DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration
Office of Commercial Space Transportation

Record of Decision
for
SpaceX Starship-Super Heavy Launch Vehicle at Launch Complex 39A (LC-39A) at the Kennedy Space Center (KSC), Merritt Island, Florida

Introduction and Background

This Record of Decision (ROD) provides the Federal Aviation Administration's (FAA's) final environmental determination to support the issuance, modification, or renewal of a license that would allow Space Exploration Technologies Corporation (SpaceX) to develop infrastructure and operate Starship-Super Heavy, including testing, launches, and Starship and booster landings at LC-39A at KSC. The federal action identified in this ROD is the FAA's issuance, modification, or renewal of launch licenses.

The ROD includes:

- A description of the project proposed by SpaceX;
- A description of all alternatives that the FAA considered and which alternative is considered to be environmentally preferable;
- A summary of potential environmental effects associated with the selected alternative;
- Mitigation measures that SpaceX will be required to implement as a condition of the launch license, which are designed to avoid or minimize environmental harm;
- Mitigation monitoring program; and
- The FAA's findings and determinations.

The ROD also discloses the federal, state, and local actions needed before the project may be implemented and identifies the FAA's preferred and the environmentally preferable alternatives and the alternative selected by the FAA for implementation.

The Final EIS documented the analysis of environmental consequences associated with development of infrastructure and operation of Starship-Super Heavy, including testing, launches, and Starship and Super Heavy landings at LC-39A at KSC and the No Action Alternative. The FAA was the lead federal agency responsible for preparation of the EIS and this ROD. Cooperating agencies included National Aeronautics and Space Administration (NASA) (at KSC), Department of the Air Force (United States [U.S.] Space Force), National Park Service (NPS) (Canaveral National Seashore [CANA]), U.S. Fish and Wildlife Service (USFWS) (Merritt Island National Wildlife Refuge [MINWR]), and U.S. Coast Guard (USCG). The EIS and ROD were prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S. Code [U.S.C.] §4321 et seq.), and FAA Order 1050.1F[1], *Environmental Impacts: Policies and Procedures*.

The FAA is responsible for the accuracy of the information in the Final EIS and the ROD. For more information concerning the contents of this ROD or the Final EIS, please contact:

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Purpose and Need

The purpose of Starship-Super Heavy at LC-39A is to provide greater mission capability to NASA and other SpaceX customers. SpaceX's activities would continue to fulfill the United States' expectation that increased capabilities and reduced space transportation costs will enhance exploration (including within the Artemis and Human Landing System programs), support U.S. leadership in space, and make space access more affordable. The Space Transportation section of the National Space Transportation Policy of 1994 addressed the commercial launch sector, stating that "assuring reliable and affordable access to space through U.S. space transportation capabilities is a fundamental goal of the U.S. space program."

[1] FAA Order 1050.1G, *FAA National Environmental Policy Act Implementing Procedures*, was issued on June 30, 2025, over a year after this EIS was initiated. This EIS was prepared in accordance with FAA Order 1050.1F and CEQ's NEPA Implementing Regulations Revision Phase 1, 87 Fed. Reg. 23453 (April 20, 2022) (Phase 1 final rule). The Final EIS deviates from the environmental analysis requirements outlined in FAA Order 1050.1F where an executive order or decisions of the U.S. Supreme Court requires it. This includes elimination of analysis as described in FAA Order 1050.1F pertaining to environmental justice, climate change, and cumulative impacts.

Starship-Super Heavy at LC-39A is needed to increase operational efficiency, capabilities, and cost effectiveness of the Starship-Super Heavy program. Satisfaction of these needs benefits government and public interests and reduces operational costs. Demand for launch services has continued to increase over the past 20 years, and the space industry growth projections indicate this will continue into the foreseeable future. By providing a reusable launch vehicle with increased lift capability that returns to its launch site, the Proposed Action would reduce the cost of a launch and increase efficiency, delivering greater access to space and enabling cost-effective delivery of cargo and people to the moon and Mars. SpaceX's Proposed Action would satisfy requirements for more efficient and effective space transportation methods and continue the United States' goal of encouraging activities by the private sector to strengthen and expand U.S. space transportation infrastructure.

Proposed Action

The Proposed Action is described in detail in Chapter 2, *Proposed Action and Alternatives*, of the Final EIS and is summarized in this ROD. LC-39A is a NASA-owned, SpaceX-leased launch site located on KSC property, approximately 3 miles (4.8 kilometers) east of NASA's Vehicle Assembly Building. LC-39A currently supports Falcon 9 and Falcon Heavy launches. SpaceX's Proposed Action includes Starship-Super Heavy launch and landing operations (up to 44 launches and 88 landings—44 for each stage [Starship and Super Heavy] of the launch vehicle—per year) at LC-39A, to include ocean landings of Super Heavy in the Atlantic Ocean and Starship in the Atlantic, Pacific, and Indian Oceans. Starship and Super Heavy could land on floating platforms (referred to as "droneships") in the ocean. Approximately 800,000 square feet (70,000 square meters) of infrastructure improvements at LC-39A are proposed to support launch and landing operations, to include launch and landing pads and towers, propellant generation, and stormwater/deluge ponds.

Federal Action

The FAA's federal action, which is the FAA's Preferred Alternative, is to issue a new vehicle operator license or modification of an existing license, as described in 14 Code of Federal Regulations (CFR) Chapter III, parts 400–460, for SpaceX Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida, along with potential renewals and modifications to licenses within the scope of operations analyzed in the Final EIS. In addition, the FAA's federal action also includes issuance of temporary airspace closures consistent with the statutory mandate in 49 U.S.C. §40103 to ensure the safe and efficient use of the National Airspace System.

Alternatives to the Proposed Action

The FAA identified a range of reasonable alternatives. The scope of alternatives that the FAA considered derives from the actions proposed by SpaceX and the purpose of and need for the federal action in connection with SpaceX's proposal. The alternatives identified that did not meet the purpose and need, as well as those that were not technically, operationally, or economically prudent or feasible, were excluded from detailed consideration in the Final EIS. The Final EIS provides a detailed evaluation of the Proposed Action (Preferred Alternative) and the No Action Alternative.

In September 2019, NASA completed the 2019 NASA Environmental Assessment (EA) to evaluate the potential environmental effects resulting from construction and operations associated with the proposed SpaceX Starship-Super Heavy launch vehicle at LC-39A. While the FAA was a cooperating agency on the 2019 NASA EA, the FAA did not adopt the EA because SpaceX did not apply to the FAA for a commercial launch vehicle operator license at that time and the FAA had no corresponding federal action requiring evaluation. Through an alternative screening process based on Starship-Super Heavy requirements and the purpose and need, the 2019 NASA EA established LC-39A as the approved location for Starship-Super Heavy operations, and infrastructure development based on NASA's 2019 Finding of No Significant Impact (FONSI) is already underway. LC-39A provides time-critical mission capability to NASA and commercial pursuits via the Starship-Super Heavy. In addition to existing launch infrastructure, LC-39A provides launch site diversity for Starship-Super Heavy to meet the purpose and need for near-term lunar exploration under the NASA Artemis and Human Landing System programs. Given the above, and as described in Section 2.3, *Alternatives Considered but Eliminated from Further Analysis*, of the EIS, no other launch sites were considered for this Proposed Action.

No Action Alternative

Under the No Action Alternative, the FAA would not issue a new license to SpaceX or modify their existing vehicle operator license for Starship-Super Heavy to authorize operations at LC-39A and would not close any associated airspace. NASA would not develop, implement, or approve agreements with SpaceX associated with Starship-Super Heavy operations at LC-39A. SpaceX would not conduct Starship-Super Heavy launch or landing operations from LC-39A. The No Action Alternative includes reasonably foreseeable actions that would still occur regardless of the Proposed Action, such as other planned launch activity at both KSC and Cape Canaveral Space Force Station (CCSFS).

Alternatives Considered but Not Carried Forward for Detailed Evaluation

As discussed previously, through an alternative screening process based on Starship-Super Heavy requirements and the purpose and need, the 2019 NASA EA established LC-39A as the approved location for Starship-Super Heavy operations; Space Launch Complex (SLC)-40 within CCSFS and SLC-4 within Vandenberg Air Force Base (now known as "Vandenberg Space Force Base") were considered as alternatives but were not carried forward in the 2019 NASA EA. Currently, infrastructure development in support of Starship-Super Heavy operations at LC-39A based on NASA's 2019 FONSI is already underway. As a result, because LC-39A is already the approved location for Starship-Super Heavy operations, alternative locations are not considered within the context of this EIS.

Selected Alternative and Summary of Necessary Permits and Approvals

Preparation of an EIS, public review and comment, and issuance of this ROD fulfills the FAA's requirements under NEPA. The FAA has selected the Preferred Alternative, which is for the FAA to issue a new vehicle operator license or modification of an existing license to SpaceX for the Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida. The requirements for obtaining and possessing a launch license are described in 14 CFR parts 400–460. The completion of the environmental review process does not guarantee that the FAA would issue a license to SpaceX for the Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida. The Proposed Action must also meet FAA safety, risk, and indemnification requirements. To comply with the FAA's licensing requirements, SpaceX may enter into a Letter of Agreement (LOA) with appropriate air traffic control centers to accommodate flight parameters of Starship-Super Heavy. SpaceX may also enter into a Letter of Intent (LOI) with appropriate USCG Districts to safely operate the Starship-Super Heavy launch vehicle over open ocean.

Acquisition of permits and approvals under other laws would be required prior to construction and operation, including:

- **Bald and Golden Eagle Protection Act (BGEPA)** — The BGEPA prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, and export or import of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. *Coordination with the USFWS under the BGEPA was conducted as part of the NEPA process through EIS review*.

- **Clean Air Act (CAA)** — Under Title V of the CAA, air emissions from the Proposed Action may require a Title V Air Operating Permit issued by the Florida Department of Environmental Protection (FDEP). Stationary sources operate under exemption thresholds established by the FDEP (Florida Administrative Code Chapter 63-210). *If required, SpaceX would obtain a Title V Air Operation Permit or coordinate with KSC for amendment of the KSC Title V Operation Permit to account for the Proposed Action*.

- **Endangered Species Act (ESA)** — Section 7 of the ESA requires all federal agencies to ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any listed species or result in destruction or adverse modification of designated critical habitat. *In accordance with the ESA Section 7, the FAA completed consultation with the USFWS and National Marine Fisheries Service (NMFS)*.

- **Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)** — The MSFCMA requires the identification of the potential effects of, and conservation recommendations for, actions that may adversely affect essential fish habitat (EFH). *In accordance with the MSFCMA, the FAA has completed consultation with NMFS for potential effects to EFH*.

- **Marine Mammal Protection Act (MMPA)** — All marine mammals are protected under the provisions of the MMPA. The MMPA prohibits any person or vessel from "taking" marine mammals in the United States or the high seas without authorization. *SpaceX has completed a programmatic consultation with NMFS for Starship-Super Heavy activities across multiple locations*.

- **Migratory Bird Treaty Act (MBTA)** — Birds, both migratory and most native-resident bird species, are protected under the MBTA. Under the MBTA, it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture, or kill; or possess migratory birds or their nests or eggs at any time, unless permitted by regulation. Effects to migratory birds and compliance with the MBTA are addressed as part of the NEPA process; *the FAA, within the context of the EIS, has considered measures to reduce effects as required by Executive Order (E.O.) 13186*, which directs federal agencies to act to further implement the MBTA.

- **U.S. Department of Transportation (DOT) Act, Section 4(f)** — Under 49 U.S.C. §303, before approving a project that uses a Section 4(f) property, the FAA must determine that there is no feasible and prudent alternative that avoids the Section 4(f) property and that the project includes all possible planning to minimize harm to the property, or the FAA may make a finding that the project has a *de minimis* impact on the Section 4(f) property. Section 4(f) pertains to impacts to subject properties from direct contact and public accessibility, as well as impacts from noise and airspace restrictions associated with the Proposed Action. *The FAA has completed a Section 4(f) evaluation within the context of the EIS*.

- **Coastal Zone Management Act (CZMA)** — The CZMA (16 U.S.C. §1451 et seq.) establishes a policy to preserve, protect, develop, restore, and enhance the resources of the nation's coastal zones. Federal actions that have reasonably foreseeable effects on natural resources or land or water uses in the coastal zone, regardless of the project's location, are required to be consistent, to the maximum extent practicable, with the enforceable policies of federally approved state coastal management programs (CMPs) (16 U.S.C. §1456; 15 CFR part 930). Federal agencies submit a Consistency Determination to the state CMP when an action could foreseeably affect coastal resources. If a federal action would not foreseeably affect the coastal zone or coastal resources, then the federal agency may prepare a negative determination for that action. For the Proposed Action, a Coastal Consistency Determination was submitted to the FDEP as part of this EIS in accordance with 15 CFR part 930, Subpart C (Appendix B.5, *Coastal Consistency Determination*). *The FDEP informed the FAA of its concurrence with the Consistency Determination*.

- **National Historic Preservation Act (NHPA)** — Section 106 of the NHPA requires federal agencies to consider the effect of federal undertakings on historic properties, including historic, archaeological, and cultural resources. *As part of the NHPA Section 106 process*, *NASA, on behalf of the FAA, completed consultation with the Florida State Historic Preservation Officer (SHPO) and federally recognized tribes to help determine the potential effects of the Proposed Action*.

- **Clean Water Act (CWA)** – Through the National Pollutant Discharge Elimination System (NPDES) program, the CWA establishes federal limits on the amounts of specific pollutants that can be discharged into surface waters. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources (i.e., stormwater) of water pollution. The FDEP is authorized by the

U.S. Environmental Protection Agency (USEPA) to issue permits for discharge to surface waters under the NPDES program.

  - *Construction Permitting*: The NPDES program requires construction site operators engaged in clearing, grading, and excavating activities that disturb 1 acre or more to obtain coverage under an NPDES Construction General Permit for stormwater discharges. Construction or demolition that necessitates an individual permit also requires preparation of a Notice of Intent (NOI) to discharge stormwater and a Stormwater Pollution Prevention Plan (SWPPP) that is implemented during construction. Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill material into wetlands and other waters of the United States. *Any discharge of dredge or fill material into waters of the United States requires a permit from the U.S. Army Corps of Engineers (Section 3.9, Water Resources)*.

  - *Industrial Stormwater Permitting*: SpaceX currently operates LC-39A in accordance with an Environmental Resource Permit (ERP) from the St. Johns River Water Management District (Permit Number [No.] 81270-11) for operation of a stormwater management system. *SpaceX would be required to coordinate adjustments to their ERP and associated SWPPP with the St. Johns River Water Management District and FDEP regarding changes in industrial activity at LC-39A*.

- **Industrial Wastewater Permitting** — The FDEP's Industrial Wastewater Program issues permits to facilities and activities that discharge to surface waters and groundwater of the state. Industrial wastewater that discharges to domestic wastewater treatment facilities, however, is regulated under the Industrial Pretreatment component of the FDEP's Domestic Wastewater Program. The FDEP is authorized by USEPA to issue permits for discharge to surface waters under the NPDES. Permits for discharge to groundwater are issued by the FDEP under state statutes and rules. Industrial wastewater permits are issued by the district offices. *SpaceX would be required to either update the existing industrial wastewater permit or apply for a new one once facility design and wastewater requirements are finalized*.

- **Florida Environmental Resources Permit Program** — The State of Florida operates the ERP Program, which regulates activities involving the alteration of surface water flows. This includes

new activities in uplands that generate stormwater runoff from upland construction, as well as dredging and filling in wetlands and other surface waters. *A modification to SpaceX's existing St. Johns River Water Management District ERP Permit No. 81270-13 at LC-39A may be required to construct the Proposed Action*.

- **Liquefaction Plant** — Final siting for the liquified natural gas (LNG) facility would be conducted in coordination with the KSC Fire Marshal and Safety Office to meet the requirements of National Fire Protection Association 59A (*Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)*), which applies to the siting, design, construction, maintenance, and operation of facilities that produce, store, and handle LNG, as well as the training of personnel involved with LNG. This standard provides minimum fire protection, safety, and related requirements for the location, design, construction, security, operation, and maintenance of LNG plants. In addition, the LNG facility would utilize 49 CFR part 193 (*Liquified Natural Gas Facilities: Federal Safety Standards*) as guidance (or as may otherwise be required by the Florida Public Safety Commission) to address facility resiliency, safety, and hazards for construction and operation of the plant. Such requirements may include a thermal exclusion zone, a flammable vapor gas dispersion zone, design sufficient to withstand wind forces without loss of structural or functional integrity, and other structural and design requirements. Until the LNG facility is constructed, commodities such as liquid oxygen and liquid methane would be trucked in by contractors; *all contractors transporting commodities to LC-39A would be required to comply with appropriate DOT Pipeline and Hazardous Materials Safety Administration regulations and NASA transportation requirements*.

Preferred Alternative

In determining the Preferred Alternative, the FAA considered environmental effects of the Proposed Action and the No Action Alternative. The FAA documented the environmental effects of the Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida in the Draft and Final EIS. Based on the analysis and considerations identified through public and agency review, the FAA determined that SpaceX's proposal, as modified to incorporate the avoidance, minimization, and mitigation measures described below and in Chapter 3, *Affected Environment and Environmental Consequences*, of the Final EIS, constitutes the FAA's Preferred Alternative. This alternative will result in the construction and operation of infrastructure and Starship-Super Heavy operations at LC-39A that is consistent with the

purpose of and need for the Proposed Action, while at the same time avoiding, minimizing, and mitigating harm to the environment.

Environmentally Preferable Alternative

The environmentally preferable alternative in the Final EIS is the No Action Alternative because the effects of the No Action Alternative would be less than those expected from the Preferred Alternative. Under the No Action Alternative, the FAA would not license operation of the Starship-Super Heavy from LC-39A, but other activities would continue at LC-39A, including launches of Falcon and Falcon Heavy. However, the No Action Alternative is not the FAA's Preferred Alternative because it is not consistent with the purpose of and need for action, including the FAA's statutory direction from Congress under the Commercial Space Launch Act to encourage, facilitate, and promote commercial space launch and reentry activities by the private sector to strengthen and expand U.S. space transportation infrastructure.

Public and Agency Involvement

The FAA provided opportunities for the public to give input on the proposed project through the public scoping period from May 10, 2024, through June 24, 2024, and again during the public comment period for the Draft EIS from August 8, 2025, through September 29, 2025. The FAA has also worked closely with the cooperating agencies and consulting agencies in the preparation of the EIS.

Scoping for the development of the EIS began with the publication of the NOI in the Federal Register on May 10, 2024 (89 Fed. Reg. 92-40526). 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 (*Orlando Sentinel, Florida Today*, and *Al Dia Today*), and notifications were provided via email to potentially interested parties and regulatory agencies. The FAA held three in-person and one virtual public scoping meetings on the following dates, times, and locations:

- June 12, 2024 (2:00 p.m.-4:00 p.m. Eastern Time), Radisson Cape Canaveral, Florida.
- June 12, 2024 (6:00 p.m.-8:00 p.m. Eastern Time), Radisson Cape Canaveral, Florida.

- June 13, 2024 (6:00 p.m.-8:00 p.m. Eastern Time), Kennedy Space Center Visitor Complex, Merritt Island, Florida.

- June 17, 2024 (6:00 p.m-8:00 p.m. Eastern Time), virtual.

Public review and comment on the Draft EIS was initiated with publication of the Notice of Availability (NOA) in the Federal Register on August 8, 2025 (90 Fed. Reg. 149-37946). The NOA described the Proposed Action, provided the public meeting dates and times, 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 meeting dates in area newspapers (*Orlando Sentinel, Florida Today*, and *Al Dia Today*). Flyers were posted in the local area to announce the NOA and comment period for the Draft EIS. The EIS was posted to the FAA website, submitted to the USEPA, and posted to the Federal Docket the week of August 4, 2025. The FAA sent notification letters and e-mails providing direction to access 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. Hard copy versions of the Draft EIS were made available at the following libraries: Cocoa Beach Public Library, Central Brevard Library and Reference Center, Cape Canaveral Public Library, Titusville Public Library, Merritt Island Public Library, and Satellite Beach Public Library.

The Draft EIS public comment period was initiated with the NOA on August 8, 2025. The FAA held four in-person and one virtual public meeting at the following dates, times, and locations:

- August 26, 2025 (1:00 p.m.-3:00 p.m. Eastern Time), Astronauts Memorial Foundation, Center for Space Education, Conference Center, Merritt Island, Florida.

- August 26, 2025 (6:00 p.m.-8:00 p.m. Eastern Time), Astronauts Memorial Foundation, Center for Space Education, Conference Center, Merritt Island, Florida.

- August 28, 2025 (1:00 p.m.-3:00 p.m. Eastern Time), Radisson Conference Center, Cape Canaveral, Florida.

- August 28, 2025 (6:00 p.m.-8:00 p.m. Eastern Time), Radisson Conference Center, Cape Canaveral, Florida.

- September 3, 2025 (6:00 p.m.-8:00 p.m. Eastern Time), virtual.

At the request of the Florida Airports Council, the comment period was extended by 7 days until September 29, 2025 (90 Fed. Reg. 183-45975). Appendix A, *Public and Agency Involvement*, of the Final EIS contains the FAA's responses to comments submitted during the public comment period. The FAA responded to all substantive comments and included in the Final EIS any necessary changes or edits resulting from the comments received.

The USEPA will publish an NOA for the Final EIS on February, 6, 2026.. An electronic version of the Final EIS was posted on the FAA website: www.faa.gov/space/stakeholder_engagement/spacex_starship_ksc.

In addition, notifications were sent to persons and agencies on the distribution list notifying recipients that an electronic version of the Final EIS was available for review at www.faa.gov/space/stakeholder_engagement/spacex_starship_ksc.

Summary of the Environmental Consequences of the Proposed Action (Preferred Alternative)

The Final EIS analyzed the environmental effects of operation of the Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida. There would be unavoidable, significant direct and indirect effects related to noise and noise-compatible land use, air quality, and airspace transportation. Nevertheless, all practicable means to minimize harm to these resources were considered. Resource areas that require avoidance or minimization measures to avoid or reduce effects include biological resources; historical, architectural, archaeological, and cultural resources; land use; noise and noise-compatible land use; and socioeconomics and children's environmental health and safety risks. The Final EIS (Chapter 3, *Affected Environment and Environmental Consequences*) describes measures that would be implemented to avoid, minimize, and mitigate environmental effects; these measures are summarized below in the Mitigation Summary section.

The following sections summarize the impact analysis for each environmental impact category under the Preferred Alternative.

Air Quality

Effects to air quality would be insignificant for all criteria pollutants except nitrogen oxides (NO_X). Emissions from construction activities would be minor and temporary, lasting only the duration of the construction phase. These emissions would remain well below insignificance indicator thresholds

established for NEPA analysis and would not contribute to an exceedance of any National Ambient Air Quality Standards. Emissions sources during construction would be mobile and intermittent, and pollutant emissions would not be large enough in a localized area to cause any exceedance of an ambient air quality standard. For operational activities, emissions of all criteria pollutants except NO_X are anticipated to remain below insignificance thresholds.

However, total NO_X emissions—including both construction (11.11 tons per year) and operational (374.55 tons per year) sources—are estimated at 385.66 tons per year, exceeding the insignificance indicator threshold of 250 by approximately 54 percent. This level of NO_X emissions represents 4.35 percent of the National Emissions Inventory total for Brevard County, which is 8,867.99 tons per year.

In addition, the ground-level effect of launch vehicle emissions released above the atmospheric mixing layer would be negligible due to the inability of released pollutants to penetrate the mixing layer and mix downward to ground level. The FAA anticipates that launch and landing activities would result in NO_X emissions above indicator thresholds and would be considered potentially significant unless localized air dispersion modeling could demonstrate that the emissions would not cause or contribute substantially to a projected air quality violation of an ambient air quality standard.

Biological Resources (including Fish, Wildlife, and Plants)

Terrestrial and Estuarine Wildlife and Habitats: Terrestrial and estuarine wildlife may alter behaviors or suffer injury or death, and their habitats may be degraded or destroyed by noise and visual disturbance, vibrations, sonic booms, strikes and collisions, artificial lighting, vapor plumes, hazardous materials, invasive species, and restricted access associated with construction and Starship-Super Heavy operations. The magnitude, frequency, and extent of exposures to such effects would increase under the Preferred Alternative. However, effects would still be less than significant because the Preferred Alternative would not result in any species extirpations, substantial habitat effects, or adverse population-level effects.

Marine Wildlife and Habitats: Marine wildlife may alter behaviors or suffer injury or death, and their habitats may be degraded by noise and visual disturbance, sonic booms, strikes and collisions, artificial lighting, hazardous materials, and restricted access associated with Starship-Super Heavy launches, expended boosters and landings, and vessel operations. The magnitude, frequency, and extent of exposures to such effects would increase under the Preferred Alternative. However, effects would still be less than significant because the Preferred Alternative would not result in any species extirpations, substantial habitat effects, or adverse population-level effects.

Federally Protected Species: Federally protected species in the launch and ocean landing study areas could be affected by the same stressors identified for terrestrial, estuarine, and marine wildlife. The magnitude, frequency, and extent of exposures to such effects would increase under the Preferred Alternative. However, the effects would still be less than significant because the Preferred Alternative would not be likely to jeopardize the continued existence of a federally listed threatened or endangered species. On October 20, 2025, the USFWS provided concurrence on these findings through issuance of a Biological/Conference Opinion (BO/CO) under Section 7 of the ESA.

Critical Habitat: Critical habitat in the launch and ocean landing study areas could be affected by the same stressors identified for terrestrial, estuarine, and marine habitats. The magnitude, frequency, and extent of exposures to such effects would increase under the Preferred Alternative, but effects to critical habitat would still be less than significant because the Preferred Alternative would not likely result in the destruction or adverse modification of federally designated critical habitat. On October 20, 2025, the USFWS provided concurrence on these findings through issuance of a BO/CO under Section 7 of the ESA (USFWS Ecosphere Log No.: 2024-0058364).

Essential Fish Habitat: EFH could be affected by hazardous materials and debris strikes from Starship-Super Heavy construction and operations. The magnitude, frequency, and extent of exposures to such effects would increase under the Preferred Alternative. However, effects would still be less than significant because there would be no adverse effects on estuarine EFH or water column or soft substrate EFH in the Atlantic Ocean landing area, and the potential to adversely affect hard bottom and deep-water corals in the Atlantic Ocean landing area would be decreased by their limited distribution in the overall study area, relatively low number and dispersed location of expended items, and number of debris items that would burn up in the atmosphere. On October 27, 2025, NMFS provided concurrence on these findings under the MSFCMA via review of the EIS, requesting tracking and reporting of project-related marine debris in shallow or deepwater and any associated EFH impacts.

State-Listed Species: State-listed species in the launch and ocean landing study areas could be affected by the same stressors identified for terrestrial, estuarine, and marine wildlife. The magnitude, frequency, and extent of exposures to such effects would increase under the Preferred Alternative. However, the effects would still be less than significant because the Preferred Alternative would not result in any species extirpations or adverse population-level effects.

Migratory Birds and Bald Eagles: Migratory birds and bald eagles in the launch and (for migratory birds) ocean landing study areas could be affected by the same stressors identified for terrestrial, estuarine,

and marine wildlife. The magnitude, frequency, and extent of exposures to such effects would increase under the Preferred Alternative. However, the effects would still be less than significant because the Preferred Alternative would not result in any species extirpations or adverse population-level effects.

Climate

Construction-related greenhouse gas (GHG) emissions for the Preferred Alternative are estimated at 1,353 metric tons (MT) of carbon dioxide equivalent (CO_2e). These emissions would occur only during the construction period and are temporary in nature. While construction emissions do not exceed the insignificance threshold, they contribute to the overall emissions associated with the Preferred Alternative.

GHG emissions from Preferred Alternative operations would exceed the GHG insignificance indicator threshold of 68,039 MT per year. Annual operational GHG emissions are estimated at 210,662.01 MT of CO_2e, with total emissions—including construction, trucks, barges, and vessel recovery—amounting to 217,354.74 MT of CO_2e. This exceeds the insignificance indicator threshold by approximately 319 percent and represents approximately 2.81 percent of the total annual emissions for Brevard County, indicating a substantial contribution to regional emissions. In summary, the Preferred Alternative's GHG emissions exceed the insignificant indicator and are expected to contribute to cumulative global GHG emissions.

Coastal Resources

The Preferred Alternative would result in effects to coastal resources; however, the effects would not be significant. In addition, the Preferred Alternative would not affect coastal barrier resource systems and coral reef ecosystems, cause an unacceptable risk to human safety or property, or have unmitigable adverse coastal environmental effects.

The FAA has determined that the Preferred Alternative may affect a Florida coastal use or resource and, therefore, reviewed the action for consistency with the enforceable policies of the Florida CMP. The FAA's determination is that the Preferred Alternative is consistent with the enforceable policies of Florida's CMP. The Florida State Clearinghouse reviewed the Draft EIS and concurred with the FAA's determination on September 30, 2025.

U.S. DOT Act, Section 4(f)

There will be no use of Section 4(f) resources resulting from construction under the Preferred Alternative. There are 392 Section 4(f) resources in the proposed project area associated with noise

analyses. The FAA considered as guidance the Joint Development Exception outlined in the Federal Highway Administration/Federal Transit Administration regulations at 23 CFR §774.11(i) and determined that the MINWR and CANA are not subject to Section 4(f) evaluation. The FAA determined that the proposed project does not require the permanent incorporation or temporary occupancy of Section 4(f) resources. In addition, the FAA determined that the proposed project does not significantly impair historic sites, public parks and recreation areas, or wildlife and waterfowl refuges; thus, the project would not use Section 4(f) resources. The FAA notified officials with jurisdiction regarding its DOT Section 4(f) determinations, and no officials responded with any related issues or nonconcurrences.

Farmlands

There are no prime or unique farmlands or open aquaculture areas within the study area. Construction and operation activities would not result in loss of access to important farmland.

Hazardous Materials, Solid Waste, and Pollution Prevention

The Preferred Alternative would not violate applicable federal, state, or local laws or regulations regarding hazardous materials and solid waste management. While the Preferred Alternative involves contaminated sites, not all the grounds within the project area are contaminated, which leaves space for siting project components on uncontaminated land within the boundaries of LC-39A. Ground-disturbing activities would be subject to any applicable Land Use Controls associated with such sites (i.e., prohibiting the use of groundwater), and testing of excavated soils for potential contamination prior to offsite transport for disposal may be required. Overall, the siting of facilities to avoid contaminated sites to the greatest extent possible serves as a pre-planning mitigation to minimize potentially adverse effects. In addition, the Preferred Alternative would not (1) produce an appreciably different quantity or type of hazardous waste from that already produced at KSC, (2) generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal or exceed local capacity, and (3) adversely affect human health and the environment. Therefore, the FAA has determined that the Preferred Alternative would not result in significant adverse effects associated with hazardous materials, solid waste, or pollution prevention.

Health and Safety

Under the Preferred Alternative, health and safety risks could occur from Starship-Super Heavy based on the number of launches and reentries. Closures for tests, launches, and reentries would be implemented for safety. Approximate times of closure include up to 396 hours per year for tests and 462 hours per

year for launches and reentries. Based on the number of hours in a year, this equates to approximately just under 10 percent total for a year, with 4.5 percent for tests and 5.3 percent for launches and reentries. Note that half of the closure times would be during the day, while half would occur at nighttime.

The FAA, NASA, and SpaceX would implement protective measures including closures to ensure risks to personnel and the public are minimized to the extent practicable. The protective measures include activation of the hazard arc; issuance of Notice to Mariners (NOTMARs) and Notices to Airmen (NOTAMs); activation of scheduling procedures to prevent potential effects to personal, commercial and recreational vessels, and aircraft; relocation of personnel prior to launch and reentry; and temporary road closures during launches and landings. Given the safety factors put in place during operational activities, the FAA does not anticipate significant adverse health and safety effects.

Historical, Architectural, Archaeological, and Cultural Resources

While effects to historical, architectural, archaeological, and cultural resources are possible, significant effects to these resources are unlikely because of the infrequency of damage to these kinds of resources when exposed to sonic boom overpressure events and vibratory effects expected within the Area of Potential Effect as the result of the Preferred Alternative. However, poorly maintained structures or previously damaged structures may be more susceptible to damage. The long-term effects of repeated sonic boom overpressure events on subsurface archaeological sites, if any, are poorly understood. Any effects potentially resulting from such events have not been systematically documented in the past.

NASA, as the lead agency for NHPA consultation and in coordination with the FAA, completed NHPA Section 106 consultation with the Florida SHPO, federally recognized tribes, and other consulting parties to develop and execute a Programmatic Agreement pursuant to 36 CFR §800.14(b). The Programmatic Agreement includes ongoing consultation and monitoring efforts and mitigation strategies to resolve any potential adverse effects resulting from the Preferred Alternative. The Programmatic Agreement was fully executed on November 22, 2025.

Land Use

Under the Preferred Alternative, land use designations at KSC would remain unchanged. Construction and operations at LC-39A would occur within areas previously approved for construction (and currently under development) as described in the 2019 NASA EA. The Preferred Alternative would be consistent

with the current land uses at and in the vicinity of KSC and would continue to function to support space transportation operations and associated support requirements.

In general, effects to recreational land use in the surrounding study area would occur due to increased noise events/public exposure, as well as increased access restrictions, closures, and the associated changes to USFWS and NPS staff management priorities altered by launches. However, the FAA has not determined a constructive use of these areas and does not consider these effects significant, as the noise and closure events would be temporary and would not permanently preclude the viability or use of the areas, as shown by their current exposure to frequent launch-related noise from both KSC and CCSFS. Land uses would not be affected to the extent that public health or safety was threatened. In addition, it is not anticipated that fire management program activities would significantly change in the area surrounding KSC due to continued enforcement of the Memorandum of Understanding for Prescribed Burning. Before any closures are enacted, the closure activities must be reviewed and approved by the NPS Director and the Assistant Secretary for Fish and Wildlife and Parks under Secretarial Order 3426. This will be coordinated between the FAA, SpaceX, and the Department of the Interior.

Noise-compatible land use outside of KSC and CCSFS would remain compatible with guidelines published at 14 CFR part 150, except for those areas exposed to sonic booms exceeding a 60 decibels C-weighted day-night average sound level. In these areas, projected noise levels from sonic booms would exceed levels at which noise-sensitive land uses are not considered compatible.

Natural Resources and Energy Supply

Significant effects to natural resources and energy are not anticipated because the Preferred Alternative would not exceed supply and demand or the capacity of required systems. Therefore, the FAA has determined that the Preferred Alternative would not result in significant adverse effects associated with natural resources and energy supply.

Noise and Noise-Compatible Land Use

Increased supersonic noise levels would result in significant noise effects based on FAA criteria. Interruptions of activities in nearby communities during the 44 proposed annual Starship-Super Heavy launch and 88 landing events per year would be relatively brief. At representative locations outside KSC/CCSFS, outdoor noise levels would exceed 97 maximum A-weighted decibels. The likelihood of people exposed to noise being awakened indoors would be as high 82 percent during late-night

operations, which would make up approximately half of total annual events at sensitive locations outside KSC/CCSFS. Noise levels would remain below 65 A-weighted decibels day-night average sound level at all locations outside the boundaries of KSC/CCSFS under the Preferred Alternative; all land uses would remain compatible in accordance with guidelines at 14 CFR part 150 with propulsion noise levels. Sonic boom noise levels would exceed a 60 decibels C-weighted day-night average sound level, a level at which noise-sensitive land uses are not considered compatible, in 28,595 acres (11,572 hectares) of off-KSC/CCSFS land. Propulsion noise levels would remain below hearing conservation criteria at all locations outside of KSC/CCSFS boundaries. Sonic booms exceeding 4 pounds per square foot in portions of Merritt Island would be relatively infrequent, and sonic boom noise energy would be primarily at frequencies that do not interact strongly with hearing mechanisms. People in known high-noise areas on KSC would be provided hearing protection where appropriate, and the risk of hearing damage would remain minimal. Significant effects associated with the Preferred Alternative are unavoidable.

Socioeconomics and Children's Environmental Health and Safety Risks

Significant effects to socioeconomic resources would not be anticipated because there would not be a large change in personnel that would induce substantial economic growth, disrupt or divide the physical arrangement of an established community, cause extensive relocation of residents and community businesses, substantially reduce the levels of service of roads, or produce a substantial change in the community tax base. However, construction and operational activities would have positive and -short-term employment and income effects. These effects would last for the duration of the construction activities or during the up to 220 static fire, launch, and landing events. During the 44 launches/booster landings and 44 Starship reentries/landings, restricted access to airspace, maritime activities, and effects to MINWR and CANA (e.g., commercial and recreational boating and fishing) may create delays from rescheduling or rerouting, annoyance, and potential losses of income and economic value.

Under the Proposed Action, Starship-Super Heavy operations would have potential effects to airspace and maritime activities for operations to result in delays, reroutes, and cancellations. KSC is a multiuser spaceport and facilitates space launch operators, including major companies such as Blue Origin, Boeing, Lockheed Martin, SpaceX, Sierra Space, and United Launch Alliance. Starship-Super Heavy operations may require closure of areas that affect other launch service providers at the spaceport. However, as described in Section 2.1.3.1 of the Final EIS, *Starship-Super Heavy Operations, Pre-Launch*, potential effects to airspace and maritime activities would be minimized due to implementation of numerous protocols and procedures, compliance with necessary notification requirements (e.g., NOTAMs and

NOTMARs), and coordination activities between SpaceX, the DAF, the FAA, and the USCG. The FAA expects range managers to coordinate launch activities amongst launch service providers to minimize potential conflicts. The area and duration of range clearance are largely based on the launch trajectory and operations. During each launch, the FAA coordinates with other federal agencies, spaceport personnel, regional air traffic controllers, U.S. military aviation units, and other launch providers and airspace users to clear the affected areas. Shipping lanes would not be altered or closed under the Proposed Action. Launches and reentries would occur 88 times per year and would be scheduled in advance to minimize interruption to ship traffic (Starship-Super Heavy launches and Super Heavy booster returns are considered one event due to short time period between launch and return).

However, estimating the economic impact that the proposed action may have on airspace and maritime activities is challenging and is unlikely to produce reasonable and defensible estimates. Any estimate of the economic impact to airspace and maritime users resulting from space launch or re-entry activity is sensitive to the timing of prelaunch notification as well as the timing and duration of the closure, which itself may be further impacted by any off-nominal launch-related events.

The economic impacts would vary significantly based on aircraft/vessel type, operational flexibility, alternative routing options, scheduling constraints, and any buffers within these operational scenarios.

Furthermore, as Starship-Super Heavy operations become more reliable at KSC, the effect on airspace and maritime activities with each launch/reentry operation may decline due to the implementation of numerous protocols and procedures, compliance with necessary notification requirements (i.e., NOTAMS and NOTMARS), and airspace coordination activities between SpaceX, the DAF, the FAA, and USCG. Economic theory also recognizes that self-interested entities whose decisions are primarily driven by gain, logical analysis and preferences may adjust their behavior to recurring, predictable constraints. As such, airlines and other users of the airspace may incorporate known operational constraints from repeated launch and reentry operations as they become more reliable and predictable into their routing, scheduling, and pricing decisions.

Given these factors and the high sensitivity of impacts to unpredictable operational variables, the lack of stable causal relationships, and the potential adaptation of affected users over time, any present attempt to estimate the long-term economic impact of airspace and maritime closures for the proposed action may be overstated and unreliable and, as such, too speculative to reasonably inform the decision-maker's choice among potential alternatives.

Launches/booster landings and reentries would occur 88 times per year and be scheduled in advance to minimize interruption to commercial and recreational participants that may be affected by temporary closures or restricted access to certain areas. The NPS could experience a range of annual fee loss due to closures potentially between $239,000 and $423,000, which equates to a potential annual average revenue loss of between approximately 13 percent and 24 percent. This would adversely affect the NPS's ability to fund projects, staff, and maintain the park; the NPS may consider this a significant adverse effect to its operations. Advance notification to the public of launch schedules would help some visitors plan accordingly and find substitute recreation sites on closure days and would help to reduce the number of people turned away who are unaware of the closures.

SpaceX is required to carry insurance to cover claims by third parties that result from licensed activities, including structural damage; claims would be subject to the insurance policy terms and Commercial Space Launch Act.

Implementation of Occupational Safety and Health Administration regulations, other recognized standards, applicable NASA regulations or instructions, and SpaceX internal procedures associated with existing launches and landings minimize potential environmental health and safety risks to the general public, including children. These regulations would continue under the Preferred Alternative. Significant levels of NO_X emissions could result in a disproportionate health and safety risk to children. However, the only potential exposure to high NO_X emissions would be the KSC Child Development Center (CDC), located more than 7 miles from the launch site. It is likely that NO_X emissions would be dispersed by the time they reach the CDC; in addition, children would be inside during the launch.

Visual Effects (including Light Emissions)

The new LC-39A infrastructure and lighting would be consistent with the existing visual landscape, which already consists of launch support facilities. Launch support facilities currently operate under lighting management plans for both KSC and CCSFS to reduce lighting effects, and LC-39A would continue this practice. As a result, the FAA has not identified any significant adverse visual effects associated with facility construction or operations.

Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)

Because the Preferred Alternative would not cause an exceedance of a surface water or groundwater quality standard, would not contaminate an aquifer used for public water supply, would not affect

wetlands, and would not cause notable adverse effects on floodplains, the FAA has identified no significant effects to water resources.

Transportation (including Roadways, Maritime, and Airspace)

While there could be temporary road closure and traffic effects associated with heavy and slow-moving construction vehicles at KSC and on the local roads, these effects would be temporary and typical for the local transportation system within and around an active spaceport. Therefore, the FAA does not anticipate significant effects to transportation systems during construction activities under the Preferred Alternative, with construction workers representing only a 0.02 percent increase in the number of employees and vehicles accessing LC-39A.

During operations, the number of employees could increase along with associated vehicle traffic; therefore, commuter traffic could increase under the Preferred Alternative. These increases would be small compared to the number of employees located at KSC. Increases in the number of launches under the Preferred Alternative, however, would change the frequency of transport of rocket components, payloads, and commodities over roadways in and around KSC and CCSFS. In addition, more launches would result in more frequent road closures. As an active spaceport, road closures would be expected.

Visitors driving to KSC and surrounding areas to view launches would continue to generate traffic effects. It is unknown if more frequent launches would generate less tourist interest, but high-profile launches and reentries would likely still attract viewer interest and associated traffic congestion. Roadways are operating at an acceptable level of service and current and planned improvement projects would result in better traffic flow. As a result, while traffic effects could occur due to more frequent road closures and launches, the FAA does not expect these effects to significantly affect current level of service.

Shipping lanes would not be altered or closed under the Preferred Alternative. With proper coordination and scheduling, the Proposed Action would not significantly affect vessel traffic. Launches and reentries would occur 88 times per year and scheduled in advance to minimize interruption to ship traffic (Starship-Super Heavy launches and Super Heavy booster returns are considered one event due to short time-period between launch and return).

The integration of Starship launches, booster landings, and reentries into the National Airspace System would significantly impact air traffic. The FAA would need to implement ground stops, manage miles in trail (distance between aircraft) for spacing and volume control, and reroute aircraft around the affected

hazard areas (AHAs). These operations would particularly affect international flights, which may face delays due to fuel constraints or extended reroute times. The launch and Super Heavy booster landing AHA could also affect airways within the flight regions of Canada and the Bahamas. Starship reentry and landings may require ground stops for volume control at multiple Core 30 airports in Florida, as well as numerous other international, regional, and general aviation airports. Starship reentry AHAs could also affect airways within the flight regions of Mexico, El Salvador, Belize, Guatemala, Honduras, and Cuba. The average expected flight delay for launches is approximately 40 minutes, potentially extending up to 2 hours, while delays for reentries are expected to be approximately 40 minutes, with a maximum of up to an hour. General aviation operations would be similarly impacted by launches, booster landings, and reentry landing AHAs; however, general aviation operations typically have more flexibility for flight planning than commercial flights, due to the nature of connecting commercial flights.

The FAA would manage such operations in a way that minimizes disruption to existing aviation operations and ensures safety for all airspace users. Successful integration requires close collaboration between space operators, the FAA, commercial airlines, general aviation, and defense stakeholders. Key factors contributing to feasibility include enhanced real-time communication systems and well-defined scheduling and deconfliction procedures. Although temporary airspace closures may impact other stakeholders, mitigation strategies such as pre-coordinated reroutes, dynamic scheduling, and time-based traffic flow management could reduce operational burdens.

Utilities and Infrastructure (including Potable Water, Wastewater, Electricity, and Natural Gas)

There could be potential minor short-term effects during construction of the utility improvement projects, but those would likely be short-term and not significant. During operations, the Preferred Alternative would result in greater utility demands; however, the Preferred Alternative includes construction projects to support the increased demand. Water use associated with Preferred Alternative operations at LC-39A would require approximately 297 million gallons (1,124,267,300 liters) per year; given the context of the City of Cocoa, this is a small percentage of current annual use and capacity. SpaceX would construct onsite bulk storage for water and commodities and would reuse or recycle as appropriate. Based on the analysis of potential effects presented above, the FAA does not anticipate significant effects to utilities and infrastructure distribution systems and service capacity from implementation of the Preferred Alternative.

Mitigation and Monitoring Summary

This section summarizes measures that SpaceX will implement to reduce or offset the potential environmental consequences of developing infrastructure and operating the Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida. This section reflects the FAA's consideration of all practicable means to minimize harm to those resources that will be subject to unavoidable significant effects, as well as avoidance and minimization measures to avoid or reduce effects to other resources below significance thresholds. Measures described in the following sections include stipulations required by the USFWS under ESA Section 7, by NMFS under the MMPA, the Programmatic Agreement under NHPA Section 106 agency consultation, and mitigations identified in the Final EIS that will be implemented during development of infrastructure and operation of the Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida. Additional measures may be considered if required by future coordination with federal and state agencies.

Development of specific plans and other best management practices (BMPs) during the construction phase will be the responsibility of SpaceX, to be delegated to the construction contractor, as necessary, during construction of related infrastructure at LC-39A. The contractor will be required to apply the current construction industry BMPs in accordance with NASA and NPDES General Permit requirements. SpaceX will oversee all contractor performance to ensure that the contractor complies with these requirements.

The FAA will take appropriate steps to ensure that the mitigation measures required as a condition of the approval of the action described in the Final EIS are implemented during project development. SpaceX will monitor the implementation of these mitigation measures. Reports of monitoring will provide necessary assurance that representations made in the Final EIS with respect to mitigation are conducted. The issuance of a license to SpaceX will be conditioned upon SpaceX's demonstration that it has complied with required mitigation measures. As appropriate, the FAA may enter into an agreement with SpaceX to provide for annual environmental FAA inspections to ensure ongoing compliance with mitigation requirements. Mitigation actions related to SpaceX operations will be made the subject of the terms and conditions of any license issued to SpaceX.

The following sections provide a description of measures to avoid, minimize, or mitigate environmental effects.

Biological Resources (including Fish, Wildlife, and Plants)

The USFWS Starship-Super Heavy LC-39A BO/CO and USFWS Starship-Super Heavy LC-39A Letter of Concurrence (EIS Appendix B.1, *Endangered Species Act Section 7 Consultation (USFWS)*), LC-39A Starship EFH Assessment and Letter of Concurrence (EIS Appendix B.2, *Essential Fish Habitat Assessment (NMFS)*), and measures contained in the NMFS Starship-Super Heavy BO/CO (EIS Appendix B.6, Section B.6.3, *Reinitiation of the Conference and Biological Opinion (September 2025)*) and SpaceX IHA application (EIS Appendix B.7, *Marine Mammal Protection Act Consultation (NMFS)*) are the source documents for the reasonable and prudent measures (RPMs), Terms and Conditions (T&Cs), mitigations, conservation measures (CMs), and monitoring finalized as part of consultations with the USFWS and NMFS for federally listed species and critical habitat, marine mammals, and EFH. These measures, identified below, would decrease the potential for effects on habitats and species resulting from the Preferred Alternative.

USFWS Starship-Super Heavy LC-39A Biological/Conference Opinion (USFWS Ecosphere Log Number: 2024-0058364) – see EIS Appendix B.1

Conservation, Avoidance, and Minimization Measures (USFWS BO/CO Section 1.4. – see EIS Appendix B.1)

Natural Resource Training

USFWS CM 1. SpaceX will develop natural resources training for contractors and employees. Prior to beginning onsite activities (i.e., construction, operations) and annually thereafter, SpaceX will ensure that all personnel, including staff and contractors, receive the natural resources training. As new staff/contractors come on board, they will receive the training. Training will include, but not be limited to, the following topics:

- Instructions on implementing the conservation measures in the Biological and Conference Assessment and the terms and conditions from the resulting BO/CO
- Photos of listed species and their habitats, guidance on wildlife encounters (e.g., do not feed wildlife), and other relevant details, including the importance of dark beaches for sea turtles and other wildlife, and prescribed fire for Florida scrub-jay (FSJ) habitat maintenance

- Instructions to immediately report the following to the KSC Duty Office and Environmental Management Branch (EMB): injured, dead, or sick wildlife (including road kills); or wildlife utilizing buildings or infrastructure for roosting or nesting
- Lighting restrictions as detailed in the KSC LC-39A Lighting Operations Manual (LOM) (PLN-210)
- Instructions on how to minimize the introduction and spread of invasive non-native plant species
- Speed limits and restriction of vehicles to existing roads, parking areas, paved areas, and authorized construction sites
- Wildfire prevention measures
- Proper disposal of litter and garbage and securing refuse containers

USFWS CM 3. To minimize adverse impacts from temporary and long-term lighting to federally listed species and designated critical habitat within the Action Area, SpaceX will update and follow the LC-39A LOM; the LOM will address applicable requirements for lighting associated with the Action, including measures for lighting minimization during sea turtle nesting season. SpaceX will submit an updated LC-39A LOM to NASA. NASA will coordinate review of the LOM with the Service. The LOM must be approved by NASA and the Service prior to operation of the Action. A full review of the LOM by the Service will be completed within 30 days upon receiving the updated LOM.

USFWS CM 5. SpaceX will work with NASA and the Service to develop a plan to implement noise and vibration monitoring at a subset of sea turtle nests in the vicinity of LC-39A such that site-specific operational conditions and any potential effects to sea turtle nests, eggs, and hatchlings can be documented and reported.

USFWS CM 6. Any construction project at KSC with the potential to affect protected species requires a biological survey by the applicant/launch service provider in coordination with NASA EMB prior to disturbances.

- If a gopher tortoise burrow is discovered within the LC-39A area prior to construction, SpaceX, in coordination with NASA EMB, will scope the burrow with an infrared burrow camera.

SpaceX, in coordination with NASA EMB, will remove any tortoises from the burrow either by bucket trapping or excavation with a backhoe. Any discovered indigo snakes will be allowed to leave the site prior to collapsing the burrow. If relocation is necessary, SpaceX, in coordination with NASA EMB, will relocate gopher tortoises and indigo snakes in accordance with the Service's MINWR protocols.

- If southeastern beach mice or their burrows are observed during pre-construction surveys, NASA will contact the Service to determine if relocations are needed based on site conditions. SpaceX, in coordination with NASA EMB, would conduct trapping over at least three consecutive nights and a total of five nights using Sherman live traps set at 33-foot (10-meter) intervals throughout the vegetated portion of the proposed area to be disturbed by construction activities. SpaceX, in coordination with NASA EMB, would relocate mice to the dune east of LC-39A or another suitable location as agreed upon with the Service.

USFWS CM 7. Construction and operations activities will follow the *2024 Standard Protection Measures for the Eastern Indigo Snake*, including displaying educational signs/posters, avoiding gopher tortoise burrows, and allowing indigo snakes to leave construction and operations areas unharmed. If an eastern indigo snake (alive, dead, or skin shed) is observed on the project site during construction activities, all such activities will cease until the established procedures are implemented, which includes notifying the Service (FW4FLESRegs@fws.gov) and NASA-EMB.

USFWS CM 9. Red obstruction lighting for towers will comply with FAA Advisory Circular No. 70/7460-1M, Change 1 (AC 70/7460-1M Chg 1) or more updated guidance document, if applicable.

USFWS CM 10. To discourage protected birds and bats from roosting or establishing maternal colonies on LC-39A infrastructure, buildings, and equipment, SpaceX will incorporate measures such as visual fright devices.

USFWS CM 11. Consistent with current SpaceX wildlife management at LC-39A, if SpaceX identifies a listed species in a location where it may conflict with construction or operations at LC-39A, SpaceX will report the occurrence to NASA EMB. NASA EMB will contact MINWR staff to respond and determine the appropriate next steps, which can include trapping, translocation, removing the bird nest or bat roost, and/or excluding bats from facilities according to best management

practices (per cooperative agreement). SpaceX will not remove bats, maternity roosts, bird nests, or other federally listed species before MINWR staff has evaluated the situation.

USFWS CM 13. SpaceX will continue to coordinate with NASA and the Service to minimize interference from construction and operations at LC-39A with monitoring efforts for federally listed species.

USFWS CM 14. Using data collected per current monitoring protocols, NASA and SpaceX will assess potential changes in the distribution and abundance of sea turtles, FSJs, and manatees on NASA property. As part of an adaptive management approach, NASA, SpaceX, Space Launch Delta (SLD 45), and the Service will meet annually to review monitoring results and determine next steps (e.g., continue or modify monitoring, reinitiate consultation, reduce or terminate monitoring).

USFWS CM 15. To minimize the potential for negative interactions with manatees, SpaceX barge/boat operations will follow the following manatee protection measures, which are primarily applicable for the Action's operations within Indian River Lagoon (IRL) and within 1 mile offshore in the Atlantic Ocean, 50 miles north and south of LC-39A.

- SpaceX will provide a dedicated observer (e.g., biologist or person other than the watercraft operator that can recognize manatees) that is responsible for surveying for manatees with the aid of binoculars during all in-water activities, including transiting estuarine and marine waters for surveillance or for transport of supplies, boosters, spacecraft, or other launch-related equipment or debris.

- When a manatee is sighted, the observer will alert the vessel operators to maintain a minimum distance of 50 feet from the animal. Boats will make all efforts to avoid passing over a submerged manatee. If the vessel is not able to avoid passing over a submerged manatee, the engine will be placed in idle until the animal is clear of the area. The engine will be placed in idle only if navigation and safe operation of the vessel can be maintained. If safe operation and navigation of the vessel cannot be maintained with the engine in an idle position, the vessel will operate at the lowest possible speed to maintain navigation and safe operation while reducing potential effects to manatees.

- Vessels will follow routes of deep water and previously established and maintained channels or basins whenever possible.

- Where manatees are observed within the IRL, personnel will restrict boat speeds to 10 knots or less outside of the channel.
- Vessels will operate at "no wake/idle" speeds while near the dock unless human safety considerations dictate otherwise.

USFWS CM 16. NASA and SpaceX will document any incidents of injury or death of a federally listed species and report them to the Service within 24 hours.

Reasonable and Prudent Measures (USFWS BO/CO Section 7.2. – see EIS Appendix B.1)

USFWS RPM 2. Additional Education. NASA will conduct an education session with the construction and/or environmental point of contact for SpaceX and empower those personnel to educate the rest of their team on all conservation measures within Section 1 of the BO/CO and all relevant items of the Incidental Take Statement of the BO/CO.

USFWS RPM 3. Minimize Road Mortalities. NASA and SpaceX will reduce the probability of eastern indigo snake and FSJ road mortalities by making staff and contractors aware of the potential presence of these species within the Action Area under federal ownership or management.

USFWS RPM 4. Minimize Light Intrusion for Kemp's Ridley and Leatherback Sea Turtles. NASA and SpaceX will reduce the amount of light on Kemp's ridley and leatherback sea turtle nests.

Terms and Conditions (USFWS BO/CO Section 7.3 – see EIS Appendix B.1)

USFWS T&C 2. Additional Education (RPM 2). NASA Environmental personnel will educate and train SpaceX points of contact on general wildlife issues, including those related to eastern indigo snake protection measures and all conservation measures within Section 1 of the BO/CO and all relevant items of the Incidental Take Statement of the BO/CO. SpaceX will use this information to educate all onsite staff and contractors. SpaceX will be responsible for educating all new staff and contractors as staff/contract turnover occur. Both SpaceX and NASA are responsible for implementing the most recent 2024 *Standard Protection Measures for the Eastern Indigo Snake*. Appropriate points of contact for NASA Environmental and the Service will be provided prior to the start of the Action and annually, if personnel changes have occurred within SpaceX, NASA, or the Service.

USFWS T&C 3. Minimize Road Mortalities (RPM 3). NASA and SpaceX will direct all staff and contractors associated with the Action to avoid, to the greatest extent practicable, driving through off-road areas where eastern indigo snakes and FSJ could occur within the Action Area under federal ownership or management. All staff will adhere to posted speed limits along all roadways, follow safe driving procedures in low light (early morning, dusk and night-time) or hazardous weather conditions and limit the amount of off-roadway driving (e.g., driving on road shoulders or other unpaved areas) to only that required to accomplish construction or operations, or for safety-related events and activities (e.g., emergency vehicle passing, passing of wide-body loads, vehicle breakdown assistance, etc.).

Monitoring and Reporting Requirements (USFWS BO/CO Section 7.4 – see EIS Appendix B.1)

To monitor the impacts of incidental take, NASA, in coordination with SpaceX, must report the progress of the Action and its impact on the species to the Service as specified in the Incidental Take Statement (50 CFR §402.14(i)(4)). If during the course of the Action the amount or extent of incidental taking is exceeded, consultation must be reinitiated immediately (50 CFR §402.14(i)(5)).

Any conflicts related to monitoring should be coordinated with NASA Environmental personnel to make reasonable accommodations to complete required monitoring. It is not anticipated that the monitoring below will need additional Section 7 consultation with the Service prior to implementation. All monitoring below is based on the Block 3 version of the Starship-Super Heavy vehicles and the launch cadence analyzed within this consultation; any future updates, modifications or new designs to the Starship or Super Heavy vehicles could require additional monitoring. Unless otherwise stated in the individual Monitoring and Reporting Requirements (MRRs) below, monitoring and reporting will be compiled into a single report and provided prior to the annual coordination as identified in MRR 1.

USFWS MRR 1. Coordination. NASA, SpaceX, the FAA, the Service, the NPS, and the United States Space Force (USSF) will meet annually between January 1 and January 31 to determine the current status of the Action and if there are any anticipated changes to the Action. The first meeting will occur in calendar year 2026. This meeting will assist in planning and coordination for any necessary future reinitiations or amendments. This meeting can occur in conjunction with other annual reporting meetings required within separate BOs.

Species monitoring results will be reviewed at this meeting to determine if they are being implemented effectively and if any additional minimization or conservation measures are

necessary or monitoring measures can be eliminated or reduced as appropriate . Difficulties and successes in monitoring or the implementation of any RPM, T&C and MRR within the BO/CO will also be discussed. This meeting will provide opportunities to discuss the status of the species, changes to the environmental baseline, any new information that reveals effects of the Action not considered in the BO/CO, and if consultation must be reinitiated.

A summary of the previous calendar year's launches, landings, and static fire tests will be included. NASA will be responsible for coordination and facilitation of the annual meeting. NASA will provide a review brief, including any relevant maps displaying construction progress and all other monitoring reports unless otherwise stated within their specific MRR to FW4FLESRegs@fws.gov, the MINWR Project Leader, and any current Service staff assigned to space industry consultations a minimum of 10 calendar days prior to the meeting for review by the Service. The subject line of the email will be "Starship-Super Heavy Construction and Operations at LC-39A FWS Ecosphere Log Number: 2024-0058364 Annual Coordination 20YY," or a similar subject line. Within 30 calendar days after this meeting, the Service and NASA will exchange written correspondence stating if reinitiating consultation is necessary or not and rationale for the determination.

USFWS MRR 2. FSJ Monitoring. FSJ monitoring is currently conducted by NASA at KSC under the NASA Kennedy Space Center Programmatic BO (2013 Kennedy BO; FWS Log No. 04EF1000-2013-F-0194). Monitoring associated with the 2013 Kennedy BO can serve as baseline for FSJ monitoring, which includes changes in distribution and abundance as reasonable surrogates for reproductive, physiological, behavioral, or ecological effects over time. SpaceX will be responsible for additional monitoring efforts, as determined in coordination with NASA, required to successfully implement the established monitoring plan. This will avoid to the greatest degree practicable duplicative efforts by NASA and SpaceX. If the FSJ monitoring identified within the 2013 Kennedy BO ceases, or is modified, at a future date, NASA will contact the Service within 30 calendar days to discuss the need for continued monitoring of FSJ incidental take associated with this Action.

NASA and SpaceX will develop and implement a monitoring plan with the objective of conducting FSJ monitoring where incidental take identified in Section 3 of the BO/CO is expected to be clearly attributed to adverse effects from the Proposed Action. The most effective method of monitoring incidental take identified in the BO/CO is through the observational monitoring of banded individuals. These methods are currently used for this species to monitor changes in distribution and abundance as reasonable surrogates for reproductive, physiological, behavioral, or ecological

effects over time. Coordination of monitoring with the USSF is required as a portion of the incidental take occurs within the boundaries of CCSFS.

NASA, in collaboration with SpaceX, will develop the monitoring plan and will coordinate the plan with the FAA prior to submission to the Service. NASA will send the monitoring plan to the Service for review within 90 days prior to the first scheduled rocket engine ignition. The monitoring plan shall be implemented by NASA and SpaceX 30 days prior to the first scheduled rocket engine ignition at LC-39A. If NASA and SpaceX choose different dates (30 and 90 days) for the review/approval and implementation of the monitoring plan prior to the first scheduled rocket ignition, NASA will send written correspondence to the Service identifying the proposed dates, rationale for the timelines chosen, and how the timeline will meet the requirements to monitor incidental take identified within the BO/CO. The Service must approve the new timeline before the changes are implemented.

The monitoring plan will include the following progress points: a minimum of 70 percent of FSJ individuals within the area where adverse effects to species are expected to occur within the incidental take area as identified in Section 3 of the BO/CO will be banded within 1 year from the issuance of the BO/CO; a minimum of 90 percent of FSJ individuals within the area where adverse effects to species are expected to occur as identified in Section 3 of the BO/CO will be banded within 3 years from the issuance of the BO/CO to the greatest degree practicable; and a minimum of one breeder from each family group shall be banded. After 3 years, banding will continue to the extent that at least 90 percent of the population within the area where incidental take will occur as identified in Section 3 of the BO/CO is banded to account for the natural loss of banded FSJ over time. NASA will coordinate with the Service and USSF, as necessary, for any banding that needs to occur within MINWR or CCSFS. All individuals identified to band FSJs will be required to have all necessary permits and authorization through the Department of the Interior and NASA prior to banding beginning.

To monitor incidental take, the monitoring plan should include at least two census periods occurring each year, with one occurring pre-breeding season (approximately February) and one occurring post-breeding season (approximately July). Continual monitoring intervals that gather the same information would be sufficient as well. Monitoring should be focused on FSJ productivity, survival, recruitment, distribution, population density, and habitat use over time. A minimum of one control area (e.g., the Tel 4 area at KSC) will be identified and monitored during

the Action. Because of natural annual and seasonal variations in FSJ populations, all metrics should be viewed relative to the control area(s) (i.e., beyond the anticipated spatial extent of adverse effects of launch activities on the species identified in Section 3 of the BO/CO). This is necessary to determine if incidental take identified through monitoring are a result of effects of the Action and account for any perceived effects as a result of natural, seasonal, or otherwise-influenced variations to the population unrelated to the Action.

USFWS MRR 3. Sea Turtle Monitoring. NASA and SpaceX will develop and implement a monitoring plan with the objective of conducting sea turtle monitoring within the KSC Security Beach related to the Action at LC-39A and the effects of lighting and associated sea turtle incidental take described in the BO/CO. Monitoring will be coordinated with the USSF, MINWR, and CANA staff to determine the necessary number of personnel needed to conduct monitoring due to the anticipated reduction of access to the KSC Security Beach in the future due to the Action.

NASA, in collaboration with SpaceX, will develop the monitoring plan and will coordinate the plan with the FAA prior to submission to the Service. NASA will send the monitoring plan to the Service for review by 90 days prior to the first scheduled rocket engine ignition. The monitoring plan shall be implemented by NASA and SpaceX 30 days prior to the first scheduled rocket engine ignition at LC-39A. If NASA and SpaceX choose different dates (30 and 90 days) for the review/approval and implementation of the monitoring plan prior to the first scheduled rocket ignition, NASA will send written correspondence to the Service identifying the proposed dates, rationale for the timelines chosen, and how the timeline will meet the requirements to monitor incidental take identified within the BO/CO. The Service must approve the new timeline before the changes are implemented.

In addition to standard disorientation monitoring already conducted at KSC under the 2017 NASA KSC Sea Turtle BO, the monitoring plan shall include the following:

- Monitoring will occur from the first observed/reported nest of the calendar year or March 1st, whichever comes first, until the last nest of the nest of the season emerges or October 31st, whichever happens last, for nesting and hatching sea turtle activity.
- Disorientation events and where the light source(s) originated will be reported to NASA Environmental and/or SLD 45 Environmental staff within 24 hours depending on the identified light source.

- A minimum of eight total light surveys will occur during the sea turtle nesting/hatching season (March–October) with no less than 21 days and no more than 30 days between surveys. At least one survey will occur each month during sea turtle season. Five light surveys are currently conducted to support the 2017 NASA KSC Sea Turtle BO monitoring. An additional three light surveys will be needed to satisfy the monitoring required for this Action, for a total of eight light surveys annually.

- All hatchling disorientations due to lighting directly attributed to the Action will be reported regardless of surveying protocols previously established under the 2017 NASA KSC Sea Turtle BO.

- NASA will work with the Service to determine the appropriate number of nests that should be surveyed annually for green and loggerhead sea turtles prior to the beginning of the calendar year 2026 sea turtle nesting season.

- All hawksbill, Kemp's ridley, and leatherback sea turtle nests within the KSC Security Beach will be monitored during sea turtle season by NASA.

USFWS MRR 4. Southeastern Beach Mouse (SEBM) Monitoring. NASA and SpaceX will develop and implement a monitoring plan with the objective of conducting monitoring of SEBM to monitor the extent of the effects of the Action on this species. Observational monitoring methods will be used for this species to monitor changes to distribution and abundance as reasonable surrogates for monitoring incidental take as a result of the Action over time. NASA, in collaboration with SpaceX, will develop the monitoring plan and will coordinate the plan with the FAA prior to submission to the Service. NASA will send the monitoring plan to the Service for review by 90 days prior to the first scheduled rocket engine ignition. The monitoring plan shall be implemented by NASA and SpaceX 30 days prior to the first scheduled rocket engine ignition at LC-39A. If NASA and SpaceX choose different dates (30 and 90 days) for the review/approval and implementation of the monitoring plan prior to the first scheduled rocket ignition, NASA will send written correspondence to the Service identifying the proposed dates, rationale for the timelines chosen, and how the timeline will meet the requirements to monitor incidental take identified within the BO/CO. The Service must approve the new timeline before the changes are implemented.

The monitoring plan should include the following objectives: determine changes in SEBM habitat use in proximity of launch/landing/static fire test operations including any movement response

to launch/landing/static fire test operations, determine spatial extent of variation in survival, determine extent of changes in reproduction, and determine variation in population densities from effects directly attributable to the Action. Because of natural annual and seasonal variations in SEBM populations, all metrics should be viewed relative to a spatial gradient or control area(s) (i.e., beyond the anticipated spatial extent of adverse effects of launch activities on the species). This is necessary to determine if population and habitat use fluctuations are a result of the Action, or if observed effects are a result of natural, seasonal, or otherwise-influenced variations to the population unrelated to the Action. Control area(s) will be identified through coordination with NASA Environmental, SpaceX, CANA, SLD 45 Environmental, and the Service within the monitoring plan for this MRR and might be located outside of NASA lands.

All individuals identified to handle SEBMs will be required to have all necessary permits and authorization through the Department of the Interior and NASA prior to initiation of live trapping. Radio telemetry or similar methodology should be investigated as a preferred method to reduce additional stress related to handling from repeated intensive mark-recapture and live trapping methods.

USFWS MRR 5. Noise Monitoring. NASA and SpaceX will develop and implement a monitoring plan with the objective of monitoring noise occurring from Starship-Super Heavy launches, static fire tests, and landings at LC-39A to correlate actual noise levels with species effects and ensure minimal deviations from what was presented during the consultation process and analyzed within the BO/CO. This information is necessary to confirm whether the amount of incidental take identified within the BO/CO is exceeded. NASA, in collaboration with SpaceX, will develop the monitoring plan and will coordinate the plan with the FAA prior to submission to the Service. NASA will send the monitoring plan to the Service for review by 90 days prior to the first scheduled rocket engine ignition. The monitoring plan shall be implemented by NASA and SpaceX on the day of the first scheduled rocket engine ignition at LC-39A. If NASA and SpaceX choose a different timeline for the review/approval and implementation of the monitoring plan, NASA will send written correspondence to the Service identifying the proposed dates, rationale for the timelines chosen, and how the timeline will meet the requirements to monitor incidental take identified within the BO/CO. The Service must approve the new timeline before the changes are implemented.

The monitoring plan shall be implemented by NASA and SpaceX beginning with the first scheduled engine ignition (Starship or Super Heavy) at LC-39A. A minimum of three monitoring events for

Starship static fire tests, Super Heavy static fire tests, Starship-Super Heavy launches, Super Heavy landings, and Starship landings (15 total) to account for factors that affect sound contours (e.g., weather, trajectory, etc.). Areas monitored will be identified within the monitoring plan and are expected to fall within the area where incidental take will occur as identified in Sections 3 and 5 of the BO/CO. If NASA, FAA, and SpaceX choose different monitoring locations or amounts for this MRR, NASA will send written correspondence to the Service identifying the different locations and/or amounts, the rationale for the changes, and how the changes meet requirements to monitor incidental take identified within the BO/CO. The Service must approve the changes before the changes are implemented. Coordination with the USSF may be required if monitor placement is anticipated outside NASA-owned boundaries.

The monitoring plan should include metrics for noise monitoring such as unweighted and A-weighted values presented as L_{max}, sound exposure level, and pounds per square foot (psf) scales. Monitoring results and completion of this MRR will be discussed during the annual coordination meeting in MRR 1.

USFWS MMR 6. Vibration Monitoring. NASA and SpaceX shall develop and implement a monitoring plan with the objective of monitoring vibration as it relates to operations from the Starship-Super Heavy program. Vibration monitoring will record vibration from launch. Data should be collected in a manner that can be easily translated or explained as to the effects to SEBM burrow collapse associated with incidental take. Monitoring will proceed only until sufficient data is collected to ensure that incidental take is not exceeded due to vibration. The monitoring plan shall be implemented by NASA and SpaceX beginning with the first scheduled rocket (Starship or Super Heavy) engine ignition at LC-39A.

The monitoring plan shall satisfy the intent of monitoring indicated above and could include:

- Vibration data loggers placed at 0.3 miles. This distance will be measured from the launch tower of LC-39A. If a different monitoring distance is chosen by NASA Environmental or SpaceX, coordination with the Service is required prior to implementing monitoring.
- Vibration data logger sensors placed at a minimum depth of 15 inches to mimic an SEBM burrow.

  a. If NASA determines data loggers are not the appropriate method of monitoring incidental take for this MRR, NASA will send written correspondence to the Service describing an

alternative monitoring method and how the alternative method meets the requirements to monitor incidental take identified within the BO/CO. The Service must approve the alternative method before the change is implemented.

- Vibration monitoring occurring for a minimum of three separate Starship-Super Heavy launches.

  a. If NASA and SpaceX choose to implement more or less than three monitoring events, NASA will send written correspondence to the Service describing the rationale for the amount of monitoring events chosen and how the change will meet requirements to monitor incidental take identified within the BO/CO.

NASA, in collaboration with SpaceX, will develop the monitoring plan and will coordinate the plan with FAA prior to submission to the Service. NASA will send the monitoring plan to the Service for review by 90 days prior to the first scheduled rocket engine ignition. The monitoring plan shall be implemented by NASA and SpaceX on the first scheduled rocket engine ignition at LC-39A. If NASA and SpaceX choose different dates for the review/approval and implementation of the monitoring plan, NASA will send written correspondence to the Service identifying the proposed dates, rationale for the timelines chosen, and how the timeline will meet the requirements to monitor incidental take identified within the BO/CO. The Service must approve the new timeline before the changes are implemented.

USFWS MRR 7. Disposition of Dead or Injured Species. Upon locating a dead, injured, or sick threatened or endangered species, notification must be made to the Service by email to FW4FLESRegs@fws.gov within 24 hours. The subject line of the email will be "Starship-Super Heavy Construction and Operations at LC-39A FWS Ecosphere Log Number: 2024-0058364 Disposition of Dead or Injured Listed Species," or a similar subject line. A description of how the individual(s) was found should be provided at this time, including if a SpaceX employee, associated contractor or federal employee was involved in the incident. This will assist in the proper tracking of incidental take associated with the Action.

Care should be taken in handling dead specimens to ensure biological material is preserved in the best possible state for later analysis as to the cause of death. If a dead specimen is found in the project area (defined as construction areas, areas within the LC-39A lease boundary, or along roadways), the specimen should be thoroughly soaked in water and frozen for later

analysis of cause of death. In conjunction with the preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Service or Florida Fish and Wildlife Conservation Commission Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

Reinitiation of the Conference and Biological Opinion on SpaceX Starship-Super Heavy Operations in the North Atlantic Ocean, Gulf of Mexico (non-U.S. waters), Gulf of America, North Pacific Ocean, South Pacific Ocean, and Indian Ocean Authorized by the Federal Aviation Administration (Environmental Consultation Organizer [ECO] Number: OPR 2025-02468) – see EIS Appendix B.6.

Conservation Measures (NMFS BO/CO Section 2.2 – see EIS Appendix B.6)

General Conservation Measures

NMFS 1. Launch and reentry activities, including vehicle landing locations and breakups, will occur at least 5 nautical miles from the coast of the United States or islands, except between 100 miles (161 kilometers) north and 100 miles (161 kilometers) south of the Boca Chica Launch Site and between 50 miles (80 kilometers) north and 50 miles (80 kilometers) south of LC-39A and SLC-37, where launch and reentry activities will occur at least 1 nautical mile from the coast. The only activities that will occur within 1 or 5 nautical miles from the coast will be interstage landings in the Gulf portion of the Action Area (as described in Section 2.1, *Proposed Action*) and vessel transits to and from a port for surveillance or when recovering launch vehicle components.

NMFS 2. No vehicle landings or breakups will occur in coral reef areas.

NMFS 3. No activities will occur in or affect a National Marine Sanctuary unless the appropriate authorization has been obtained from the Sanctuary.

NMFS 4. If safe and feasible to do so, conduct surveillance via vessel, aircraft (including unmanned aircraft systems/vehicles), or remote camera 30 minutes prior to either vehicle's landing to document any protected species present in the vicinity of the landing area. After the vehicle lands and once safe to do so, conduct surveillance via vessel, aircraft (including unmanned aircraft systems/vehicles), or remote camera to document any potential impacts to protected species (presence, distribution, abundance, and behavior). This documentation will be included in the reports to NMFS prior to the launch vehicle reaching full reusability (see below).

Education and Observation

NMFS 5. A dedicated observer(s) (e.g., biologist or person other than the vessel operator that can recognize ESA-listed and MMPA-protected species) will be provided by the launch operator to monitor for ESA-listed and MMPA-protected species with the aid of binoculars during all in-water activities, including transit for surveillance or to retrieve launch vehicle stages and components, other launch and reentry-related equipment, or debris.

a. When an ESA-listed or MMPA-protected species is sighted, the observer will alert vessel operators to implement the appropriate measures (see Vessel Operations below).

b. Dedicated observers will record the date, time, location, species, number of animals, distance and bearing from the vessel, direction of travel, and other relevant information such as behavior, for all sightings of ESA-listed or MMPA-protected species.

c. Dedicated observers will survey the landing/recovery area for any injured or killed ESA-listed or MMPA-protected species and any discoveries will be reported as noted below.

NMFS 6. The launch operator will instruct all personnel associated with launch and reentry operations about ESA-listed species and critical habitat, and species protected under the MMPA, that may be present in the operations areas. The launch operator will advise personnel of the civil and criminal penalties for harming, harassing, or killing ESA-listed or MMPA-protected species.

Vessel Operations

NMFS 7. All vessel operators will be on the lookout for and attempt to avoid collision with ESA-listed and MMPA-protected species. A collision with an ESA-listed species will require reinitiation of consultation. Vessel operators will ensure the vessel strike avoidance measures and reporting are implemented, and will maintain a safe distance by following these measures.

NMFS 8. All vessels will be in compliance with all area restrictions.

NMFS 9. All vessels will slow to 10 knots or less when mother/calf pairs or groups of marine mammals are observed.

NMFS 10. All vessels will maintain, at minimum, a distance of 300 feet (91.4 meters) from all ESA-listed marine mammals and MMPA-protected species (except for greater distances specified below), and 150 feet (45.7 meters) from sea turtles. If this distance becomes less than 300 feet (91.4

meters) or 150 feet (45.7 meters), the vessel will slow down and shift the engine to neutral until the animal(s) have left the area.

NMFS 11. All vessels will attempt to remain parallel or transit away to an ESA-listed species' course when sighted while the vessel is in transit (e.g., bow riding) and avoid excessive speed or abrupt changes in direction until the animal(s) has left the area.

Reporting Stranded, Injured, or Dead Animals

NMFS 12. Any ESA-listed species collision(s), injuries, mortalities, or strandings observed will be reported immediately to the appropriate NMFS regional contact listed below (see also (https://www.fisheries.noaa.gov/report), to Tanya Dobrzynski, Chief, ESA Interagency Cooperation Division, by email at Tanya.Dobrzynski@noaa.gov, and to nmfs.hq.esa.consultations@noaa.gov with the subject line "OPR-2025-00164– Collision, Injury, or Mortality Report."

a. For operations in the Gulf and Atlantic Ocean: for marine mammals (877) WHALE-HELP (877-942-5343) and for sea turtles (844) SEA-TRTL (844-732-8785)

b. For operations in the North Pacific Ocean: (866) 767-6114 (West Coast) or (888) 256-9840 (Hawaii)

c. In the Gulf and Atlantic Ocean near Florida, report any smalltooth sawfish sightings to (844) 4SAWFISH or (844) 472-9347 or via email sawfish@fwc.com

d. Report any giant manta ray sightings to (727) 824-5312 or via email to manta.ray@noaa.gov

e. Report any injured, dead, or entangled North Atlantic right whales to (877) WHALE-HELP (877) 942-5343 and the USCG via VHF Channel 16

Aircraft Procedures

NMFS 13. Aircraft will maintain a minimum of 1,000 feet (304.8 meters) over ESA-listed or MMPA-protected species and 1,500 feet (457.2 meters) above North Atlantic right whales. Aircraft will avoid flying in circles, if marine mammals or sea turtles are spotted, and avoid any type of harassing behavior.

Hazardous Materials Emergency Response

NMFS 14. In the event of a failed launch operation, launch operators will follow the emergency response and cleanup procedures outlined in their Hazardous Material Emergency Response Plan (or similar plan). Procedures may include containing the spill using disposable containment materials and cleaning the area with absorbents or other materials to reduce the magnitude and duration of any impacts.

Atlantic Ocean Portion of the Action Area (non-Gulf) Conservation Measures

NMFS 15. All vessels will slow to 10 knots or less when North Atlantic right whales are observed and maintain a minimum distance of 1,500 feet (457.2 meters) from North Atlantic right whales. If a whale is observed but cannot be confirmed as a species other than a North Atlantic right whale, the vessel operator must assume that it is a North Atlantic right whale and take appropriate action.

NMFS 16. All vessels will comply with applicable North Atlantic right whale speed rules, including Seasonal Management Areas, Slow Zones, and Dynamic Management Areas. Information on Seasonal Management Areas, Slow Zones, Dynamic Management Areas, and how to sign up for alerts is available at NMFS's Reducing Vessel Strikes to North Atlantic Right Whales website.

NMFS 17. For a single flight, Super Heavy and Starship will not both land in the portion of the Atlantic Ocean portion of the Action Area that overlaps North Atlantic right whale critical habitat and North Atlantic right whale Seasonal Management Areas from November 1 through April 30.

NMFS 18. No vehicle (Super Heavy or Starship) landings, explosions, or breakups will occur within designated North Atlantic right whale Slow Zones or Dynamic Management Areas, if the Slow Zone or Dynamic Management Area is established prior to launch.

Indian Ocean Portion of the Action Area Conservation Measures

NMFS 19. To the maximum extent practicable, Starship landings will avoid Important Marine Mammal Areas[2] and Ecologically or Biologically Significant Areas[3].

NMFS 20. If possible, Starship landings will also avoid other physiographic features, such as seamounts, that may provide conservation benefits to listed species.

Hawaii and Central North Pacific Portion of the Action Area Conservation Measures

NMFS 21. Although unlikely, to prevent debris from a Starship explosive event or in-flight breakup from entering the Papahānaumokuākea National Marine Sanctuary, SpaceX will have a vessel in the area of highest likelihood of debris that will identify large debris for salvage. SpaceX will use the vessel to survey for debris for approximately 24– 48 hours (using visual survey in the daytime and onboard vessel radar at night) depending on the outcome of the breakup. If there is floating debris detected by the vessel during the debris survey, SpaceX will sink or recover any debris before it can drift into the Papahānaumokuākea National Marine Sanctuary by removing the item using a net or boat hook, or puncturing the item using a firearm to cause it to sink. If debris is still identified after the 24–48 hour survey, SpaceX will use an aerial asset, additional vessel, or satellite imaging, to confirm and characterize any debris to verify that debris sinks within 10 days.

Reporting to NMFS

NMFS 22. Prior to full reusability of the launch vehicle, the FAA, in coordination with SpaceX, will provide a report after each Starship-Super Heavy flight. Reports after each flight, prior to achieving full reusability, should be submitted no more than 30 days after the flight to NMFS electronically at nmfs.hq.esa.consultations@noaa.gov with the subject line "OPR-2025-02468 [Flight #] Fate Report."

[2] Important Marine Mammal Areas are "discrete portions of habitat, important to marine mammal species that have the potential to be delineated and managed for conservation." For more information, see https://www.marinemammalhabitat.org/immas/ and https://www.marinemammalhabitat.org/imma-eatlas/

[3] Ecologically or Biologically Significant Areas under the Convention on Biological Diversity are marine areas that are functionally important in supporting healthy oceans and ocean services. For more information, see https://www.cbd.int/ebsa/

NMFS 23. After each Starship-Super Heavy flight prior to achieving full reusability, the FAA will provide information to NMFS detailing the results of launches and landings, based on available telemetry data received from the vehicles, including:

a. Whether Starship and Super Heavy resulted in an anomaly or nominal (i.e., all operations occurred as expected) landing, and where (expressed in the last known GPS location) the anomaly or landing occurred.

b. The debris catalog generation, approximate location, and any other information that can corroborate assumptions about the debris and/or debris field from an in-flight breakup or explosive event of each vehicle.

c. Whether Starship and Super Heavy landings occurred in the expected manner. For landings resulting in explosion, information reported to NMFS shall include the amount of fuel/propellant remaining in main and header tanks, vehicle orientation upon landing and height of the explosive event above the surface of the water, debris catalog generation, and any other data that can corroborate whether the assumptions about the explosion and area of impact (physically and acoustically) were appropriate.

d. Any documentation of ESA-listed species pre- and post-landing, per items 4 and 5 under General Conservation Measures.

Reasonable and Prudent Measures (NMFS BO/CO Section 10.2 – see EIS Appendix B.6)

NMFS 24. The FAA shall continue to coordinate with NMFS to minimize effects to ESA-listed green, Kemp's ridley, and loggerhead turtles from explosive events.

NMFS 25. The FAA shall monitor and report to NMFS's Office of Protected Resources ESA Interagency Cooperation Division on impacts to ESA-listed green, Kemp's ridley, and loggerhead turtles from explosive events at nmfs.hq.esa.consultations@noaa.gov with the subject line "OPR-2025-02468 – [Flight #] ITS Report."

Terms and Conditions (NMFS BO/CO Section 10.3 – see EIS Appendix B.6)

NMFS 26. The FAA or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the Action and its impact on the species as specified in this Incidental Take Statement (50 CFR §402.14(i)(3)).

NMFS 27. The following terms and conditions implement reasonable and prudent measure NMFS 24:

a. The FAA shall continue to coordinate with NMFS to help inform future consultations on Starship-Super Heavy operations in the action area. Coordination should include provision and review of Starship-Super Heavy fate reports and annual reports, regular review of ESA Section 7 reinitiation triggers (described in Section 12), and potential development of new measures to increase the effectiveness of mitigation and monitoring.

NMFS 28. The following terms and conditions implement reasonable and prudent measure NMFS 25:

a. The FAA shall monitor SpaceX and Starship-Super Heavy operations as licensed, and submit fate reports after each Starship-Super Heavy flight and annual reports to NMFS Office of Protected Resources ESA Interagency Cooperation Division.

b. The FAA shall report any new information regarding the nature and extent of potential effects, and ranges to effects (e.g., ensonified areas), of explosive events on ESA-listed species.

c. The FAA shall report to the NMFS Office of Protected Resources ESA Interagency Cooperation Division all observed injury or mortality of any ESA-listed species resulting from the Proposed Action within the Action Area.

d. The FAA shall report to the NMFS Office of Protected Resources ESA Interagency Cooperation Division on impacts to ESA-listed green, Kemp's ridley, and loggerhead turtles from explosive events. The report should be submitted no more than 30 days after each flight prior to reusability. This may be submitted with the fate report.

NOAA NMFS EFH Assessment / Review and Response Letter (October 27, 2025 - F/SER47:LW/ad) – see EIS Appendix B.2.

NMFS EFH Mitigations

EFH 1. Launch operators will not site a landing area in coral reef areas.

EFH 2. Activities will not occur in or affect a National Marine Sanctuary (which contain habitats that are EFH) unless the appropriate authorization has been obtained from the Sanctuary.

EFH 3. Prior to any in-water work (i.e., debris recovery or sinking), SpaceX would ensure all ballast and vessel hulls do not pose a risk of introducing new invasive species and that project

implementation would not increase abundance of invasive species present at the project site. SpaceX would sanitize any equipment that has been previously used in an area known to contain invasive species prior to its use for project activities.

EFH 4. After review of the EFH Assessment, NMFS requested the FAA and SpaceX track spaceship marine debris as much as practicable and submit summary reports detailing any project-related marine debris, in shallow or deepwater, every 2 years so that they may better assess any potential impacts to EFH that may occur. If EFH impacts occur from expended items, the FAA should also provide notification to NMFS so that direct and immediate guidance can be provided to best mitigate those effects and to avoid recurrence.

Historical, Architectural, Archaeological, and Cultural Resources

Programmatic Agreement Section IV – Monitoring Programs for Historic Properties within the Area of Potential Effects (APE)

A. Archaeological Site Monitoring Program

1. An Archaeological Site Monitoring Program will be developed and finalized prior to the first scheduled Starship-Super Heavy rocket engine ignition at LC-39A to monitor for potential effects of vibration and sonic boom overpressure on archaeological site integrity during static fire, launch, and landing activities.

2. A draft of the Archaeological Site Monitoring Program will be provided to the consulting parties no later than 90 days prior to the first scheduled Starship-Super Heavy rocket engine ignition. The Archaeological Site Monitoring Program will be finalized, and implementation of the plan by SpaceX will begin within 30 days prior to the first scheduled Starship-Super Heavy rocket engine ignition to collect baseline data.

3. NASA, in coordination with the FAA, will continue to consult with the SHPO, the Seminole Tribe of Florida, and other consulting tribes to develop the Archaeological Site Monitoring Program. Other federal agencies with management responsibilities over proposed monitoring sites will be included to help inform site selection and ensure site access.

4. All consulting parties will be given the opportunity to review the draft Archaeological Site Monitoring Program pursuant to Stipulation VI. NASA and the FAA may withhold or redact documents for review pursuant to Stipulations VIII.C and XIV.

5. Document review periods will be 30 calendar days to the extent feasible but may be shortened by NASA, in coordination with the FAA, to meet the implementation schedule specified in Stipulation IV.A.2.

6. The Archaeological Site Monitoring Program will at a minimum define:

a) A representative sample of sites in varying psf ranges to be monitored;

b) The monitoring program duration or minimum number of events to be monitored;

c) The types of events to be monitored;

d) A monitoring methodology;

e) The data to be collected during the monitoring program;

f) Reporting requirements and timelines;

g) Adverse effect criteria;

h) A monitoring program assessment; and

i) The responsible entity for overseeing and completing the monitoring program.

B. Historic Structures Monitoring Program

1. Historic structures will be monitored for potential effects of vibration and sonic boom overpressure on their character-defining features during launch and landing activities. Due to unpredictable variables that affect operational schedules or landings (e.g., weather or mechanical issues), the monitoring program will be based on a minimum number of events rather than a timeframe. The monitoring program will capture no fewer than five of each Starship-Super Heavy launch and Super Heavy landing events and one Starship landing at LC-39A. Super Heavy landing and Starship landing events may not occur concurrently with the first five Starship-Super Heavy launches and may take place later in time. Any static fires deemed operationally necessary by SpaceX during the first five Starship-Super Heavy launch events will be monitored if they occur.

2. The monitoring program will consist of the following components:

a) Baseline Assessment: SpaceX will complete a baseline structural assessment prior to the first scheduled Starship-Super Heavy rocket engine ignition to establish structure-specific monitoring protocols for each structure monitored under this program.

b) Establishment of Monitoring Protocols: Once SpaceX establishes the specific monitoring protocols for each structure, a baseline assessment report and resulting monitoring protocols will be distributed to the Signatories, Invited Signatories, and additional consulting parties for review and comment pursuant to Stipulation VI.

c) Monitoring: Once the monitoring protocols are finalized, SpaceX will install the monitoring equipment prior to the first Starship-Super Heavy operationally necessary static fire or Starship-Super Heavy launch activity and continuously monitor the structures through the completion of the first five Starship-Super Heavy launches. If five Super Heavy landing and one Starship landing events have not occurred at LC-39A at the end of the five Starship-Super Heavy launch events, the continuous monitoring approach will be reassessed pursuant to Stipulation IV.B.4 and the monitoring program will continue until the minimum number of events has occurred (unless Stipulation IV.B.4.e is applicable). The finalized monitoring protocols will remain unchanged unless they are modified pursuant to Stipulation IV.B.4.b.

d) Reporting: Within 30 calendar days of each monitored event, SpaceX will provide a monitoring report and note any changes to the structures resulting from the Starship-Super Heavy launch and any associated static fire, Super Heavy landing, or Starship landing operations. This data will be cumulative and will track the performance of the structure over time. The monitoring reports will be distributed to the Signatories, Invited Signatories, and additional consulting parties for review and comment pursuant to Stipulation VI. SpaceX Starship-Super Heavy launch, static fire or landing operations may continue during this review and comment period.

e) Monitoring Program Assessment: At the end of this monitoring program, NASA and the FAA will assess the results of the monitoring program in consultation with the Signatories, Invited Signatories, and additional consulting parties pursuant to Stipulation IV.B.4.

3. The following structures, which include a representative sample of sites across the psf ranges, will be monitored by SpaceX. If a selected site is not able to be monitored for any reason, a different site can be substituted in its place with written agreement from the SHPO:

a) 8BR177/St. Gabriel's Episcopal Church (2 psf/Titusville)

b) 8BR524/Pritchard House (2 psf/Titusville)

c) 8BR514/Walker Apartments, 302 S. Washington Ave (2 psf/Titusville)

d) 8BR278/Cocoa Jr. High (2 psf/Cocoa)

e) 8BR282/Aladdin Theater Building (2 psf/Cocoa)

f) 8BR212/Cape Canaveral Lighthouse (4 psf/CCSFS)

g) 8BR1873/John Sams House (4 psf/Merritt Island)

h) 8BR581/St. Luke's Episcopal Church (4 psf/Merritt Island)

i) 8BR2990/Beach House (10 psf/KSC)

4. Monitoring Program Assessment: After the completion of the first five Starship-Super Heavy launch events, NASA, in coordination with the FAA, will convene a meeting with the Signatories, Invited Signatories, and additional consulting parties to determine whether a change in the monitoring approach for any outstanding Super Heavy landing and Starship landing events is warranted or an extension of the monitoring program is warranted based upon the resulting data and an indication of the potential for adverse effects to occur. Outcomes may include, but are not limited to, any of the following:

a) Continuation of the monitoring program for an agreed upon number of events; and/or

b) Changes in the monitoring approach (e.g. continuous to event-specific) or monitoring protocol; and/or

c) Changes to the number of sites being monitored (e.g. increase or reduction); and/or

d) Changes to the sites being monitored; and/or

e) Termination of the monitoring program due to a lack of noted changes in resources or adverse effects.

C. NASA and the FAA will utilize monitoring reports from both the Archaeological Site Monitoring Program and the Historic Structures Monitoring Program to note any potential adverse effects resulting from Starship-Super Heavy operations. Any noted effects will be evaluated pursuant to Stipulation V. Resolution of Adverse Effects will proceed pursuant to Stipulation VII.

D. If at any time it is determined by NASA and the FAA that a monitoring program is unable to be executed as planned due to insufficient data, natural disaster, or equipment failures, the Programmatic Agreement will be amended per Stipulation XIII. Changes to the properties being monitored can be

changed through written agreement from the SHPO, and the Seminole Tribe of Florida specific to the Archaeological Site Monitoring Program, without triggering the amendment process.

Programmatic Agreement Section XI – Monitoring and Reporting

A. Annual Report: Each year following the execution of this Programmatic Agreement, SpaceX will coordinate with NASA and the FAA to develop an annual report detailing work undertaken pursuant to its terms during the previous year. NASA, in coordination with the FAA, will distribute the report to all Signatories, Invited Signatories, and additional consulting parties at least 15 calendar days prior to the Annual Meeting (described below). The annual report will include:

1. A description of activities completed to comply with Stipulations III, IV, V, VII, and IX of this Programmatic Agreement, including a summary of any changes in monitoring programs; and

2. If relevant, information on any valid insurance claims related to structural damage outside of the APE; and

3. If relevant, progress on the implementation of mitigation activities conducted pursuant to a Memorandum of Agreement developed under Stipulation VII; and

4. Any disputes and objections received; and

5. Any anticipated or proposed amendments to the Programmatic Agreement and/or any known changes to the Undertaking or the APE; and

6. A description of the future Programmatic Agreement compliance activities.

B. Annual Meeting: For the life of this Programmatic Agreement beginning approximately one year after its execution, NASA, in coordination with the FAA, will coordinate a meeting with the Signatories, Invited Signatories, and additional consulting parties to be held each year in November, or another mutually agreed upon date, to discuss activities carried out pursuant to this Programmatic Agreement during the preceding year and compliance activities scheduled for the upcoming year. The meeting will be conducted virtually or held in a location agreed upon by consensus of the Signatories and Invited Signatories, and parties may participate by video conference if they so desire. NASA, in coordination with the FAA, will distribute meeting minutes to all Signatories, Invited Signatories, and additional consulting parties within 14 calendar days of the meeting.

Land Use

1. Statements including scheduled dates and times for upcoming launches are already provided to news outlets and local law enforcement. Public and agency notifications would continue as baseline prior to each launch and would add Starship-Super Heavy launch and landing events. This serves to minimize the likelihood of people being surprised by noise associated with these events. KSC-PLN-5000_SIMS_Rev_B documents processes and procedures used for planning of all NASA and Partner operations. The Spaceport Integrated Master Schedule provides insight and situational awareness of launch, landing, and recovery operations and major operations testing including tank tests, wet dress rehearsals, launch abort testing, and static fire tests. SIMS products and tools are accessible from the non-public Inside Kennedy – Home website. Internal notifications are also provided via email from kennedyspacecenter@dcnotify.com. There are multiple sources accessible by the public that provide launch schedules, including NASASpaceflight.com and a Florida Today app. Those wishing to receive notifications can register at the Brevard County Emergency Management website: https://member.everbridge.net/892807736724796/login.

2. Property owners may contact SpaceX directly via email (insurance@spacex.com) to submit claims and evidence in support of property damage claims.

Noise and Noise-Compatible Land Use

1. Statements including scheduled dates and times for upcoming launches are already provided to news outlets and local law enforcement. Public and agency notifications would continue as a baseline prior to each launch and would add Starship-Super Heavy launch and landing events. This serves to minimize the likelihood of people being surprised by noise associated with these events. KSC-PLN-5000_SIMS_Rev_B documents processes and procedures used for planning of all NASA and Partner operations. The Spaceport Integrated Master Schedule provides insight and situational awareness of launch, landing, and recovery operations and major operations testing including tank tests, wet dress rehearsals, launch abort testing, and static fire tests. SIMS products and tools are accessible from the non-public Inside Kennedy – Home website. Internal notifications are also provided via email from kennedyspacecenter@dcnotify.com. There are multiple sources accessible by the public that provide launch schedules, including NASASpaceflight.com and a Florida Today app.

Those wishing to receive notifications can register at the Brevard County Emergency Management website: https://member.everbridge.net/892807736724796/login.

2. Property owners may contact SpaceX directly via email (insurance@spacex.com) to submit claims and evidence in support of property damage claims.

Socioeconomics and Children's Environmental Health and Safety Risks

1. Property owners may contact SpaceX directly via email (insurance@spacex.com) to submit claims and evidence in support of property damage claims.

Decision and Order

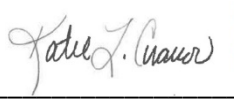
The undersigned finds that the No Action Alternative would result in restrictive licensing that would impede the FAA's ability to assist the commercial space transportation industry in meeting projected demand for services and expansion in new markets. The Preferred Alternative, in contrast, would allow the greatest development and growth of the U.S. commercial space launch industry and aids the FAA's statutory mission.

The undersigned carefully considered the FAA's goals and objectives in relation to issuing a new vehicle operator license or modification to an existing license that would allow SpaceX to develop infrastructure and operate the Starship-Super Heavy launch vehicle at LC-39A at KSC, Merritt Island, Florida. In addition, the FAA's federal action includes issuance of temporary airspace closures. The undersigned has considered the purpose and need to be served, the alternative means of achieving them, the environmental effects of these alternatives, and the mitigation measures available to preserve and enhance the environment. The undersigned has determined that all practicable means to avoid or minimize environmental harm from the selected alternative have been adopted. Based upon the record of this proposed federal action, and under the authority delegated to the undersigned by the Administrator of the FAA, the undersigned finds that the selected alternative described in this ROD is reasonably supported.

Accordingly, under the authority delegated to the undersigned by the Administrator of the FAA, the undersigned approves and authorizes all necessary agency action to implement the FAA's federal action.

This decision signifies that applicable federal environmental requirements relating to the FAA's federal action have been met. The decision enables the FAA to implement that action.

Responsible FAA Official:



Katie L. Cranor
Executive Director
Office of Operational Safety, ASA-1
Commercial Space Transportation

1/29/2026
Date

Right of Appeal

This ROD constitutes a final order of the FAA Administrator which, in most cases, are subject to exclusive judicial review under 49 U.S.C §46110 by the U.S. Circuit Court of Appeals for the District of Columbia or the U.S. Circuit Court of Appeals for the circuit in which the person contesting the decision resides or has its principal place of business.