



Environmental Impact Statement (EIS)

for SpaceX Starship–Super Heavy Launch Vehicle
at Launch Complex 39A at the Kennedy Space Center, Florida

NATIONAL ENVIRONMENTAL POLICY ACT

What is NEPA?

- » U.S. Law enacted in 1969.
- » Requires consideration of the direct, indirect, and cumulative environmental impacts prior to a Federal agency making a decision on a major Federal action.
- » Requires identification and analysis of reasonable alternatives.
- » Requires public participation.

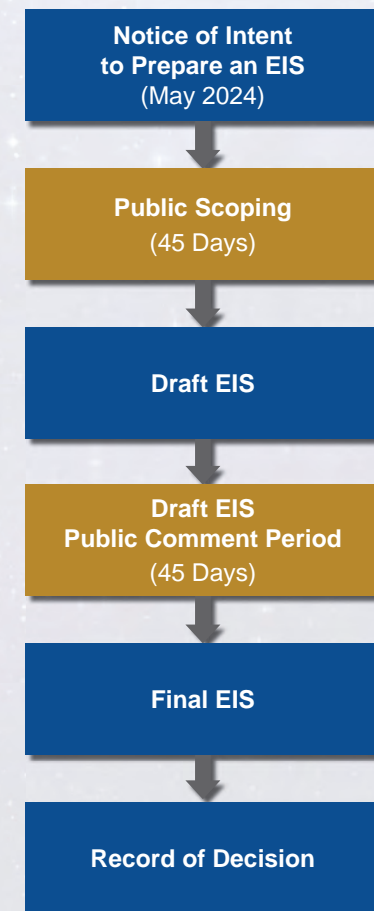
What is the role of FAA and other agencies in this EIS?

- » The FAA is the lead agency overseeing the development of the EIS.

Cooperating Agencies include:

- » National Aeronautics and Space Administration (NASA)
- » U.S. Fish and Wildlife Service (USFWS)
- » National Park Service (NPS)
- » U.S. Coast Guard (USCG)
- » Department of the Air Force (DAF)

EIS MILESTONES





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PROPOSED ACTION

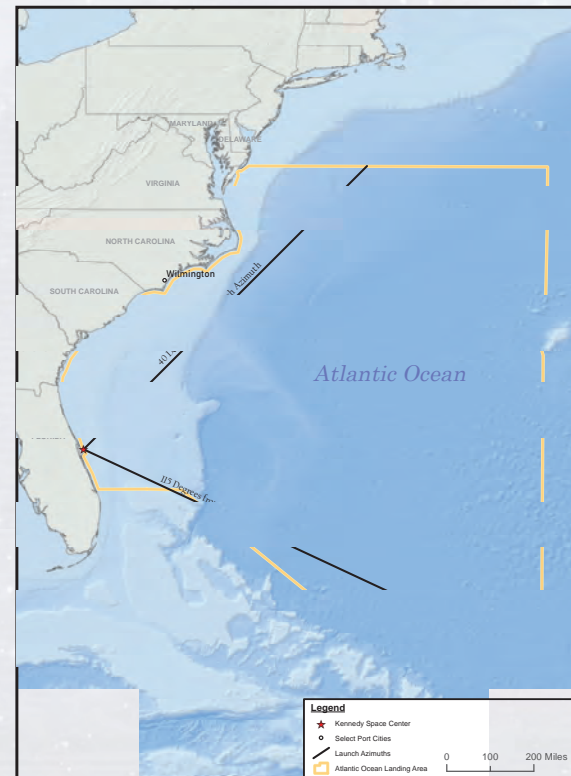
Proposed Construction

- » SpaceX proposes to construct launch, landing, and other associated infrastructure at and in proximity to LC-39A.



Proposed Operations

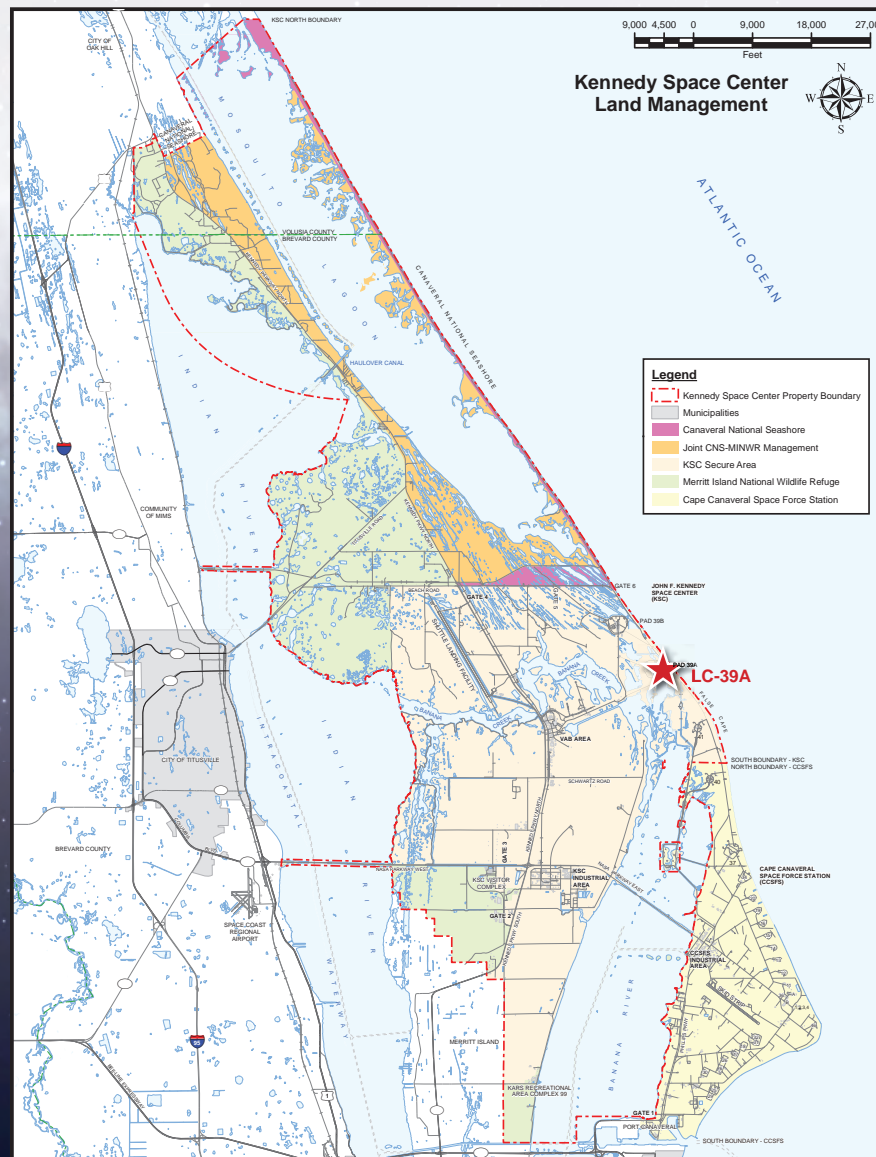
- » Starship-Super Heavy launches at LC-39A.
- » Recoverable Super Heavy booster and Starship landings at LC-39A or on a droneship.
- » Expendable Super Heavy booster and Starship landings in the open ocean.





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LOCATION OF LC-39A





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STARSHIP-SUPER HEAVY LAUNCH VEHICLE

**Starship
9 Raptor
engines**

**Super Heavy
35 Raptor
engines**

**Powered by
liquid oxygen
(LOX) and
liquid methane**

**Intended to be
fully reusable**



STARSHIP-SUPER HEAVY OPERATIONS

Pre-Launch

- » Pre-flight operations could include ground testing activities, tanks testing, spin-prime tests, mission rehearsals (i.e., dry and wet dress rehearsals).

Launch

- » Up to 44 times per year and could occur at any time of day or night.

Super Heavy Landing

- » At LC-39A, downrange in the Atlantic Ocean on a droneship, or expended in the Atlantic Ocean.

Starship Landing

- » At LC-39A or droneship in the open ocean.



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ROLE OF THE FEDERAL AVIATION ADMINISTRATION

FAA's Involvement

- » The Federal Aviation Administration (FAA) is the lead agency on the Environmental Impact Statement (EIS).
 - The FAA is the licensing authority.
 - NASA requested that FAA lead the EIS.

FAA's Federal Action

- » Issue a license(s) to SpaceX for Starship-Super Heavy operations at Kennedy Space Center LC-39A.
- » Approve airspace closures for launch and landing operations to ensure public safety.

License Determination

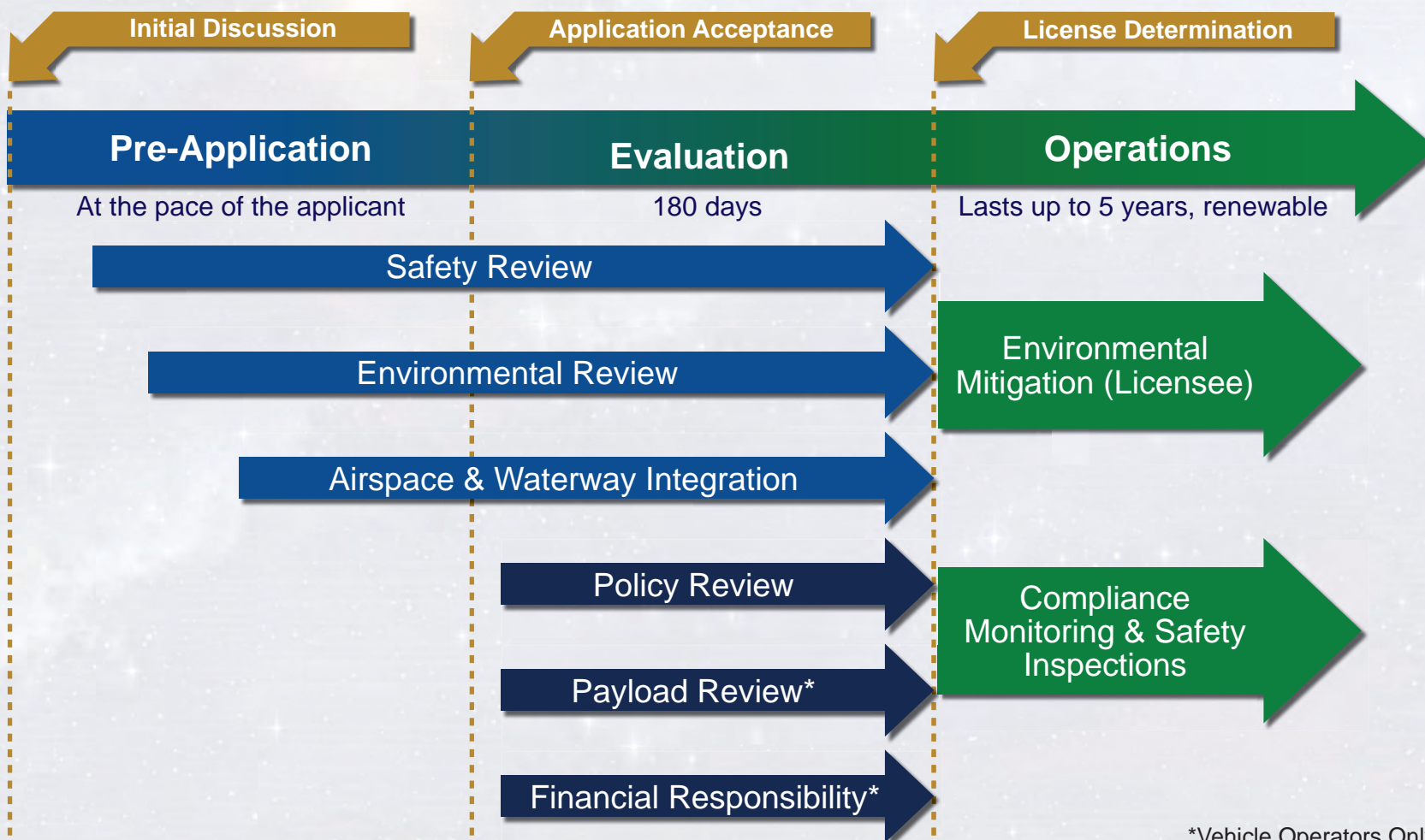
- » FAA conducts policy, location, safety, and environmental reviews.
- » EIS fulfills the environmental review portion of the license evaluation and determination.
- » The environmental review must be complete before the FAA makes a decision on the license.
- » Any environmental mitigation requirement will become a term and condition of the license.
- » Successful completion of the environmental review does not guarantee that the FAA will issue a license.
- » The FAA will perform safety inspections during the licensed operations.



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FAA LICENSING PROCESS





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NOISE BASICS

What is Noise?

Unwanted, extraneous, or annoying sound that interferes with or disrupts normal human activities.

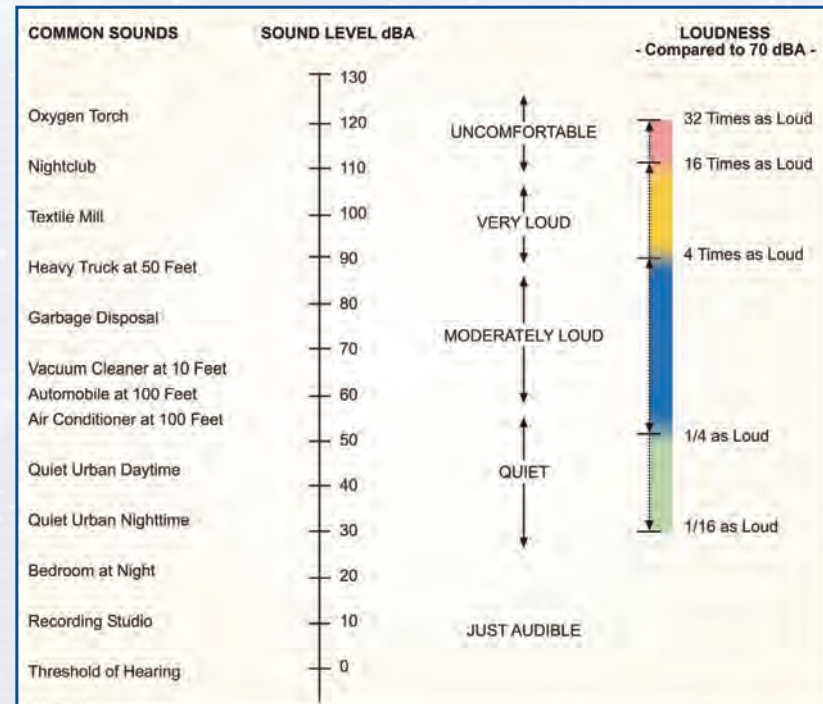
- » Response of different individuals to similar noise events is diverse.
- » Perception and evaluation of sound involves three basic physical characteristics:

Duration – the length of time the sound can be detected.

Magnitude – the acoustic energy, which is expressed in terms of sound pressure, in decibels (dB).

Frequency – the number of cycles per second the air vibrates, in hertz.

Typical A-Weighted Levels of Common Sounds



Impact Analysis Considers

(including, but not limited to):

- » Human Annoyance
- » Ecological Effects
- » Structural Damage
- » Hearing Conservat
- » Land Use Compatibility



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RESOURCES TO BE STUDIED IN THE EIS

- » Air Quality
- » Biological Resources
- » Climate
- » Coastal Resources
- » Department of Transportation Act, Section 4(f)
- » Hazardous Materials, Solid Waste, and Pollution Prevention
- » Farmlands
- » Natural Resources and Energy Supply
- » Land Use
- » Historical, Architectural, Archaeological, and Cultural Resources
- » Noise and Noise-Compatible Land Use
- » Socioeconomics, Environmental Justice and Children's Environmental Health and Safety Risks
- » Visual Effects
- » Water Resources
- » Cumulative Impacts

