

**Draft Environmental Impact Statement  
for Authorizing Changes to the  
Falcon Launch Program  
at  
Vandenberg Space Force Base, California**

**Summary**

**May 2025**

**Unique Identification Number: EISX-007-57-USF-1728547807**

### **PRIVACY ADVISORY**

*This Draft Environmental Impact Statement (EIS) is provided for public comment in accordance with the National Environmental Policy Act (NEPA), as amended by Public Law 118-5, the Fiscal Responsibility Act of 2023 (42 United States Code Section 4321 et seq.), and with 32 Code of Federal Regulations (CFR) Part 989, Environmental Impact Analysis Process (EIAP).*

*The EIAP provides an opportunity for public input on Department of the Air Force (DAF) decision-making, allows the public to offer input on alternative ways for the DAF to accomplish what it is proposing, and solicits comments on the DAF's analysis of environmental effects.*

*Public input allows the DAF to make better, informed decisions. Letters or other written or verbal comments provided may be published in the EIS. Providing personal information is voluntary. Private addresses will be compiled to develop a stakeholders inventory. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, telephone phone numbers, and email addresses will not be published in the EIS.*

### **Compliance with Section 508 of the Rehabilitation Act**

*The digital version of this EIS and its project website are compliant with Section 508 of the Rehabilitation Act of 1973 because assistive technology (e.g., "screen readers") can be used to help the disabled to understand these electronic media. Due to the nature of graphics, figures, tables, and images occurring in the document, accessibility may be limited to a descriptive title for each item.*

## COVER SHEET

**Responsible Lead Agency:** Department of the Air Force

**Cooperating Agencies:** Federal Aviation Administration, U.S. Coast Guard

**Title:** Authorizing Changes to the Falcon Launch Program at Vandenberg Space Force Base, California

**Inquiries:** Information regarding the Environmental Impact Statement (EIS) is available on the website at [www.VSFBFalconLaunchEIS.com](http://www.VSFBFalconLaunchEIS.com). Questions can also be directed to ATTN: VSFB Falcon Launch EIS, c/o ManTech International Corporation, 420 Stevens Avenue, Suite 100, Solana Beach, CA 92075. For other inquiries, please contact Ms. Hilary Rummel, National Environmental Policy Act Project Manager, at [info@VSFBFalconLaunchEIS.com](mailto:info@VSFBFalconLaunchEIS.com) or VSFB Public Affairs office by phone at 1-805-606-3595.

**Designation:** Draft EIS

**Abstract:** The Department of the Air Force (DAF) has prepared this Draft EIS in accordance with the National Environmental Policy Act, as amended by the Fiscal Responsibility Act of 2023 (Public Law 118-5; FRA); DAF's implementing regulations at 32 Code of Federal Regulations Part 989 to the extent they are consistent with NEPA as revised by the FRA; and Executive Order 14154 (*Unleashing American Energy*). Under the Proposed Action, the DAF would authorize an increase in the annual Falcon launch cadence at Vandenberg Space Force Base (VSFB) through launch and landing operations at Space Launch Complex (SLC) 4 and SLC-6. The Proposed Action includes the DAF authorization of the modification of SLC-6 for Falcon 9 and Falcon Heavy launch vehicles to support future U.S. Government and commercial launch service needs. Modifications would include constructing commodity storage tanks, a vehicle erector, water tower(s), ground supporting equipment, a transport road with rail system from an existing horizontal integration facility (HIF) to the launch pad, and two new landing pads adjacent to SLC-6. The DAF would also authorize an increase in Falcon 9 launches from SLC-4. No modification of SLC-4 is proposed. The overall launch cadence for Falcon 9 and Falcon Heavy at both SLCs, combined, would be up to 100 launches per year. Falcon Heavy, which has not launched from VSFB in the past, would launch a maximum of five times per year from SLC-6.

This Draft EIS evaluates the potential environmental impacts associated with the Proposed Action, Alternative 1 (the same activities described under the Proposed Action, but construction of a new hangar at SLC-6 instead of utilizing the existing HIF), and the No Action Alternative to the following resource areas: air quality, noise, biological resources, water resources, cultural resources, coastal resources, Department of Transportation Act section 4(f) resources, utilities, socioeconomics, transportation, human health and safety, hazardous materials and waste management, solid waste management, geology and soils, land use and aesthetics, light emissions, and visual resources/character, farmlands, natural resources, and wild and scenic rivers.

**Public Review:** A 45-day public review period of the Draft EIS will take place starting 23 May 2025 and ending 7 July 2025. Comments will be accepted at any time during the environmental impact analysis process; however, to ensure the DAF has sufficient time to consider public comments during the preparation of the Final EIS, please submit comments within the 45-day Draft EIS public comment period, no later than 7 July 2025.

**EIS Identification Number:** EISX-007-57-USF-1728547807

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## SUMMARY

### S.1 Introduction

This Draft Environmental Impact Statement (EIS) has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences associated with the following: (1) the Department of the Air Force (DAF)'s authorization of the redevelopment of Space Launch Complex (SLC)-6, an existing SLC on south Vandenberg Space Force Base (VSFB), to support Falcon 9 and Falcon Heavy operations, including launch and landing at VSFB; (2) DAF's authorization of an increase in Falcon 9 launches, landings, and static fire tests at VSFB and the addition of Falcon Heavy launches, landings, and static fire tests at VSFB; and (3) the Federal Aviation Administration's (FAA's) licensing Space Exploration Technologies Corporation's (SpaceX's) Falcon operations at VSFB and approval of related airspace closures. Redevelopment of SLC-6 would include constructing commodity storage tanks, a vehicle erector, water tower(s), ground supporting equipment, a transport road with rail system from an existing horizontal integration facility (HIF) to the launch pad, and two new landing pads adjacent to SLC-6. The DAF is the lead agency for the Proposed Action and is responsible for the scope and content of this EIS in accordance with (IAW) the Memorandum of Understanding between FAA and DAF. The FAA and United States (U.S.) Coast Guard (USCG) are cooperating agencies. The FAA is a cooperating agency because the scope of the Proposed Action includes the FAA's issuance of licenses along with potential license renewals and modifications for SpaceX operations analyzed in this EIS. In addition, the FAA must also approve related airspace closures for launch operations. The USCG is a cooperating agency because of its role in maritime safety and regulatory authority over waters subject to jurisdiction of the U.S., pursuant to the Ports and Waterways Safety Act, 46 United States Code (USC) Section 700.

#### S.1.1 Purpose and Need

The purpose of the Proposed Action is to increase the space launch mission capability of the U.S. Department of Defense (DOD), the National Aeronautics and Space Administration, and other federal and commercial customers, and to enhance the resilience and capacity of the nation's space launch infrastructure, while promoting a robust and competitive national space industry. As directed by U.S. policy (10 USC Section 2273, "Policy regarding assured access to space: national security payloads"; see also the White House's 2021 Space Priorities Framework), the U.S. seeks to provide greater launch and landing capabilities and infrastructure to support national security objectives, including deploying satellites and other space assets that enable intelligence, reconnaissance, and global security operations. The U.S. aims to promote a hybrid space architecture that diversifies access to space, reduces dependency on singular systems, and ensures rapid reconstitution capabilities.

The Proposed Action is needed to meet current and near-term U.S. Government space launch requirements from the Western Range, specifically for medium and heavy-lift launches to polar, geostationary, and other orbits less reliably available elsewhere, without compromising current launch capabilities. The Proposed Action is also needed to expand launch capacity by returning heavy-lift launch capability to the Western Range and to fulfill (in part) 10 USC Section 2276(a), "Commercial space launch cooperation."

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## **S.2 Proposed Action and Alternatives**

### **S.2.1 Proposed Action**

The Proposed Action is for the DAF to authorize an increase in the annual Falcon launch cadence at VSFb through launch and landing operations at SLC-4 and SLC-6, including construction and demolition (C&D) activities at SLC-6 for Falcon 9 and Falcon Heavy launch vehicles to support future U.S. Government and commercial launch service needs. The DAF would also authorize an increase in Falcon 9 launches from SLC-4. No modification of SLC-4 is proposed. The overall launch cadence for Falcon 9 and Falcon Heavy at both SLCs, combined, would increase from 50 to up to 100 launches per year. Under the Proposed Action, the DAF would authorize SpaceX to modify the existing HIF near SLC-6 to support launch operations at SLC-6, construct a road with rails between the launch pad and the HIF to move launch vehicles to the pad, and construct two new landing zones adjacent to SLC-6 to support landing of first stage Falcon boosters launching from SLC-6.

The FAA's federal action is to issue or modify a vehicle operator license to authorize SpaceX commercial launches and landings at VSFb, described above. The FAA's federal action also includes the issuance of temporary airspace closures.

### **S.2.2 Alternative 1**

Under Alternative 1, the DAF would implement the Proposed Action as described above, but rather than modifying the existing HIF, DAF would authorize SpaceX to construct a new approximately 62,000 square foot hangar north of the launch pad at SLC-6 to support Falcon 9 and Falcon Heavy integration and processing. A road with rails would be constructed between the launch pad and the hangar to transport launch vehicles to the pad. All other aspects of the Proposed Action would be identical.

### **S.2.3 No Action Alternative**

Under the No Action Alternative, the DAF would not authorize any Falcon 9 or Falcon Heavy launches or landing operations at, or modifications to, SLC-6, nor would the DAF authorize additional Falcon 9 launches from SLC-4. The FAA would not modify or issue a vehicle operator license for Falcon operations at SLC-6 or an increase in Falcon 9 launches at SLC-4. Falcon 9 launches and landings would continue at SLC-4 as currently authorized. The No Action Alternative is the environmentally preferable alternative.

## **S.3 Affected Environment and Environmental Consequences**

The Draft EIS evaluates the potential effects of the Proposed Action, Alternative 1, and the No Action Alternative on the following resources: air quality, noise, biological resources, water resources, cultural resources, coastal resources, Department of Transportation Section 4(f) resources, utilities, socioeconomics, transportation, human health and safety, hazardous materials and waste management, solid waste management, and geology and soils. A summary of the findings for each of the resources is presented below.

### **S.3.1 Proposed Action**

**S.3.1.1 Air Quality:** The Proposed Action would occur within three counties in California: Santa Barbara, Ventura, and Los Angeles. Construction would take place in Santa Barbara County, while operations would occur within all three counties. It was determined that the portion of Los Angeles County

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where the action would occur encompasses five nonattainment areas and two maintenance areas. Therefore, the air quality impact assessment is summarized separately for each county to ensure that each nonattainment or maintenance area is evaluated separately. Construction under the Proposed Action would result in the temporary addition of pollutants to the local airshed in Santa Barbara County. Implementation of the Proposed Action would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. Operations, which would increase under the Proposed Action with increased launch and landing cadence, would generate criteria pollutant and hazardous air pollutants emissions from mobile sources, including vehicle trips from passenger vehicles and heavy-duty trucks, marine vessels, booster launches and landings, launch vehicle processing, and off-road equipment used for maintenance. The net annual emissions of the Proposed Action within Santa Barbara and Ventura Counties would not exceed the DAF insignificance thresholds. Emissions of nitrogen oxides would exceed the insignificance threshold in Los Angeles County. As such, a general conformity determination is necessary to determine if the Proposed Action would have an adverse effect on air quality within Los Angeles County.

**S.3.1.2 Noise:** C&D activities would temporarily increase noise levels at SLC-6. These activities are far removed from any human sensitive receptors. Sound levels decay with increasing distance. Noise from the C&D activities would be entirely limited to within the VSFB boundary, with the exception of explosives which would be used to aid in the removal of one existing structure. This would result in a short impulsive sound, similar to those experienced during first stage landing events at SLC-4. Therefore, C&D activities at SLC-6 would not have a significant impact on the acoustic environment.

Launch and landing operations create engine noise and sonic booms. Noise levels would not exceed the Occupational Safety and Health Administration's (OSHA) thresholds for daily noise exposure limits. Residents within the area surrounding VSFB would likely hear launch engine noise and sonic booms during return landings at VSFB. Noise-induced structural vibration during launches and landings caused by rocket engine noise and sonic booms may cause annoyance to building occupants in and around Lompoc, CA. In southeastern Santa Barbara, Ventura, and northwestern Los Angeles Counties, residents would likely hear occasional sonic booms, which would vary in impact location and levels depending on mission trajectories and weather conditions, and may cause annoyance because of induced secondary vibrations, or "rattle" of objects within buildings.

Falcon 9 and Falcon Heavy launches and landings at SLC-4 and SLC-6 have the potential to cause damage to some structures depending on the overpressure levels the structures are exposed to as well as the construction quality and condition of the structures. Damage associated with noise and vibrations may occur to lightweight or brittle structural elements in poor condition, such as windows and plaster that are pre-cracked, prestressed, older and weakened, or poorly mounted; however, damage to windows and plaster in good condition and structural damage to buildings is not expected. Launches typically generate sonic booms over water which are not expected to damage structures. Booms in some areas may rarely exceed 4 pounds per square foot (psf). Damage to structures is unlikely below 2 psf, and more likely at 4 psf and above. Overall, while 4 psf sonic booms are more likely to cause damage compared to 2 psf, the extent of damage still depends on other factors, including the construction quality and maintenance of the structures.

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A Community Noise Equivalent Level (CNEL) exceeding 65 A-weighted decibels (dBA; A-weighting is an adjustment applied to sound measurement to reflect how a noise is perceived by the human ear) is generally considered unacceptable for a residential neighborhood and is used to define the area of potentially significant noise impacts on communities. CNEL was estimated for projected launch, landing, and static fire test operations at SLC-4 and SLC-6. These estimates were made for each operation type (i.e., Falcon 9 launches, landings, and static fire tests at SLC-4 and SLC-6 and Falcon Heavy launches, landings, and static fire tests at SLC-6) and the results indicated that none of the operation types alone are expected to cause adverse community noise exposure using the CNEL 65 dBA. Additionally, when CNEL was assessed for the proposed maximum cadence which includes all combinations of these operation types assuming an almost equal distribution between night and day activities, noise exposure was still estimated to be less than CNEL 65 dBA in populated areas east of the VSFB property line. The CNEL 65 dBA contour is located entirely within the VSFB property and does not include residential land use. Therefore, the Proposed Action would not result in significant impacts related to noise and noise-compatible land use.

The C-weighted Day-Night Average Sound Level (CDNL) is similar to CNEL but computed with C-weighting, which has more emphasis placed on low frequencies below 1,000 hertz (Hz). This metric is used as a cumulative measure of noise events having lower frequency content and higher levels (e.g., sonic booms, large caliber weapons, and blast noise events). The cumulative sonic boom levels were estimated for the projected annual Falcon 9 and Falcon Heavy landing operations at SLC-4 and SLC-6. Conservatively estimating that all operations occurred at night, the maximum CDNL was estimated at 58.0 dBC. Since the FAA uses CDNL 60 dBC as the significance threshold for determining land use compatibility, the cumulative sonic boom levels from Falcon 9 and Falcon Heavy landing operations would be below the threshold for acceptable land use.

**S.3.1.3 Terrestrial Biological Resources:** Vegetation present within the construction area would be removed, resulting in a relatively small loss of native vegetation. Wildlife present within the C&D areas would also be at risk of injury and noise exposure from C&D activities. However, the DAF would implement environmental protection measures (EPMs) to minimize the risk of injury to any wildlife species. Rocket engine noise and sonic booms during launch and landing operations are the primary potential impact on sensitive species. The DAF has initiated formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act (ESA) for 16 species listed as threatened or endangered. The Terms and Conditions and Reasonable and Prudent Measures identified during the Section 7 consultation with the USFWS and the resultant Biological Opinion would be implemented. These measures would decrease the potential for long-term habitat and species loss, as well as adverse effects on reproductive success, mortality rate, or ability to sustain minimum population levels, such that there would be no significant impact.

**S.3.1.4 Marine Biological Resources:** The Proposed Action may also have impacts on marine species, including ESA-listed fish, turtles, cetaceans, and pinnipeds, as well as marine mammals protected under the Marine Mammal Protection Act (MMPA). The DAF conducted informal Section 7 consultation with National Marine Fisheries Service (NMFS), which concurred potential impacts may affect, but not likely to adversely affect ESA-listed species and issued a Letter of Concurrence on 17 April 2024. Pinnipeds at haulouts along the mainland coastline at VSFB, southeastern Santa Barbara, Ventura, northwestern Los

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Angeles Counties, and on the northern Channel Islands (NCI) would be disrupted by noise and visual disturbance associated with Falcon launches and landings up to 100 times per year under the Proposed Action. Through decades of monitoring and collaboration with NMFS, there are generally no substantial behavioral disruptions or anything more than temporary affects to the number of pinnipeds hauled out on VSFB and the Northern Channel Islands. Under the MMPA, NMFS issued a Final Rule for taking marine mammals incidental to VSFB launches. The Letter of Authorization (LOA) allows launch programs to unintentionally take small numbers of marine mammals by “Level B Harassment” (i.e., behavioral disruption) during launches. The Proposed Action would not result in exceedance of take thresholds as identified in the LOA. The DAF is required to comply with the LOA listed conditions and address NMFS concerns regarding marine mammals.

**S.3.1.5 Water Resources:** Potential impacts associated with C&D activities and operations on surface water, ground water, and jurisdictional wetlands were evaluated for the Proposed Action. EPMs would ensure that adequate sediment and erosion control best management practices (BMPs) are implemented to minimize or prevent any loss of surface soils. In compliance with Section 402 of the Clean Water Act (CWA), SpaceX would also obtain coverage under the National Pollutant Discharge Elimination System Construction General Permit and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). Wastewater discharges would continue to follow the conditions of the Regional Water Quality Control Board letter for Enrollment in the General Waiver of Waste Discharge Requirements. Water use to support the increased launch cadence would not have detectable impacts on the San Antonio Creek basin. Therefore, the Proposed Action would not have a significant impact on surface water or groundwater resources.

Under the Proposed Action, impacts on flow within the north drainage during construction could be avoided by completing any modifications to the drainage during the dry season and restoring drainage function prior to the onset of winter rains. Approximately 0.02 acres (ac) of the north drainage would be affected, which is currently impermeable concrete v-ditches and culverts. Since any disturbance would be temporary and the site has little ecological value, impacts on the north drainage would not be significant.

Approximately 0.01 ac of the south drainage, which is currently riprap line, would be temporarily disturbed. Impacts on the south drainage could be avoided by boring under the drainage, suspending the pipeline over the drainage, or completing construction during the dry season and restoring drainage function prior to the onset of winter rains. Because any disturbance would be temporary and it has little ecological value, impacts on the south drainage would not be significant.

A seep that occurs south of N Road would be filled in to construct the proposed landing zones and related infrastructure. Siting alternatives that avoid wetland impacts are not feasible and would not meet the purpose of and need for the Proposed Action. With the implementation of BMPs, no significant impacts on wetlands are anticipated.

**S.3.1.6 Cultural Resources:** The DAF considered the Proposed Action’s potential impacts on prehistoric and historic sites, structures, artifacts, and any other physical or traditional evidence of human activity considered relevant to a particular culture or community for scientific, traditional, religious, or other reasons. Cultural resources include archaeological resources, historic architectural resources, and Native American sacred sites and traditional cultural properties. The only historic building located on VSFB that is not associated with launch complexes or supporting infrastructure is the former USCG Lifeboat Rescue

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Station. The centerpiece of the Colonial Revival style complex is the wood-frame three-story Administrative Barracks built in 1936. The building, which sports a substantial number of single-pane glass windows, has been subjected to many years of launches and boost-back landings at SLC-4 as well as launches conducted at nearby SLC-6 with no reported or observed effect. Accordingly, there would be no effect on any National Register of Historic Places eligible resources in the built environment at VSFb from launch noise.

Built environment and archaeological resources could be subject to sonic booms of up to 4 and 5 psf. Specifically, the 2 psf and greater sonic boom impacts on the NCI which may reach as much as 5 psf over a very narrow portion of land on the NCI. However, a large portion of the NCI would be exposed to an overpressure no more than of 2–3 psf. Sonic booms are dependent on launch trajectory, inclination, and atmospheric conditions. The Proposed Action is not expected to result in a repeated alignment of the sonic boom overpressure footprint within specific areas and the duration of the overpressure effects are estimated to last less than one second per sonic boom. Previous studies, experimental analysis and observations of archaeological sites located on VSFb have provided good evidence that archaeological sites consisting of only surface artifacts or buried archaeological material do not have the potential to be affected by rocket engine noise exceeding 120 dB and sonic booms exceeding 2 psf. The DAF engaged with the California State Historic Preservation Office (SHPO) and Santa Ynez Band of Chumash Indians (SYBCI) over potentially affected historic properties. The SHPO concurred with the DAF's finding of no historic properties affected on 6 February 2025. The SYBCI responded on 21 January 2025 that the Tribe has concerns the Proposed Action would affect a perceived traditional cultural landscape and therefore requested a site visit. The Installation Tribal Liaison Officer (ITLO) responded on 21 January 2025, requesting the Tribe schedule a site visit. As of 30 April 2025, the Tribe had not scheduled a site visit or identified any perceived potential effects. The ITLO will continue open communication with the Tribe to gather comments and address any perceived potential effects. Accordingly, the Proposed Action would have no significant impact on cultural resources.

**S.3.1.7 Coastal Resources:** VSFb property is statutorily excluded from the coastal zone. Downrange landings would occur outside of state waters, and would not occur within intertidal areas, salt marshes, estuaries, or coral reefs. The Proposed Action does not include any coastal construction nor seafloor disturbing activities. However, some effects from launch and landing (e.g., noise, public access restrictions) would occur within the California Coastal Zone. In addition, increased impervious surfaces could increase stormwater runoff; however, post-construction BMPs and stormwater management would minimize any potential effect. Based on the DAF's review of the Coastal Zone Management Act (CZMA) and California's approved Coastal Management Plan, the DAF has determined that the Proposed Action is consistent with the enforceable policies of the California coastal management program, pursuant to the requirements of the CZMA. The DAF has prepared a Consistency Determination and will request concurrence from the California Coastal Commission.

**S.3.1.8 Department of Transportation Section 4(f) Resources:** Because there would be no physical use of any 4(f) properties, only constructive use is being determined. Constructive use occurs when the impacts of a project on a Section 4(f) resource are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Impacts on Jalama Beach County Park would result from occasional, temporary evacuation of the public during launch/landing events. Surf Beach and County of Santa Barbara Ocean Beach Park would only be closed up to 12 times

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per year. While some impacts on Jalama Beach County Park are unavoidable due to mission requirements, evacuations would not be issued for more than 12 launches. Given the formal evacuation agreement in place and the temporary nature of the closure, implementation of the Proposed Action would not substantially diminish the protected activities, features, or attributes of any Section 4(f) resources and therefore would not result in substantial impairment of the properties. There is no reasonable potential for launch-related noise to impair the majority of the Section 4(f) resources within the region of influence because a quiet setting is not part of the significant attributes or features qualifying these properties for protection under Section 4(f). Although launch trajectories overfly the Channel Islands National Park, impacts would not be significant to the point of impairing the activities, features, or attributes that qualify the Channel Island National Park for protection under Section 4(f).

**S.3.1.9 Utilities:** Impacts associated with utilities are related to changes in the supply (also referred to as capacity) or demand for a particular resource. As long as the capacity of a particular utility is higher than the demand for that resource, no impact occurs. However, if the demand exceeds the capacity or if the demand is increased beyond the resource's projected rate of increase, an impact would occur, and the significance of the impact is determined based on the degree to which the capacity is strained. The DAF determined that existing infrastructure and utility capacity are adequate to support increased launch cadence and associated increased requirements for electricity and septic systems. The Proposed Action would not have a detectable effect on water supplies.

**S.3.1.10 Socioeconomics:** Launching and landing operations under the Proposed Action would result in moderate but positive economic benefits from increased demand in the existing workforce, higher revenues, and increased per capita income. SpaceX would continue to use its existing workforce for launching and landing activities. Ongoing commercial space activities at VSFb would continue to be an important economic generator for the local region and nearby counties. Recreational and commercial vessels transit and operate offshore of VSFb and may be affected by short-term warning areas during launches and landings, but these temporary closures of these areas for security and safety do not limit commercial or recreational fishing vessel access to or use of adjacent areas. Areas would be closed for the duration of the activity and reopened at the completion of the activity. The Proposed Action would not significantly affect the demand for local housing and the need for social services and support facilities.

**S.3.1.11 Transportation:** Given the low traffic volumes projected from increased operations, existing capacity of roadways at and near VSFb that would be affected by C&D activities on VSFb and nearby, and the relatively small and temporary increase in daily vehicle traffic that the Proposed Action would generate, no adverse effects on capacity would occur to transportation resources in the area. Increased oversized load transport is not expected to have a significant impact on operations on south VSFb, as these transports would utilize Coast Gate rather than Solvang Gate, which is the only point of access for routine traffic on south VSFb, and existing daily traffic volumes on south VSFb are low. Some oversized or commercial trucks may require additional inspection at the Lompoc Gate on north VSFb prior to transiting to south VSFb but this is not expected to have a significant impact on the operational level of service of VSFb roads. Trains that would pass through a launch vehicle flight path from VSFb would be temporarily stopped at safety hold points during launches to reduce potential risk to people and property. However, launch windows are typically instantaneous or several minutes; during longer launch delays

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VSFB communicates with railroad points of contact to allow trains to move through the affected area, thereby minimizing potential impacts on train schedules.

**S.3.1.12 Human Health and Safety:** An impact on Human Health and Safety would be considered significant if it were to create a potential public health hazard or to involve the improper use, production, or disposal of materials that pose a hazard to people in the affected area. An impact would also be considered significant if project activities were to pose a serious risk of fire, especially wildland fires, or were to involve potential obstruction of emergency response or evacuation routes in and around the project area. While adhering to these safety measures and procedures and EPMs, there would not be significant impacts on human health and safety as a result of the Proposed Action due to launch and landing operations. Modifications to SLC-6 would expose construction workers to hazards associated with C&D activities, including explosives. Contractors would be required to develop a site-specific safety plan that would address these potential hazards. Daily safety briefings would be conducted and workers would be expected to comply with federal OSHA and Air Force Occupational and Environmental Safety regulations. SpaceX would coordinate with VSFB staff to ensure DAF policies are incorporated into the site safety plan. SpaceX and its contractor(s) would be responsible for industrial hygiene and ground safety during SLC-6 construction and modification operations. While complying with industrial and ground safety procedures and EPMs, there would be no significant impacts on Human Health and Safety from the construction activities at SLC-6 under the Proposed Action.

**S.3.1.13 Hazardous Materials and Waste Management:** Compliance with all pertinent federal, state, and local laws and regulations, and applicable DAF and Space Launch Delta 30 plans, would govern all actions (i.e., C&D activities and launch and landing operations) associated with implementing the Proposed Action and would minimize the potential for significant impacts. Launch support operations would use a small amount of products containing hazardous materials, including petroleum, oil, and lubricants (POLs), paints, solvents, oils, lubricants, acids, batteries, and chemicals. SpaceX would also generate a small number of waste tires each year through “roll-on-roll-off” operations and other pad support equipment during routine launch support. Payload processing would generate a small amount of empty containers, spent solvents, waste oil, spill cleanup materials (if used), and lead-acid batteries. Loading and unloading operations would take place over appropriately designed and sized containment basins, with spill prevention and emergency response procedures in place. Proper handling practices of liquid fuels would adhere to applicable federal regulations for liquid fuels and limit the risk of hazardous material releases due to leaking storage tanks, tanker trucks, delivery lines, or other infrastructure.

The relatively small amounts of hazardous materials needed and the waste generated by the Proposed Action would have little to no impact on waste processing capacity. EPMs would be implemented during implementation of the Proposed Action to avoid and reduce potential effects due to hazardous materials. Therefore, the Proposed Action would not have a significant impact due to using and generating hazardous materials and hazardous wastes.

**S.3.1.14 Solid Waste Management:** Solid waste generated during demolition would primarily include concrete, asphalt, and metal, much of which is recyclable. Construction wastes would include packing materials, scrap materials, and miscellaneous waste generated by onsite construction workers. Contractors would be responsible for the disposal or recycling of all waste generated during the scope of the C&D activities. During launch operations and facilities maintenance, solid waste would be disposed of

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routinely. Solid waste would be collected in on-site refuse containers and transported to the Santa Maria Transfer Station for waste disposal, diversion, and recycling. During C&D at SLC-6, sewage would be collected in temporary on-site portable toilets subject to spill-prevention EPMs and serviced by a commercial contractor. Before implementing the Proposed Action, the contractor would prepare a hazardous material Spill Prevention and Response Plan. Compliance with all applicable federal, state, local laws, and regulations, applicable DAF plans and policies, and EPMs, would govern all aspects of the Proposed Action, and would avoid or minimize potential impacts related to solid waste or pollution prevention. Therefore, the Proposed Action would not have a significant impact on solid waste management.

**S.3.1.15 Geology and Soils:** The Proposed Action would increase the extent of impervious areas at SLC-6 and the adjacent proposed Landing Zones. Activities with the potential to impact geology and soils would largely be associated with the removal of existing structures and construction of new structures. However, this area is largely previously disturbed from past construction activities and proposed soil disturbance is anticipated to be shallow. Coverage under the Construction General Permit is required and the DAF would prepare a SWPPP in accordance with this permit. The SWPPP would include erosion control measures. BMPs would also be implemented during ground-disturbing activities, and the EPMs would be implemented. Project construction and demolition would be designed to comply with seismic design standards. Implementation of Proposed Action would have no bearing on liquefaction. Thus, potential hazards due to liquefaction are not anticipated. As a result, no long-term or significant impacts on geological or soil resources from the Proposed Action are anticipated.

### **S.3.2 Alternative 1**

Operations under Alternative 1 would be the same as the Proposed Action and would generate the same types and levels of impacts on all resources. The only differences between Alternative 1 and the Proposed Action is the construction of a new hangar, which would have minimal differences in terms of impacts on vegetation communities and water resources as a result of different construction footprints. Therefore, Alternative 1 would not result in significant impacts on any resource category.

### **S.3.3 No Action Alternative**

Under the No Action Alternative, modifications of SLC-6 and increased Falcon launch cadence on VSFB would not occur, resulting in no new impacts on any resource categories. The FAA would not license Falcon operations at SLC-6 or an increase in Falcon 9 launches at SLC-4.

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