



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW.
Washington, DC 20591

December 20, 2024

Ms. Catherine Yeargan
Texas Coastal and Central Plains Ecological Services Field Office
U.S. Fish and Wildlife Service
4444 Corona Drive, Suite 215
Corpus Christi, TX 78411

Submitted to: catherine_yeargan@fws.gov

Re: Section 4(f) of the Department of Transportation Act Consultation, SpaceX Starship/Super Heavy Launch Operations, Boca Chica TX

Dear Catherine:

The purpose of this letter is to notify you of the Federal Aviation Administration's (FAA's) initiation of a Section 4(f) consultation addressing the eligible properties in the study area under consideration for an application to modify Space Exploration Technologies Corporation's (SpaceX's) existing vehicle operator license. SpaceX has applied to the FAA to increase the number of licensed annual launches and landings at the Boca Chica vertical launch area (VLA) in Cameron County, Texas. Eligible properties under U.S. Fish and Wildlife Service (USFWS) jurisdiction include the Lower Rio Grande Valley National Wildlife Refuge (NWR) and the Palmito Ranch Battlefield National Historic Landmark (NHL), which is largely contained within the NWR (Attachment 1).

The affected environment and environmental impacts of Starship-Super Heavy operations at the Boca Chica Launch Site were analyzed in the 2022 Final Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the SpaceX Boca Chica Launch Site in Cameron County, Texas (2022 PEA).¹ The FAA issued a Mitigated Finding of No Significant Impact (FONSI)/Record of Decision (ROD) based on the 2022 PEA on June 13, 2022. The 2022 analysis included consultation with USFWS regarding Section 4(f) properties in the study area and considered their comments and those of the public in making the final 4(f) determinations identified in the 2022 PEA.² At that time, FAA determined that the proposed action would not result in more than a minimal (i.e., *de minimis*) *physical use* of any Section 4(f) resources and would not constitute a *constructive use*. Mitigation measures were incorporated to avoid, minimize, compensate, or mitigate potential Section 4(f) concerns. SpaceX conducted six launch tests in 2023 and 2024 and analyzed the effects of each launch in comparison to anticipated effects, which have been considered in proposing the modifications and subsequent analyses. The FAA is in the process of preparing a Tiered Environmental Assessment to assess the

¹ FAA. 2022. Final Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the SpaceX Boca Chica Launch Site in Cameron County, Texas. Available at: https://www.faa.gov/space/stakeholder_engagement/spacex_starship. Accessed October 2023.

² USFWS concurrence letter received June 2, 2022.

potential environmental impacts of an increase in launch and landing cadence and changes to the Starship-Super Heavy vehicles.

Summary of Issues for Discussion

Increased number of orbital launches and landings:

- a. The FAA seeks input as to whether an increased number of licensed launches and landings would substantially impair the activities, features, or attributes of the Section 4(f) properties under USFWS jurisdiction. Note that the increase in launches and landings are not anticipated to require any changes in contemplated access restriction hours.
- b. FAA is considering whether the increased number of orbital launches and landings would constitute a *constructive use* under Section 4(f) related to an increase in noise or diminishment of attributes that contribute to the enjoyment or quality of the Section 4(f) properties under USFWS jurisdiction because of the short-term and intermittent nature of the noise generated by launches and landings.
- c. The FAA is including potential anomaly impacts in its Section 4(f) analysis although they are unlikely to occur..

The following sections of this letter include a summary of the proposed action, details of the changes to the proposed action from the previous analysis, pertinent regulatory background, and further information about the Section 4(f) determination issues.

Proposed Action

The FAA's proposed action is to modify SpaceX's vehicle operator license, which would allow SpaceX to conduct up to 25 orbital launches of the stacked Starship-Super Heavy vehicles from the VLA and up to 50 landings of the individual Starship or Super Heavy vehicles at the VLA annually. The modifications would not result in changes to estimated access restrictions.

Discussion of Proposed Modifications

Increased Mission Cadence: The FAA's proposed action is to modify SpaceX's vehicle operator license, which would allow SpaceX to conduct up to 25 orbital launches of the stacked Starship-Super Heavy vehicles from the VLA and up to 50 landings of the individual Starship or Super Heavy vehicles at the VLA annually. The number of annual launch events would increase by 150% and the number of annual landings would increase by 233% over the previously analyzed mission cadence.

SpaceX no longer anticipates performing sub-orbital launches of the Starship vehicle. Therefore, no Starship-only launches are proposed. The proportion of annual launches that involve the Super Heavy vehicle would double from 50% to 100%.

Decreased Total Duration of Static Fire Testing: SpaceX anticipates conducting static fire engine tests of the Starship and Super Heavy vehicles as described below:

- Starship Static fire engine tests: 90 total seconds of static fire per year
- Super Heavy static fire engine tests: 70 total seconds of static fire per year

In total, SpaceX estimates that it will conduct static fire tests for a combined total duration of 160 seconds per year, which is a 44% decrease from 285 seconds per year assessed in the 2022 PEA.

Regulatory Background

The FAA's procedural requirements for complying with Section 4(f) are set forth in Department of Transportation Order 5610.1C, Procedures for Considering Environmental Impacts. The FAA also considers Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations [CFR] part 774) and FHWA guidance (e.g., Section 4(f) Policy Paper) when assessing the potential for *use* of Section 4(f) properties. These requirements are not binding on the FAA; however, the FAA may use them as guidance to the extent relevant to FAA projects.

A *use* under Section 4(f) can occur when: 1) land from a Section 4(f) property is permanently incorporated into a transportation project; 2) there is a *temporary occupancy* of a Section 4(f) property; or 3) the transportation project's proximity to a Section 4(f) property results in impacts that would substantially impair the activities, feature, or attributes that qualify the property for protection under Section 4(f). The first two types of *use* are referred to as a *physical use*. The latter type of *use* is identified as *constructive use*.

Physical Use

A permanent incorporation would involve an actual physical taking of Section 4(f) property as part of a transportation project either as a purchase of land or a permanent easement.

Temporary occupancy occurs when a transportation project results in activities that require a temporary easement, right-of-entry, project construction, or another short-term arrangement involving a Section 4(f) property. A *temporary occupancy* is considered a Section 4(f) *use* unless all the conditions listed in Appendix B, Paragraph 2.2.1 of FAA Order 1050.1F are satisfied:

1. Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;
2. Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
4. The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

A *physical use* may be considered *de minimis* if, after taking into account avoidance, minimization, mitigation, and enhancement measures, the result is either: 1) a determination that the project would not adversely affect the activities, features, or attributes qualifying a park, recreation area, or wildlife or waterfowl refuge for protection under Section 4(f); or 2) a Section 106 of the National Historic Preservation Act finding of no adverse effect or no historic properties affected.

A *de minimis* impact determination requires agency coordination and public involvement. For parks, recreation areas, and wildlife and waterfowl refuges, the officials with jurisdiction over the property must be informed of the FAA's intent to make a *de minimis* impact determination, after which the FAA must provide an opportunity for public review and comment. The public notice and opportunity for comment may be combined with similar public involvement efforts for the National Environmental Protection Act (NEPA) process. After considering any public comments and if the officials with jurisdiction concur in writing that the project would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, the FAA may finalize a *de minimis* impact determination. For historic sites under Section 106, the FAA must consult with the consulting parties identified in accordance with 36 CFR part 800 (Section 106's implementing regulations) and inform the officials with jurisdiction of the intent to make a *de minimis* impact determination. The officials with jurisdiction must concur in a finding of no adverse effect or no historic properties affected. Compliance with 36 CFR part 800 satisfies the public involvement and agency coordination requirement for *de minimis* findings for historic sites.³

Constructive Use

In order for a *constructive use* to occur, a transportation project must result in substantial impairment to the property's activities, features, or attributes to the extent that the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. As noted in FHWA's Section 4(f) Tutorial,⁴ "[c]onstructive use involves an indirect impact to the Section 4(f) property of such magnitude as to effectively act as a permanent incorporation." Per the FAA 1050.1F Desk Reference,⁵ which provides guidance for FAA NEPA practitioners and is used to help FAA integrate applicable special purpose laws and requirements, a proximity-related impact's consequences must amount to "taking" a property or a portion of a property in order for a *constructive use* determination to be made.

A *de minimis* impact determination is not appropriate for *constructive use* of a Section 4(f) property because *constructive use* is defined as substantial impairment, and substantial impairment cannot be considered a *de minimis* impact.

Section 4(f) Determination Issues

The FAA is in the process of evaluating whether the changes to the proposed action would result in a *use* of Section 4(f) properties through permanent incorporation, *temporary occupancy*, or *constructive use*. There would be no physical use to a Section 4f property from this proposed project. A brief summary of

³ The FAA will consult with the Texas Historical Commission to determine the potential impacts of the proposed action to historic properties under its jurisdiction, in compliance with Section 106. The FAA will use information from its Section 106 process to help inform its determinations regarding Section 4(f) and to define mitigation measures which will be enforceable on SpaceX as a term and condition of its FAA-issued permit(s) or license(s), if appropriate.

⁴ Available online at: <https://www.environment.fhwa.dot.gov/section4f/default.aspx>.

⁵ Available online at: [https://www.faa.gov/about/office org/headquarters offices/apl/enviro_nepa_order/desk_ref/](https://www.faa.gov/about/office_org/headquarters_offices/apl/enviro_nepa_order/desk_ref/).

the FAA's initial understanding of the proposed action's Section 4(f) impacts is presented in the following section. The FAA invites USFWS to provide further information to help the FAA make a final determination.

USFWS previously conditionally concurred with FAA's Section 4(f) findings, provided that mitigation measures already incorporated in the 2022 PEA, along with specific additional measures, as well as the terms of the Texas Parks and Wildlife Department's concurrence and Memorandum of Agreement with SpaceX, dated September 2, 2021, were included in project plans, final environmental documents, and terms of SpaceX's permits and licenses. Specific mitigation related to predictive scheduling that accommodates weekend and holiday public use of the Refuge and acquisition of requisite permits for any activities occurring on Refuge lands.

The FAA has determined the data and analyses in the PEA and FONSI/ROD regarding effects on Section 4(f) properties remain relevant. Pertinent conditions and requirements of the prior analysis and approval, including Section 4(f) considerations previously agreed to with your agency, will be met in the current action.

Increased number of orbital launches and landings

The FAA seeks input as to whether an increased number of licensed launches and landings would substantially impair the activities, features, or attributes of the NWR and NHL. Issues of concern related to the total number and pattern of launches and landings focus on the potential for access restrictions, anomalies, and the potential for noise levels to substantially impair the activities, features, or attributes of the NWR and NHL, including impacts to historic properties.

The previous analysis evaluated a potential of up to 500 hours per year of access restrictions for licensed activities at the VLA and up to 300 hours for response activities in the event of anomalies. It is not expected that the NHL would be subject to access restrictions for anomalies given the distance of the NHL from the VLA. The current modifications would not change the anticipated number of access restriction hours and would conform to previously agreed upon mitigation regarding such issues as predictive scheduling and avoidance of specific holiday and date access restrictions.

The quiet, natural setting of the NWR and the NHL is a notable feature of both resources. Updated noise modeling has been conducted to evaluate potential noise-related changes associated with static fire engine tests, launches, landings, and potential for structural damage. The results indicate that noise impacts would be comparable to those discussed in the 2022 PEA. The 2022 PEA contemplated the noise associated with Starship-Super Heavy orbital launches and landings, ultimately determining that no residents or members of the public would experience noise above Occupational Safety and Health Administration's (OSHA's) 115-dBA threshold⁶ during an orbital launch and there was no significant risk of structural damage. When these operations are not occurring, the normal daily sound levels in the NWR and NHL would persist.

According to the land use compatibility guidelines in FAA's 14 CFR part 150, an increase of Day-night average sound level (DNL) of 1.5 dB or more for a noise sensitive area that is exposed to noise at or

⁶ Chapter 11 of the FAA Order 1050.1F Desk Reference states the FAA should evaluate whether the Occupational Safety and Health Administration (OSHA) hearing damage criteria from 29 CFR 1910.95 and the National Academy of Sciences' 1977 guidelines for structural damage may be exceeded for a project. Guidelines on permissible noise exposure limits from OSHA are designed to protect human hearing from long-term, continuous exposures to high noise levels and aid in the prevention of noise-induced hearing loss.

above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase would be considered a significant impact. Order 1050.1F also notes that special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties. The DNL 65 dB contour for the Proposed Action is located within approximately 3.5 miles of the VLA entirely in areas that are unpopulated, except for Boca Chica Village. SpaceX would enforce the access restriction area during launch operations, as discussed in the 2022 PEA. Thus, no visitors or village residents would be present at noise sensitive areas within the 3.5-mile radius during launch operations to experience the elevated noise. Furthermore, the launch operations would be short-term and temporary and spread out over time. Noise from activities such as construction at the VLA and increases to truck traffic are not anticipated to add meaningfully to the noise in the area, and are thus not quantitatively assessed. Although portions of the NHL would be located within the 62 CDNL contour for sonic booms from Super Heavy landings at the VLA, no members of the public would be present to experience the sonic booms in the NWR or the NHL. Additionally, because there are no above ground components to the NHL, there would be no damage to the NHL due to sonic booms. No harm to wildlife is anticipated due to the predicted sonic boom overpressure levels^{7, 8}.

The FAA made a finding of *adverse effect* for 17 historic properties (i.e., historic sites, objects, structures, and buildings), because they could experience visual, auditory, and vibration effects or falling debris from an anomaly directly striking the historic properties that could diminish their integrity. To resolve these adverse effects, the FAA, Texas State Historical Preservation Office, National Parks Service, USFWS, Texas Parks and Wildlife Department, Advisory Council on Historic Preservation, and SpaceX executed a Programmatic Agreement in April 2022⁹ that stipulated the process for minimizing and mitigating adverse effects to historic properties. SpaceX would continue to mitigate impacts to cultural resources by implementing the mitigation measures established in the 2022 PEA and the 2022 Programmatic Agreement and would not cause any new access restrictions, visual impacts or changes to the original 10-mile APE are anticipated. Although there would be more launches and landings under the proposed action, the NHL would continue be closed to visitors during launch operations, and no new adverse visual impacts are anticipated.

The FAA is considering whether the proposed action would substantially diminish the attributes that contribute to the enjoyment or quality of the NWR and NHL. Therefore, the FAA seeks input as to whether the noise generated by the proposed action would constitute a constructive use.

Anomalies

As described in detail in the 2022 PEA, a Starship/Super Heavy test operation or launch could cause something unexpected (referred to as an anomaly), which could result in the spreading of debris. Although anomalies are unlikely to occur, the FAA nonetheless provides the Section 4(f) analysis of anomaly impacts to enable fuller environmental review. While the number of orbital launches and landings would increase under the proposed action, the total duration of access restrictions would still

⁷ Bowles, A. E., F.T. Aubrey, and J.R. Jehl. 1991. The Effect of High Amplitude Impulsive Noise on Hatching Success. A Reanalysis of Sooty Tern Incident. Noise and Sonic Boom Impact Technology Program, OL-AC HSD/YAH Rept. No. HSD-TP-91-0006. Accessed July 2024.

⁸ National Aeronautics and Space Administration (NASA). 2003. Sonic Booms. NASA Dryden Flight Research Center. Publication number FS-2003-11-016 DFRC. Available at: https://www.nasa.gov/wp-content/uploads/2021/09/120274main_fs-016-dfrc.pdf?emrc=f4b1ff. Accessed July 2024.

⁹ Available online at:

https://www.faa.gov/sites/faa.gov/files/space/stakeholder_engagement/spacex_starship/Appendix_C_National_Historic_Preservation_Act_Section_106_Consultation.pdf

not exceed 500 hours annually. As the number of launches increases, the reliability of the vehicle would increase, and the risk of an anomaly would be below what was described in the 2022 PEA. Therefore, SpaceX anticipates to continue the need for up to 300 hours per year of access restrictions, in addition to 500 hours for nominal operations. An anomaly response access restriction would start immediately at the time the launch ends and last until the area is deemed safe for the public. Additional access restrictions in the event of an anomaly is not anticipated to affect the NHL due to the distance of the NHL from the VLA. SpaceX would reduce the size of the restricted area based on the debris field, as was performed following the April 20, 2023 anomaly at the launchpad. Due to the distance from the launchpad, it is anticipated that the public would be able to access the NHL during anomaly response access restrictions, however portions of the NWR may be restricted. For launch and anomaly response activities, the NWR may be restricted from access by the public for up to 800 hours per year, or approximately 9% of the year.

In addition, an anomaly may result in parts of the launch vehicle or launchpad into the NWR, therefore requiring entry into the NWR for anomaly related activities (e.g., debris removal), the FAA has considered the anomaly-related activities and extended closure hours associated with anomalies for potential *temporary occupancy* under Section 4(f). It is not anticipated that the debris from an anomaly would reach the NHL. SpaceX would continue to implement the measures specified in the Memorandum of Agreement with TPWD described in the 2022 PEA to mitigate and restore any impacts from anomalies. The MOA provides a protocol for responding to events, recovering debris, and implementing, monitoring, and adapting restoration efforts to restore impacts. By implementing, monitoring, and adapting restoration efforts, it is expected that any affected land will be restored and long-term impacts to the natural, cultural, and recreational values of the NWR would be avoided. Occupancy of the NWR would be short term (not more than 300 additional hours per year), and there would be no permanent or residual effects to the NWR lasting beyond the occupancy. Therefore, the FAA is considering whether the *temporary occupancy* of the NWR resulting from anomaly-related activities would constitute a *use* under Section 4(f).

Please provide input on the issues discussed above by January 31, 2025, to Ms. Amy Hanson, FAA Environmental Specialist, via email at Amy.Hanson@faa.gov. If you have questions or concerns, please contact Ms. Hanson at (847) 243-7609 or via email at Amy.Hanson@faa.gov.

Sincerely,

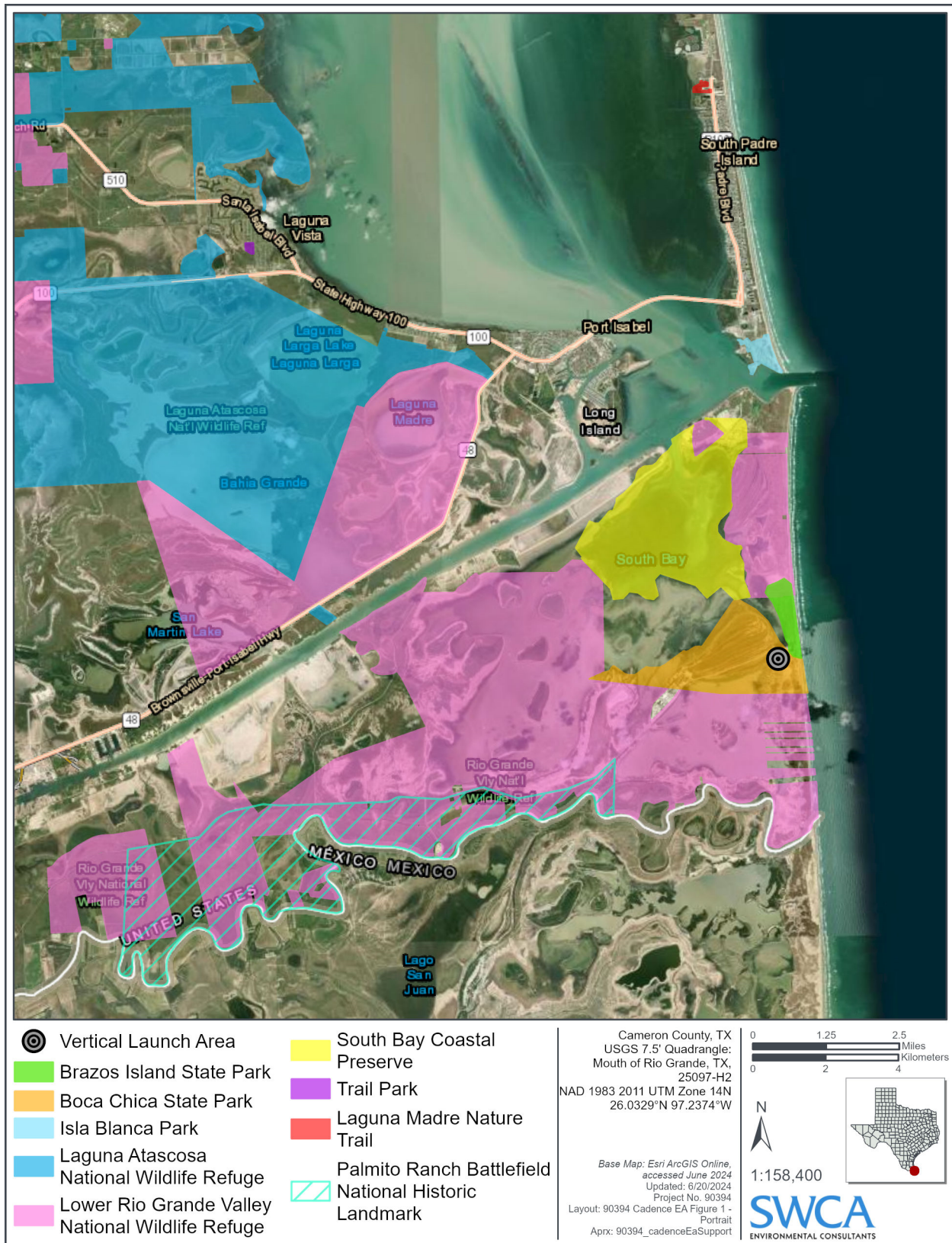
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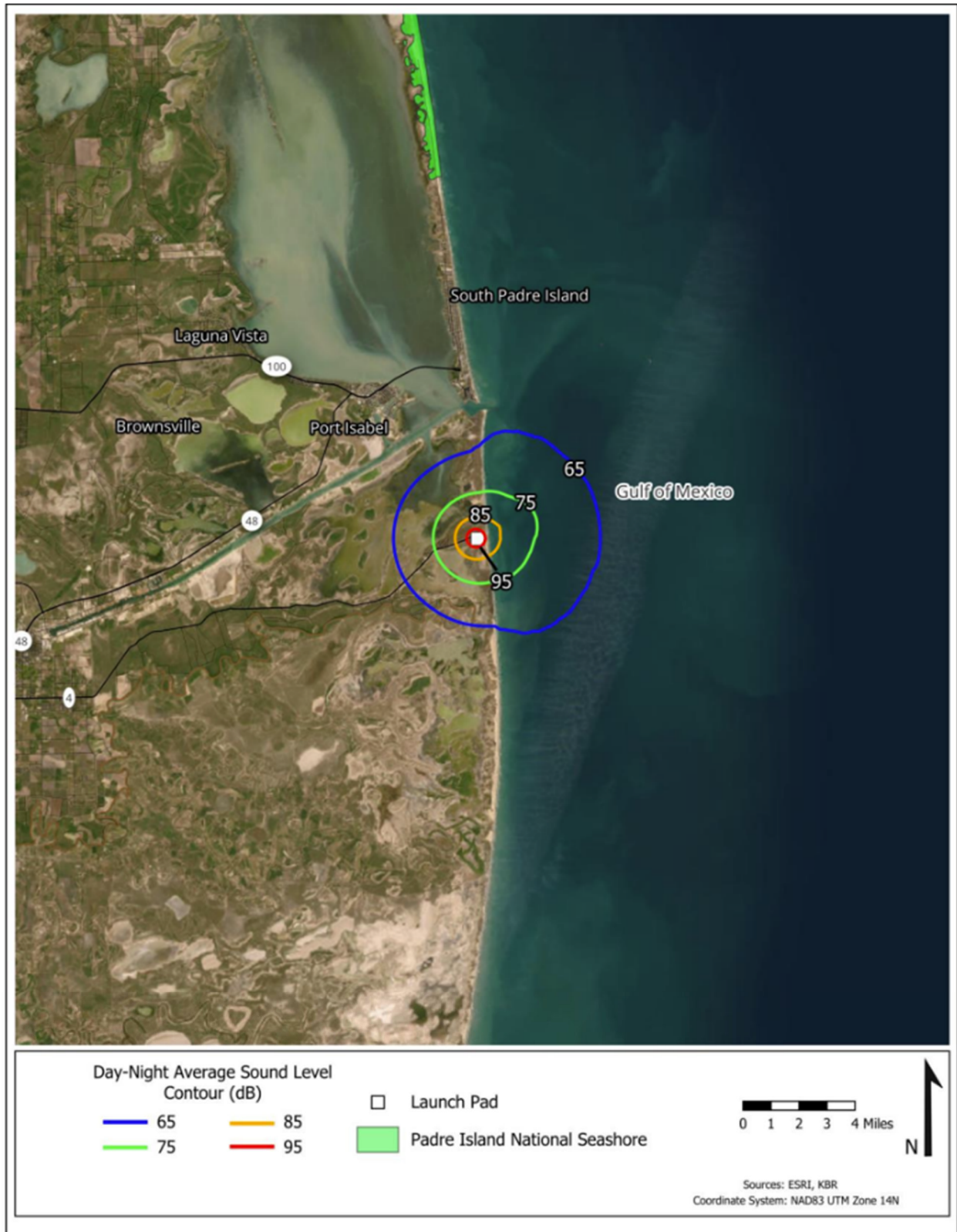
Stacey M. Zee
Manager
Operations Support Branch

Attachment 1: Section 4(f) Properties Under USFWS Jurisdiction

Attachment 2: Annual Operations Day Night Average Sound Level (DNL)



Attachment 1. Section 4(f) properties under USFWS jurisdiction – Lower Rio Grande Valley NWR and Palmito Ranch Battlefield NHL.



Attachment 2. Annual Operations Day Night Average Sound Level (DNL)



United States Department of the Interior

FISH AND WILDLIFE SERVICE

South Texas Refuge Complex
Santa Ana National Wildlife Refuge
Lower Rio Grande Valley National Wildlife Refuge
3325 Green Jay Road
Alamo, Texas 78516



February 7, 2025

Ms. Amy Hanson
Federal Aviation Administration (FAA)
800 Independence Ave., SW
Washington, D.C. 20591

Dear Ms. Hanson:

This responds to your letter dated December 20, 2024, requesting U.S. Fish and Wildlife Service (FWS) input on FAA's initiation of a Section 4(f) consultation addressing the eligible properties that include the Lower Rio Grande Valley National Wildlife Refuge (Refuge) and the Palmito Ranch Battlefield National Historic Landmark (NHL), which is largely contained within the Refuge, for the proposed modified vehicle operator license and increased cadence for the SpaceX Starship/Super Heavy Launch project at Boca Chica, Texas.

Section 4(f) of the Department of Transportation Act of 1966 protects publicly owned parks, recreation areas, and wildlife and waterfowl refuges of national, state, or local significance and historic sites of national, state, or local significance from "use" by transportation-related projects. The FAA is seeking input on several Section 4(f) issues including: 1) If an increased number of licensed launches and landings would substantially impair the activities, features, or attributes of the properties under USFWS jurisdiction; 2) If the increased number of orbital launches and landings would constitute a *constructive use* under Section 4(f) related to an increase in noise or diminishment of attributes that contribute to the enjoyment or quality of the Section 4(f) properties under USFWS jurisdiction because of the short-term and intermittent nature of the noise generated by launches and landings; and 3) if potential anomaly impacts constitute a *constructive use*.

The Refuge, and the National Wildlife Refuge System in general, maintains the biological integrity, diversity and environmental health of its natural resources for the benefit of present and future generations of Americans (National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. §§ 668dd-668ee). The Refuge was established in 1979, as a long-term program of acquiring lands to protect and restore the unique biodiversity of the Lower Rio Grande Valley of Texas. The Refuge ensures the conservation of unique South Texas fish, wildlife and plant populations and their habitat, which is necessary for the scientific study of wildlife, conservation biology and ecosystem management. In addition to its primary task of conserving wildlife, the Refuge also provides six wildlife-dependent recreational uses, which include: hunting, fishing, wildlife observation, photography, environmental education, and interpretation.

In June 2022, the FWS concurred with the FAA's Section 4(f) findings that the SpaceX proposed Starship/Super Heavy launch operations project would not result in a constructive use of the Lower Rio Grande Valley National Wildlife Refuge (Refuge) provided that mitigation measures already incorporated in the Programmatic Environmental Analysis, along with a list of measures described in the letter, and the terms of the Texas Parks and Wildlife Department's conditioned concurrence and Memorandum of Agreement with SpaceX, dated September 2, 2021, were included in project plans, final environmental documents, and terms of SpaceX's permits and licenses.

The FWS looks forward to continuing working with FAA and SpaceX on the mitigation measures spelled out in the June 2, 2022, concurrence letter.

We appreciate the work that SpaceX is doing to provide early and up-to-date information to the public on closures through websites, email alerts and physical signage 48 hours in advance. Additionally, we recognize the efforts SpaceX is making to put into place a procedure for revoking closure requests when not necessary.

We understand that according to the FAA's Programmatic Environmental Assessment, anomalies "will become increasingly unlikely as the Starship/Super Heavy program develops" and "the probability of debris spreading outside of the launch pad boundary... is low and not anticipated." We appreciate efforts by SpaceX to monitor and immediately remove any minimal debris created by normal flights.

Finally, monitoring of noise on wildlife and historic structures with timely reporting of results remains an important part of our coordination and we appreciate the modeling work and data shared by SpaceX and their efforts to better understand the impacts of sound on the wildlife, habitats and historic properties of the area.

We appreciate the ability to share our thoughts and look forward to discussing these or other concerns as pertains to the SpaceX Boca Chica site. You may contact me at imer_delagarza@fws.gov or by phone at (956) 784-7561.

Sincerely,

Imer de la Garza, Project Leader
U.S. Fish & Wildlife Service
South Texas Refuge Complex

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Cc:

Romeo Garcia, Refuge Manager, Lower Rio Grande Valley NWR
Catherine Yeargan, Project Leader, Texas Coastal and Central Plains ESFO
Jennifer Owen-White, Refuge Supervisor, Texas Coastal NWR's



U.S. Department
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**Federal Aviation
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Office of Commercial Space Transportation

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March 11, 2025

Imer de la Garza
Project Leader
U.S. Fish & Wildlife Service
South Texas Refuge Complex
4444 Corona Drive, Suite 215
Corpus Christi, TX 78411
Submitted to: imer_delagarza@fws.gov

Re: Section 4(f) of the Department of Transportation Act Consultation, SpaceX Starship-Super Heavy Launch Operations, Boca Chica TX

Dear Imer de la Garza:

The Federal Aviation Administration (FAA) has received and reviewed your letter dated February 7, 2025, which responded to the FAA's December 20, 2024, initiation of consultation under Section 4(f) of the Department of Transportation Act in regard to an application under consideration by the FAA to modify Space Exploration Technologies Corporation's (SpaceX's) existing vehicle operator license.

In June 2022, the U.S. Fish and Wildlife Service (USFWS) concurred with the FAA's Section 4(f) finding that the SpaceX-proposed Starship/Super Heavy launch operations project would not result in a constructive use of the Lower Rio Grande Valley National Wildlife Refuge (Refuge). USFWS also concurred with the FAA's Section 4(f) finding that temporary occupancies of the Refuge from anomaly activities (e.g., debris removal) would result in *de minimis* impacts provided that mitigation measures incorporated in the FAA's Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the SpaceX Boca Chica Launch Site in Cameron County, Texas, along with a list of measures described in the letter and the terms of the Texas Parks and Wildlife Department's conditioned concurrence and Memorandum of Agreement with SpaceX, dated September 2, 2021, were included in project plans, final environmental documents, and the terms of SpaceX's permits and licenses. The USFWS February 7, 2025, letter did not identify any new concerns and acknowledges the continuing working relationship with SpaceX in regard to provision of closure information, monitoring and removal of debris, and monitoring of noise related to wildlife and historic structures. The USFWS requests continued adherence to the above-referenced mitigation and agreements.

The FAA appreciates your continued coordination on this project. Please contact Ms. Amy Hanson, FAA Environmental Specialist, via email at Amy.Hanson@faa.gov or at (847) 243-7609 with any questions.

Sincerely,

STACEY
MOLINICH ZEE



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Stacey M. Zee
Manager
Operations Support Branch

cc:

Romeo Garcia, Refuge Manager, Lower Rio Grande Valley NWR

Catherine Yeargan, Project Leader, Texas Coastal and Central Plains ESFO (catherine_yeargan@fws.gov)

Jennifer Owen-White, Refuge Supervisor, Texas Coastal NWR