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October 15, 2024

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SUBJECT: ENVIRONMENTAL ASSESSMENT (EA) FOR THE FALCON 9 CADENCE INCREASE PROJECT AT VANDENBERG SPACE FORCE BASE, CALIFORNIA, SCH NO. 2024090604, SANTA BARBARA COUNTY, CA

Dear Tiffany Whitsitt-Odell:

The California Department of Fish and Wildlife (CDFW) reviewed the EA from The Department of Air Force (DAF) for the Falcon 9 Cadence Increase Project (Project) pursuant to the National Environmental Policy Act (NEPA) of 1969 with the purpose of informing decision-makers and the public regarding potential environmental effects related to the Project.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

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PROJECT DESCRIPTION SUMMARY

Proponent: Space Exploration Technologies Corporation (SpaceX)

Objective: Overall, the purpose of the proposed Project is to provide greater mission capability to the Department of Defense (DOD), National Aeronautics and Space Administration (NASA), National Security, and commercial customers by increasing Falcon 9's flight opportunities. The Project proposes to increase the Falcon 9 annual launch cadence from 36 to 50 launches per year at Space Launch Complex (SLC)-4 on Vandenberg Space Force Base (VSFB) and modify SLC-6 to support the Falcon launch vehicles. Following each launch at SLC-4, SpaceX would perform a "boost-back" and landing of the first stage boosters up to 50 times, either downrange on a droneship or at landing zones at VSFB. No more than 12 first stage landings would occur at SLC-4 per year. SpaceX is proposing to expand its downrange recovery area by approximately 900 miles west and approximately 1,000 miles south to account for potential missions with an expended first-stage booster. The Project describes a "region of influence" from these activities, which includes areas potentially impacted by sonic boom, rocket engine noise, and increased water usage, due to expansion of the area of noise impacts.

SLC-6: The current Project Description calls for modification of SLC-6 including demolition of existing structures and construction of necessary infrastructure to support the new launch cadence. Demolition includes the use of heavy machinery to cut or pull down the structures or the use of explosives. Infrastructure that is proposed to be constructed are utilities, a new hanger, a vehicle erector system at the launch pad, and minor modification to the existing flame trench. SpaceX would construct new or improve existing power, water, wastewater, and communications utilities. More specifically, SpaceX would construct two landing zones across 16 acres, south of SLC-6. Each of the landing zones would be a total of 400 feet in diameter consisting of a 280 feet diameter concrete pad surrounded by a 60-foot gravel apron and a 30-ft by 30-ft pedestal would also be constructed at each landing pad. A new nitrogen gas line would be constructed from SLC-6 to an equipment bay at the landing zones. Crane storage is proposed to be created on the western boundary. Lastly, a new firebreak is proposed south of the landing zones and Cypress Ridge Road and N Road would be improved for fire access. It is proposed that construction may occur at any time of the day and night.

Alternative Location 1 – SLC-6 with Horizontal Integration Facility: At this alternative location, in addition to activities proposed in the Project Description, the horizontal integration facility (HIF) located north of SLC-6 would be modified. Proposed Project activities would include interior work, construction of an approximately 5,000 square foot annex on the south side of the building, construction of an approximately 42,000 square-foot paved area north of the building, and rails from the hanger to the launch pad. The existing culverts would be maintained, modified, or improved during construction of the rail system.

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Alternative Location 2 – SLC-6 with North Hanger: This alternative location, in addition to activities proposed in the Project Description, proposes the construction of an approximately 61,250 square foot hanger north of the launch pad line. Areas around the hanger would be graded to provide rear access to the hanger. Similar to alternative 1, rails would be constructed, and culverts would be maintained, modified, or improved. The SLC-6 fence would be relocated and vehicular access from Lunar Road to N Road would be removed. Lastly, an apron would be constructed to provide rear access into the hanger.

Location: The proposed Project is located on VSFB which in central Santa Barbara County. VSFB is divided into two distinct parts, North Base and South Base, by the Santa Ynez River and State Highway 246. SLC-4 is located on the South Base approximately four miles south of the Santa Ynez River and 0.9 miles east of the Pacific Ocean. SLC-6 is 3.6 miles south of SLC-4, approximately one mile east of the Pacific Ocean.

Biological Setting: The VSFB is located along the south-central coast of California and covers 99,099 acres. Development surrounding SLC-4 and SLC-6 consists of existing infrastructure, developed land and pavement, access roads and parking lots, and maintained vegetation/landscaping. A Supplemental Environmental Assessment (SEA) Launch was created in 2018 for the Launch, Boost-Back, and Landing of the Falcon 9 at Vandenberg Air Force Base, California and Offshore Landing Contingency Options Final EA and in 2023 for the Falcon 9 Cadence Increase at Vandenberg 29 Space Force Base, California and Offshore landing Locations Final EA. Biological surveys were also conducted for SLC-4 in 2017 but concluded that no additional field surveys were needed due to no occurrence of construction-related ground disturbance at this location. Biological surveys for the proposed construction at SLC-6 were conducted during October and November 2023.

Biological resources within and adjacent to the Project area are referenced from the two SEA documents. There are additional species not included in the 2023 SEA that are within the Project's region of influence. Rare plant species Lompoc yerba santa (*Eriodictyon capitatum*; Endangered Species Act (ESA)-listed endangered; California Rare Plant Ranking (CRPR) 1B.2), crisp monardella (*monardella undulata ssp. crispa*; CRPR 1B.2), and beach layia (*Layia carnosa*; ESA-listed endangered; California Endangered Species Act (CESA)-listed endangered species, CRPR 1B.1) were not found during biological surveys but occur in the greater area. Although suitable habitat for Gaviota tarplant (*Deinandra increscens ssp. villosa*; ESA-listed endangered; CESA-listed endangered species, CRPR 1B.1) exists where physical impacts would occur, only the common unlisted grassland tarplant (*Deinandra increscens ssp. increscens*) was identified. Wildlife species that have potential to be impacted due to the proposed Project include least Bell's vireo (*Vireo bellii pusillus*; ESA listed-endangered and CESA listed-endangered), monarch – California overwintering population (*Danaus plexippus plexippus*; ESA candidate species), and nesting birds.

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CDFW offers the comments and recommendations below to assist the DAF in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on wildlife (biological) resources.

Specific Comments

- 1) **Biological Resource Assessment.** The EA should be amended to include an updated general field survey for SLC-4 and should be conducted prior to Project activities to provide an accurate assessment of plant and wildlife species utilizing the Project area. Generally, CDFW considers surveys older than two years unable to accurately represent baseline conditions. The new biological resources assessment should include a complete assessment and impact analysis of the flora and fauna within the Project area, and should place emphasis upon identifying endangered, threatened, sensitive, regionally and locally unique species, and sensitive habitats. CDFW also considers impacts to Species of Special Concern (SSC) a significant direct and cumulative adverse effect without implementing appropriate avoidance and/or mitigation measures. Mitigation measures to avoid, minimize, or mitigate for these species should also be included in the revised EA.
- 2) **Least Bell's Vireo.** While CDFW acknowledges that mitigation measure 2.3.6 is intended to minimize impacts to least Bell's vireo, we recommend that the breeding season window referenced be changed to 15 March – 30 September. These birds typically arrive in southern California breeding areas by mid-March to early-April and generally leave by late-September. The breeding season in the EA leaves the potential for least Bell's vireo to be impacted by construction activities, such as the use of explosives and heavy machinery, if surveys are conducted outside of the appropriate breeding season. CDFW recommends adhering to the [Least Bell's Vireo Survey Guidelines](#) for the appropriate protocol (USFWS 2001).
- 3) **Monarchs.** There are multiple monarch butterfly overwintering habitats documented within the SLC-4 Rocket Engine Noise and SLC-4 Falcon 9 First Stage Landing Sonic footprints. Additionally, there are multiple habitats found within a two-mile range of both sites according to the California Natural Diversity Database (CNDDDB) (CDFW BIOS 2023). While there are no direct impacts due to construction on monarch butterflies, indirect impacts due to noise could occur. CDFW is concerned that elevated noise from an increase in launches may result in monarch butterflies abandoning the documented overwintering sites and recommends that the DAF incorporate a measure to avoid Project activities near the overwintering sites during periods of monarch aggregation (typically September 30 through March 1).
- 4) **Rare Plants.** Rare plant species Lompoc yerba santa, crisp monardella, and beach layia have been observed and recorded through the California Natural Diversity Database to occur within and/or near the SLC-4 and SLC-6 sites (CDFW BIOS 2012). Direct impacts at SLC-4 may occur to rare plant species due to increased

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wind speeds and maintenance activities. Also, construction activities and vegetation removal at SLC-6 may result in loss of individuals and seedbank and contribute to the population decline of these rare plants. The EA states that areas occupied by these species would not be affected by ground disturbance and physical impacts but does not discuss avoidance of other rare plants documented within the Project area. Given that survey assessments for SLC-4 are seven years old and may or may not have occurred during the blooming period, we have further concerns that the locations of all sensitive plant species are not known. Additionally, biological surveys for SLC-6 were conducted during October and November, which is outside of the blooming period, exacerbating our concerns that locations of these species are not known.

CDFW recommends the EA incorporate a measure that requires a rare plant survey to be conducted prior to any ground-disturbing activities to ensure that no impacts to undetected rare plants occur. CDFW also recommends a qualified botanist conduct a rare plant survey, adhering to CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). If rare plants are observed within the Project area, the qualified botanist should implement an adequate buffer around the individual plant or population to prevent any potential adverse impacts. If avoidance is not achievable, the EA should offset the loss of rare plants through compensatory mitigation at a minimum of 2:1 ratio. Translocation of these species are not advisable, as there is insufficient data to support that such translocations would be successful.

- 5) **Nesting Birds.** The Project area of SLC-4 and SLC-6 have vegetation that may provide nesting habitat for various avian species. The proposed Project would impact nesting birds through construction activities, installation activities, elevated-related noise, and vegetation removal. Furthermore, Project activities occurring during the nesting bird season, especially in areas providing suitable habitat, could result in the incidental loss of fertile eggs or nestlings, or nest abandonment.

CDFW recommends the DAF revise 2.3.1 General Environmental Protection Measures regarding impacts on nesting migratory birds. CDFW recommends that clearing of vegetation occur outside of the peak avian breeding season, which runs from February 1 through September 15 (as early as January 1 for some raptors). If Project construction is necessary during the bird breeding season, a qualified biologist should conduct a nesting bird survey within three days prior to work in the area. The measure should be revised to include a 100-foot buffer from common avian species, 300 feet for listed or highly sensitive, and 500 feet for raptors if an active nest is identified and an established buffer is necessary between construction activities. Reductions in the nest buffer may occur in consideration of site-specific features such as ambient levels of human activity, screening vegetation, or other factors.

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FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the EA to assist the DAF in identifying and mitigating Project impacts on biological resources. Questions regarding this letter or further coordination should be directed to Joleena De La Fe, Environmental Scientist, at (858) 354-3527 or Joleena.delafe@wildlife.ca.gov.

Sincerely,

DocuSigned by:

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REFERENCES

[CDFW] California Department of Fish and Wildlife. 2012. crisp monardella [ds45]. Calif. Dept. of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Retrieved October 14, 2024, from <https://wildlife.ca.gov/Data/BIOS>

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