

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)**

**Environmental Assessment (EA) for the
Blue Origin Orbital Launch Site Construction at Launch Complex 11 and 36
Cape Canaveral Air Force Station (CCAFS), FL**

INTRODUCTION

Pursuant to the Council on Environmental Quality (CEQ) regulations, the provisions of the National Environmental Policy Act (NEPA) of 1969, 40 Code of Federal Regulations (CFR) Parts 1500-1508, and *Environmental Impact Analysis Process* (32 CFR Part 989), the U.S. Air Force (USAF) adopts the EA prepared by Blue Origin Florida, LLC. (Blue Origin) to address the potential environmental consequences associated with the proposed action at Launch Complexes 11 and 36 (LC-11 and LC-36), CCAFS, Florida. That EA is attached and incorporated by reference. The EA analyzed impacts associated with land clearing and constructing an engine test stand and launch complex with attendant facilities; the launching of a heavy-lift capable orbital launch vehicle (OLV), and recovering the first stage at sea. The USAF has determined that the EA is current, satisfactorily meets 32 CFR Part 989 requirements, and adequately addresses impacts associated with conducting construction and operations of the OLV program at LC-11 and LC-36.

In accordance with 32 CFR Part 989.9, the USAF released the draft EA for public review along with a draft FONSI and FONPA for actions affecting USAF property. These documents were made available to the affected public for a 30-day review/comment period commencing on , 2016. The affected public was notified by advertisements placed in a locally viewed newspaper. The documents were made available by placing them in two local public libraries, the 45 SW Public Affairs Office, and the Patrick Air Force Base internet site. The EA was also coordinated in draft with Federal and State agencies. Discuss public review comments

Proposed Actions Occurring on USAF Property

The Proposed Action is to construct and operate an Orbital Launch Site (OLS) at LC-11 and LC-36 at CCAFS, Florida. The commercial facility would contain infrastructure to test rocket engines, integrate launch vehicles, and conduct launches of liquid fueled, heavy-lift class orbital launch vehicles (OLV). The Proposed Action includes development to support satellite and science payload launches. The OLV is a multi-stage launch system capable of carrying the Payload Accommodations (PA) which would be comprised of one or more Spacecraft (SC) in a Payload Fairing (PLF). The launch vehicle's first stage is reusable, designed to be flown numerous times. The first stage would return to Earth by landing on a downrange ocean-going platform and be transported to a facility for reuse.

The manufacturing of the large elements (e.g. first stage, second stage, PLF, etc.) would occur at a new facility located at Exploration Park (Phase 2) on Kennedy Space Center (KSC), which was the subject of a completed NASA Environmental Impact Statement (EIS). The construction of that facility and the manufacturing of those elements are a separate action and are not considered in this EA. The transportation of the flight elements from the manufacturing facility to LC-11 and LC-36, however, is within the scope of this Proposed Action. Final integration of the various flight elements of the launch vehicle that would occur at the CCAFS site is also part of the Proposed Action. The major elements of the OLS at CCAFS are the Launch Pad, Integration Facility, Engine Test Stand, and the systems to recover and refurbish reusable space systems

(first stage). After arrival at the Integration Facility, the first and second stages, and a possible upper stage, would then be mated together and integrated onto the Transporter Erector System. Following integration of the booster stages, the PA would be attached, and then the entire system would undergo a readiness test. The OLV would then be transported from the Integration Facility to the Launch Pad and erected for launch. After a successful launch the first stage would return to the Earth for recovery in the Atlantic Ocean in an elliptical-shaped area no closer to Florida than 200 nautical miles downrange in the Atlantic Ocean. Blue Origin anticipates a total of approximately 12 launches per year.

ENVIRONMENTAL CONSEQUENCES

The EA addressed impacts associated with the No Action Alternative and the Proposed Action. Other alternatives were considered but not carried forward for analysis. Alternate sites in Virginia, Georgia, North Carolina, and Florida were considered; however, those sites did not meet the purpose, need, and assessment criteria to be carried forward. Another complex at CCAFS (LC-20) was also considered, however that alternative was not carried forward due to the potential for significant operational impacts to CCAFS.

Effects to land use/visual resources (which includes coastal resources), noise, biological resources, cultural resources, air quality, climate, hazardous materials/hazardous waste (which includes solid waste and pollution prevention), orbital debris, water resources, geology and soils, transportation, utilities, health and safety, socioeconomics, environmental justice, and Section 4(f) properties were assessed and presented in Chapter 4 of the EA. The analysis identified negligible to moderate effects on those resources from construction and direct launch operations. Cumulatively, effects to these resources would be negligible to minor as described in Chapter 5.

Since construction actions at LC-11 and LC-36 may affect federally-listed species or their habitats, consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA of 1973 was required. In accordance with Section 7 consultation, the USAF completed a Biological Assessment which addressed the potential of construction and operational activities to result in the take of some special status wildlife species from activities such as disturbance, excavation, crushing or burial. The USAF determined that the proposed project may affect, and is likely to adversely affect, the loggerhead, green, leatherback, hawksbill, and Kemp's Ridley sea turtles, as well as the southeastern beach mouse, the eastern indigo snake, and the Florida scrub-jay from impacts to unoccupied potential scrub-jay habitat. The USFWS concurred with that determination. The USAF also determined that the proposed project may affect, but is not likely to adversely affect, the manatee, red knot, wood stork, and the piping plover. The USFWS concurred with that determination. Although the gopher tortoise is not a federally-listed species, it is currently a candidate for federal listing. Due to its status as a state-listed threatened species, however, the USAF will undertake special conservation actions consistent with state guidelines and requirements. The USFWS issued a Biological Opinion (BO) on May 27, 2016, stating that the Proposed Action is not likely to jeopardize the continued existence of any federally-listed species. In its BO, the USFWS listed terms and conditions for which USAF must comply.

Mitigation for direct and indirect impacts to the scrub-jay would minimize or compensate for impacts caused by the Proposed Action. Provided the following mitigation measures are implemented, the Proposed Action would not significantly impact the scrub-jay population at CCAFS: *approximately 37 acres of potential scrub-jay, southeastern beach mouse and eastern indigo snake habitat at CCAFS would be restored over a five-year period. Unoccupied scrub-jay habitat would be restored at a ratio of 2:1 (every acre lost would require compensation in the*

amount of two acres) for 15 acres, and a ratio of 1.5:1 for about four acres of low-quality scrub-jay habitat. The proposed areas to be restored would be located in Land Management Unit 33. This habitat restoration would also serve to mitigate and direct or indirect impacts to the southeastern beach mouse, and the eastern indigo snake. The USFWS issued an "Incidental Take Statement" for this Action.

The USAF also formally consulted with the Florida State Historical Preservation Office (SHPO) for Section 106 issues and with the Florida Clearinghouse for Coastal Zone Management issues. Both concurred that significant impacts would not occur to the subject resource areas.

Based on a formal wetlands survey validated by the U.S. Army Corps of Engineers (USACE) and the St Johns River Water Management District (SJRWMD), approximately 8.29 acres of primary wetlands would be impacted by the Proposed Action. Blue Origin coordinated with the USAF, NASA, USACE, and SJRWMD to determine the most beneficial means to mitigate wetlands impact. *Blue Origin will mitigate impacts to wetlands from the Proposed Action through the creation and enhancement of approximately 53 acres of wetlands at their Manufacturing Facility parcel in Brevard County, Florida. The mitigation area is located within Exploration Park at Kennedy Space Center. Sufficient credits exist to support mitigation activities for the Proposed Action at CCAFS. Blue Origin has created a Financial Responsibility Mechanism for mitigation, monitoring and corrective action for the project.*

There would be no resultant significant impacts to wetlands resources from implementation of the Proposed Action.

FINDING OF NO PRACTICABLE ALTERNATIVE

Executive Order (EO) 11988, *Floodplain Management*, dated May 24, 1977, requires Federal agencies to evaluate the potential effects of actions it may take in a floodplain to avoid adversely impacting floodplains; wherever possible, to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management, including the restoration and preservation of such land areas as natural undeveloped floodplains; and to prescribe procedures to implement the policies and procedures of this EO. Due to the location of LC-11 and LC-36, portions of the proposed site would be constructed within a large contiguous floodplain that spans the coast. Construction would result in clearing approximately 20 acres of vegetation within the floodplain, directly adjacent to existing fence lines at these launch complexes. While this is a relatively small area compared to the overall floodplain footprint at CCAFS, construction activities (i.e., clear cutting and grubbing of vegetation) would result in unavoidable encroachment and impacts to floodplain based wildlife. This potential impact was considered and addressed during consultation with USFWS.

A notice was published in the local newspaper between 28 June and 28 July, 2016, allowing the public to comment on potential floodplain impacts from Blue Origin's proposed OLS. One public comment was received which was considered in the development of the EA.

Pursuant to EO 11988, the authority delegated by SAFO 780-1 and 32 CFR part 989 and taking the submitted information regarding the siting of this proposal and associated impacts into account, I find that there is no practicable alternative to this action that would avoid floodplain encroachment during construction and operational activities, and the Proposed Action includes all practicable measures to minimize harm to the environment.

Finding of No Significant Impact

In accordance with the CEQ Regulations implementing NEPA (Public law 91-190, 42 U.S.C. §§4321-4347), as amended, and 32 CFR 989, 15 Jul 1999, and amended 28 Mar 2001, an assessment of the identified environmental effects has been prepared for the Proposed Action at LC-11 and at LC-36 at CCAFS. I find that the action will have no significant impact on the quality of the human or natural environment; thus, an EIS is not warranted. This decision has been made after taking into account all submitted information and considering a full range of practicable alternatives that will meet project requirements and that are within the legal authority of the USAF.

MICHELLE A. LINN, GS-15, DAFC
Chief Engineer Division
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Date