



TexSpace *2022 Annual Report*

FINAL

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Our objective in sharing this document is to provide information for the upcoming 2023 Texas State Legislature while continuing to generate collaborative feedback from members of the Texas Space Ecosystem

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PREFACE

Our mission is set to activate the State of Texas in defining and shaping national and global space efforts for the benefit of Texas, the United States, and our allies across the civil, commercial, and military ecosystem.

We have actively garnered support from municipalities across the State and continue our outreach effort. Thus far, all are interested in the TexSpace statewide initiative to support the space industry. Each municipality that we have engaged with possesses strategic assets that can contribute to Texas' space economy. As part of this, we have provided support in terms of information and communication strategies to high levels of government - including with military, state, and federal officials discussing the need to unite civil, commercial, and military space operations and missions and how the State of Texas can contribute. This document, in two parts, provides a snapshot of our work over the past 18 months along with a preliminary draft of legislation that outlines the TexSpace mandate, to set the direction and strategy for space-related matters and activities. This suggested piece of drafted legislation has been sent to Rep. Dennis Paul and Rep. Greg Bonnen.

Our objective in sharing this document is to provide information to our Texas representatives for the upcoming 2023 Texas State Legislature while continuing to generate collaborative feedback from members of the Texas-Space Ecosystem.

PRIMARY OBJECTIVES

Texas Space Commission

1

Sets the direction and strategy for space-related matters and activities.

2

Collaborative representation from executive and legislative branches, academia, military, community and industry.

KEY STAKEHOLDERS:

Strategic Texas Locations for Texas Space Commission

All municipalities listed below have expressed an interest in collaborating with TexSpace for the creation and support of a Texas Space Commission or have been identified to share a direct, specific need to activate the Texas Space Economy – Letters of Support from each municipality to present to the Governor's Office and Speaker of the House of Texas Representatives to display a united effort for the consideration of a Texas Space Commission in the upcoming 2023 Texas State Legislative Session.

Brownsville

Suborbital Launch facilities with SpaceX and over 100 vendors with capabilities and interest to support the United States' third range for the United States Space Force, in response to China's rapid development of six strategic spaceports, opening pathways for commercial and military space missions for the State of Texas.

San Antonio

Defense Manufacturing, Cyber, and heavy military presence at Port San Antonio, Joint Base San Antonio (JBSA), and Tech Port Gaming Arena with Lunar Mock Simulation and Vertiport drone facilities in early-stage planning.

Midland/Odessa

High concentration of oil/gas workforce with transferrable skills in the space economy and desirable location for launch-testing facilities to commercial partners.

Lubbock

Radiation shielding, semiconductors, and heavy material science presence.

El Paso

Heavy research and development for advanced technologies at University of Texas El Paso.

Austin/Round Top

Semiconductor and microprocessor community with government and military presence and competing destination for startups choosing the State of Texas as home. Near Waco, 300-acre test site in McGregor, Texas to conduct engine and large-scale structural testing.

Dallas/Arlington

Defense manufacturing and telecommunications infrastructure

Houston

Home to NASA JSC and FAA-regulated Houston Spaceport for horizontal launch with multiple tenants of new commercial space companies including strong industry presence in life sciences/biotech and energy.

SUMMARY

According to Morgan Stanley, the global space industry will reach \$1 trillion in revenues by 2050, currently up from \$350 billion. In addition, the Foundation for the Future suggests the industry will employ over 5 million people (420,000 now) with diverse backgrounds and skillsets. In 2021, CNBC reports Venture Capital space investments were \$17.1 billion (\$561 billion in US innovation for Series A/Seed Funds), with an estimated \$770 million invested in Texas. Secretary of Defense for Research and Engineering Heidi Shyu states the US needs to dominate in 14 technologies to remain the world's largest superpower. Florida, Colorado, Alabama, and California created programs to compete nationally to support innovation and small business and industry growth. Texas needs to do it bigger and better by leveraging its relative advantages to accelerate a new industry while supporting existing, mature sectors throughout the state by tapping into its historic legacy as the:

- Fastest-growing Microprocessor and IT Community in the World
- Largest Number of Certified Cyber Professionals Outside of Washington, DC
- Global Leader in Defense Industry Manufacturing
- Energy Capital of the World
- Largest Medical and Biotech Complex in the World
- Home to Human Spaceflight and Private Launch Facilities

CHALLENGES DRAFT

Emerging high-growth industries like Space, Biotech, and Cyber face significant barriers to developing a minimum viable product and commercializing their technologies to generate annual revenues to enter the market. Most small, high-growth businesses are not likely to succeed because they do not align with the existing demands seen within existing, mature industries. Government grants are not guaranteed, and contract-to-acquisition costs do not match industry speed with current and future national security implications and economic demand. The technologies within these emerging high-growth industries are vibrant and transferable throughout multiple sectors, but their value proposition, messaging, and infrastructure needs for continued development and testing are absent.

SOLUTION

Texas needs to renew itself as the epicenter of space exploration with an aligned narrative that will promote an entrepreneurial spirit within the academic institutions and innovation hubs, developing breakthrough technologies that can increase capital investment in our state, supporting research and development, and workforce development. The State of Texas is globally recognized for its business-friendly environment supporting the existing mature industries that choose to do business here. Texas can tap into its relative advantage by investing in the space industry and rekindle the spirit of "Houston, Tranquility Base here. The Eagle has Landed." by establishing a Texas Space Commission unifying the State of Texas space industry and thereafter a Public-Private Partnership that acts on behalf of the commission and for the Texas Space Ecosystem to drive innovation, promote small business growth, and remain a preferred location for corporations to call home.

VISION

The Current Context: In Headlines

WORLD NEWS: 2022 Russia threatens cyberattacks against Star Link and commercial satellite constellation

WORLD NEWS: 2022 China discovers new mineral on lunar surface and conducts robotic sample return

WORLD NEWS: 2022 China completes Tiangong Space Station in 10 years and larger than NASA's Skylab

WORLD NEWS: 2022 China sets new world record achieving two-hour cargo supply mission

WORLD NEWS: 2022 NASA Artemis 1 conducts first uncrewed test flight

Our Vision: In Headlines

WORLD NEWS: 2022 SpaceX Starship conducts first flight test

TEXAS NEWS: 2023 The State of Texas establishes a Texas Space Commission to set the strategy for Texas to remain competitive within the space economy and identify opportunities for growth

WORLD NEWS: 2023 Intuitive Machines beats Japan startup ispace to become the first commercial lunar lander to touchdown on the lunar southern pool

TEXAS NEWS: 2023 Houston Spaceport is listed as an opportunity and free-trade zone

WORLD NEWS: 2023 Jared Isaacman conducts first civilian spacewalk with private program, Polaris in a SpaceX Dragon capsule to boost NASA Hubble Space Telescope into higher orbit

TEXAS NEWS: 2024 future technology and space conference convening, the entire state announcing the strategic vision for Texas' space program

TEXAS NEWS: 2024 Flextronics and NTS move to Houston Spaceport aiding prototyping and supply chain for space companies with a combination of local, state, and federal tax incentives

WORLD NEWS: 2024 Space Perspective launches first civilian commercial spaceflight for tourists

TEXAS NEWS: 2024 groundbreaking for classified facilities and SCIF to support Space Force and DoD military space operations

WORLD NEWS: 2025 Russia and China, in joint military cyber operation, attack US commercial satellite asset

TEXAS NEWS: 2025 TexSpace enters into a legal agreement with the Texas Space Commission to act on behalf of and execute upon the statewide space strategy providing special-purpose vehicles along with local and state tax incentive opportunities to existing or future Texan space companies

WORLD NEWS: 2025 US claims space-based assets as critical infrastructure from added pressure by state-run space programs

TEXAS NEWS: 2025 groundbreaking for fourth generation nuclear power plant

WORLD NEWS: 2025 NASA Artemis 2 carries four astronauts and completes lunar flyby

TEXAS NEWS: 2025 Texas University Consortium unveils joint educational program from High School STEM programs and internships to doctoral fellowships

WORLD NEWS: 2026 Orbit Fab successfully makes its first financial transaction in GEO and refuels first GEO spacecraft

TEXAS NEWS: 2023

The State of Texas establishes a Texas Space Commission to set the strategy for Texas to remain competitive within the space economy and identify opportunities for growth

VISION

TEXAS NEWS: 2028

Multi-use (multi-launch) vertical launch spaceport for suborbital launch to aid commercial and military space operations in Brownsville, Texas

TEXAS NEWS: 2026 provides the first joint special purpose vehicle and local/state financial tax incentive package to select existing and future Texan Space companies

TEXAS NEWS: 2027 Texas Central Partners announce new high-speed rail route connecting San Antonio to Houston, Austin, and Dallas/Fort Worth with forward thinking statements to Brownsville

WORLD NEWS: 2027 Ad Astra Rocket Company successfully tests first advanced electric nuclear plasma propulsion system (VASIMR engine) for NASA resupply mission

WORLD NEWS: 2028 NASA Artemis 3 – first woman of color steps onto the lunar surface

TEXAS NEWS: 2028 Multi-use (multi-launch) vertical launch spaceport for suborbital launch to aid commercial and military space operations in Brownsville, Texas

WORLD NEWS: 2029 first space debris remediation mission conducted in LEO

WORLD NEWS: 2029 China lands first humans on lunar surface

WORLD NEWS: 2029 Axiom commercial space station fully operational

WORLD NEWS: 2030 China creates a lunar base with a commercial mining activity laying claim or control to a territory

TEXAS NEWS: 2032 Texas successfully captures and completes development proposal of the United States Space Force Field Command with dual city bid

WORLD NEWS: 2033 first joint university and medical research conducted on commercial space station

WORLD NEWS: 2035 United States Space Force officially becomes its own military branch separate from the United States Air Force

TEXAS NEWS: 2035 Texas records the close of the first life cycle of the investment fund and starts coordinating the first fully funded LM-SIF and Exploration Park sourced from the Texas Space Commission and TexSpace

WORLD NEWS: 2035 groundbreaking for Russia and China international research lunar base

WORLD NEWS: 2036 first full spectrum in-situ mineral analysis is conducted on the lunar surface

TEXAS NEWS: 2038 Texas State Legislative Session – complete the first self-sustaining infrastructure improvement project not funded through the usage of taxpayer dollars and government programs

WORLD NEWS: 2042 Astroport Space Technologies conducts the first extraction and refinement of materials from lunar regolith

WORLD NEWS: 2050 first lunar settlement operational and embedded in lunar lava tubes

PROPOSED ORGANIZATIONAL STRUCTURE

Priority: Texas Space Commission

(See Section 1 of DRAFT Texas Legislation reduce to eleven or thirteen members)

Complete in the 2023 Texas State Legislative Session

Purpose

(Run by commissioners) or state commission setting direction for the state – lines of effort

- *Focus on policy and arranging statewide strategy by monitoring local, state, and federal policies and opportunities and establishing an economic ecosystem for Texas' space enterprises.*

Structure

1. Executive Secretary
2. Governor (Commission Chairman)
3. Speaker of the House of Representatives Appointee
4. Speaker of the House of Representatives Appointee
5. President of the Senate Appointee
6. President of the Senate Appointee
7. The City of Houston Appointee
8. The City of San Antonio Appointee
9. The City of Dallas/Fort Worth Appointee
10. The City of Austin Appointee
11. Texas Military Department (TMD) Appointee
12. Houston Spaceport Appointee
13. Midland FAA-Regulated Spaceport Appointee
14. SpaceX FAA-Regulated Spaceport Appointee
15. Blue Origin FAA-Regulated Spaceport Appointee

ORGANIZATION SEGMENTS

Fund distribution subject to change based on awarded funds, growth stages, and organization needs.

Internal Coordination

10% Fund Distribution

Coordinating among local and state stakeholders, ensuring small business and industry needs are aligned and met.

Examples:

- Space Training and Readiness Command (STARCOM) strategic basing action
- SpaceX FAA/EPA Environmental Impact Assessment
- Local incentives packaged with state offerings and real estate relocation services

External Communications

25% Fund Distribution

Drive Business to Texas by organizing regional conferences and participating in national conferences.

Leverage the existing TexSpace brand platform and assets, along with partner support and input to develop and disseminate omnichannel communications outreach tools, events, and monitoring. This will enable TexSpace to provide consistent agenda-driven information, cultivated through leadership, collaboration, and conversation – and activate ambassadors for the Texas space ecosystem.

Examples:

- National/Global Conferences
- Space Symposium
- National Space Club – Dr. Robert H. Goddard Memorial Dinner

Policy and Advocacy

15% Fund Distribution

Monitor all local, state, and federal policies and communicate to respected branches of government to align with Texas business needs and opportunities.

Examples:

- Space Training and Readiness Command (USSTARCOM) strategic basing action
- SpaceX FAA/EPA Environmental Impact Assessment
- Business/Industrial parks with city/state rent offsets
- Onshoring Texas launch capabilities for commercial and military missions
- Space Debris Remediation and Monitoring Commercialization Enablement

Education and Training

15% Fund Distribution

Coordination with academic institutions, innovation communities, and local and state municipalities and organizations to offer small business loans, tax incentives, and primary points of contact for coordinating relationships with regional businesses.

Examples:

- Statewide University Consortium
- Local/State Financing and Tax Packages for prospective companies

Grants and Investment

35% Fund Distribution

The state-chartered, public-private partnership establishes an investment fund on top of its present organizational structure with a combination of state and donor funds. All profits from the “evergreen” fund will be returned for further investment, whether reinvested in infrastructure for state industrial projects or continued investment in emerging small businesses through grants, scholarships, debt financing, tax financing incentives and investments, special purpose vehicles (SPV), etc.

Examples:

- TexSpace
- Texas BioDesign Program

Lines of Effort

- Debt Financing
- Special Purpose Vehicles
- Conduit Financing

Benefits

- Direct more investment to Texas
- Attract small businesses to Texas
- Accelerate present small-business growth
- Increase job production and tax revenues

ACCOMPLISHMENT HIGHLIGHTS

- Established a nonprofit with bylaws and working board.
- Outlined the Houston ecosystem.
- Created a web portal for space act agreement testing facility access and digital registry.
- Outlined the state, national, and global space company database.
- Created a survey tool to help with local and state financing options.
- Reached global brand recognition with a fully developed brand platform, visual and verbal identity, and omnichannel communications assets including earned and paid social media, public relations, etc.
- Brought the now Chief of Space Operations (CSO) of the Space Force to Houston.
- Hosted an event, Lasso the Moon with an estimated 250 attendees and 14,000 digital viewers with a 40% retention rate, and brought five corporate sponsors.
- Participated, secured speakers, and consulted for multiple events and panel discussions (online, hybrid, and in-person) including but not limited to Moon2Mars, Houston Angel Network, Mass Challenge, Space Force Association, International Automation Society, FED Supernova, Secured Finance Network, National Security Innovation Council, SXSW, etc.
- Organized initiative led by Dr. Brian Babin and the entire Texas State Legislature with a signed bipartisan letter addressing STARCOM strategic basing action.
- Continuous briefs to greater community on needs for Houston and the State of Texas including and not limited to barriers for space innovation, monitoring national and global incentives for space company relocation, onshoring Texas launch capabilities, city and state landscape, etc.
- Job placement to local companies in the Texas area.
- Helped draft legislation for Texas Space Commission.
- Developed investment model for state to generate self-sustaining fund for future space initiatives like exploration park.
- Supported and provided advisement to multiple startups in the space and defense sectors aligning them with capital, resources, and connections.
- Traveled the state and the United States visiting with other municipalities, companies, and organizations identifying their needs and cooperative involvement in a Texas Space Commission and TexSpace.
- Drafted Letters of Support for regional municipalities to Texas Space Commission and TexSpace.

UPCOMING OBJECTIVES

- **Letters of Support from Regional Municipalities**

Present to Governor's Office and the Speaker of the House of Representatives as a united effort for their consideration in the upcoming 2023 state legislature.

- **Lawyer and Accountant Consultation**

Ensure bylaws, agreements, potential disputes, organizational structure, financials, and guardrail are all upstanding.

- **Economic Impact Assessment**

Assessments have been made for municipalities and their local projects but not the entire state and how Texas fits into the national/global landscape. This will aid legislative efforts and help develop Texas' direction and strategy.

- **Statewide Future Technology Conference with Space Focus**

Upon setting the direction, a statewide event to convene respective stakeholders between December 31st, 2023 and January 3rd, 2024 (Dates Subject to Change) to announce the strategic vision for the State of Texas brought forth by the Texas Space Commission.

- **Onshoring Texas Launch Capabilities**

Education and awareness for multi-use vertical launch capability with the USSF.

