Commercial Space Transportation

Public Meeting for the Draft Environmental Assessment For the Huntsville International Airport Reentry Site Operator License and Sierra Space Corporation Vehicle Operator License, Madison County, Huntsville, Alabama

December 9, 2021
Meeting Assistance

• If you need assistance, send the host a chat message or raise your hand using the raise hand icon next to your name

• If you experience technical difficulties during the meeting, you can call in to listen to the meeting
  o 1-833-548-0276
  o Meeting ID: 850 3217 5874
  o Meeting Password: 8695227
Meeting Agenda

• Logistics
• Introductions
• AST, Authority, and Sierra Space Presentations
• Comment Session
How to Submit Comments

• Provide an oral comment at tonight’s public meeting
  • Those who pre-registered will be called on first
  • Send host a chat message or raise your hand to be added to the speaker's list

• Email: huntsvillereentry@icf.com

• Mail:
  Ms. Stacey Zee, HSV Draft EA
  c/o ICF
  9300 Lee Highway
  Fairfax, VA 22031

Comment period closes on December 22, 2021

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.
Ground Rules

• Please do not use inappropriate language
• Pre-registered commenters will be called on in the order in which they registered
• Commenters will be given 3 minutes to speak. Please respect everyone’s time
• Remember that all comments are weighted equally regardless of whether they are oral, electronic or written
Commercial Space Transportation

Public Hearing for the Draft Environmental Assessment For the Huntsville International Airport Reentry Site Operator License and Sierra Space Corporation Vehicle Operator License, Madison County, Huntsville, Alabama

December 9, 2021
Why Are We Here?

• The FAA is evaluating the Huntsville Madison County Airport’s (Authority) and Sierra Space Corporation’s (Sierra Space) proposed commercial space reentry operations at Huntsville International Airport (HSV)

• Reentry site and vehicle operations require a license from the FAA

• The FAA is analyzing the potential environmental impacts in an Environmental Assessment (EA) and is collecting comments on the Draft EA
FAA Licensing Process
Reentry Site Operator License

Pre-Application
- Application
- Safety Review
- Environmental Review
- Airspace & Waterway Integration

Evaluation
- Policy Review
- Reentry Site Location Review

License
- Monitoring
- Safety Inspections

Note: Figure illustrates general, not exact, timing of reviews
FAA Licensing Process
Vehicle Operator License

Pre-Application
- Application

Evaluation
- Safety Review
- Environmental Review
- Airspace & Waterway Integration
- Policy Review
- Payload Review
- Financial Responsibility

License
- Determination
- Monitoring
- Safety Inspections

Note: Figure illustrates general, not exact, timing of reviews
Project Overview

- The Authority is proposing to operate a commercial space reentry site at HSV under an FAA Reentry Site Operator License.
- Sierra Space is proposing to conduct reentries of its Dream Chaser vehicle at HSV under an FAA Vehicle Operator License.
- Maximum number of proposed reentries, annually (could be daytime or nighttime):

<table>
<thead>
<tr>
<th>Year</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
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Proposed Project at HSV
Dream Chaser Vehicle

- Runway-landing commercial Orbital Space Vehicle in development
- Uncrewed transportation from Low Earth Orbit (LEO)
- Non-toxic propulsion for orbital translations, attitude control, deorbit
- < 1.5g re-entry profile and >1000 mile total cross-range capability
- Designed to launch on a variety of launch vehicles
- Contract for Cargo Resupply Services 2 (CRS2) Program with National Aeronautics and Space Administration (NASA)
NASA Commercial Resupply Services 2 (CRS2) Program
Mission Overview
Ascending/Descending Trajectory and Cross Range
Ground Track – HSV Reentry

Legend

- HSV
- Trajectories

Sources: Google Earth, 2021; RS&H, 2021; Sierra Space, 2021

This figure is not to scale and is for graphic purposes only.
Representative Flight Path
Airspace Closures due to Reentry at HSV

- Sierra Space would coordinate airspace closures for reentry operations with:
  - FAA Office of Commercial Space Transportation
  - FAA Air Traffic Organization
  - FAA Office of Airports
  - HSV
  - impacted Air Traffic Control facilities
  - any affected military organizations
  - U.S. Coast Guard
  - impacted foreign Air Navigation Service Providers

- The FAA does not anticipate altering the dimensions of airspace

- A NOTAM will be issued for each reentry opportunity; aircraft would be re-routed around the airspace closure area
Airspace Closures

Legend
- Cross Range AHA
- Nominal Trajectory
- Nominal AHA
- Runway 18L-36R
- NOTAM

Sources: ESRI, 2021; RS&H, 2021

This figure is not to scale and is for graphic purposes only.
Sonic Boom

Legend
- Project Study Area
- Reentry Site Boundary at HSV
- County Boundaries

Sources: ESRI, 2020; RS&H, 2020

This figure is not to scale and is for graphic purposes only.
Runway Closures

• Temporary Flight Restrictions (TFRs) would be issued by the FAA at HSV per request by Sierra Space

• **Runway 18R-36L** (not within the reentry site boundary) would be closed during reentry, but would open after Dream Chaser has landed

• **Runway 18L-36R**
  - would remain closed for up to 10 hours or until the Dream Chaser is unloaded and in safe condition
  - prior to reopening, Airport Operations would inspect the runway before returning to normal aircraft operations
Impact Categories Analyzed in Detail

- Noise and Noise-Compatible Land Use
- Biological Resources
- Department of Transportation Act Section 4(f)
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archaeological and Cultural Resources
- Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks

Refer to the Draft EA for a full discussion of potential environmental consequences
Noise Impacts

- Sonic boom would be produced during Dream Chaser reentry operations
- Predicted sonic boom overpressure levels for populated areas near HSV: 1.25 pounds per square foot (or psf)
- Overpressure levels of 1.25 psf are similar to a clap of thunder
- Noise in surrounding communities would be below levels that the FAA has determined could adversely impact land use, occupational health and safety, and building structures
FAA consulting with the U.S. Fish and Wildlife Service per Section 7 of the Endangered Species Act

- May affect, but would not significantly affect federally threatened and endangered species (proposed determination sent to USFWS on October 22, 2021)
  - Sonic booms infrequent and similar to thunder
  - Low probability of wildlife strikes

### Biological Resource Impacts

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<th>Common Name (Scientific Name)</th>
<th>Federal Status</th>
<th>State Status</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>Indiana Bat (Myotis sodalis)</td>
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<td>Northern Long-eared Bat (Myotis septentrionalis)</td>
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<tr>
<td>Dark Pigtoe (Pleurobema furvum)</td>
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<td>Endangered</td>
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<tr>
<td>Pink Mucket (pearlymussel) (Lampsilis abrupta)</td>
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<td>Snuffbox Mussel (Epioblasma triqueta)</td>
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<tr>
<td>Anthony’s Riversnail (Athearnia anthonyi)</td>
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</table>
Cultural Resource Impacts

- No anticipated adverse effects to characteristics of historic properties from noise
- No anticipated structural effects on historic properties
- Under National Historic Preservation Act, consulting with
  - Alabama State Historic Preservation Officer
  - Native American Tribes
  - Other consulting parties

Source: National Park Service
Department of Transportation Section 4(f) Impacts

- Increased sound levels during reentry operations
  - Proposed reentries modeled at 1.25 psf for sonic boom
- Proposed Action not expected to result in a significant impact on Section 4(f) resources
- FAA is consulting with
  - Tennessee Valley Authority
  - U.S. Fish and Wildlife Service
  - State Historic Preservation Officer

Source: U.S. Fish and Wildlife Service
• **Draft EA Preparation** – Coordination with agencies

• **November 12, 2021** – Publication of Draft EA

• **December 9, 2021** – Public meeting on the Draft EA

• **December 22, 2021** – Comment period closes

• **Next Step** – Publish Final EA (incorporates comments on Draft EA)
Comments on the Draft EA

• Submit comments on the Draft EA:
  • **Email:** huntsvillereentry@icf.com
  • **By Mail:** Stacey Zee, HSV DEA, c/o ICF, 9300 Lee Highway, Fairfax, VA 22031

• Comment period closes on **December 22, 2021**

• Draft EA and public comment form available at: https://www.faa.gov/space/stakeholder_engagement/Huntsville_reentry

• To subscribe to the project mailing list, visit: https://www.faa.gov/space/stakeholder_engagement/Huntsville_reentry

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Oral Public Comments

02:59
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