as described in this addendum. This 14.625 acres of land is located approximately 1 mile south of the 4.56 acres of land already donated to TPWD referenced above.

2.0 Compensatory Mitigation

2.1 Goals and Objectives

The goals and objectives associated with the project mitigation remain the same as presented in the approved December 2015 Commercial Launch Site Wetland Mitigation Plan, with the following revisions.

2.2 Site Selection

Description of the factors considered during the site selection process

The site selection process for replacing the 14.625 acres of port-owned land remained the same as described in the December 2015 Commercial Launch Site Wetland Mitigation Plan. The previously proposed 14.625 acres of land *(SpaceX Additional Port Mitigation Land)* was located approximately 2.14 miles from the Launch Control Center, and was contiguous with the previously donated 50-acres or "Port of Brownsville" mitigation land.

Previously proposed 14.625 acres of mitigation land

SpaceX proposed to replace with Port of Brownsville mitigation land with an alternative property that is located 1.2 miles south of the launch site, and is adjacent to both TPWD and USFWS land. In the figure below, the newly proposed mitigation land is the white outlined parcel, adjacent to the yellow parcel owned by USFWS. All land to the west is owned by TPWD.

Newly Proposed 14.625 acres of mitigation land

As previously committed, SpaceX will conduct an assessment of the donated properties. SpaceX will conduct the assessment annually until the properties are transferred. The assessment will:

- Document some basic biological condition criteria prior to transfer
- Be submitted to USACE and any other interested agencies
- Note any environmental concerns and report them as part of the assessment.

Newly proposed 14.625 acres of mitigation land (white; one parcel) relative to the previously donated 4.56 acres of mitigation land (green; three parcels)

2.3 Baseline Information/ Site History

The description of the proposed project site remains the same as described in the approved September 2013 Mitigation Plan.

The newly proposed mitigation land located approximately 1.2 miles south of the Vertical Launch Area. The parcel is located in Cameron County, within the South Laguna Madre watershed, the same watershed as the proposed project and the original Port Mitigation land (mitigation land for previously issued 404 Permit). It is a privately owned and isolated parcel surrounded by TPWD land, and will thus result in full local continuity of TPWD-owned wetland.

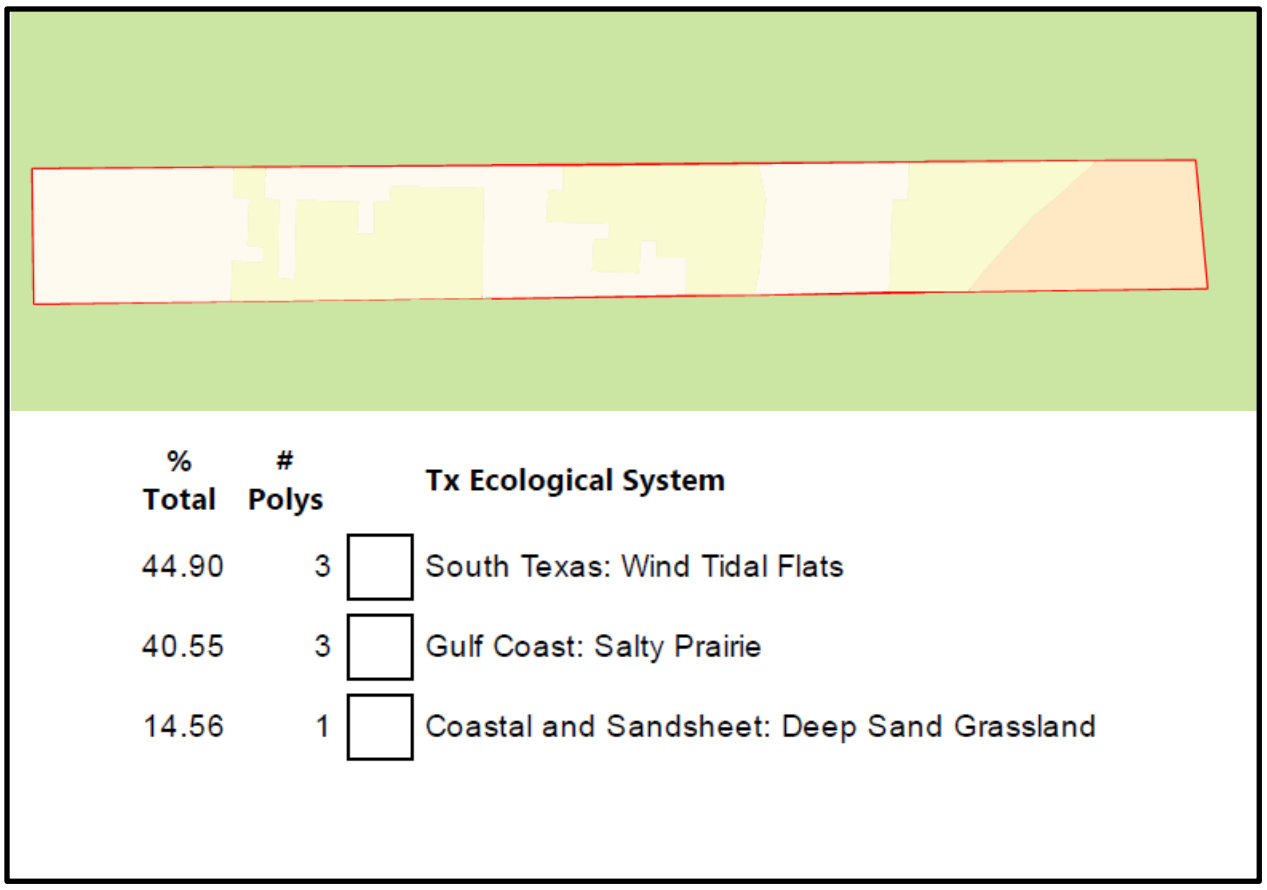
Newly Proposed Mitigation Land

Descriptions of Historic and Existing Plant Communities

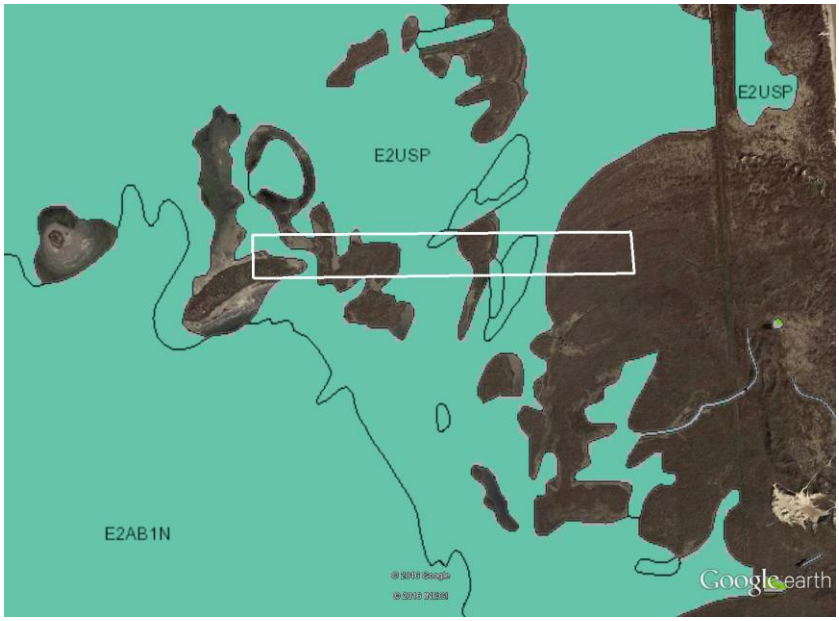
The description of historic and existing plant communities remain the same as described in the approved September 2013 Mitigation Plan.

The SpaceX newly proposed mitigation land consists of dunes, high marshes and tidal flats. Typical plants found in loma/tidal flats include sea ox-eye (Borrichia frutescens), saltwort (Batis maritima), and glasswort (Salicornia virginica) on vegetated portions of the flats, and gulf cordgrass (Spartina spartinae), Berlandier's fiddlewood (Citharexlyum berlandieri), texas ebony (Pithecellobium ebano) and yucca (Yucca treculeana) on higher lomas (Jahrsdoerfer and Leslie 1988; USFWS 1997).

As shown in the figure below, according to Texas ecological mapping, the mitigation area consists of South Texas: Wind Tidal Flats, Gulf Coast: Salty Prairie and Coastal and Sandsheet: Deep San Grassland.



A shown in the exhibit below, according to National Wetland Inventory mapping, the newly proposed mitigation land consists primarily of estuarine, intertidal unconsolidated shore, irregularly flooded wetland.



Mitigation Land National Wetland Inventory Map

Description of Historic and Existing Hydrology

The newly proposed mitigation land is located in the within South Laguna Madre watershed, which is within the Bahia-Grande Brownsville Ship Channel watershed, a 363-square mile subwatershed to the Southwestern Texas Coastal Basin. South Bay is directly adjacent and to the west of the Port Mitigation Land utilized in the initial 404 Permit. South Bay is an inland bay along the Gulf of Mexico located within the Laguna Madre hypersaline lagoon system and is the southernmost bay in Texas. South Bay is separated from the Gulf of Mexico by Brazos Island. On the northern boundary of South Bay is an inlet where water flows freely from South Bay into the Brownsville Shipping Channel, which connects the Port of Brownsville to the Gulf of Mexico. On the southern end of South Bay, is Boca Chica Bay where Boca Chica State Park is located. Boca Chica Bay, is a subdelta of the Rio Grande (FAA, 2014).

Soil Conditions

As mapped below, based on the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) web soil survey, the soil underlying the newly proposed mitigation land consists of Mustang fine sand (63.5%), Mustang fine sand, saline (21.8%), Galveston fine sand, hummocky (7.4%) and coastal dunes (7.4).

Cameron County, Texas (TX061)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
CU	Coastal dunes	1.6	7.4%
GA	Galveston fine sand, hummocky	1.6	7.4%
MS	Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded	13.5	63.5%
MU	Mustang fine sand, saline	4.6	21.8%
Totals for Area of Interest		**21.2**	**100.0%**

Soils found within the proposed mitigation site

2.4 Determination of Credits

SpaceX cannot mitigate impacts to Waters of the U.S. through credit purchase based on the unavailability of credits. In coordination with the USACE, SpaceX there proposes preservation in order to offset unavoidable impacts to Waters of the U.S. associated with the construction of the proposed project. The total compensatory mitigation ratio will be 8.5:1 (19.125-acre donation). The transfer of the properties will take place within 18 months of the start of construction.

2.5 Mitigation Work Plan

No additional impacts to Waters of the U.S. are anticipated as a result of establishing the newly proposed mitigation site. The sites consist of currently functioning wetland habitat. No grading, planting, soil management, erosion control measures or non-native plant species controls are therefore necessary or included in this plan.

2.6 Maintenance Plan

As previously discussed, SpaceX will donate the newly proposed mitigation land to TPWD SpaceX would therefore not be responsible for the ongoing maintenance of the property.

2.7 Performance Standards

As previously discussed, SpaceX will donate the newly proposed mitigation land to TPWD. SpaceX would therefore not be responsible for developing or tracking mitigation performance standards.

2.8 Monitoring Requirements

As previously discussed, SpaceX will donate the newly proposed mitigation land to TPWD. SpaceX would therefore not be responsible for the ongoing monitoring of the property.

2.9 Long-Term Management Plan

As previously discussed, SpaceX will donate the newly proposed mitigation land to TPWD. SpaceX would therefore not be responsible for the long-term management of the property.

2.10 Adaptive Management Plan

As previously discussed, SpaceX will donate the new proposed mitigation land to TPWD. SpaceX would therefore not be responsible for the long-term management of the property.

2.11 Short-term and Long-term Financial Assurances

As previously discussed, SpaceX will donate the newly proposed mitigation land to TPWD. SpaceX would therefore not be responsible for providing short and long-term financial assurances.

3.0 References

FAA 2014. Final Environmental Impact Statement, SpaceX Texas Launch Site. Volume I, Executive Summary and Chapters 1-14. http://www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/review/documents_progress/spacex_texas_launch_site_environmental_impact_statement/. Accessed February 23, 2015.

Jahrsdoerfer, S.E. and D.M. Leslie, Jr. 1988. Tamaulipan brushland of the Lower Rio Grande Valley of South Texas: description, human impacts, and management options. U.S. Fish and Wildlife Service, Biological Report 88(36).

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