Texas Space Industry Highway Transportation Needs Assessment

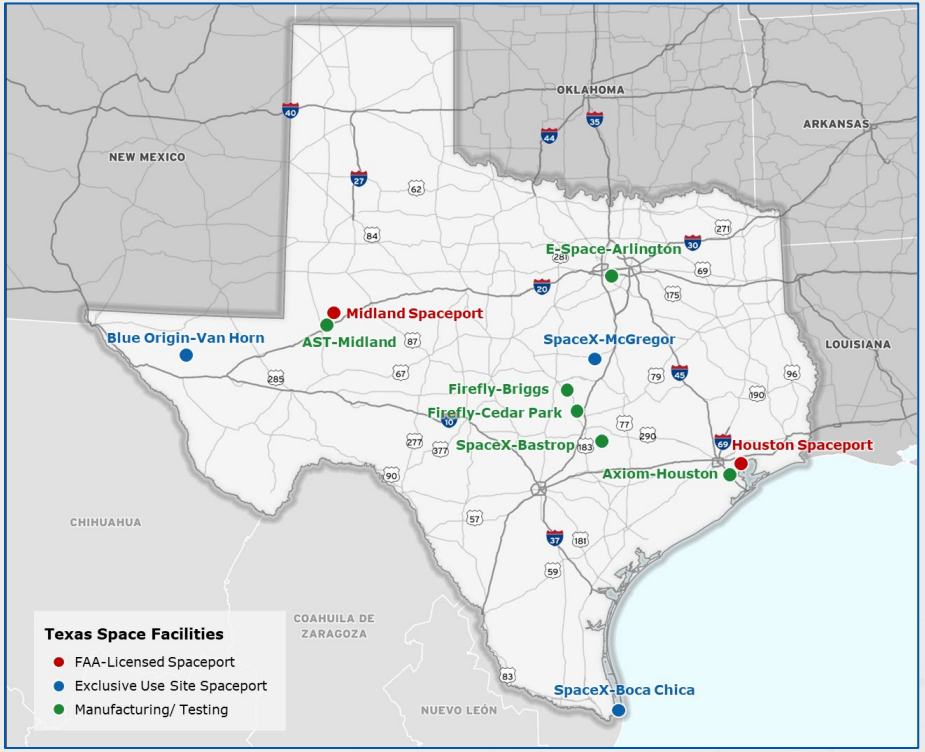
Texas Department of Transportation

Texas Space Commission Board of Directors Meeting

March 31, 2025

The Texas Space Industry

- 60+ year history of leadership
- 150,000+ aerospace sector employees
  - Research and development
  - Manufacturing
  - Testing
  - Operations (Launch and Recovery)
- Texas Space Commission
  - H.B. 3447 (2023)



Purpose of This Assessment

- The State of Texas has identified the space industry **as a key sector for economic growth**
- **Continued strategic investment in the Texas highway network is critical** to ensuring the space industry continues to call Texas home to grow and thrive

What corridors does the space industry depend on for moving freight and what are the challenges?

Does current and planned highway infrastructure accommodate the space industry's growing needs?

What highway characteristics are critical to accommodate the space industry's freight and job access needs?

What highway investments are needed to ensure Texas leads the American space industry and economy?

Stakeholder Informed Assessment

Space Industry Companies

- Firefly Aerospace
- SpaceX

Research Institutions

- Southwest Research Institute

Public & Quasi-Public Agencies

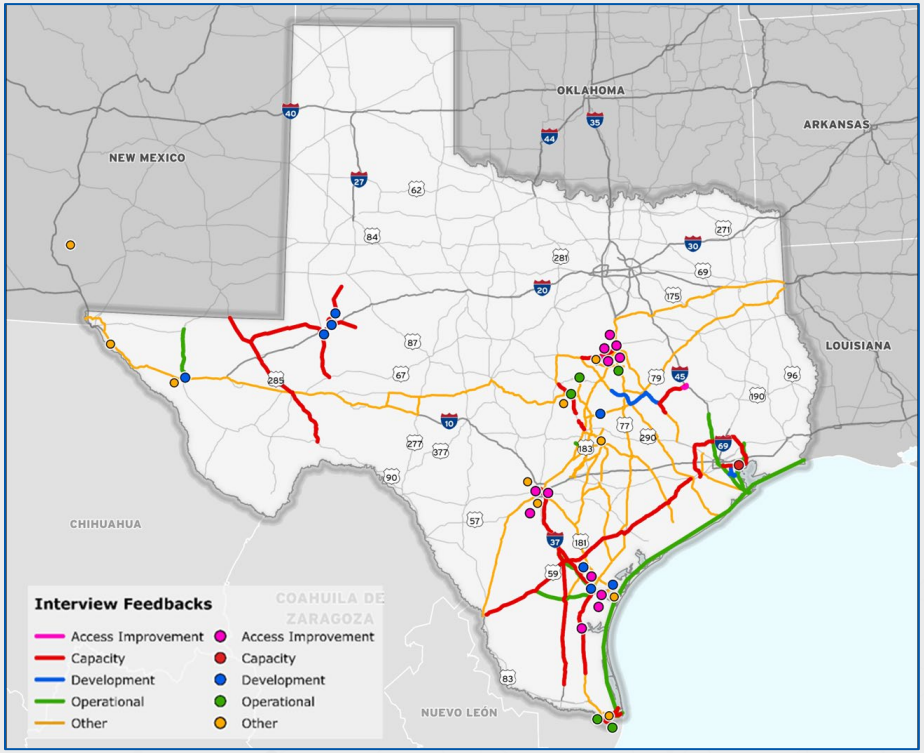
- City of Arlington
- City of McGregor
- Ellington Field Joint Reserve Base
- Houston Airport System
- Midland Development Corporation
- Port San Antonio

TxDOT Districts & Divisions

- Austin District
- Beaumont District
- Bryan District
- Corpus Christi District
- El Paso District
- Houston District
- Maintenance Division
- Odessa District
- Pharr District
- San Angelo District
- Waco District

Summary of Stakeholder Input on Highway Needs

- Roadway access improvements
- Roadway capacity improvements
- Roadway operational and safety upgrades
- Development-centered investments



Stakeholder Input: Key Infrastructure Challenges and Needs

- Suitable routing alternatives
- Geometric challenges
- Bridge vertical clearance and load rating
- Need to temporarily close highways to accommodate OS/OW trucks
- Overnight truck parking, especially for larger loads
- Highway capacity, especially for job access to rural and exurban facilities

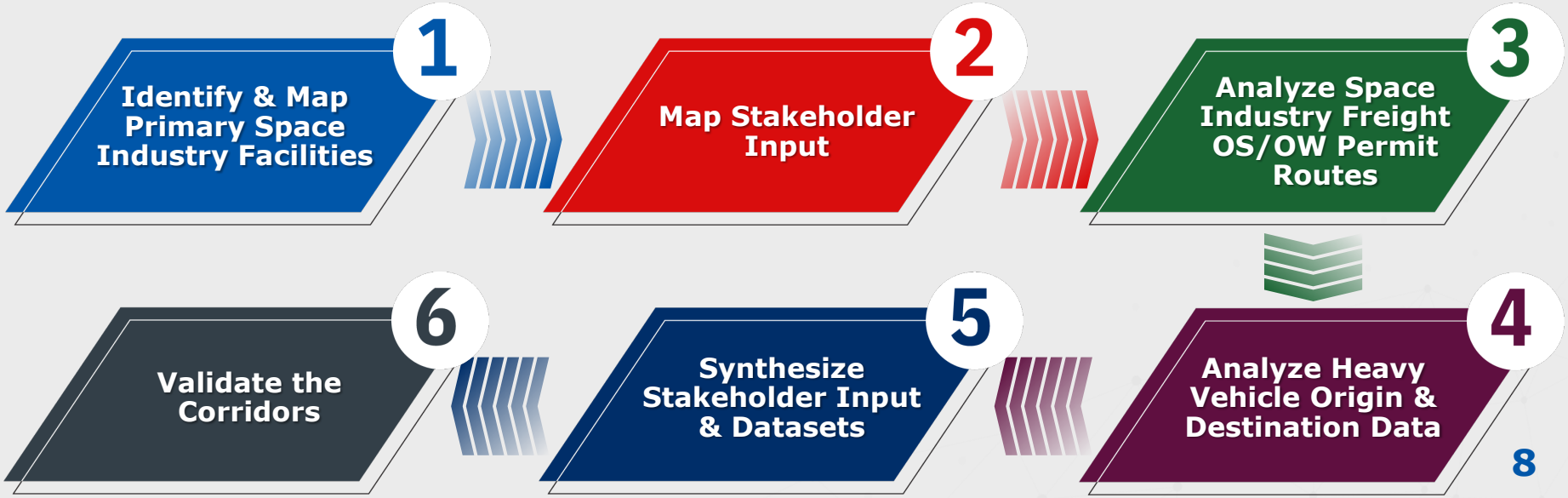
TeslaMotorsClub/u/nwdiver

Stakeholder Input: Key Programmatic Challenges and Needs

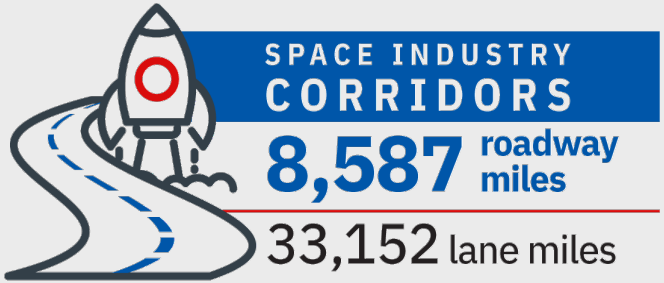
- Funding constraints and availability
- Lengthy transportation project development timelines
- Need for early and open communication between the private sector and TxDOT
- OS/OW load permitting process consistency

Identifying Texas Space Industry Highway Corridors

- The assessment **establishes a network of Space Industry Corridors (SIC)**, a new planning tool that will help TxDOT identify and prioritize highway improvements that will benefit the space industry
- Leverages stakeholder input, a **6-step data-driven process** analyzed key transportation datasets to confirm stakeholder input and identify the SIC



Texas Space Industry Corridors (SIC)

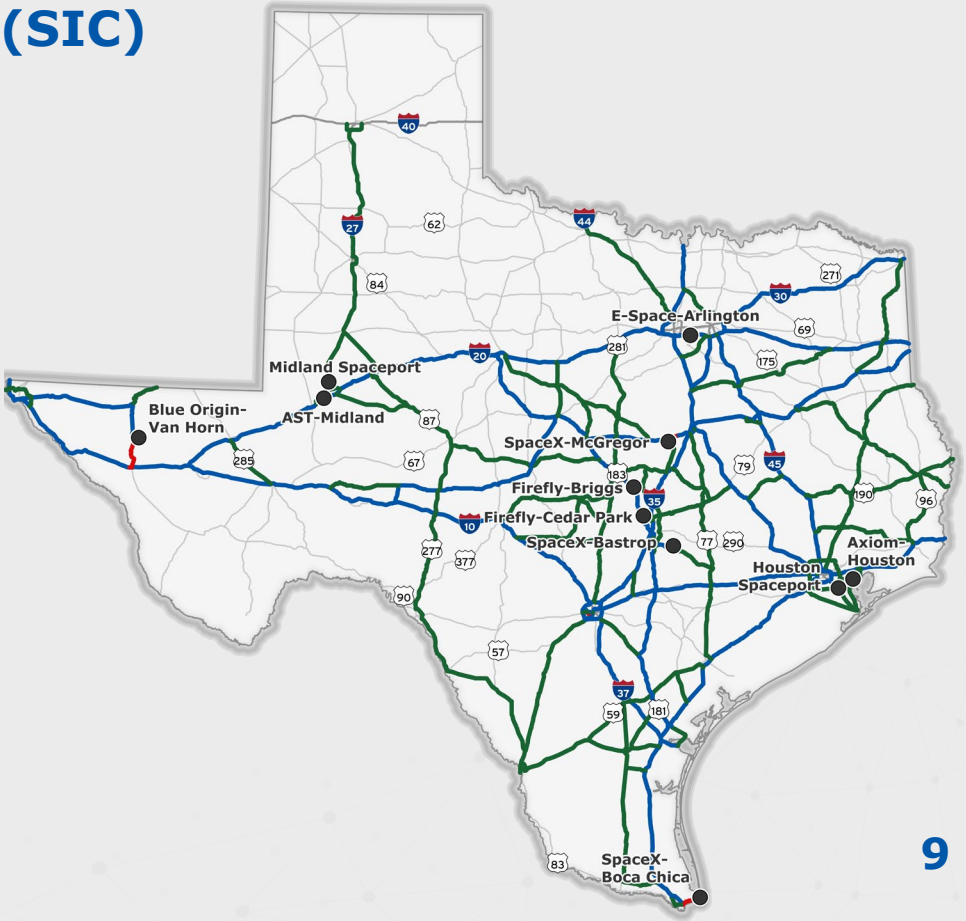


SIC Tiers

CRITICAL
98 roadway miles

PRIMARY
4,063 roadway miles

SECONDARY
4,426 roadway miles



Addressing Texas Space Industry's Highway Needs

Programmatic Needs

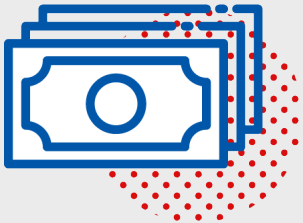
- Roadway capacity expansion
- Safety-focused roadway capacity
- Congestion-focused roadway capacity
- Bridge vertical clearance
- Bridge condition and loading
- Superheavy pavement
- At-grade railroad crossings

Critical SIC Hubs & Corridors

- Houston Spaceport/Ellington Airport, Houston
- SpaceX Starbase, Boca Chica
- SpaceX Rocket Development and Test Facility, McGregor
- SpaceX Starlink, Bastrop
- Blue Origin Launch Site One, Van Horn
- Firefly Aerospace, Briggs
- Port San Antonio, San Antonio

Summary of SIC Investments – Funding Gap

$27 billion funding gap



Improvements	Construction Cost	Construction Funded	Construction Funding Gap
Critical project improvements	$ 0.7B	$ 0.2B	$ 0.5B
Programmatic improvements			
- Bridge replacement	$ 3.2B	$ 1.3B	$ 1.9B
- Highway widening	$37.8B	$25.5B	$12.2B
- Pavement rehabilitation	$13.7B	$ 1.2B	$12.5B
- Railroad crossings	$ 0.3B	<$ 0.1B	$ 0.3B
Total	**$55.7B**	**$28.3B**	**$27.4B**

- *Due to rounding, not all figures add to total*
- *Costs shown is for construction only*

SIC Funding Gap – 15-Year Program

Unfunded Improvements	0-5 Years	5-10 Years	10+ Years	Construction Funding Gap
Critical project improvements	$ 0.3B	<$ 0.1B	$ 0.2B	$ 0.5B
Programmatic improvements				
- Bridge replacement	$ 0.1B	$ 0.6B	$ 1.2B	$ 1.9B
- Highway widening	$ 0.2B	$ 4.0B	$ 8.0B	$12.2B
- Pavement rehabilitation	$ 0.1B	$ 4.1B	$ 8.3B	$12.5B
- Railroad crossings	<$ 0.1B	$ 0.1B	$ 0.2B	$ 0.3B
Total	**$ 0.7B**	**$ 8.8B**	**$17.8B**	**$27.4B**

- *Due to rounding, not all figures add up total*
- *Costs shown is for construction only*

Future Considerations for Success

TxDOT's Organizational Strategies

Short-Term

- Dedicated district and division **space industry liaisons**
- **Internal task force** to share best practices for working with Texas space industry
- **Coordination and Partnership** with Texas Space Commission and other State Agencies, local, regional, and federal agencies
- **Coordination and Partnership** with space industry stakeholders and other organizations

Medium-Term

- **Optimize TxDOT's organizational framework** to most efficiently address Texas Space industry's transportation needs

Infrastructure Strategies

- Develop consensus around SIC
- Evaluate specific needs in more detail
- Apply standardized SIC design criteria

Why It Matters for Texas

- Texas' **60-plus-year legacy** boldly leading America's space industry
- Industry forecast to be **valued at $1.8 trillion nationally** by 2035
- Texas' **150,000-plus aerospace employees** are uniquely qualified
- The **average aerospace job salary topped $100,000** in 2023, twice the average Texas salary

*States are actively competing for these dollars, jobs, and development – **robust investment in the Texas highway network** will enable efficient space industry freight movement, ensure space industry jobs are accessible to Texas' uniquely qualified workforce, and position Texas to continue leading the growing American space industry well into the 21st Century*

"Those who reach for the stars [will] do so from the great state of Texas."

– Governor Abbott

Questions

Caroline A. Mays, AICP
Director of Planning and Modal Programs, TxDOT
caroline.mays@txdot.gov
(512) 658-2436