

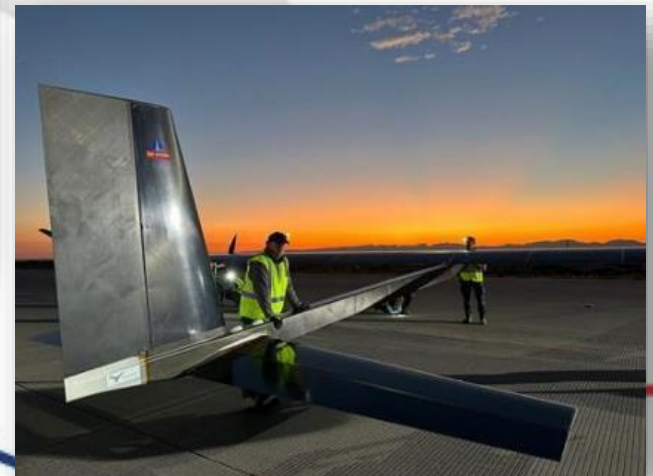
The **GATEWAY TO SPACE**®

Update on Spaceport America

NM Finance Authority Oversight Committee

Thursday, September 7, 2023

Scott McLaughlin
Executive Director



SPACEPORT AMERICA

THE SPACE TO BE...

OUTLINE

- Activity Review
- Capital Projects and Facilities
Maintenance Updates
- Budget and Economic Impact
- Business Development

ACTIVITY REVIEW



- **USAF Thunderbirds** winter training
- Two HAPS (**High Altitude Platform System**) customers have been testing on site, with a 3rd returning this winter
- Liquid engine testing by **Phantom Aerospace**
- **U.S. Military Academy** (West Point) flew student rockets
- **Virgin Galactic** flew to space on May 25th, June 29th, August 10th is scheduled for September 8th, and plans to launch every 30 days
- **UP Aerospace Rocket** launch had very rare anomaly during launch on May 1, will launch later this year or early next
- Another **kinetic launch** customer considering operations at SpA
- **Suborbital liquid rocket launch** in late 2023 or early 2024
- **AeroVironment** small UAV training and testing and HAPS later this year
- Continued operations by **SpinLaunch**
- **STEM Outreach** including virtual, site tours/demos etc.
- The **Spaceport America Cup** was held the week of June 20
- **Prismatic** succeeded in first milestone high altitude flight
- Participated in **Dona Ana County intern** program and continuing with other interns
- **Electric car manufacturer** battery testing
- See www.youtube.com/spaceportamerica for updates and review of activities

ACTIVITY PICTURES



Dean of the Academic Board-West Point

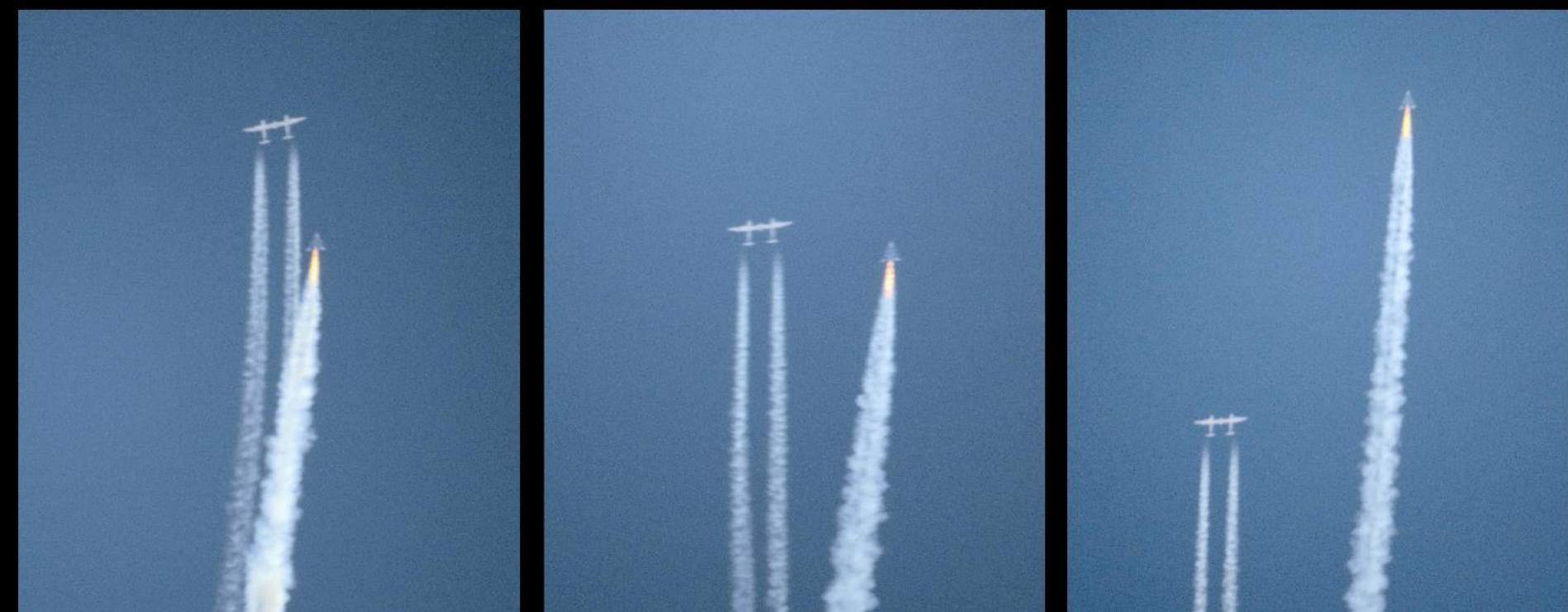
As I was walking on campus this week, I passed a dress rehearsal for a rocket launch! The project is a Civil and Mechanical Engineering senior Mechanical Engineering capstone called the SPEAR-HRT for Space Engineering and Applied Research – Hypersonic Rocket Team. The rocket is 80lbs, 12feet tall, on a 16ft launch rail that will go >Mach 5 and attempt to reach 100km altitude, the Karman line and international definition of space. Cadets are CDT Brandon Cea, ME'21, Chase Lewis, ME'21, Nick McDonald, ME'21, Connor McQueen, ME'21 and Easton Bolin, ME'22. Advisor is MAJ Jeremy Paquin and co-advisors are Maj. Galliard and MAJ Humbert. The launch attempt is set for 1 MAY at Spaceport America in New Mexico. Good luck to the SPEAR-HRT!



VIRGIN GALACTIC STATUS

- Recommend: <https://investors.virgingalactic.com/events-and-presentations>
- Flew to space: **U25** - May 25, **Galactic 01** - June 29, **G-02** - Aug. 10
- Will fly about every 4 weeks (next flight G-03 scheduled Sep. 8)
- Tremendous press world wide

Photo credit: Dr. Chas Miller



GALACTIC02 RESULTS-AT-A-GLANCE

17,000+

**EARNED MEDIA
PIECES**

3,814

**BROADCAST
HITS**

36.34B

**MEDIA
IMPRESSIONS**

938

B-ROLL HITS

92%

**NEUTRAL TO
POSITIVE IN TONE**

45+

PRESS ON-SITE

NEW VIEWING LOT NEAR FRONT GATE

- Outside of security, so public can simply park and watch



PRISMATIC/BAE SYSTEMS



- Prismatic completed a successful stratospheric test flight of their PHASA-35 HAPS/UAV glider in late June of 2023
- PHASA-35 exceeded 66,000 feet in test flight
- Potential applications in intelligence, surveillance, recon and communication network delivery
- Successful trial is the first in a series to confirm system performance with the intent of making it available globally
- Prismatic acquired by BAE Systems in 2019. BAE is Great Britain's largest manufacturer and is one of the six largest suppliers to the US Department of Defense

STEM AND OUTREACH

- 22 STEM Events in FY22, reaching about 1800 students
- So far in FY23 have served about 3,000 students (that includes Dr. Bill Gutman going to every 6th grade class in the district, which is about 1,700 students)
- Recent tour events include Central Elementary, Girl Scouts, Lynn Middle School, Roswell HS, Mimbres Valley HS, Socorro HS, Picacho Elementary, and more.
- Participated in Mesa Middle Career Day, NM Workforce Connection, Global Spaceport Alliance Pathways Series, Las Cruces Space Festival Aerospace Industry Night



2023 SPACEPORT AMERICA CUP

- 2023 was the largest to date (5,901 participating, with about 1,651 in NM)
- NMSU, UTEP, and NM Tech all participated; NMSU won the Chile Cup
- 17 countries, 38 states, 8.9M earned media impressions, ~115 rocket flights
- Next year: June 17-22, 2024; see: <https://www.youtube.com/@esrarocket>



2023 SPACEPORT AMERICA CUP



SPACEPORT AMERICA CUP SUPPORTERS



SPACEPORT AMERICA[®] CUP
June 19-24, 2023



**20
23**

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CAPITAL PROJECTS AND MAINTENANCE UPDATE



INFRASTRUCTURE IMPROVEMENTS



- **SOC Repairs** almost all completed
- **Launch Rail** manufacturing and construction under way
- **Extending electricity** to several locations in VLA (waiting on transformers)
- **Gravel roads in VLA** added and improved
- Working on **repairs for HLA paved roads**
- Design-build contract for **STARC building** awarded to Buffalo Design Architects
- **Master Plan** contract awarded to RS&H, Populous, and Zia Engineering
- **GTS Roof** repairs completed and maintenance plan being developed
- **Runway assessment** and **taxiway** being worked on
- Legislature approved FY24 ICIP* including \$2M to start work on **taxiway** and \$1.5M for **general infrastructure upgrades**
- **Cell phone tower antenna** with 2 carriers will be on site soon
- VG Replica **Accessibility Improvements** and **Viewing Lot** completed
- Implementing **Facilities Management** software for entire site
- **General purpose hangar** being designed
- Improved **county road from HLA to VLA** under review and development
- Installing **reverse-osmosis system** to prevent continuing corrosion of water system and fire apparatus part

*Infrastructure Capital Improvement Plan

EXAMPLE SITE MAINTENANCE ISSUES: HARD-WATER

1. Degrading water infrastructure pipe. Puts sitewide water utilities at risk.
2. Degrading fire equipment. Put fire response trucks and equipment at risk.
3. Degradation of equipment and pipes within buildings.
4. Below are photos showing water supply infrastructure degradation
5. Installing reverse-osmosis system later this year



VERTICAL LAUNCH AREA ELECTRICAL

- Electricity is needed by all customers and for all activities at VLA
- Will increase customer usage and revenue
- Allows further expansion of facilities
- Cost for the project: \$1.8 million.



CAPITAL PROJECTS – COMPLETED UPGRADES



\$2.1 million dollar Space Operations Center Interior & Exterior repairs and upgrades

Interior Scope: Repairs to drywall, storefront windows, new interior finishes upgrades.

Exterior Scope: Site grading, soil stabilization and new concrete/asphalt surfaces. **Duration:** 6 months.

Site Engineer: Lilley Engineering, a Las Cruces NM based firm. **Contractor:** Summit Construction, an Albuquerque, NM based firm.



CAPITAL PROJECTS – COMPLETED UPGRADES



BEFORE

\$160,000 Spaceship Replica ADA Accessibility and Public Viewing Lot upgrades aimed at enhancing safe access to iconic Spaceport areas. **Duration:** 3 weeks. **Contractor:** Mans Construction, a Las Cruces based firm.

AFTER



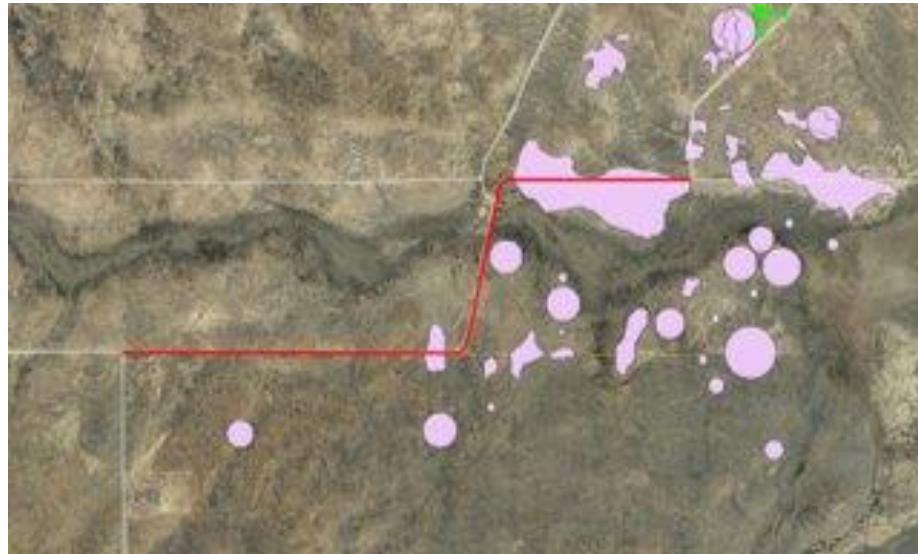
Spaceport America Vertical Launch Area



\$2.8 million dollar Vertical Launch Area Access Road upgrades providing safe all-weather access to customer rocket staging and launch areas. **Duration:** 8 months. **Contractor:** Mans Construction, a Las Cruces based firm.

Access Road Improvements

All weather access to Vertical Launch Area from the north Spaceport America complex.
Project Budget: \$5 million



Launch Rail System

Remote steered launch rail system capable of supporting 2,000 lb. sounding rocket. Will launch customers.
Project Budget: \$1.7 million



UPCOMING CAPITAL PROJECTS



STARC Project

Spaceport Technology and Reception Center Project.

Project Budget: ~ \$18 million

Currently in design phase



Spaceport Taxiway Addition

And runway maintenance upgrades.

Project Budget: \$25 million



General Purpose Hangar

Spaceport General Purpose Aviation Hangar

Project Budget: \$7-10 million

ICIP REQUEST



Agency/Local Government	Project Title	Project Year
Spaceport America	Spaceport Taxiway and Ancillary Infrastructure	2025
Spaceport America	Infrastructure Improvements and Upgrades	2025
Spaceport America	Gateway to Space Roof Improvement	2025
Spaceport America	Aircraft & Vehicle Operations Facility	2025
Spaceport America	Vehicle Payload & Rocket Operations Facility	2025
Spaceport America	NMSA Site Administration Building	2025
Spaceport America	Rocket Motor Test Stands & Launch Pads	2025
Spaceport America	Cultural and Technical Center	2028
Spaceport America	Range Instrumentation	2029

NMSA BUDGET



NMSA BUDGET

- A shortage of employees has been our main impediment to handling increased operations, business development, and infrastructure improvements; two new positions were authorized in 2023: 1) Manager of Infrastructure, 2) Manager of protective services; have also hired construction project managers
- SpA is about 60% self-funded, with inherent variability in customer revenue and expenses (e.g., maintenance and repairs)
- Customer revenue recognition takes a while (up to 18 months) before it can be used to support operations, presenting unique challenges in providing services and balancing the current year budget

NMSA BUDGET VS ACTUAL (THOUSANDS)

As of 08/20/23

	FY23 Actual ¹	FY24 Budgeted	FY24 Projected	Notes
Operating Revenue	\$7,362	\$7,330	\$7,330	From customers (fees, leases, utilities, fuel)
General Fund	3,791	4,247	4,247	
Revenue Total	11,153	11,577	11,577	
200 Personal Services	2,613	3,538	3,538	
300 Contract Services	5,660	5,655	5,655	
400 Other Costs	2,819	2,384	2,384	
Expense Total	11,092	11,577	11,577	
Fund Balance Transfer²	1,325	0	0	
Net Result	\$1,386	\$0	\$0	

Notes:

1. FY23 actual are unaudited numbers.
2. Fund transfer is based on 5% BAR and Appropriation Fund Balance Transfer

ECONOMIC IMPACT 2022

- Study completed by **NMSU Center for Border and Economic Development** (<https://cbec.nmsu.edu/>)
- Released on Friday, August 25, 2023
- Impacts include tenant employment (direct, indirect, induced), privately funded construction, out of state visitor spending, and spaceport customer revenues.

Table 14 - Total Economic Impact, Spaceport America, 2022

Impact	Employment	Labor Income	Value Added	Output
1 - Direct	548	\$30,608,919	\$35,615,913	\$87,880,353
2 - Indirect	144	\$9,294,889	\$12,911,142	\$25,980,079
3 - Induced	118	\$5,193,673	\$10,421,659	\$18,254,754
Total	810	\$45,845,649	\$60,435,345	\$138,080,756

From NMSU Spaceport America 2022 Economic Impact Study

BUSINESS DEVELOPMENT



BUSINESS DEVELOPMENT

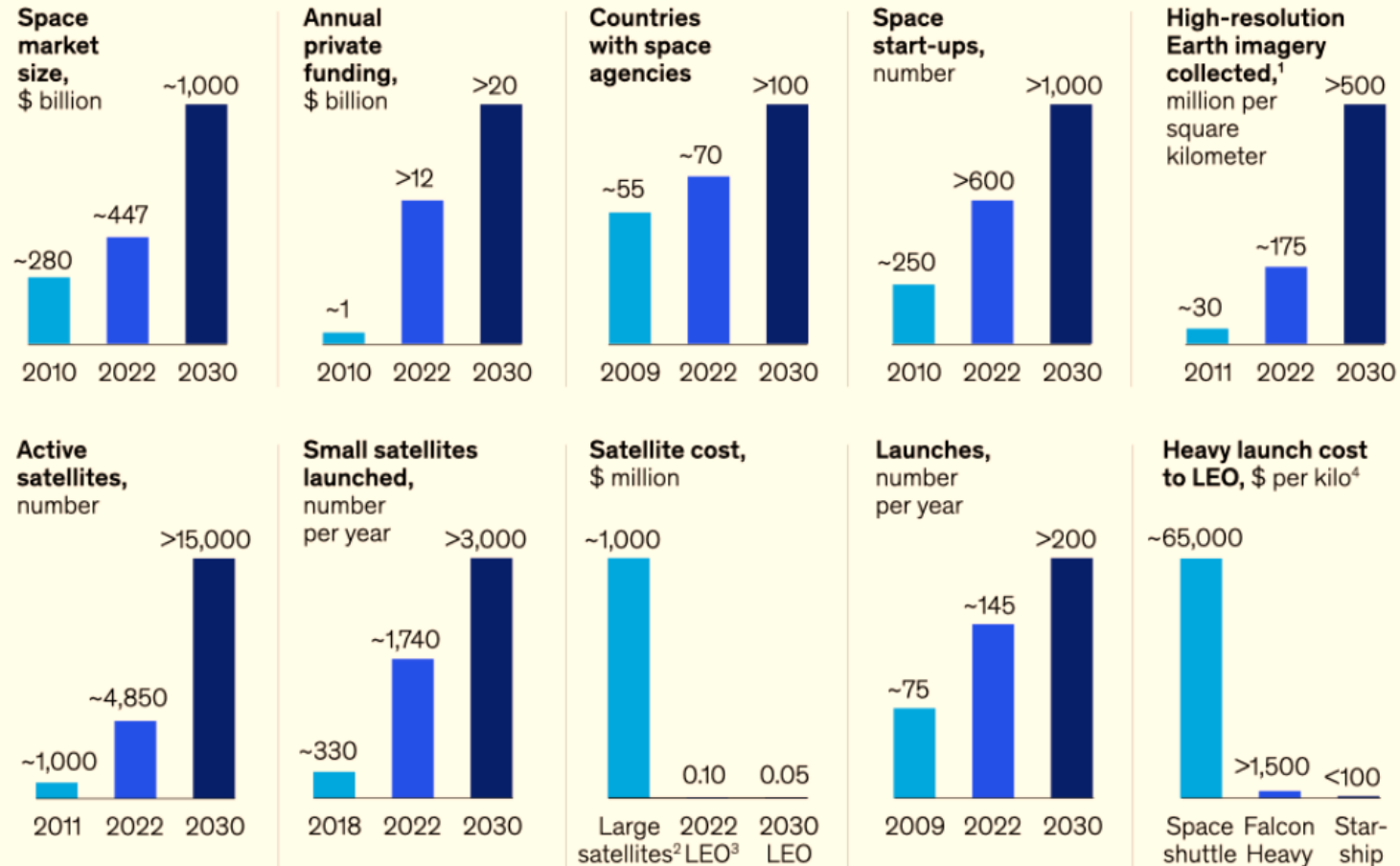


- Working on **FAA reentry license**
- Working with **Commercial Spaceflight Federation (CSF)** for federal funding for commercial spaceport (bill introduced by Sen. Hickenlooper and Sen. Lujan)
- Continue to attend and market at various **aerospace conferences**
- **Planning agreements** in place with various companies
- Increasing interest from **horizontal launch** developers, especially regarding future need for space cargo
- Note that the **space economy** is growing at a high rate (<https://tinyurl.com/2qh2ns64>)

HEADED TO \$1T BY 2030

The space sector has come a long way and seems poised for future growth.

Projections for space activities



From McKinsey, and Co. (<https://tinyurl.com/2ls39tgw>)

SPACE VALLEY...



- There is an opportunity to connect and grow “Los Alamos to El Paso” into **Space Valley**, as an economic region, like Silicon Valley, Space Coast, etc.
- The goal is to create a **complete aerospace ecosystem** to include research and development, entrepreneurs, funding, manufacturing, workforce development, test, and operations.
- This is already possible since we have two DOE laboratories (LANL & Sandia), U.S. Air Force Research Laboratory, White Sands Missile Range, design and manufacturing exist in Albuquerque and El Paso, we have the Borderplex, other space customers such as the USSF Space Rapid Capabilities Office, 100+ aerospace companies in the regions, and 4 universities with very good aerospace programs.
- Uniquely, the region also has a very active spaceport, which is acting to tie many of these activities and entities together.

U.S. SPACEPORTS



MAP LEGEND

- States with Current Spaceports
- 📍 FAA-Licensed Launch Site
- 🚀 FAA-Licensed Reentry Site
- ★ U.S. Federal Site
- ◆ Exclusive Use Site (Non-FAA Licensed)

FAA-LICENSED SITES

LAUNCH HORIZONTAL

- 📍 Cecil Spaceport
- 📍 Colorado Air & Space Port
- 📍 Houston Spaceport
- 📍 Midland International Air & Space Port
- 📍 Mojave Air & Space Port

- 📍 Oklahoma Spaceport
- 📍 Space Coast Regional Airport
- 📍 Space Florida Launch & Landing Facility (SLF)
- 📍 Spaceport America

REENTRY SITE

- 🚀 Huntsville Reentry Site

LAUNCH VERTICAL

- 📍 Mid-Atlantic Regional Spaceport
- 📍 Pacific Spaceport Complex Alaska
- 📍 Spaceport Camden
- 📍 Space Florida Launch Complex 46
- 📍 Spaceport America

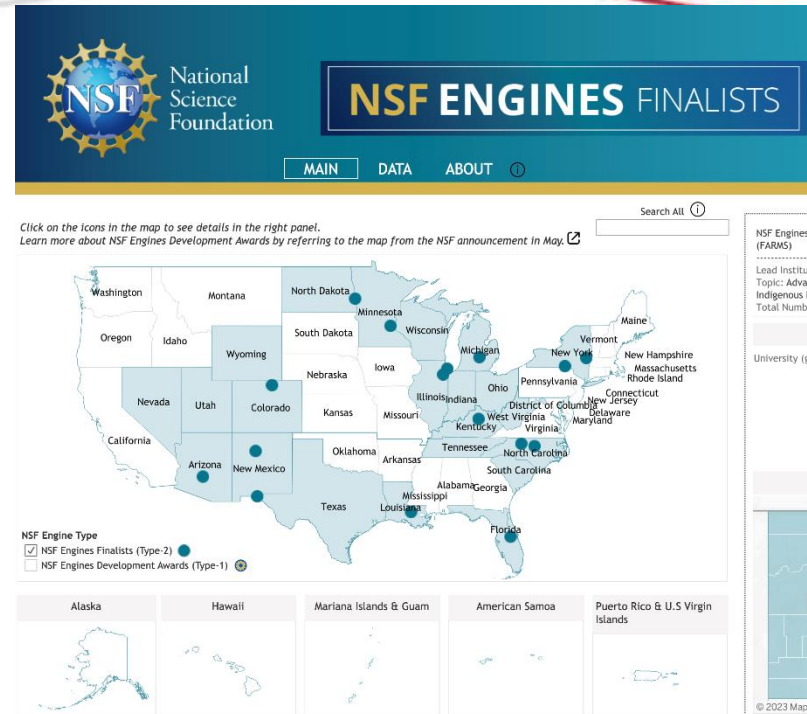
- 🚀 Space Florida Launch & Landing Facility (SLF)

Source: FAA/AST May 2022

SVC, EDA, AND NSF



- **Space Valley Coalition -**
<https://spacevalley.org/>
- **EDA BBB** (<https://tinyurl.com/2hk3ot49>)
- **NSF Regional Innovation Engines Grants**
(<https://tinyurl.com/2dmswnvl>)
 - 1) **Paso del Norte Innovation for Defense and Aerospace (IDEAL) Engine** (El Paso and UTEP)
 - 2) **Space for Earth, Space for All: Space Valley's Role in Securing America's Economic and Political Future** (Albuquerque and SVC Partners)



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