

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WRITTEN RE-EVALUATION**

**Written Re-evaluation of the 2014 Final Environmental Impact Statement for the SpaceX
Texas Launch Site**

1. INTRODUCTION AND BACKGROUND

Introduction

This written re-evaluation (WR) determines whether supplemental environmental analysis is needed to support the Federal Aviation Administration's (FAA's) decision to issue launch licenses and/or experimental permits to Space Exploration Technologies Corp. (SpaceX) to conduct launches of the Falcon 9 and Falcon Heavy orbital vertical launch vehicles and a variety of reusable suborbital launch vehicles from a private launch site on privately owned property in Cameron County, Texas. The affected environment and environmental consequences of construction and operation of a private launch site in Cameron County, Texas were analyzed in the 2014 *Final Environmental Impact Statement for the SpaceX Texas Launch Site* (Final EIS). A Record of Decision (ROD) was issued for this action on July 9, 2014. Since publication of the Final EIS and ROD, SpaceX has proposed modifications to the site design of the control center (see Section 2.0). This WR provides the determination of whether the contents, analyses, and conditions of approval in the Final EIS and ROD remain current and substantially valid.

Issuance of launch licenses and experimental permits is a major Federal action subject to the requirements of the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code §4321 et. seq.). As such, the FAA must assess the potential environmental impacts of SpaceX's proposed modifications to the control center site design. The FAA's environmental policies and procedures for implementing NEPA (FAA Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures*) provide that the FAA may prepare a WR to determine whether the contents of previously prepared environmental documents remain substantially valid or whether significant changes to a previously analyzed proposed action require the preparation of a supplemental EIS.

In accordance with paragraphs 515 and 516 of FAA Order 1050.1E, Change 1, the preparation of a new or supplemental EIS is not necessary when the following can be documented:

1. The Proposed Action conforms to plans or projects for which a prior EIS has been filed and there are no substantial changes in the Proposed Action that are relevant to environmental concerns;
2. Data and analyses contained in the previous EIS are still substantially valid and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts; and
3. All pertinent conditions and requirements of the prior approval have, or will be, met in the current action.

Background

The NEPA process for SpaceX's original proposal was initiated with the publication of the Notice of Intent (NOI) in the *Federal Register* on April 10, 2012 (77 FR 21619-21620). In the NOI, the FAA invited the participation of Federal, State, and local agencies, Native American tribes, environmental groups, citizens, and other interested parties to assist in determining the scope and significant issues to be evaluated in the EIS. The NOI was published in area newspapers; flyers announcing the scoping meeting were posted in local libraries, gas stations, and within the surrounding communities; and notices were hand-delivered to the residents of Boca Chica Village.

A public scoping meeting was held on May 15, 2012, from 5:00 p.m. to 8:00 p.m., at the International Technology, Education, and Commerce Center in Brownsville, Texas.

The FAA published a Notice of Availability (NOA) of the Draft EIS in the *Federal Register* on April 19, 2013 (78 FR 23629-23630). The NOA described the Proposed Action, provided the public hearing date and time (May 7, 2013 from 5:00 p.m. to 8:00 p.m.), informed the public on how to obtain a copy of the Draft EIS, and initiated the public comment period. The FAA also announced the availability of the Draft EIS and the public hearing date in area newspapers. Flyers were posted in the local area to announce the NOA and comment period for the Draft EIS. Copies of the Draft EIS were distributed the week of April 8, 2013. The FAA sent notification letters, e-mails, and compact discs (CDs) containing the Draft EIS to individuals; Federal, State, and local agencies; elected officials; various interest groups that were part of the mailing list compiled during the scoping period; and Native American tribes.

At the request of Environmental Protection Agency (EPA) Region 6, the comment period was extended by 21 days until June 24, 2013 (78 FR 35067). The FAA held a formal public hearing in Brownsville, Texas on May 7, 2013.

The EPA issued an NOA for the Final EIS on June 6, 2014 (79 FR 32729). The FAA signed its ROD on July 9, 2014.

2. PROPOSED ACTION

The FAA's Proposed Action, which was the subject of the ROD and is described in full in Section 2.1 of the Final EIS, is to issue launch licenses and/or experimental permits to SpaceX. The launch licenses and/or experimental permits would allow SpaceX to conduct launches of the Falcon 9 and Falcon Heavy orbital vertical launch vehicles and a variety of reusable suborbital launch vehicles from a private launch site in Cameron County, Texas. To support these launches, SpaceX would construct vertical launch and control center areas in Cameron County, approximately 17 miles east-northeast of the Brownsville/South Padre Island International Airport and approximately 5 miles south of South Padre Island.

The previously approved Proposed Action remains the same as described in the Final EIS except for two modifications to the control center. These modifications are:

- Expand Parcel 1 by approximately 7.2 acres and exclude development in Parcels 2 and 3 as described in the Final EIS (see Figures 1, 2 and 3). Developed area for the control center would total 11.4 acres instead of the previously analyzed 13.4 acres. There would

be 2.0 acres of adjacent land held as “buffer.” While SpaceX has no current plans to develop these 2.0 acres, this land could be developed in the future. If so, the FAA would undertake further NEPA analysis to the extent necessary.

- Develop solar array infrastructure on Parcel 1 to generate power (see Figure 4). Installation of the solar array infrastructure would occur on land not previously considered in the Final EIS. The solar panels would not be mirrored; therefore, there would be no visual or wildlife-related effects from solar glare. The solar power would be collected by batteries that would be contained inside one of the control center buildings. The solar array would be used to power construction at the control center and may need to be supplemented with other power sources (as described in the Final EIS) for operation of the completed control center. The final Mega-Wattage to be produced would be between 500 kW and 4 MW spread between 1 and 7 acres of land. On the land itself, only 55% would be covered with arrays with the other 45% left bare. Thus, the area of disturbed land comprising the array would be between 0.55 and 3.85 acres. The arrays would be approximately 3 feet off the ground tilted slightly to the south (though the direction will eventually be optimized for maximum flux).

These modifications to the control center area are being analyzed in this WR. There would be no changes to operations as described in the Final EIS as a result of the control center area modifications.

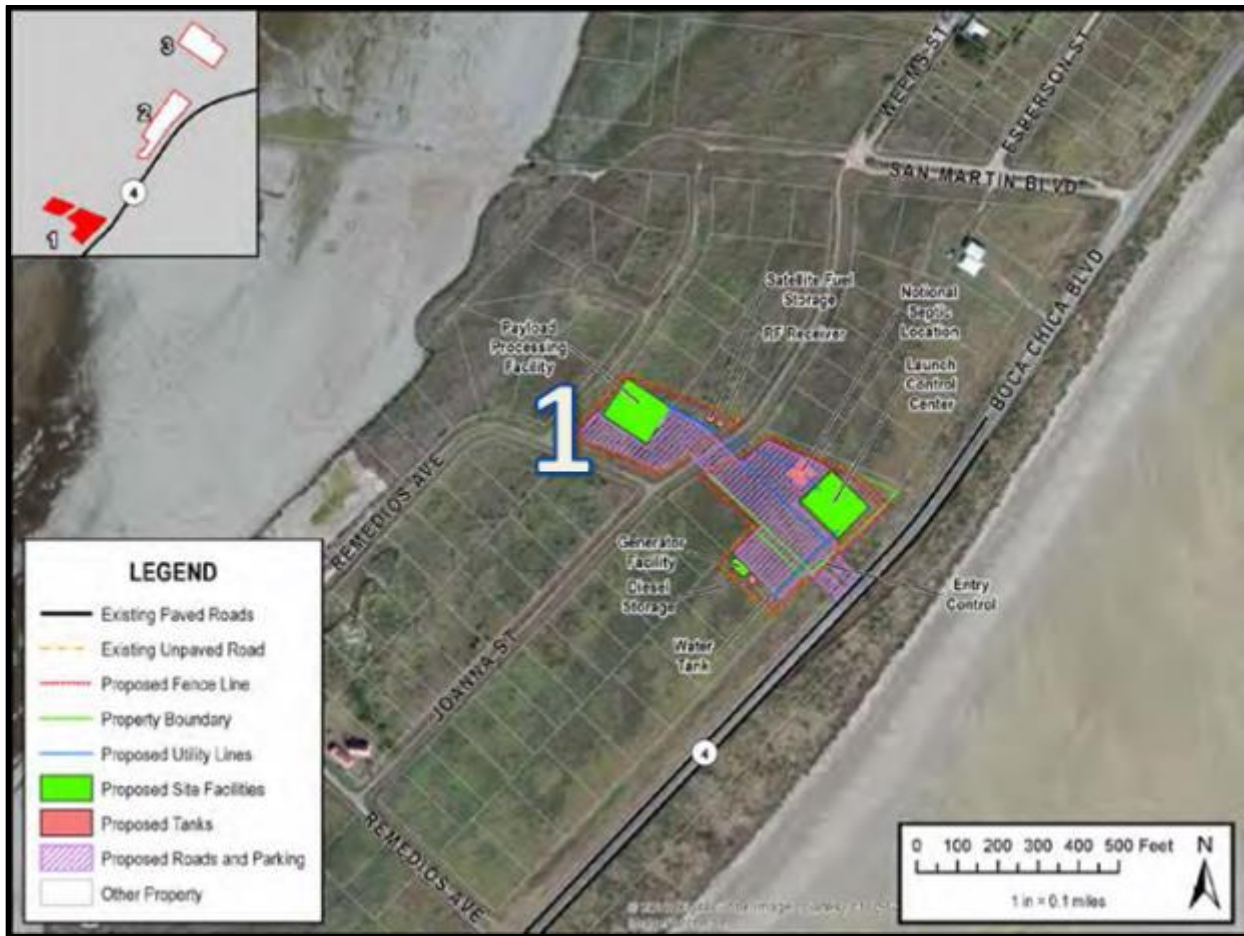


Figure 1. Control Center Area Site Layout – Parcel 1 (Exhibit 2.4-1b in Final EIS)



Figure 2. Control Center Area Site Layout – Parcels 2 and 3 (Exhibit 2.4-1a in Final EIS)

SpaceX proposes to no longer develop in the two parcels shown in Figure 2.



Figure 3. Newly Proposed Control Center Area – Parcel 1



Figure 4. Parcel 1 Showing Potential Solar Array Layout

The layout shown in Figure 4 is for a 2-acre solar array. The lighter blue portion represents the solar array and the darker blue represents the remaining portion of the control center, which would house the control center buildings and other infrastructure. The solar array could be spread across as many as 7 acres and would be contained within the parcel delineated in this figure. The solar array could be placed at any location within the parcel.

3. AFFECTED ENVIRONMENT

Because SpaceX no longer plans to develop control center infrastructure on Parcels 2 and 3, these parcels are no longer part of the Regions of Influence (ROIs) defined for the environmental impact categories analyzed in the Final EIS. Additionally, the ROI for direct effects on historical, architectural, archaeological, and cultural resources, which was defined as the “direct impacts Area of Potential Effects (APE),” has changed. In consultation with the Texas Historical Commission (THC), the FAA defined a direct impacts APE¹ for the vertical launch area and the control center area. The direct impacts APE for the control center area was defined as the limits of all three parcels on which development would occur. Thus, the ROI for historical, architectural, archaeological, and cultural resources is expanded by approximately 7.2 acres for Parcel 1, and no longer includes Parcels 2 and 3. All other ROIs remain unchanged.

SpaceX coordinated with the THC (including the State Historic Preservation Officer) and U.S. Fish and Wildlife Service (USFWS) to identify any concerns related to cultural resources (including historic properties) and protected species and designated critical habitat. THC requested a metal detector survey in the expanded area to determine presence of cultural resources but did not request an expansion of the APE. A qualified contractor conducted a survey (see attached report). No historic resources were located, only modern materials. USFWS had no additional concerns regarding protected species and designated critical habitat.

There are no changes to the existing/baseline conditions for the environmental impact categories analyzed in the Final EIS except for wetlands. Because SpaceX no longer plans to develop Parcels 2 and 3, the 0.04-acre wetland in Parcel 3 analyzed in the Final EIS is now outside the ROI for wetlands and will not be impacted by the Proposed Action. A freshwater emergent wetland is located near the north tip of the expanded Parcel 1. This wetland is outside the new ROI for wetlands and will not be impacted by the Proposed Action.

¹ The APE for indirect effects was defined as a 5-mile radius centered upon the proposed vertical launch area.

4. REEVALUATION OF ENVIRONMENTAL CONSEQUENCES

Because SpaceX's solar proposal would not affect operations as discussed in the Final EIS, this WR focuses only on re-evaluating construction-related potential impacts.

4.1 COMPATIBLE LAND USE (INCLUDING FARMLANDS AND COASTAL RESOURCES)

Land use impacts from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final FEIS. Farmlands are not located in the expanded area and thus would not be affected. The federal consistency review remains unchanged as a result of SpaceX's solar proposal, and therefore, the Proposed Action is still consistent with the Texas Coastal Management Program. No significant impacts on coastal resources would occur.

Construction of the vertical launch and control center areas would change land uses from rural residential and recreational to developed, mixed use. In the Final EIS, significant impacts to land use compatibility were identified as a result of increased personnel working on-site, traffic, and noise generated from operational activities and from increased noise during launches, particularly to Boca Chica Village (a residential area) and the surrounding parks, cultural resources, and National Wildlife Refuges (NWRs) (considered sensitive noise receptors). Noise impacts to up to 35 households in Boca Chica Village were identified and considered significant during a nighttime launch of the Falcon 9 and Falcon Heavy. Public access to Boca Chica Beach, Boca Chica State Park, Lower Rio Grande Valley NWR, and Brazos Island State Park would be closed for safety and security reasons during launch operations for up to 15 hours per launch; a maximum of 180 hours per year.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in a meaningful change to the environmental consequences presented in the Final EIS. Like the original Proposed Action, the changes would not result in the violation of any local land use ordinances, and there would be no significant construction impacts related to compatible land use. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact on compatible land use, including farmlands and coastal resources.

4.2 SECTION 4(F) PROPERTIES

Impacts on Section 4(f) properties from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. In the Final EIS, the FAA determined that construction and operation of the vertical launch and control center areas would not result in a physical use or constructive use of a Section 4(f) property. The FAA further determined that temporary closures of some Section 4(f) properties would not substantially reduce the use or enjoyment of the Section 4(f) properties, because impacts from closures during launches would be intermittent and temporary, and thus, would not constitute a constructive use of these properties.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in any potential construction-related impacts that would be considered outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and the vertical launch area. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact on any Section 4(f) properties.

4.3 NOISE

Impacts related to noise from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. In the Final EIS, the FAA identified noise related impacts that would result from intermittent construction noise and from the operation of delivery trucks and other personnel vehicles along State Highway 4. Significant noise impacts of to up to 35 households in Boca Chica Village were also identified during a nighttime launch of the Falcon 9 and Falcon Heavy. In addition, the FAA found that sonic booms would not produce any significant impacts in the surrounding areas.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in any potential construction-related impacts that would be considered outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and the vertical launch area. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact related to noise.

4.4 LIGHT EMISSIONS AND VISUAL IMPACTS

Light emissions and visual impacts from the Parcel 1 expansion and solar array installation would be comparable to those emissions and impacts described in the Final EIS. In the Final EIS, the FAA determined that construction activities would impact the visual environment of residents of Boca Chica Village and travelers on State Highway 4, but that the impacts would be intermittent, temporary, and minimized through SpaceX's Lighting Management Plan. In addition, the FAA concluded that operation of the vertical launch and control center areas would likely have a significant impact on visual resources along State Highway 4 and the Palmito Ranch Battlefield National Historic Landmark (NHL), and that nighttime launch operations, occurring only once per year, would result in considerably higher levels of light emissions than those currently present at Boca Chica Village.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in any potential construction-related impacts that would be considered outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and the vertical launch area. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact related to light emissions and visual impacts.

4.5 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Historical, architectural, archeological, and cultural resource impacts from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. In the Final EIS, the FAA determined that construction and operation of the vertical launch and control center areas would directly impact the historic integrity of the Palmito Ranch Battlefield NHL through visual impacts, including vertical construction of towers and lighting. The FAA and other consulting parties executed a Programmatic Agreement, which includes stipulations on the process for mitigating adverse effects on historic properties.

The proposed solar array infrastructure would be approximately three feet tall and would be developed behind the facility fence line. Final design would determine the orientation of the facility buildings, but preliminary layouts indicate the buildings would shield a large portion of the infrastructure when looking from Highway 4. No additional impacts to the historic integrity of the Palmito Ranch Battlefield NHL would occur.

In the FEIS, it was determined the increased noise levels related to construction may also diminish the integrity of the quiet setting of the Palmito Ranch Battlefield NHL, which contributes to its significance, and that three historic properties (Cypress Pilings, Palmetto Pilings, and Palmetto Pilings Historical Marker) within the 5-mile Area of Potential Effects (APE) may be physically damaged from vibrations caused by high noise levels from a Falcon vehicle launch.

No significant archaeological resources were found during the initial survey of the original vertical launch and control center areas conducted during development of the EIS. For Parcel 1, a total of four shovel probes were excavated in a very compact sandy matrix to depths of between approximately 30-50 centimeters. One shovel probe was positive for cultural materials that consisted of a modern metal (iron) stake or rebar with associated yellow flagging tape and electrical wire. Additionally, the metal detection survey resulted in detection and subsurface scrapes of two targets, both consisted of modern trash. A total of three isolates were recorded in Parcel 1 as a result of the intensive pedestrian survey, subsurface testing, and systematic metal detection survey. The archeological survey concluded that the Proposed Action would have no effect on any historic properties within Parcel 1.

On August 18, 2014, Bill Martin of THC requested that SpaceX conduct a metal detector survey of the expanded Parcel 1 area. On September 23, 2014, a qualified contractor conducted a metal detector survey of the expanded area (see attached report). No historic resources were located, only modern materials. Any unanticipated discoveries during installation of the solar array would be subject to the management guidelines established in the Unanticipated Discoveries Plan.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in any construction-related potential impacts that would be considered outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and the vertical launch area. Accordingly, the data and analyses

contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact on historical, architectural, archeological, and cultural resources.

4.6 AIR QUALITY

Air quality impacts from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. In the Final EIS, the FAA determined that construction and operational related impacts on air quality would not be significant. The estimated emissions represent an extremely small percentage of the Cameron County regional emissions and would not cause any National Ambient Air Quality Standards to be exceeded.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not introduce any additional air emission sources, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and the vertical launch area. Project emissions are therefore within the scope of impacts analyzed in the Final EIS. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact on air quality.

4.7 WATER RESOURCES (INCLUDING SURFACE WATERS, GROUNDWATER, WETLANDS, FLOODPLAINS, AND WILD AND SCENIC RIVERS)

Impacts on water resources from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. There would be no impacts to Wild and Scenic Rivers. In the Final EIS, the FAA determined that construction of the launch site would result in approximately 6.19 acres of wetland impacts including the direct impact to approximately 3.34 acres of wetlands and the indirect impact to approximately 2.85 acres of wetlands. Additional efforts to avoid and minimize wetland impacts (as a result of the wetland permitting process with the U.S. Corps of Engineers) resulted in a reduction of potential direct and indirect wetland impacts to 3.90 acres.

Parcel 3 analyzed in the Final EIS contained a 0.04-acre wetland. SpaceX is now proposing to not develop in this parcel. A freshwater emergent wetland is located near the north tip of the expanded Parcel 1. This wetland is outside the area to be developed and would not be affected. An August 11, 2014 email from Jayson Hudson, U.S. Army Corps of Engineers, noted that the project does not result in the discharge of fill material in a water of the U.S. and therefore does not require a Department of the Army permit. Therefore, there would be no wetland impacts from developing the control center area.

Approximately 4.22 acres of floodplain Zone V10 and 4.37 acres of Zone A8 would be filled in the vertical launch area. Approximately 13.4 acres of Zone A8 would be filled in the control center area. Based on the expected notable adverse impacts on some of the natural and beneficial floodplain values, the Proposed Action was therefore found to result in a significant floodplain encroachment per DOT Order 5650.2.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in any construction-related impacts that would be considered outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and vertical launch area. Potential impacts are therefore within the scope of impacts analyzed in the Final EIS. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact on water resources, beyond on those floodplain impacts documented in the Final EIS.

4.8 BIOLOGICAL RESOURCES (FISH, WILDLIFE, AND PLANTS)

Biological resource impacts from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. In the Final EIS, the FAA determined that a total of 15.74 acres of upland habitat and would be removed as a result of the construction of the vertical launch and control center areas. Also, there would be 6.19 acres of wetland impacts, including the direct impact to approximately 3.34 acres of wetlands and the indirect impact to approximately 2.85 acres of wetlands. Additional efforts to avoid and minimize wetland impacts (as a result of the wetland permitting process with the U.S. Corps of Engineers) resulted in a reduction of potential direct and indirect wetland impacts to 3.90 acres.

In accordance with Section 7 of the Endangered Species Act (ESA), the FAA prepared a Biological Assessment (BA) and entered into formal consultation with USFWS to address potential impacts to ESA-listed species, species proposed for listing, and designated critical habitat. Based on the analysis presented in the BA, the FAA determined the Proposed Action “may affect, is likely to adversely affect” the following species: piping plover and its critical habitat, red knot, northern aplomado falcon, Gulf Coast jaguarundi, ocelot, and Kemp’s ridley, hawksbill, leatherback, loggerhead, and green sea turtles. The FAA determined the Proposed Action “may affect, is not likely to adversely affect” the West Indian manatee. Consultation with USFWS was completed with issuance of a Biological and Conference Opinion (BCO) on December 18, 2013. The BCO concurred with the findings in the BA and concluded no jeopardy to any species and no adverse modification to designated critical habitat. The BCO specified non-discretionary Terms and Conditions that are necessary to minimize impacts to listed species and critical habitat. The FAA is committed to implementing the Conservation Measures and Terms and Conditions outlined in the BCO to minimize potential impacts on ESA-listed species and critical habitat.

SpaceX coordinated the solar plans with the USFWS. On September 2, 2014, Mary Orms from the USFWS noted via email that the USFWS does not have any objections to change in design or inclusion of a solar array.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in additional construction-related impacts that are outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control

center and vertical launch area. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact on biological resources.

4.9 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

Impacts related to hazardous materials, pollution prevention and solid waste from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. In the Final EIS, the FAA determined that construction and operation of the vertical launch and control center areas would use products containing hazardous materials, including paints, solvents, oils, lubricants, acids, batteries, surface coating, and cleaning compounds. Hazardous materials such as propellants, chemicals, and other hazardous material payload components would also be transported to the facilities in accordance with DOT regulations. The FAA concluded that through the implementation of appropriate handling and management procedures for hazardous materials, hazardous wastes, and solid wastes, the potential for impacts would be limited and not significant.

Battery infrastructure associated with the solar array infrastructure would be subject to the implementation of appropriate handling and management procedures as described in the Final EIS. A potential hazardous material release associated with the solar array infrastructure, although unlikely, would be subject to the management procedures described in Final EIS and the Hazardous Materials Emergency Response Plan and would therefore not result in significant impacts.

Thus, consolidating the control center to an expanded Parcel 1 and solar array installation would not result in additional construction-related impacts that are outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and vertical launch area. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact related to hazardous materials, pollution, and solid waste.

4.10 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

Impacts related to socioeconomics, environmental justice, and children's environmental health and safety risks from the Parcel 1 expansion and solar array installation would be comparable to those impacts described in the Final EIS. In the Final EIS, the FAA determined that construction and operation of the vertical launch and control center areas might have a beneficial impact on the local economy through direct spending and that the related economic activity might lead to indirect job creation in areas such as the accommodation and food services and retail trade sectors. Construction activities would not be expected to result in significant impacts to the housing market. The Proposed Action would not be expected to strain the capacity or affect the quality of emergency response, medical, or public education services. Changes to the viewshed from State Highway 4 were determined to affect all viewers equally

and would therefore not result in disproportionate impacts to environmental justice populations. The Proposed Action was also found to not negatively affect children's environmental health and safety. While effects on property values cannot be quantified, potential effects to quality of life for Boca Chica Village residents were noted based on changes to the noise environment, visual viewshed, nighttime light emissions, traffic, and numbers of people in the vicinity.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in additional construction-related impacts that are outside the scope of impacts analyzed in the Final EIS, because construction would no longer occur in Parcels 2 and 3 and installation of the proposed solar array would be minor compared to construction of the rest of the control center and vertical launch area. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact related to socioeconomics, environmental justice, and children's environmental health and safety risks.

4.11 NATURAL RESOURCES AND ENERGY SUPPLY

Impacts related to natural resources and energy supply from the Parcel 1 expansion and solar array installation would be smaller than those impacts described in the Final EIS. In the Final EIS, the FAA determined that the energy required for construction activities would predominantly be associated with operating construction equipment and generators, which would require the supply of gasoline and diesel fuels. The FAA also found that although construction may have a minimal requirement for single-phase electrical power, no significant impact to energy supply is anticipated as a result of construction. A substantial requirement for aggregate (mineral materials such as sand and/or stone used in making concrete) was also identified, but it was determined that the region surrounding Brownsville would have sufficient supply of aggregate to meet the requirements for the Proposed Action without impacting the availability for other uses in the area. The construction of the vertical launch and control center areas was found to not require significant quantities of groundwater, and it is unlikely that groundwater use for construction would result in a significant impact in the region.

As part of the analysis, it was estimated the vertical launch and control center areas would have a total maximum electrical load of 3,000 kilowatts per hour, which would require energy infrastructure upgrades. In addition to electricity, energy supply requirements for operations would also include various propellant fuels, as well as diesel and gasoline to fuel the ground equipment necessary for launch operations. All propellants would be provided by regional or national suppliers and would be transported to the vertical launch and control center areas by truck. No significant impact to the energy supply as a result of operations was therefore identified in the Final EIS. Groundwater would be potentially used for two primary uses: the supply of the deluge water for each launch and for personnel use at the vertical launch and control center areas. No significant impacts to municipal water supply in Brownsville, or groundwater supply in Cameron County, were identified as a result of the Proposed Action.

It is anticipated that the solar infrastructure could provide for all of the power demands of the facility, making the facility self-sustaining, utilizing a fully renewable energy source. Impacts would be associated with the construction of the solar array infrastructure, but these impacts would be negligible when compared to the impacts associated with upgrading the existing utility transmission infrastructure. If utility upgrades were not needed, the use of solar technology would have a beneficial effect on energy supply.

Potential impacts are therefore within the scope of impacts analyzed in the Final EIS. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant impact on natural resources and energy supply.

4.12 SECONDARY/INDUCED IMPACTS

Impacts related to secondary/induced impacts from the Parcel 1 expansion and solar array installation would be comparative to those impacts described in the Final EIS. In the Final EIS, the FAA determined that temporary impacts to the regional economy are anticipated due to the construction of the vertical launch and control center areas; however, these impacts were determined to be short-term (approximately 24 months) and would not result in significant beneficial impacts to the economy. No significant secondary impacts to public services were identified in the Final EIS.

The Final EIS also found that the operation of the vertical launch and control center areas would result in temporary impacts to the local and regional economy during launch campaign periods due to increases in transient employees and visitors. The potential for secondary impacts to land use due to the potential for amenities such as hotels, restaurants, shopping, etc., which may be developed to accommodate the needs of employees and visitors during launches, was also identified. However, no known specific future development activities that would be dependent on the Proposed Action were identified. The Final EIS concluded that under the Proposed Action, the operation of the vertical launch and control center areas are not anticipated to have significant secondary impacts to public services.

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in additional secondary/induced impacts. Potential impacts are therefore within the scope of impacts analyzed in the Final EIS. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have significant secondary/induced impacts.

4.13 CUMULATIVE IMPACTS

Consolidating the control center to an expanded Parcel 1 and solar array installation would not result in cumulative impacts on any impact category which would be substantially different from those cumulative impacts analyzed in the Final EIS. The Proposed Action analyzed in the Final EIS could have notable, but less than significant, impacts on:

- Section 4(f) Properties

- Historical, Architectural, Archaeological, and Cultural Resources
- Air Quality
- Biological Resources (Fish, Wildlife, and Plants)
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Socioeconomics, Environmental Justice, and Children’s Environmental Health Risks and Safety Risks
- Natural Resources and Energy Supply

The Proposed Action could have significant impacts on:

- Compatible Land Use
- Noise
- Light Emissions and Visual Impacts
- Wetlands
- Floodplains

Consolidating the control center to an expanded Parcel 1 and solar array installation would not affect any other actions described in the Final EIS, the project site, or the surrounding area, and conversely the Parcel 1 expansion and solar array installation would not be affected by any other actions at this location. Environmental consequences would not be expected to increase beyond those considered in the Final EIS due to the Parcel 1 expansion and solar array installation, and no substantial cumulative impacts on impact categories would be expected. Accordingly, the data and analyses contained in the Final EIS remain substantially valid, and the Parcel 1 expansion and solar array installation would not have a significant cumulative impact.

4.14 CONCLUSION

The Final EIS examined the potential for significant environmental impacts and defined the regulatory setting for impacts associated with the FAA issuing launch licenses and/or experimental permits to SpaceX that would allow SpaceX to conduct launches of the Falcon 9 and Falcon Heavy orbital vertical launch vehicles and a variety of reusable suborbital launch vehicles from a private launch site on privately owned property in Cameron County, Texas. The areas evaluated for environmental impacts included:

- Compatible Land Use (Including Farmlands and Coastal Resources)
- Section 4(f) Properties
- Noise
- Light Emissions and Visual Impacts
- Historical, Architectural, Archaeological, and Cultural Resources
- Air Quality
- Water Resources (Including Surface Waters, Groundwater, Wetlands, Floodplains, and Wild and Scenic Rivers)
- Biological Resources (Fish, Wildlife, and Plants)
- Hazardous Materials, Pollution Prevention, and Solid Waste

- Socioeconomics, Environmental Justice, and Children's Environmental Health Risks and Safety Risks
- Natural Resources and Energy Supply
- Secondary/Induced Impacts
- Cumulative Impacts

Based on the above review and in conformity with FAA Order 1050.1E, Change 1, paragraph 515, the FAA has concluded that the consolidation of the control center to an expanded Parcel 1 and solar array installation conforms to the prior environmental documentation, that the data contained in the Final EIS remain substantially valid, that there are no significant environmental changes, and that all pertinent conditions and requirements of the prior approval have been met or will be met in the current action. Therefore, the preparation of a supplemental or new environmental document is not necessary to support the FAA issuing launch licenses and/or experimental permits to SpaceX. Consolidation of the control center to an expanded Parcel 1 and solar array installation would not significantly impact the quality of the human or natural environment within the meaning of NEPA, as amended, and the Council on Environmental Quality Regulations (40 Code of Federal Regulations parts 1500 to 1508).

Responsible FAA Official: *David P. Meyer*

Location and Date Issued: *Washington DC on 11/17/2014*