

January 7 & 13, 2025

# Commercial Space Transportation

Public Meeting for the Revised Draft Tiered Environmental Assessment for the SpaceX Starship/Super Heavy Vehicle Increased Cadence at the Boca Chica Launch Site in Cameron County, Texas



**Federal Aviation  
Administration**

# Meeting Agenda

- Logistics
- Introductions
- Presentation
- Open House
  - Attendees will be given the opportunity to provide public comments to a court reporter or using written comment forms



# Stacey Zee

Manager

Operations Support Branch (ASA-140)  
Office of Commercial Space Transportation (AST)  
Federal Aviation Administration (FAA)

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**Federal Aviation  
Administration**

# Media Contact

- For any media inquiries, please contact:
  - FAA Press Office
    - [Pressoffice@faa.gov](mailto:Pressoffice@faa.gov)



# In-Person and Virtual Public Meetings

- In-Person Meetings
  - **Tuesday, January 7, 2025; 1:00 PM – 3:00 PM & 5:30 PM – 7:30 PM CT**
    - Texas Southmost College, Jacob Brown Auditorium, 600 International Boulevard, Brownsville, TX 78520
- Virtual Meeting
  - **Monday, January 13, 2025; 5:30 PM – 7:30 PM CT**
  - Register at:
    - [https://us02web.zoom.us/webinar/register/WN\\_6f5su5mtTne\\_vBr8MqJOLA](https://us02web.zoom.us/webinar/register/WN_6f5su5mtTne_vBr8MqJOLA)



# How to Submit Comments

- Provide a verbal comment to the court reporter at today's meeting
- Provide a written comment at today's meeting
- Submit online at [www.regulations.gov](https://www.regulations.gov)
  - Search for Docket No. FAA-2024-2006
  - Click on the "Comment" button, enter your information and comment, then click "Submit Comment"
- Mail to:  
Ms. Amy Hanson, FAA Environmental Specialist, SpaceX EA  
c/o ICF  
1902 Reston Metro Plaza  
Reston, VA 20190

**The comment period closes on January 17, 2025**

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.



# FAA Presentation



**Federal Aviation  
Administration**

# Why Are We Here?

- The FAA is evaluating SpaceX's proposal to increase the number of launches and landings per year (cadence) of the Starship/Super Heavy launch vehicle at its Boca Chica Launch Site in Cameron County, Texas.
- Launch and landing operations of Starship/Super Heavy and the use of associated launch systems at a higher cadence requires a new or modified license from the FAA.
- The FAA may also need to authorize additional temporary airspace closures to accommodate launch and reentry operations at the Boca Chica Launch Site.
- The FAA is analyzing the potential environmental impacts in a Revised Draft Environmental Assessment (Revised Draft EA).



# National Environmental Policy Act (NEPA)

- The FAA considers the issuance of a new or modified license to be a major federal action under NEPA.
- NEPA is a procedural statute that requires Federal agencies to consider the potential environmental impacts of proposed actions subject to Federal control or responsibility before a decision is made.
- FAA decisions to license commercial space operations and to close airspace are proposed actions subject to NEPA.
- Before making a decision regarding a license, the FAA must consider:
  - A range of reasonable alternatives
  - Potential environmental or health consequences
  - Tribal, government agency, and public input



# Project History

- This Revised Draft EA is tiered from the June 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 (PEA).
- Related Documents
  - **May 2014 Environmental Impact Statement**
    - Analyzed launch of Falcon 9, Falcon Heavy, and other reusable suborbital launch vehicles from Boca Chica.
  - **June 2022 Programmatic Environmental Assessment**
    - Analyzed the construction of launch-related infrastructure and operations, including Starship/Super Heavy launches and landings.
  - **April 2023 Written Re-Evaluation**
    - Analyzed additional ocean landings and launch pad detonation suppression systems.
  - **November 2023 Written Re-Evaluation**
    - Analyzed additional deluge system operation information, the addition of a forward heat shield, and the expansion of the cultural resources area of potential effects.
  - **March 2024 Tiered Environmental Assessment**
    - Analyzed proposed landings of the Starship in the Indian Ocean.
  - **October 2024 Written Re-Evaluation**
    - Analyzed proposed updates to forward heat shield, sonic boom coverage, use of the deluge system, and use of U.S. Coast Guard safety zones.

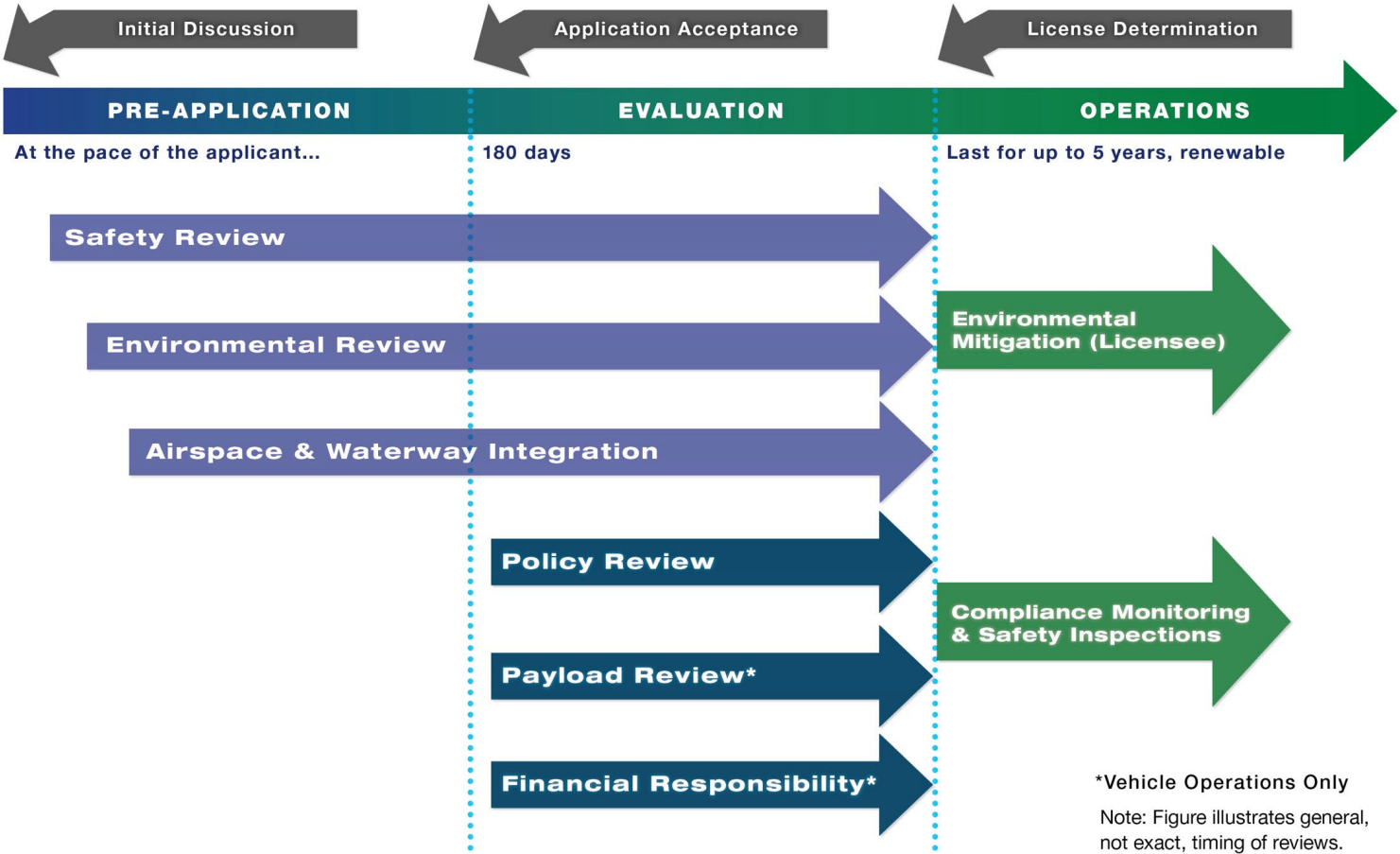


# Revised Draft EA Revisions

- A March 13, 2024 Administrative Order (AO) issued by the U.S. Environmental Protection Agency (EPA) and an August 2, 2024 investigation report by the Texas Commission on Environmental Quality (TCEQ), found that prior deluge water discharges were not permitted and thus violated the Clean Water Act. These reports prompted the cancellation of the August public meetings.
- SpaceX submitted a permit application on July 1, 2024, and entered into agreements with TCEQ and EPA to resolve the alleged violations.
- The day-night launch cadence was revised in order to reduce noise impacts of Super Heavy landings at the vertical launch area (VLA).



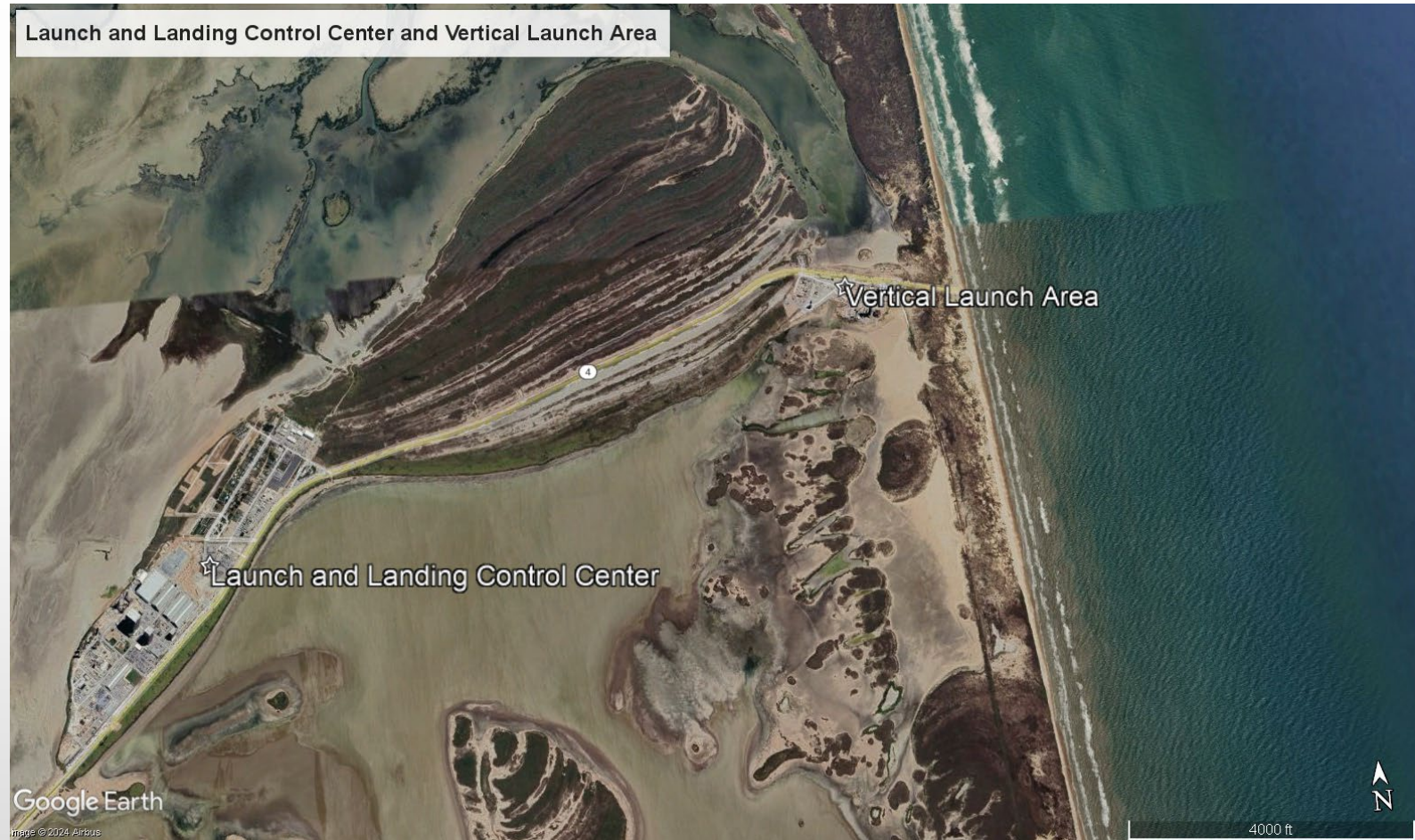
# FAA LICENSING PROCESS



\*The Environmental Review process is in reference to the National Environmental Policy Act (NEPA) process.



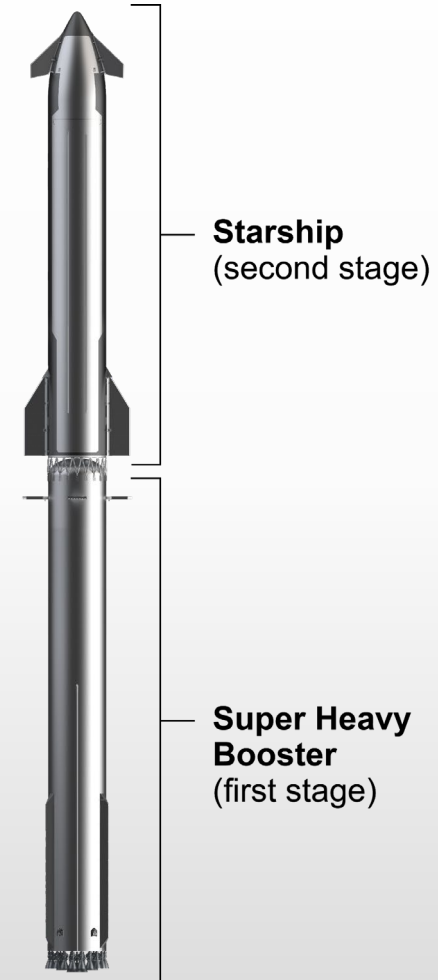
# Project Location and Site Overview



# Starship/Super Heavy Launch Vehicle

- Starship is equipped with 9 Raptor engines
- Super Heavy is equipped with 35 Raptor engines
- Raptor engines are powered by liquid oxygen (LOX) and liquid methane
- Intended to be fully reusable for multi missions

Specification	2022 PEA Starship	2022 PEA Super Heavy	Upgraded Starship	Upgraded Super Heavy
Length (meters; m)	50	71	70	80
Diameter (m)	9	9	9	9
Number of Engines	6	37	9	35
Thrust (meganewtons; MN)	12 MN	74 MN	28.7 MN	103 MN
Propellant quantity (metric ton; MT)	1,500	3,700	2,650	4,100



# Proposed Operations

Activity	2022 PEA Proposed Action	2024 Draft EA Proposed Action
Starship Static Fire Engine Test	<ul style="list-style-type: none"><li>• 150 seconds</li></ul>	<ul style="list-style-type: none"><li>• 90 seconds (daytime)</li></ul>
Super Heavy Static Fire Engine Test	<ul style="list-style-type: none"><li>• 135 seconds</li></ul>	<ul style="list-style-type: none"><li>• 70 seconds (daytime)</li></ul>
Daytime refers to 7:00 a.m. to 7:00 p.m.; nighttime refers to 7:00 p.m. to 7:00 a.m.		



# Proposed Operations

Activity	2022 PEA Proposed Action	2024 Draft EA Proposed Action
Starship Suborbital Launch	<ul style="list-style-type: none"> <li>• 5 launches (4 daytime/1 nighttime)</li> </ul>	<ul style="list-style-type: none"> <li>• 0 launches</li> </ul>
Super Heavy Launch	<ul style="list-style-type: none"> <li>• 5 launches (4 daytime/1 nighttime)</li> </ul>	<ul style="list-style-type: none"> <li>• 25 launches (22 daytime/3 nighttime)</li> </ul>
Starship Landing	<ul style="list-style-type: none"> <li>• 10 landings (8 daytime/2 nighttime)</li> <li>• Landing at the vertical launch area (VLA), on a floating platform in the Gulf of Mexico or the Pacific Ocean, or disposed in the Gulf of Mexico or Pacific Ocean.</li> </ul>	<ul style="list-style-type: none"> <li>• 25 landings (22 daytime/3 nighttime)</li> <li>• Landing at the VLA, on a floating platform, or expended in the Pacific Ocean or Indian Ocean.</li> </ul>
Super Heavy Landing	<ul style="list-style-type: none"> <li>• 5 landings (4 daytime/1 nighttime)</li> <li>• Landing at the VLA, on a floating platform in the Gulf of Mexico, or disposed in the Gulf of Mexico.</li> </ul>	<ul style="list-style-type: none"> <li>• 25 landings (22 daytime/3 nighttime)</li> <li>• Daytime landing at the VLA, on a floating platform or expended.</li> <li>• Nighttime landing on a floating platform or expended in the Gulf of Mexico.</li> </ul>
Daytime refers to 7:00 a.m. to 7:00 p.m.; nighttime refers to 7:00 p.m. to 7:00 a.m.		



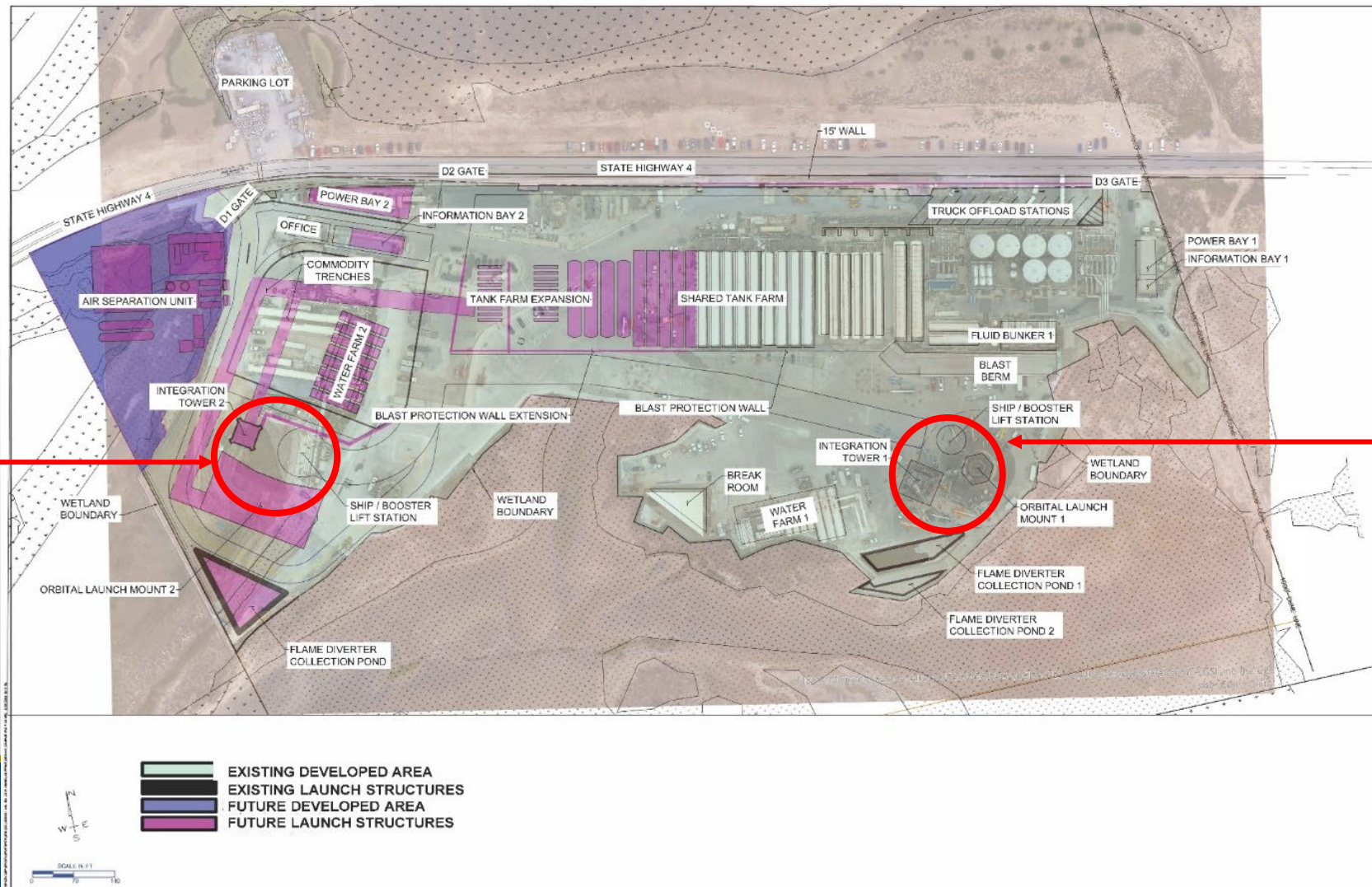
# Proposed Operations

Activity	2022 PEA Proposed Action	2024 Draft EA Proposed Action
Nominal Operational Access Restrictions	<ul style="list-style-type: none"><li>SpaceX anticipates the proposed operations would require 500 hours of annual access restriction.</li></ul>	<ul style="list-style-type: none"><li>No change</li></ul>
Anomaly Response Access Restrictions	<ul style="list-style-type: none"><li>SpaceX anticipates debris clean-up would require up to 300 hours of annual access restriction.</li></ul>	<ul style="list-style-type: none"><li>No change.</li></ul>
Daytime refers to 7:00 a.m. to 7:00 p.m.; nighttime refers to 7:00 p.m. to 7:00 a.m.		



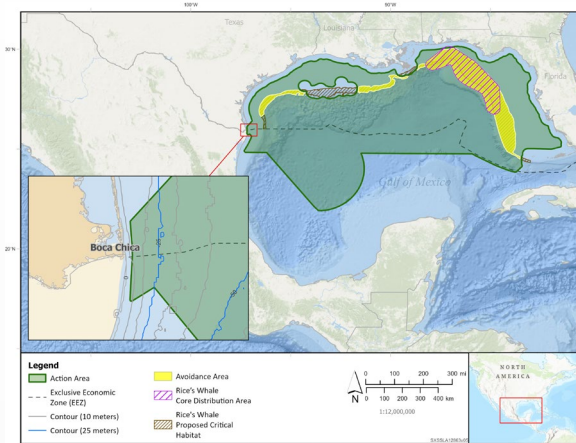
# Proposed Launch Operations

- All launches considered in this Draft EA would originate from the Boca Chica vertical launch area (VLA).

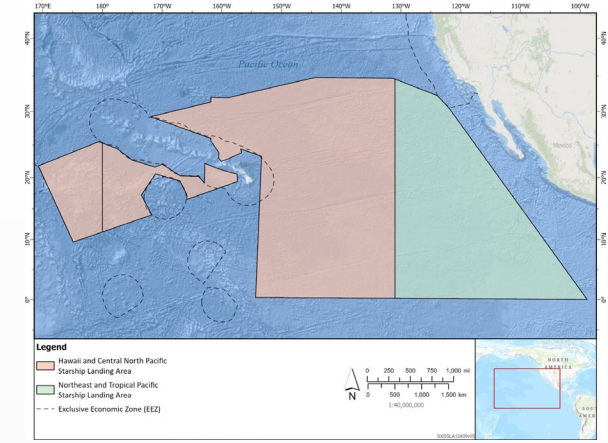


# Proposed Landing Operations

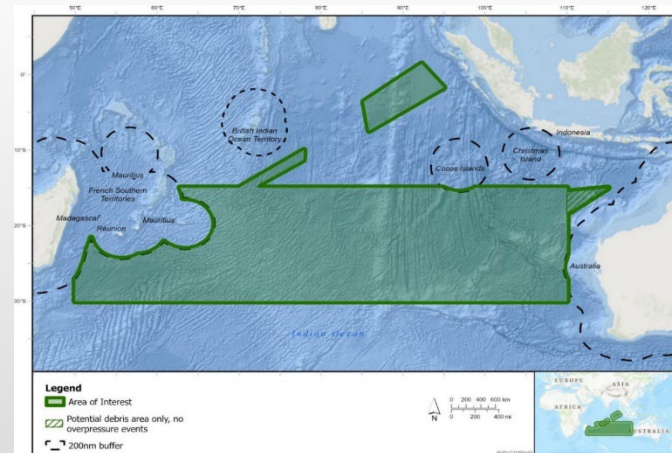
- SpaceX plans to land Starship/Super Heavy back on land at the VLA or on floating platforms in the ocean.
- Some vehicles may not be reused and would be disposed in the ocean.



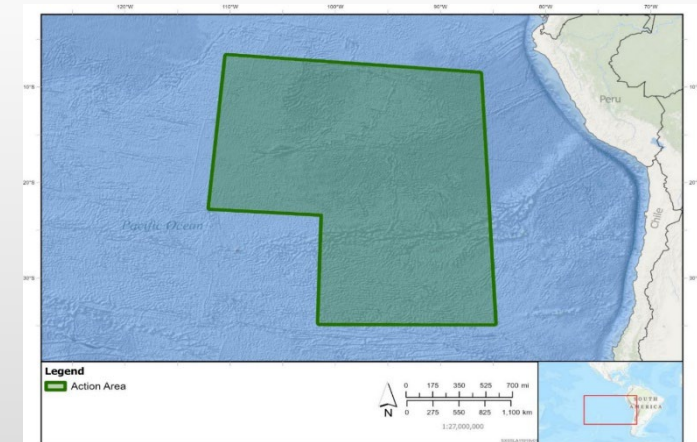
**Gulf of Mexico Super Heavy Landing Area and Nominal Landing Location**



**North Pacific Starship Landing Area (Hawaii and Central North Pacific Landing Area and Northeast and Tropical Pacific Ocean Landing Area)**



**Indian Ocean Starship Landing Area**



**Southeast Pacific Starship Landing Area**

# Lead and Cooperating Agencies

- **Lead Federal Agency:** FAA
- **Cooperating Agencies:** Due to special expertise and jurisdictions
  - National Aeronautics and Space Administration
  - U.S. Fish and Wildlife Service
  - National Park Service
  - U.S. Coast Guard
- **Participating Agencies:**
  - Texas Historical Commission
  - Texas Parks and Wildlife Department
  - Texas General Land Office
  - Texas Department of Transportation



# Impact Categories Analyzed in Detail

- Air Quality
- Biological Resources (Terrestrial and Marine Wildlife)
- Climate
- Coastal Resources
- Cultural Resources
- Department of Transportation Section 4(f)
- Hazardous Materials
- Land Use
- Natural Resources and Energy Supply
- Noise and Noise-Compatible Land Use
- Socioeconomics, Environmental Justice and Children's Health
- Visual Resources
- Water Resources

Farmlands was initially considered but dismissed from detailed analysis as it would not be affected by the Proposed Action. No prime farmland, unique farmland, or farmland of statewide or local importance is present within the vicinity of the Boca Chica Launch Site (NRCS 2021). Therefore, the Proposed Action would not impact farmlands.



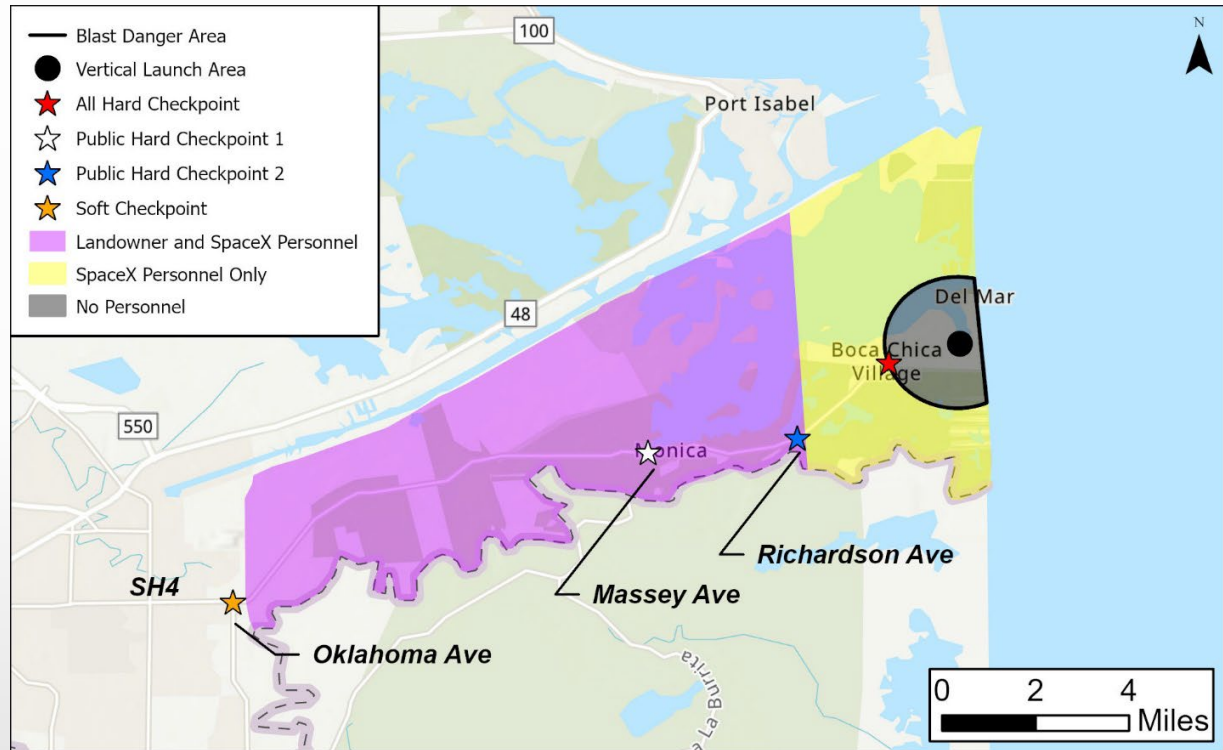
# Biological Resources Impacts

- The FAA has determined that the Proposed Action would not result in significant terrestrial habitat and wildlife or marine resource impacts as SpaceX would continue to implement mitigation measures.
- Section 7 of the Endangered Species Act (ESA) consultations
  - U.S. Fish and Wildlife Service to determine whether the Proposed Action may affect and is likely to adversely affect ESA-listed species and critical habitat
  - National Marine Fisheries Service to determine whether the Proposed Action would adversely affect ESA-listed marine species or designated critical habitat



# Department of Transportation Section 4(f) Impacts

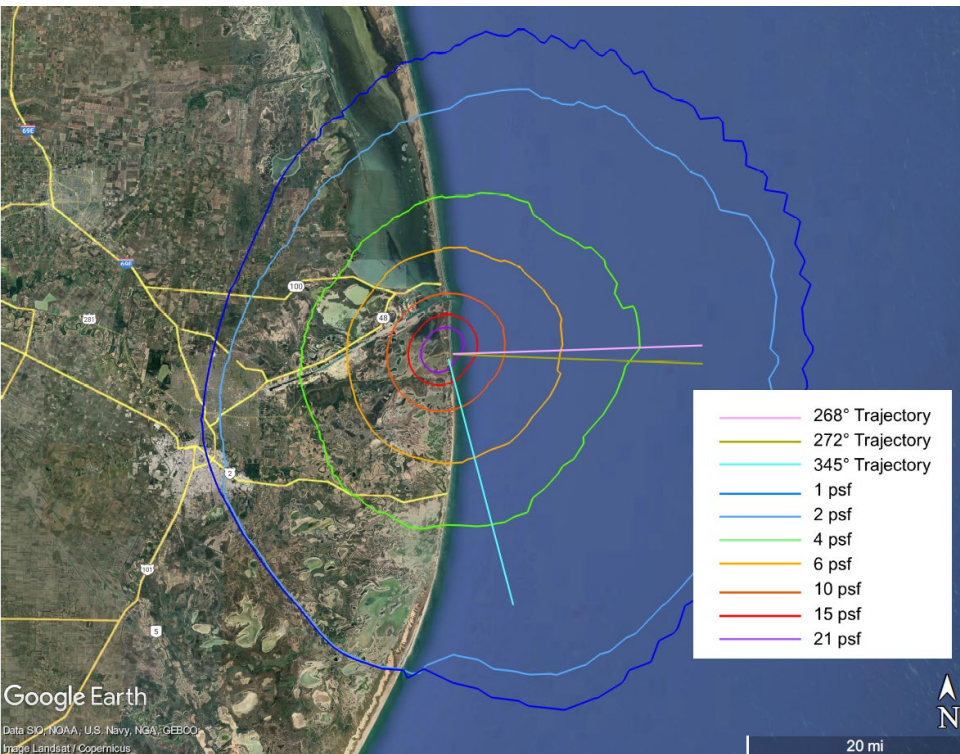
- Protected Section 4(f) resources include public parks, recreation areas, wildlife or waterfowl refuges of national, state or local significance, and land of an historic site of national, state, or local significance.
- The FAA is evaluating the Proposed Action for potential significant impacts to 4(f) resources, including constructive use<sup>1</sup>, caused by sonic booms from Super Heavy landings at the site.
- Noise from launches assessed in the 2022 PEA would expand by approximately 2 miles under the Proposed Action but would continue to create only short-term and intermittent effects.
- The duration and location of access restrictions would not change beyond those described in the 2022 PEA.



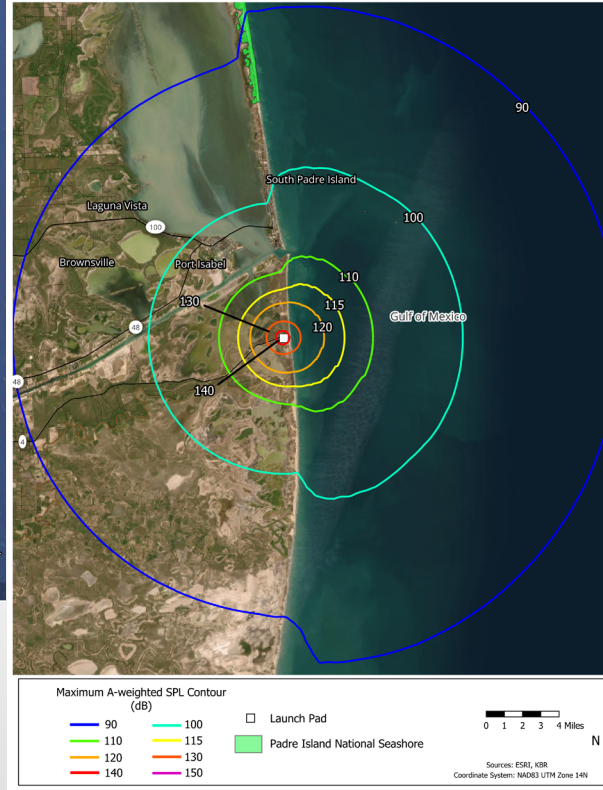
Closure Area

<sup>1</sup> Constructive use occurs when the impacts of a project on a Section 4(f) property are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired.

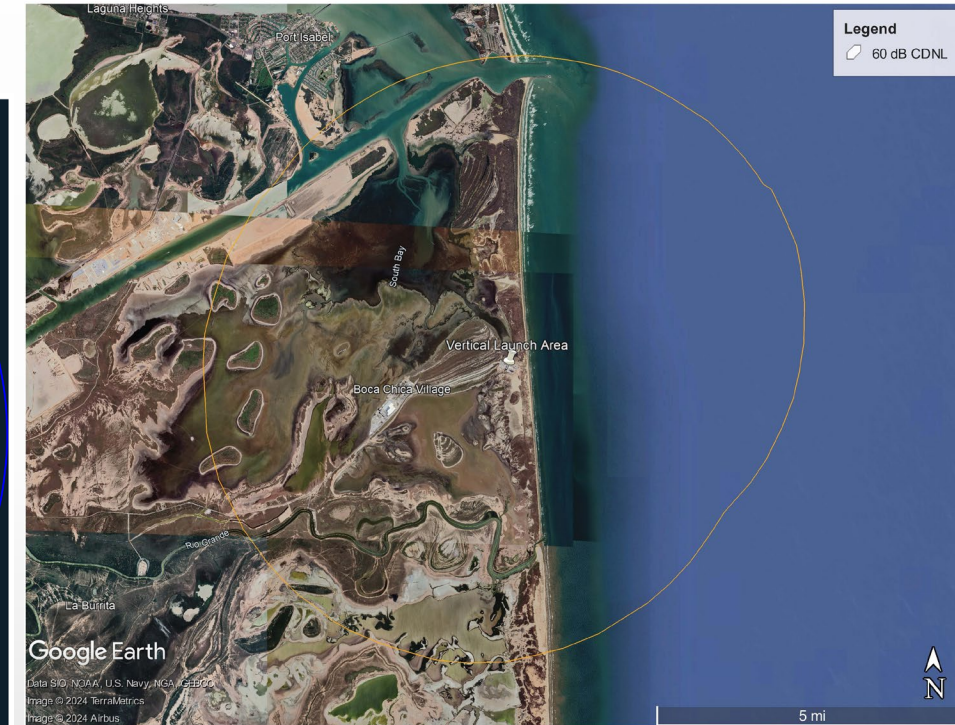
# Noise and Noise-Compatible Land Use Impacts



**Super Heavy Sonic Boom Levels for Reentry/Landing at Boca Chica, TX**



**Super Heavy Landing Noise Levels for Reentry/Landing at Boca Chica, TX**



**Starship/Super Heavy Cumulative Day-Night Average Sound Levels**

OSHA - Occupational Safety and Health Administration

OSHA guidelines on noise exposure limits 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.

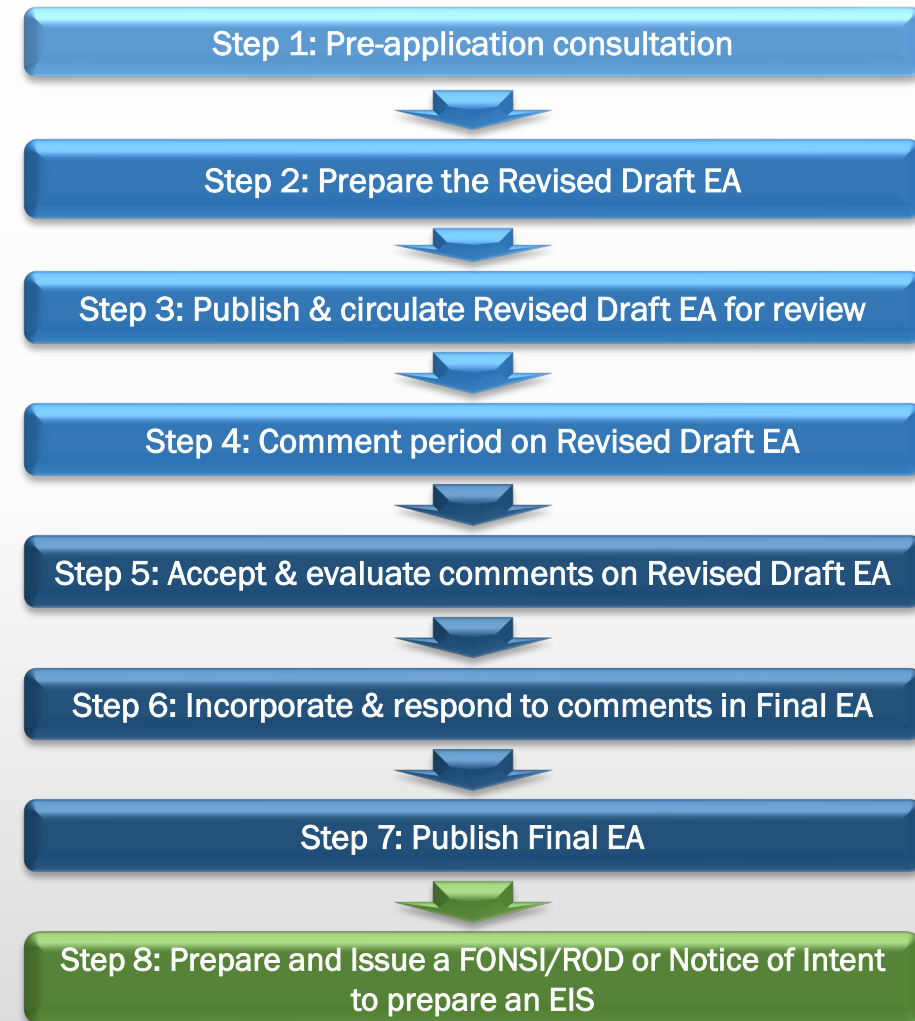


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# Stakeholder Engagement Schedule

- **Revised Draft EA Preparation**
  - Coordination with agencies
- **Publication of Revised Draft EA**
  - November 20, 2024
- **Public Meetings on Revised Draft EA**
  - In-person meetings on January 7, 2025
  - Virtual meeting on January 13, 2025
- **Comment Period Closes**
  - January 17, 2025
- **Next Steps**
  - Incorporate comments on Revised Draft EA and publish Final EA

WE ARE HERE



# Comments on the Revised Draft EA

- Provide an oral comment to the court reporter at today's meeting
- Provide a written comment at today's meeting
- Submit electronically to: [www.regulations.gov](http://www.regulations.gov)
  - Search for Docket No. FAA-2024-2006
  - Click on the “Comment” button, enter your information and comment, then click “Submit Comment”
- Mail to:

Ms. Amy Hanson, FAA Environmental Specialist, SpaceX EA  
c/o ICF  
1902 Reston Metro Plaza  
Reston, VA 20190
- Comment period closes on January 17, 2025
- Subscribe to the project mailing list and view the Draft EA at:  
[https://www.faa.gov/space/stakeholder\\_engagement/spacex\\_starship](https://www.faa.gov/space/stakeholder_engagement/spacex_starship)



# Providing Public Comments

- Helpful Types of Comments
  - Accuracy of information
  - Adequacy of, methodology for, or assumptions used in the environmental analysis
  - New information relevant to the analysis or that would change the conclusions
  - New alternatives that meet the purpose and need statement, are feasible, and are substantially different than the alternatives already considered
  - Where clarification is needed

**The public comment period ends on January 17, 2025.**



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# Open House



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