



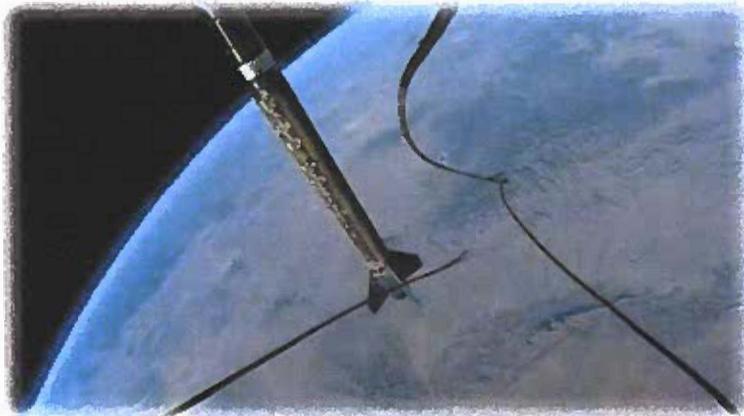
NM Spaceport Authority Status Brief

Legislative Finance Authority Oversight Committee

Chaparral High School

August 3, 2021

Scott McLaughlin, Executive Director



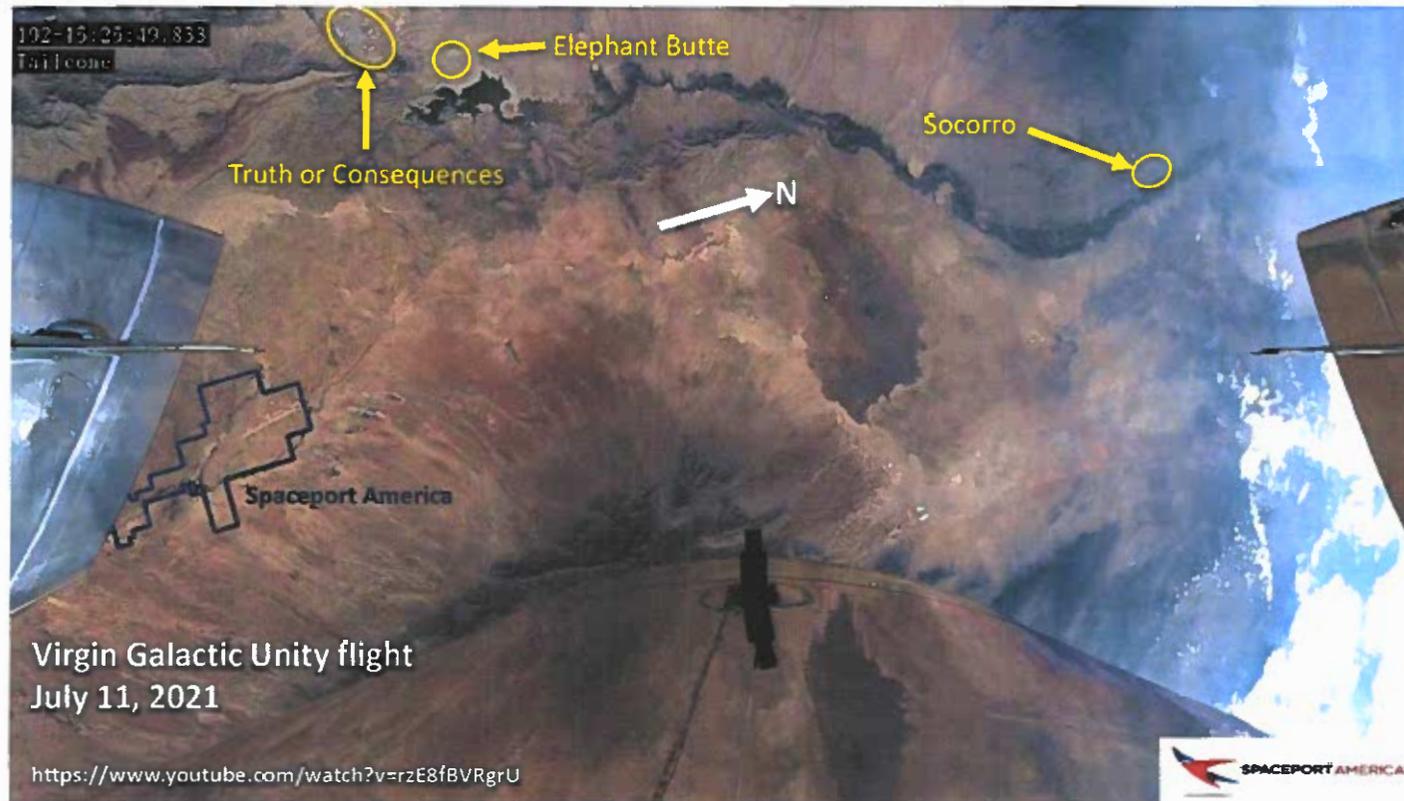
SPACEPORT AMERICA

THE SPACE TO BE...

OUTLINE

- Commercial Space Market
- Spaceport America Facilities
- Current Tenants and Activities
- Capital Outlay Project Status
- Financial Outlook
- Extra Slides

Please ask questions at any time.



COMMERCIAL SPACE MARKET

*Short review of what and where the
commercial space market is going.*



WHAT IS COMMERCIAL SPACE?

- “...space goods, services, or activities provided by **private sector enterprises** that bear a reasonable portion of the investment risk and responsibility for the activity, operate in accordance with typical market-based incentives for controlling cost and **optimizing return on investment**, and have the legal capacity to offer these goods or services to existing or potential nongovernmental customers.”

National Space Policy of the United States of America. (2010)

- Also known as “**New Space**” & “**Space 2.0**”
- NASA is becoming a customer, and investments are made by private companies and investors
- SpaceX *Dragon* capsule was the first U.S. launched human spaceflight since 2011

- Washington Post, <https://tinyurl.com/yk237lsr>
- NASA Spaceflight.com <https://tinyurl.com/yisyxubi>



Business
The historic SpaceX launch of NASA astronauts Bob Behnken and Doug Hurley
By Washington Post Staff | May 30, 2020

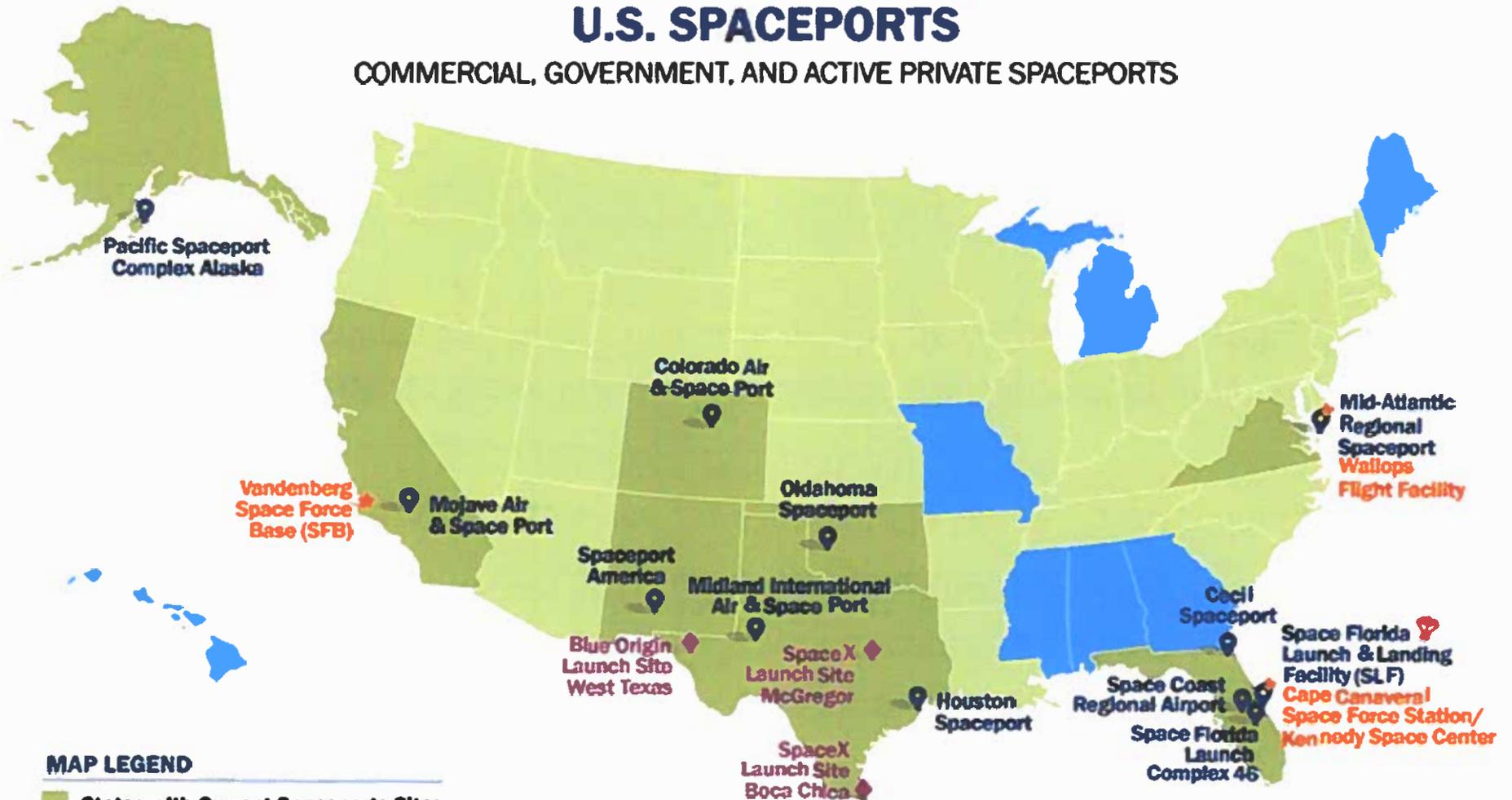


SPACE ECONOMY

- **Morgan Stanley:** Space economy will be 1.7 trillion by 2040, <https://tinyurl.com/yh8dfnu2> (2019)
- **CNBC:** Space economy is ~\$420B and growing, <https://tinyurl.com/y2m3oh93> (July 2020)
- **Financial News Now:** References to continued and strong growth of the space industry; <https://tinyurl.com/yfjp5rop> (April 2021)
- **AP Article:** *60 years since 1st American in space: Tourists lining up*, <https://tinyurl.com/yjq9k8bf> (May 2021)
- **SpaceNews:** *Space industry in midst of transformation following record private and public investments*, <https://tinyurl.com/yejbx5h> (April 2021)

U.S. SPACEPORTS

COMMERCIAL, GOVERNMENT, AND ACTIVE PRIVATE SPACEPORTS



MAP LEGEND

- States with Current Spaceports Sites
- States with Potential Spaceport Sites
- FAA-Licensed Site
- U.S. Federal Site
- FAA-Licensed Reentry 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

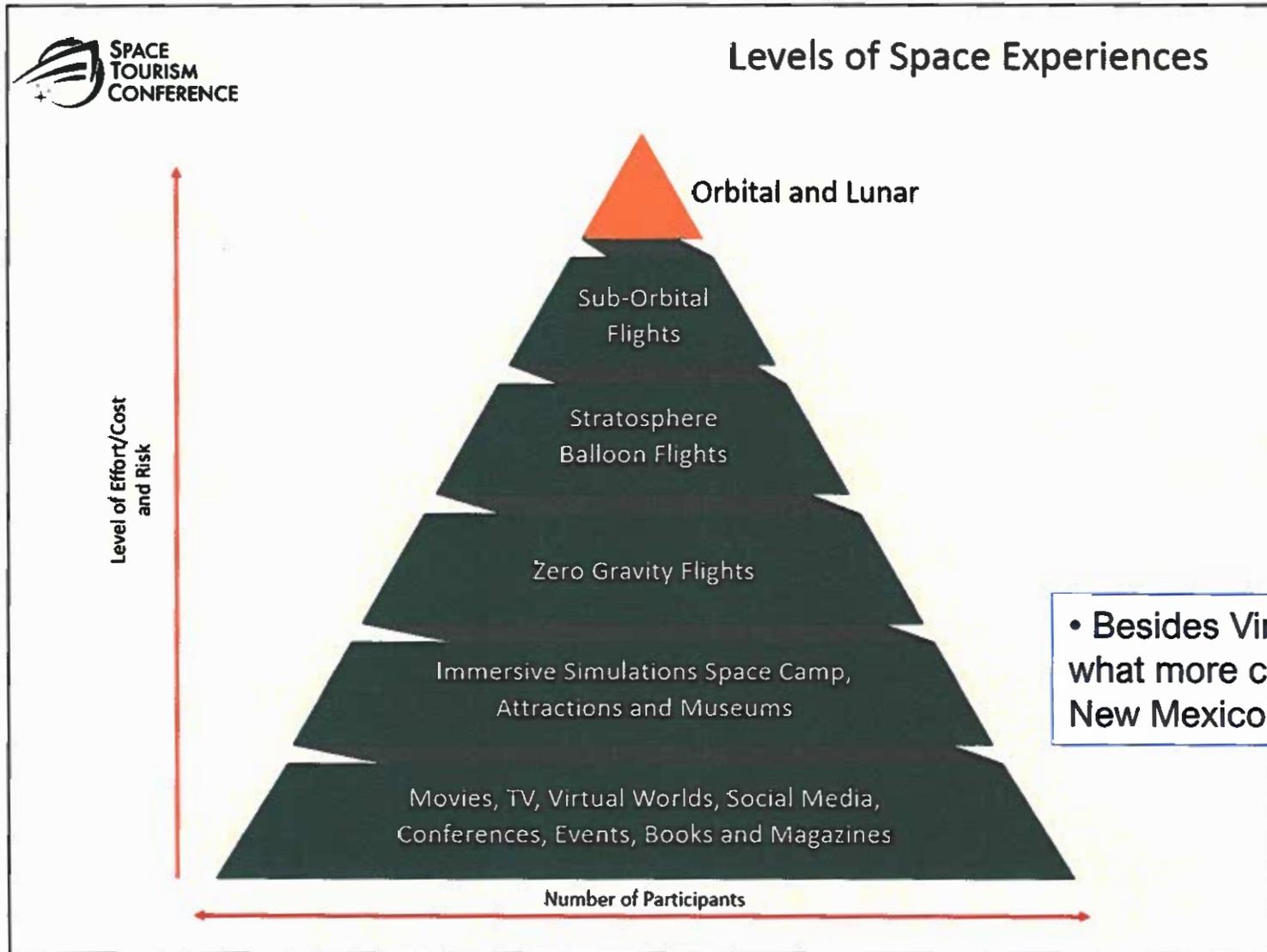
- Oklahoma Spaceport
- Space Coast Regional Airport
- Space Florida Launch & Landing Facility (SLF)
- Spaceport America

LAUNCH VERTICAL

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

Source: FAA/AST June 2021

SPACE TOURISM



Courtesy of John Spencer

August 3, 2021, NM FA Oversight Committee

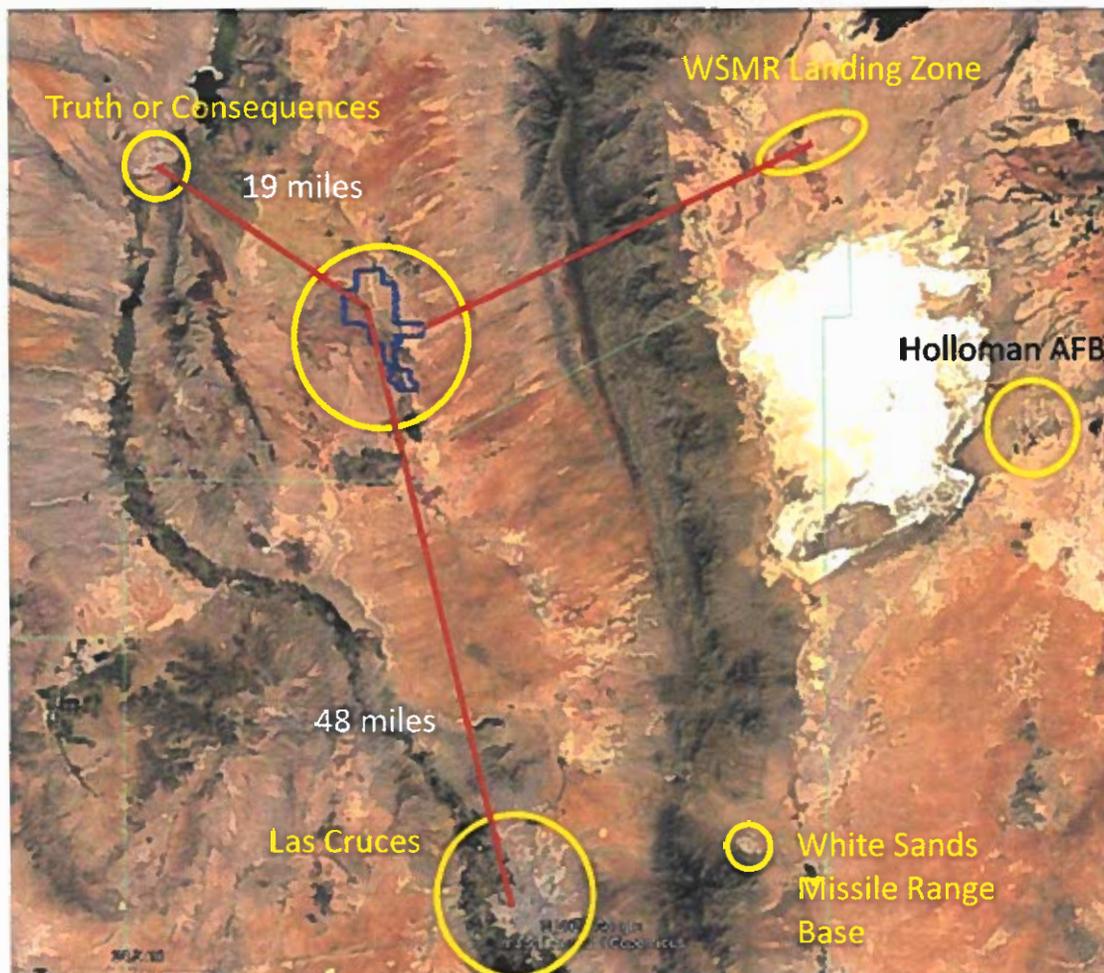


SPACEPORT AMERICA

Review of site.



SPACEPORT AMERICA NEW MEXICO LOCATION

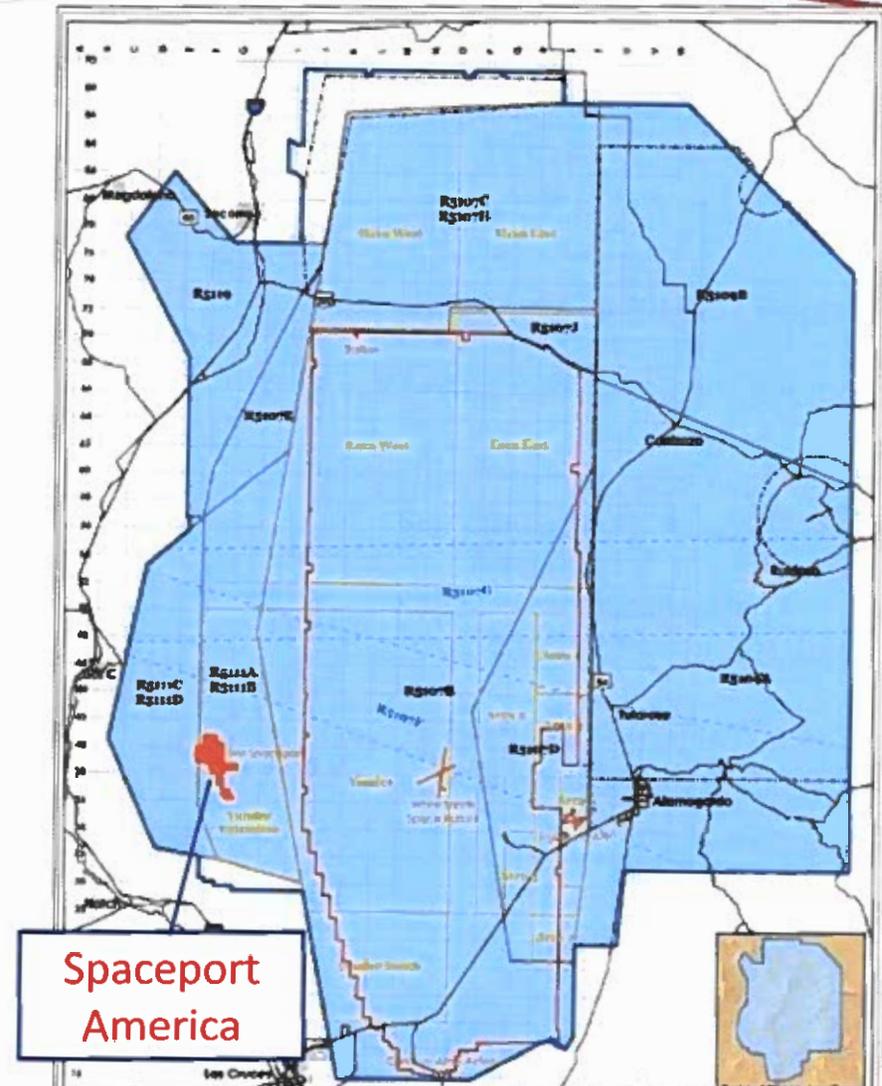


- Launch facilities across 18,000 acres in Sierra County, New Mexico
- Inland spaceport adjacent to White Sands Missile Range (WSMR)
- DoD restricted airspace from surface at 4,600 feet to unlimited altitude
- No rerouting of air traffic for launches
- Easy road access from I-25 and I-10

SPACEPORT AMERICA'S COMPETITIVE ADVANTAGES



- Very good launch weather with 340+ days of sunshine
- High elevation of 4,600 ft MSL beneficial for launch
- No salt air corrosion
- Remote location with very low population density
- 24/7 security, Fire, and EMS protection
- Access to 6,000 sq mi of restricted airspace (R5111 and R5107), surface to unlimited
- Available assets from nearby White Sands Missile Range include radar, telemetry, optics, and meteorological services
- Access to NASA WSTF, WSMR, SNL, LANL, AFRL, and universities



AREA DESCRIPTIONS

Horizontal Launch Area (HLA)

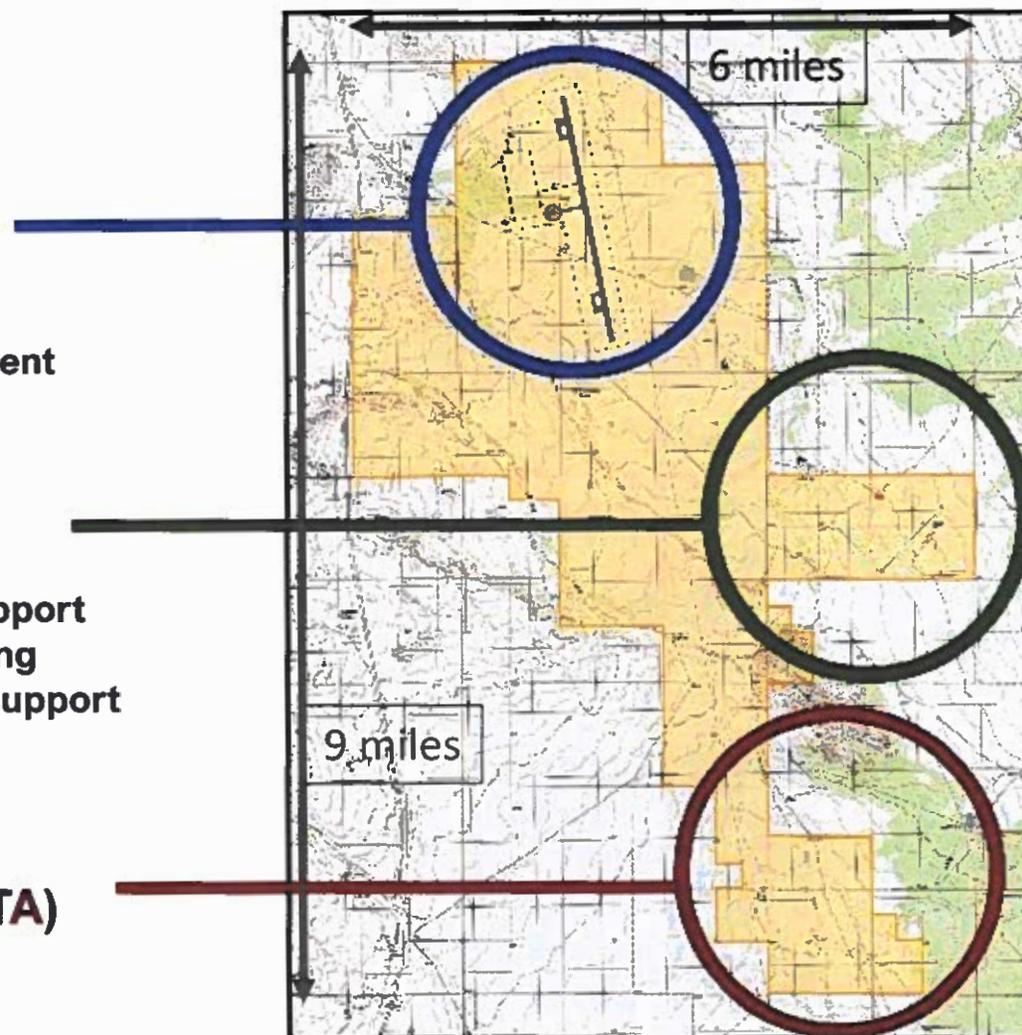
- 12,000-ft long, 200-ft wide runway
 - Horizontal and air launch operations
 - Space tourism
 - Conventional aircraft operations
 - Unmanned aircraft operations
 - High-altitude balloon operations
- Tenants: Virgin Galactic, AeroVironment

Vertical Launch Area (VLA)

- Suborbital space research
 - Launch vehicle R&D
 - Solid, liquid, and hybrid propellant support
 - Rocket motor manufacturing and testing
 - Commercial and academic customer support
 - Launch from SpA, land on WSMR
- Tenants: UP Aerospace, 2 prospects

Advanced Technology Area (ATA)

- Emerging technology R&D
 - Isolated environment
- Tenant: SpinLaunch





SPA ACTIVITIES

Review of current tenants and recent activities



August 3, 2021, NM FA Oversight Committee

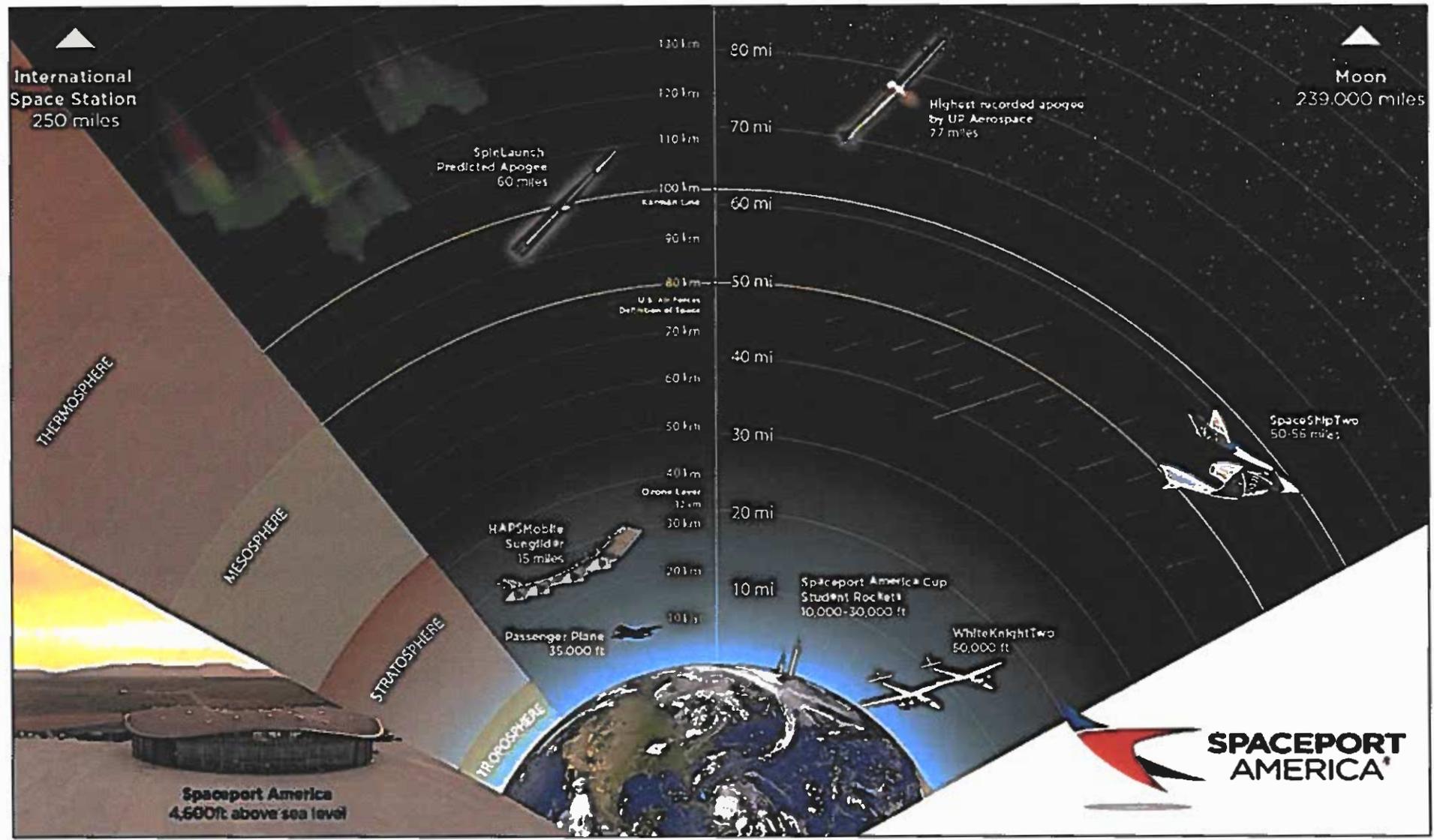
RECENT WORKLOAD



- **Up Aerospace – 14 flights total; Recent Sep. '19**
NASA Flight Opportunities; rocket motors from SA Up/Cesaroni facility
- **EXOS Aerospace – 2nd flight 5 Mar & Jun '19**
New SARGE Pathfinder System – supports sub-orbital research
- **NM Tech and U.S. Army West Point launches**
'Choice' location for university launches
- **AeroVironment / HAPSMobile**
Site built in 2020 and flight to 62K'
- **SpinLaunch, Facility Complete in 2021**
Broke ground on research facility in 2019
- **Spaceport America Cup 18-22 June 2019**
1300 student competitors, 93 vertical launches
- **Virgin Galactic**
Moved workforce to NM in 2019, 4 test flights planned in 2021
- **Swift Engineering**
Solar-powered USA, sponsored by NASA Ames
- **C6 Launch and Ursa Major**
Liquid Engine Tests



SPACEPORT AMERICA FLIGHT VEHICLES



VIRGIN GALACTIC



- Completed two flights to space this year: May 22, and July 11. Likely one or two more flights in 2022.¹
- Unveiled new spaceship, *VSS Imagine*.
- Currently about 180 employees living and working in NM (will increase as operations tempo increases).
- First Quarter 2021 Financial results.² Second quarter scheduled for Aug 5.



¹ VG Investor Relations - <https://tinyurl.com/yflvvwhp>

² VG Investor Relations - <https://tinyurl.com/yfagdeqe>

VG AND GATEWAY TO SPACE



AEROVIRONMENT / HAPSMOBILE

- Solar-powered high-altitude platform-station (HAPS)
- Construction of test started in February 2020
- Over \$8M in construction paid by customer for new test site
- Includes large hangar, offices, mission control, maintenance space
- Airplane has 260' wingspan, 10 electric motors, and can fly to 80,000'
- Eventually two will be on site; multi-year effort for FAA certification



See: <https://tinyurl.com/y49ksmuv> and <https://tinyurl.com/yfsygvmr>

AEROVIRONMENT TEST SITE



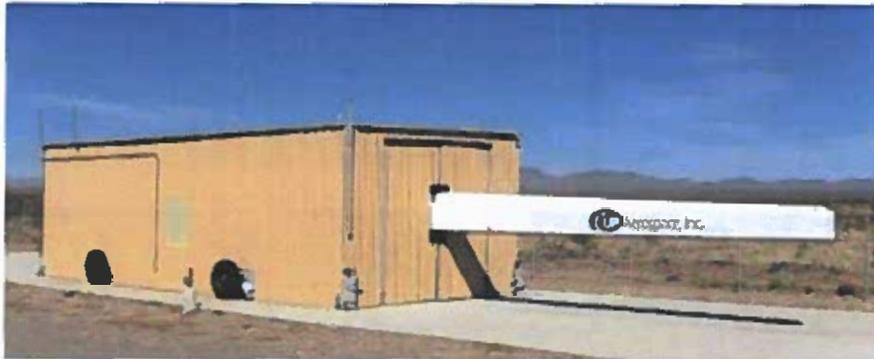
About 35 people on site, with increase when flight operations – up to 100

August 3, 2021, NM FA Oversight Committee

UP AEROSPACE AND CESARONI AEROSPACE



- Foundational tenant of SpA (14 launches since 2006)
- Several suborbital launches planned for the next few years
- Solid engine testing & manufacturing onsite



Spacecraft 1 launch November 22, 2019 at 8:19 am from Spaceport America, New Mexico



August 3, 2021, NM FA Operations Center



SPINLAUNCH

- Continuing construction of 30-meter (world's largest) evacuated centrifuge,
- This is a suborbital installation, but technology will act as 1st stage for eventual larger orbital version at other locations in the world
- Currently about 55 onsite for construction, expected to spend >\$40M
- Expect stable workforce (~30) and numerous tests a year starting in 2022



- <https://www.wired.com/story/inside-spinlaunch-the-space-industrys-best-kept-secret/>
- <https://spacenews.com/spinlaunch-expands-new-mexico-test-site/>

SPINLAUNCH SYSTEM



KINETIC LAUNCH SYSTEM

7,500 KPH LAUNCH VELOCITY (MACH 6)

TETHER

HIGH TENSILE STRENGTH COMPOSITE
INTEGRATED COUNTERWEIGHT
450 RPM ROTATIONAL LAUNCH SPEED

FLIGHT VEHICLE

PASSIVE AERODYNAMIC STABILIZATION
100 KG SATELLITE PAYLOAD

VACUUM CHAMBER

MEDIUM VACUUM LEVEL
INDUSTRIAL GRADE PUMPS - 1 HOUR PUMPDOWN
THIN-WALL WELDED STEEL ROOF

LAUNCH TUNNEL

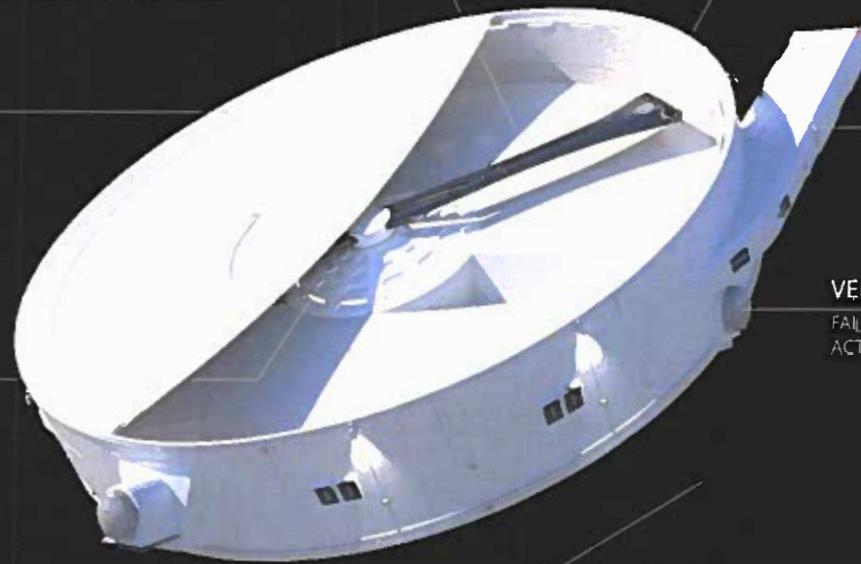
HIGH SPEED MECHANICAL AIRLOCK
LAUNCH VELOCITY MACH 6 (7,500 KPH)

ELECTRIC MOTOR DRIVE

HYDRODYNAMIC OIL DAMPENED BEARING
1.5 HOUR SPOOL UP TIME

VEHICLE RELEASE MECHANISM

FAIL-SAFE MECHANICAL SEPARATION SYSTEM
ACTUATION ACCURACY < 1 MILLISECOND

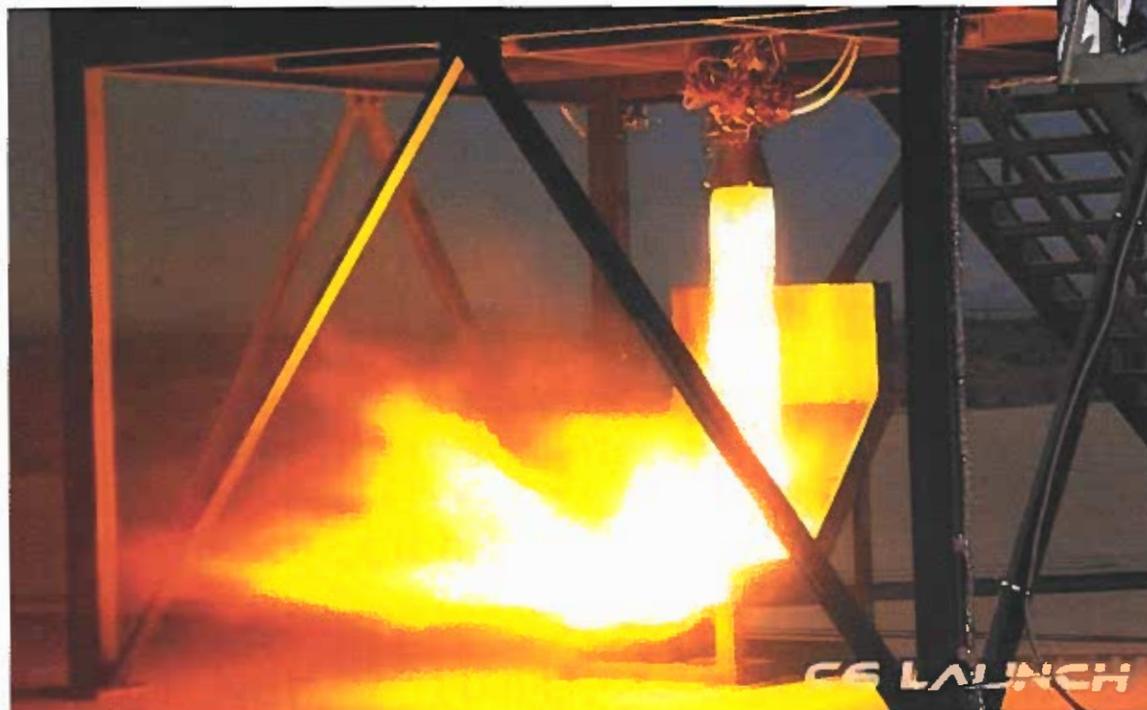


35° LAUNCH ANGLE

100 M DIAMETER

C6 LAUNCH AND URSA MAJOR TECHNOLOGIES

- Onsite liquid rocket engine testing
- Successful tests over the last few months
- Engine test stand now available for other customers



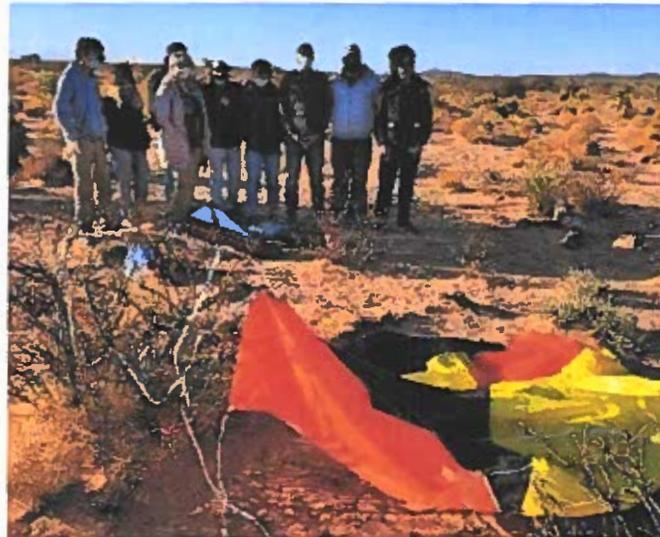
- <https://www.c6launch.ca/>
- <https://www.ursamaortechologies.com/>

OTHER ACTIVITIES

- UAS customers
 - Swift Engineering had good tests last year and is planning on coming back this year
 - Other UAS customers interested in possible long-term spaceport use
- Three vertical launches already this spring
- Continued testing of a planetary landing aids technology
- Increased aerospace customer and venue inquiries
- STEM outreach



Swift Engineering HALE UAS

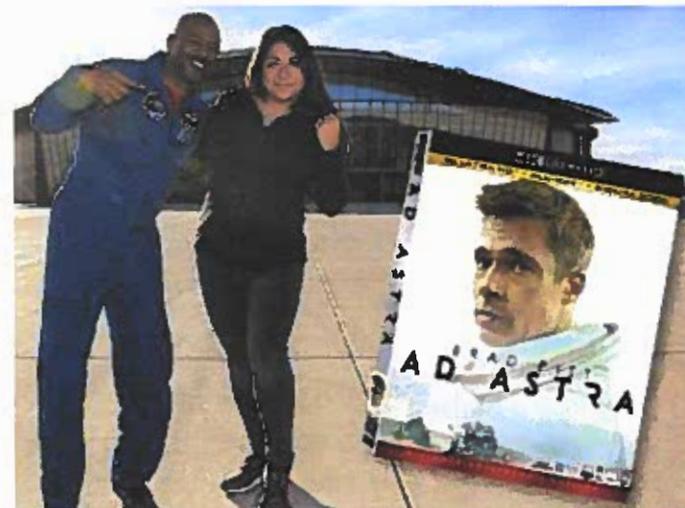
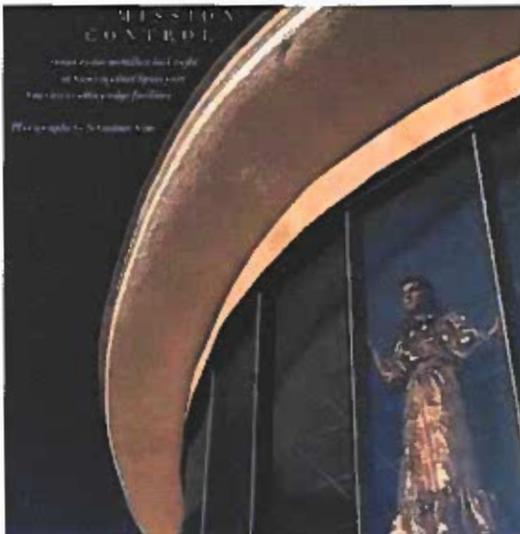
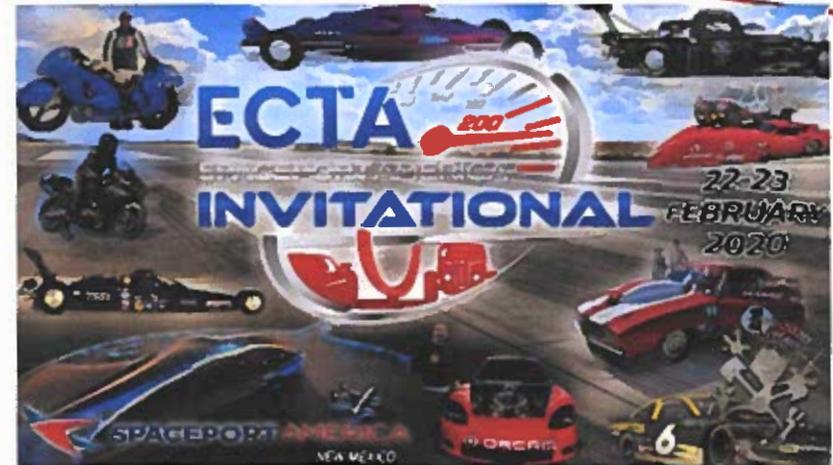


NM Tech preparations and recovery (April 10, 2021)

VENUE EVENTS



- Non-aerospace events create revenue for NMSA and **have significant economic impact on local economy** involving numerous hotel stays and per diem spent, often along with local contracted work
- Produces important exposure for SpA and NM, driving new business and tourism
- Are held on non-interference basis for aerospace events, will occur less frequently
- Depending on event, can provide the local public unique access to the spaceport



NASA Astronaut Leland Melvin



SPACEPORT AMERICA[®] CUP



- 2021 will be a virtual event, June 18-20, 2021 (so far about 62 teams and ~900 participants)
- The 2019 Cup had 122 teams, about 1500 student attendees (representing 14 different countries), 80 sponsors, and 100 judges
- The event fills hotels and restaurants in the area -- with an estimated \$1.5 million in economic impact
- Tremendous earned media and great marketing for SpA, LC, and NM

2019 SA Cup Participants



STEM OUTREACH

- Ongoing production of educational videos with aerospace related science
- Podcasts on social media
- Visits to local schools (before and after COVID)
- Working with NM Public Education Department (PED) for additional outreach
- Student visits to SpA and partnership with tenants
- Work to create excitement about STEM and cultivate ongoing workforce pipeline for spaceport customers
- *Foster entrepreneurship and keep young New Mexicans in New Mexico*



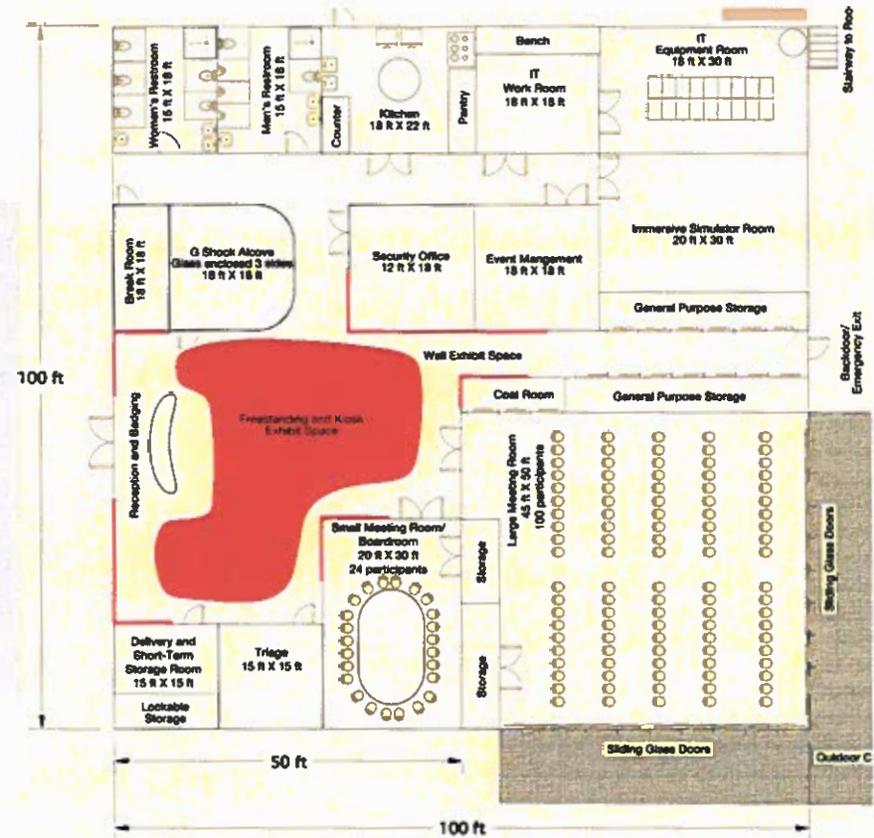
A NOTE ON LIABILITY

Spaceport America and the State of NM are protected at several different levels:

- Agreements and leases with customers always require insurance and are the **primary** coverage. This includes comprehensive aviation liability policies of insurance, vehicle liability insurance, and single limit liability for bodily injury, death, and property damage.
- The SoNM Risk Management Division (RMD) acts as **secondary** insurer and includes real property damage, medical, and other liability.
- *More information is included in Extra Slides*

CAPITAL OUTLAY PROJECT STATUS

Review of capital outlay projects.



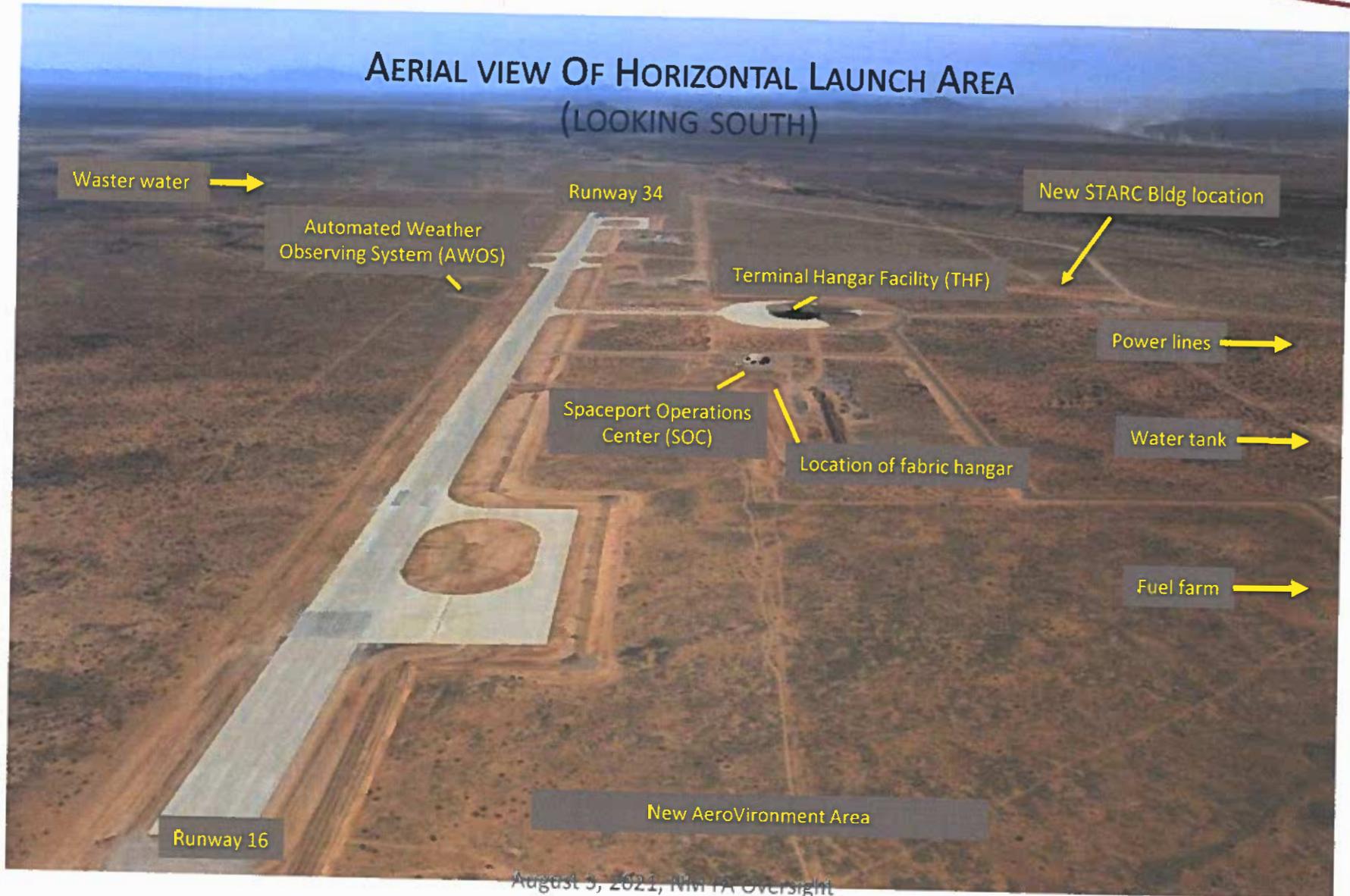
CAPITAL OUTLAY



- Approximately \$38M available
- In progress items include
 - Spaceport Operations Center (SOC) Repairs
 - Fabric Hangar Improvements (fire alarm, fire suppression, and HVAC)
 - Spaceport Technology and Reception Center (STARC)
 - Vertical Launch Rail
 - Vertical Launch Area Improvements
 - Roads, electricity, water, restrooms, rentable buildings, and concrete pads
 - General Purpose Hangar(s)
 - Master Plan

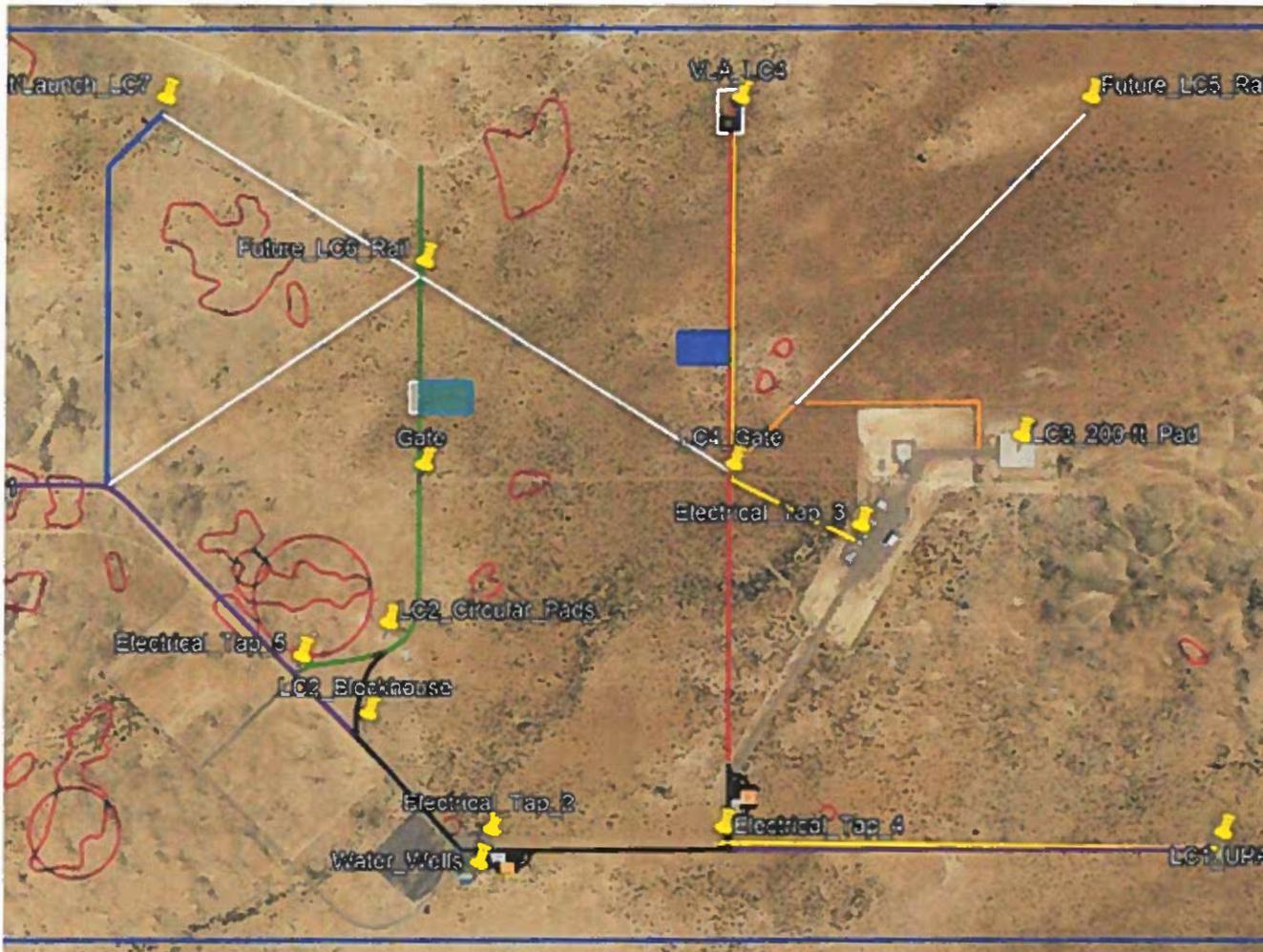
NM Statewide Pricing Agreement contractors will be utilized to access project management services to increase development and implementation speed.

HORIZONTAL LAUNCH AREA (HLA)



August 5, 2021, NARA Oversight
Committee

VERTICAL LAUNCH AREA (VLA)



- The VLA is located ~5 miles away from the HLA
- Figure shows current development plan underway
 - Road improvements
 - Electricity throughout
 - Vertical Launch Rail
 - Water and restrooms
 - Vehicle Assembly Building
 - New launch areas
- Goal is to attract long-term tenants and regular launches

NMCA BUDGET (THOUSANDS)

Item	FY20	FY21	FY22
	(Actual)	(Projection)	(Estimated)
Operating Revenue (e.g. user fees, rents, fuel)	5,536	5,740	5,745
General Fund	1,761	1,710	1,920
Revenue Total	6,897	7,450	8,070
200 Personnel Services	7,582	7,194	7,707
300 Contract Services	4,407	5,702	5,400
400 Other Costs	1,464	2,134	2,467
Expense Total	8,409	9,750	10,865
Fund Balance Use	1,712	2,42	2,51
Supplier	0	1,710	2,000
Result	0	0	0

FINANCIAL PICTURE

Review of budget, staffing, and outlook.

August 3, 2021, NM FA Oversight
Committee



NMSA BUDGET BACKGROUND

- On site operations have increased significantly in the last 2 years (Virgin Galactic, SpinLaunch, AeroVironment, etc.), increasing hours worked and FTEs needed by SAFE Team and NMSA personnel
- Even after large cuts of prior budget requests, NMSA's total budget is about \$10M, with about \$6M from customer revenue (about 60%), and \$4M needed from the SoNM
- NMSA had relied on about \$2M a year of GRT Excess Pledged Revenues (EPR) – now no longer an option
- Due to facilities operations and maintenance, NMSA has many fixed costs that cannot be cut
- If the \$2M from EPR is not replaced, NMSA will be in deficit, and will have to make severe cuts to the operational budget, staff, and onsite services, directly affecting tenant operations since operating hours and other support will have to be significantly reduced
- This is a critical time for the spaceport, and cuts (or instability of support by SoNM) will negatively affect the future of NMSA and its customers

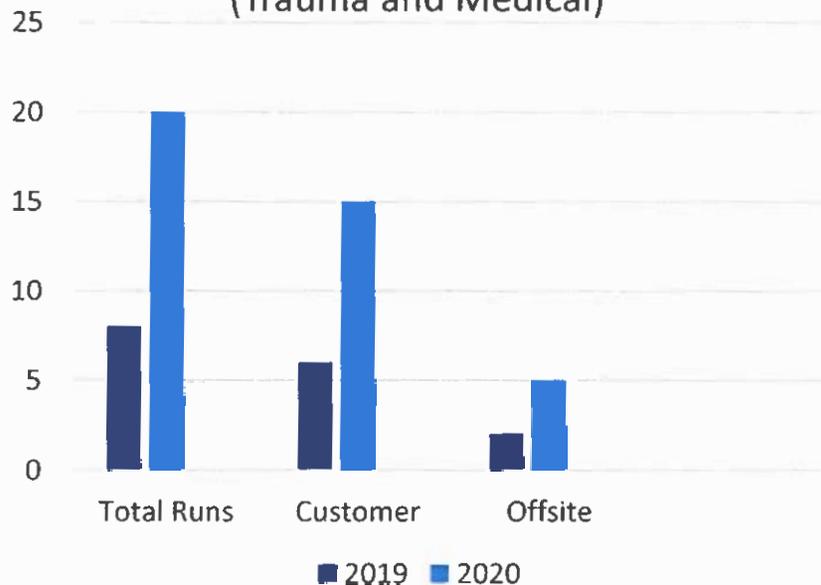
SAFE TEAM STAFFING

- Current staffing includes 3 security guards, 4 fire fighters and 2 EMTs 24-hours a day; there is also 1 Security Chief and 1 Fire Chief during the day and during any critical events; for holidays or known non-event periods, fire fighters are reduced to 4 – *This is equivalent to ~38 FTEs.*
 - Security, Fire fighter and EMS requirements are based on FAA, NFPA, CFR, and CONOPS of customers as well requirements in contracts; Staffing is increased depending on event needs; the SAFE Team is also protecting NM's investment in infrastructure
 - All fire fighters train to understand their assigned apparatus as well how to rescue people from VG vehicles, other aircraft, from buildings and hangars, and other unique needs like fighting fires on composite vehicles, dealing with various fuels, and lithium batteries on UAVs, solid and liquid rocket engines tests and operations, and safely conducting large gatherings
 - Ambulance has been utilized many times for injury and medical issues
 - NMSA staff and customers practice crisis management with SAFE Team and others
-
- SAFE – Security, Fire, and EMS
 - NFPA – National Fire Protection Association
 - CFR – Code of Federal Regulation
 - CONOPS – Concept of Operations

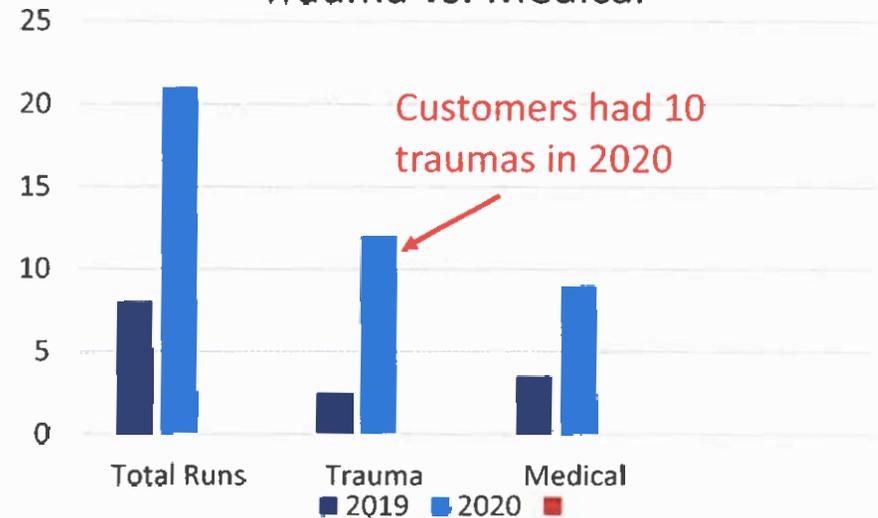
SPACE FIRE/EMS RESPONSE PER YEAR (NOT INCLUDING SPACEPORT AMERICA CUP)



Customer vs Off Site Response
(Trauma and Medical)



Trauma vs. Medical



- On site Traumas have included: fractures, joint dislocations, lacerations, other physical harm
- Medical Items have included: Cardiac events, significant abdominal pain, respiratory distress, covid-19
- Obviously increases with number of people on site

NMSA DEPARTMENTS AND CRITICAL BACKUP

- The charts depicts the current organizational structure of NMSA and real-time backup requirements
- To fulfill mission requirements of NMSA, ~ 28 FTEs are required
- *Critical Backup* refers to real-time support of site activities and facilities, meaning vital functions always have a backup person
- This need applies both to single missions or two missions a day
- Besides 24/7 SAFE Team requirements, they also surge for mission
- Absent sufficient staffing and backup, events cannot be properly and safely supported, causing mission cancellations and customer interruption

NMSA BUDGET (THOUSANDS)

Item	FY20	FY21 (Projection, 20 FTE)	FY22 (Estimated, 28 FTE)	
Operating Revenue	5,536	5,829	6,245	Inc. user fees, leases, utilities, fuel
General Fund	1,361	1,918	1,825	
Revenue Total	6,897	7,747	8,070	
200 Personal Services	2,332	2,294	2,707	
300 Contract Services	4,807	4,883	5,187	These expenses increase with tenant activities, mainly VG
400 Other Costs	1,670	2,119	2,467	
Expense Total	8,809	9,296	10,361	
Fund Balance Used	1,912		291	
Supplemental		1,750	2,000	*Required to replace GRT EPR
Result	0	201	0	
Fund Balance*	1,000	1,201	910	

- SPA is approximately 60% customer funded but will need a Special Appropriation for FY22 to balance the budget.
- SPA is continuing to work to increase client revenue, but the additional ~\$2M is projected to be needed for future years.
- *Note that SPA has variable revenue and expenses and should keep a minimum 5-10% Fund Balance to stabilize from year-to-year.

ECONOMIC IMPACT

- Current private sector tenants have about 220 full-time jobs with many indirect and induced jobs (possible 2x's multiplier)
- New tenant construction in the area was at least \$60M in the last 18 months (Virgin Galactic, SpinLaunch, and AeroVironment)
- Salaries, construction, & services to spaceport customers all add to collected GRT
- Spaceport-related activity also generates income taxes and other taxes returned the SoNM
- Once Virgin Galactic is regularly flying to space, there will likely be new VG hires, as well as an expected increase in tourism
- Spaceport customers fill hotel rooms, add per diem, and spend other money in the local area throughout the year
- NMSA is working to attract new long-term tenants and short-term customers, and expects the spaceport's growth to be aligned with the very quick growing commercial space industry
- Millions of dollars in earned media (free media) for New Mexico and Spaceport America

GROWTH STRATEGY – NEXT FIVE YEARS

- Continue to work with Virgin Galactic to maximize economic impact of regular space tourism flights and space operations
 - As Virgin Galactic moves toward 2 carrier aircraft and 3 spaceships, the region should see significant and regular positive economic benefits
- Target appropriate markets and find new tenants that increase local private sector jobs, and help enable the NM aerospace ecosystem
 - Continually update business development targets and operational plans as the commercial space marketplace continues to grow
- Acquire FAA reentry license and work toward attracting viable partners
 - Suborbital point-to-point and orbital re-entry programs are upcoming markets and will be carefully and objectively considered, dimensioned, and cultivated
- Watch new technologies...
 - Continue watching for other emerging markets, technologies, and requirements. Adjust our operational capabilities to meet them

Spaceport America is well positioned for the growing commercial space and aerospace market.

THANK YOU FOR THE OPPORTUNITY TO TALK ABOUT SPACEPORT AMERICA

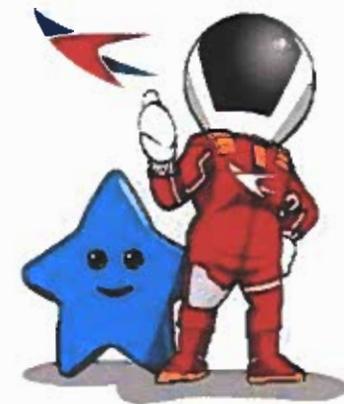


Questions?



Recent launch by
U.S. Army
West Point

- URL: WWW.SPACEPORTAMERICA.COM
- EMAIL: SCOTT.MCLAUGHLIN@SPACEPORTAMERICA.COM
- MAIN PHONE: (575) 267-8500
- GOOGLE EARTH LINK TO SITE: [HTTPS://TINYURL.COM/Y4GRKVCA](https://TINYURL.COM/Y4GRKVCA)



THE SPACE TO BE...



EXTRA SLIDES



NMSA STATUTORY MISSION

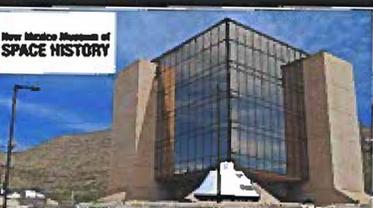
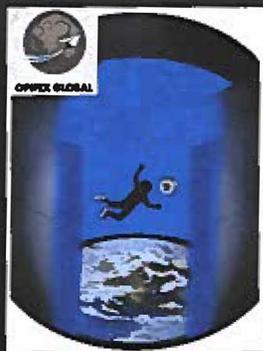


The New Mexico Spaceport Authority shall:

- A. Encourage and foster development of the state and its cities and counties by **developing spaceport facilities** in New Mexico;
- B. Actively promote and assist public and private sector infrastructure development to attract new industries and businesses, thereby **creating new job opportunities** in the state;
- C. Create the statutory framework that will enable the state to **design, finance, construct, equip and operate spaceport facilities** necessary to ensure the timely, planned and efficient development of a southwest regional spaceport; and
- D. Promote educational involvement in spaceport activities and **education and training of the workforce** to develop the skills needed for spaceport operations.

Stipulated in the New Mexico Spaceport Development Act, 2005

Space Consumer Tourism



August 3, 2021, NM FA Oversight Committee

Regulatory Authority

Key Legislation

- Commercial Space Launch Act of 1984
- Commercial Space Launch Amendments Act of 2004
- FAA Modernization Act of 2012
- Commercial Space Launch Competitiveness Act of 2015

Limits to FAA's authority:

- FAA authority is focused on issuing licenses or permits for the operation of launch and reentry vehicles and launch and reentry locations (Spaceports)
- With few exceptions **Congress has prohibited** the FAA from **regulating the safety of the crew or space flight participants** until 2023
- Congress has not provided the FAA authority to certify launch or reentry vehicles as safe for carrying humans

https://www.faa.gov/about/office_org/headquarters_offices/ast/

MORE INFORMATION ON LIABILITY (1/4)



The first level of financial protection in the event of an accident at the spaceport is in the agreement with the customer. Customer agreements and leases require insurance, the limits of which vary depending on the type of activity. For example, one of our customers is required to maintain the following:

- Comprehensive aviation liability policies of insurance, including Aircraft liability, passenger liability, Airport/Spaceport premises liability, contractual liability and products/completed operations of \$200,000,000 combined single limit per occurrence and in the aggregate as respects Products.
- Vehicle liability insurance for all vehicles used in its operation at the Spaceport of \$1,000,000 per occurrence
- Single limit liability for bodily injury, including death, and property damage of \$5,000,000.00) in the aggregate.

These policies include coverage for premises, operations, and contractual liability to the spaceport. The latter specifically ensures the indemnification provisions in the agreement, which are extensive.

MORE INFORMATION ON LIABILITY (2/4)



In addition, Spaceport America has a \$100,000,000 combined limit for 3rd Party Property Damage and Bodily Injury Airport Liability policy with the following limits:

- Each Occurrence Limit: \$100,000,000
- Damage To Premises: \$100,000
- Medical Expense Limit: \$25,000
- Personal & Advertising Injury Aggregate Limit: \$50,000,000
- Products/Completed Operations Aggregate Limit: \$100,000,000
- Hangar Keepers Limit:
 - Each Aircraft Limit \$100,000,000
 - Each Loss Limit \$100,000,000

Any loss that occurs would be submitted to the aircraft/airport carrier to handle. This airport liability coverage would be primary and our RMD coverage (below) would be secondary (excess).

MORE INFORMATION ON LIABILITY (3/4)



The next layer of coverage is provided by the State of New Mexico. Spaceport America and its employees acting within the scope of their duties are generally extended protections that limit liability to the extent allowed by the New Mexico Tort Claims Act. The Risk Management Division will cover and defend them in accordance with the limitations and deductibles specified in the Certificate of Coverage and the Letter of Administration, which for FY22, reflect the maximum liability statute (section 41-4-19):

- \$200,000 for real property damage/destruction arising out of a single occurrence
- \$300,000 for past and future medical and medically related expenses arising out of an occurrence
- \$400,000 to any person for any number of claims arising out of a single occurrence for all damages other than real property damage and medical and medically related expenses
- \$750,000 for total liability for all the above claims that arise out of a single occurrence

MORE INFORMATION ON LIABILITY (4/4)



Deductibles (per occurrence; per agency)

- Property Real (Buildings) and Personal (Contents) \$2,500.00
- Theft and/or Vandalism (All Property, All Vehicles) \$5,000.00
- Vehicles (Owned, Hired, and Non-Owned) \$2,500.00
- Fine Arts (Stand Alone Policy) \$25,000.00
- Unmanned Aerial Systems (Drones) 15% Actual Cash Value or \$2,500.00 (greater)
- Boiler (Mechanical Breakdown) \$2,500.00

Comprehensive General Liability Insurance (CGL) is insurance that protects the spaceport from liability claims related to completed products coverage, completed operations coverage and premises coverage. It protects us for liability for injuring someone else or damaging their property and against damages caused by our independent contractors if we are found liable due to our independent actions. Personal injury and advertising injury coverage protect us if someone alleges we slandered them or that our advertising is fraudulent.

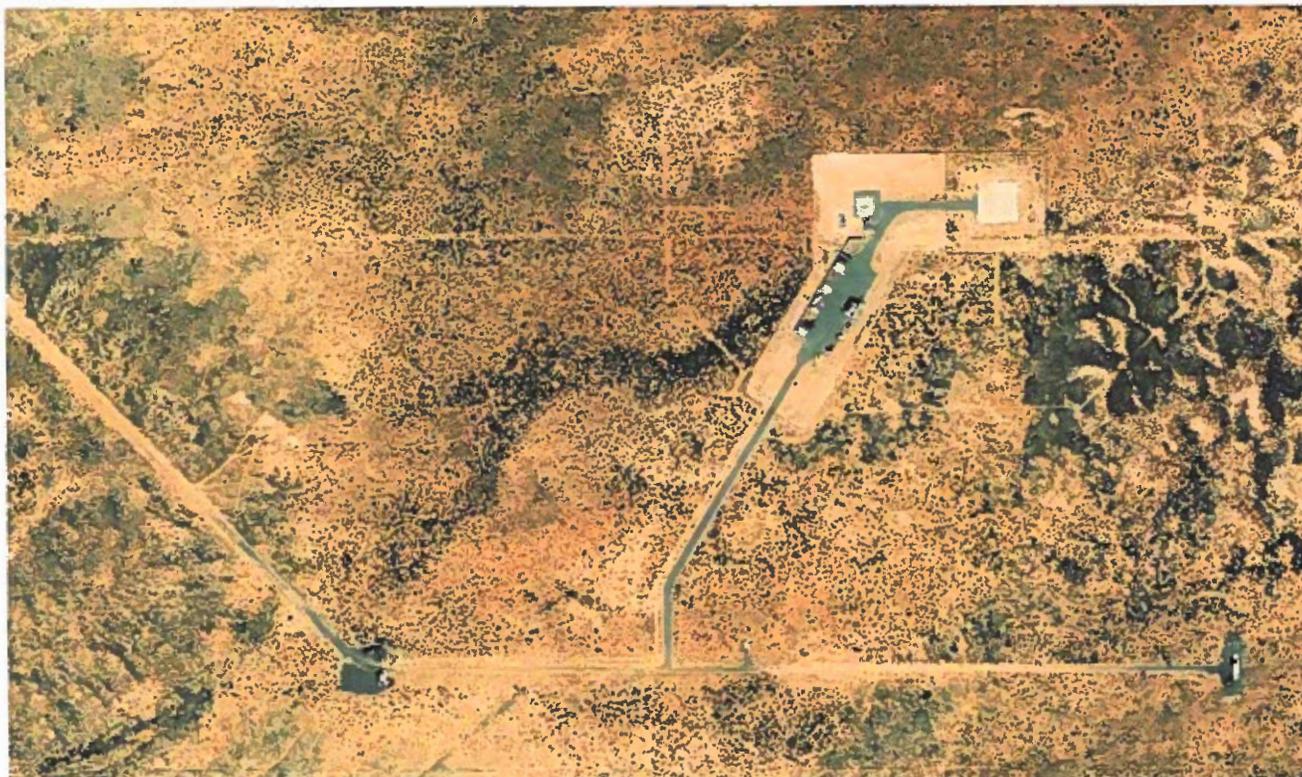
HORIZONTAL LAUNCH AREA (HLA)

- Spaceport Operations Center (SOC)
- New Visitor Reception and IT Center for 2022
- Security/Safe Team Quarters
- VG and AV operations
- 12,000' x 200' Runway
- In-ground utilities for water, wastewater, electricity, fiber
- Plenty of space for additional hangars or support facilities
- New 4,000' x 500' UAS test area (no shown in picture)
- Future point-to-point transportation



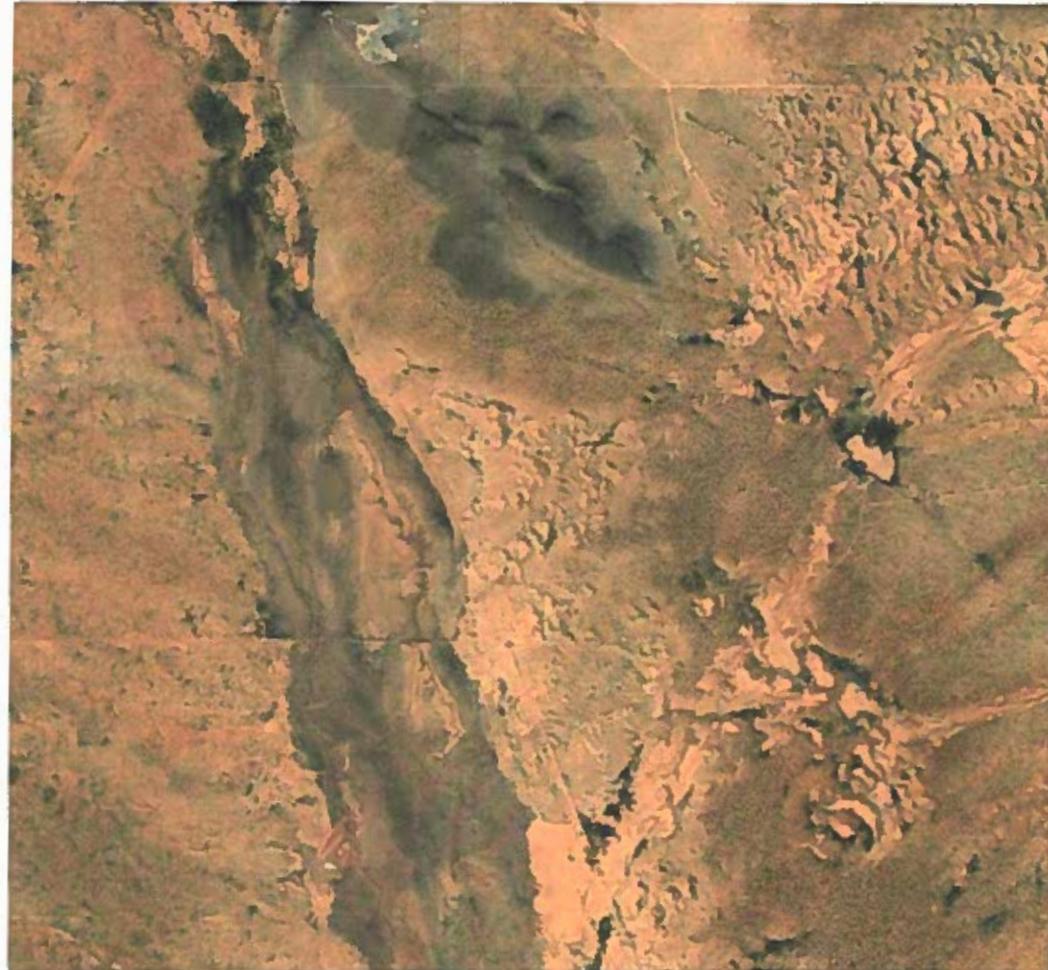
VERTICAL LAUNCH AREA (VLA)

- ~5 miles from HLA
- Concrete pads to host launch
- Room for growth
- New vertical launch rail for 2021
- Engine test manufacture
- Can host many other types of events such as balloon launch and Spaceport America Cup

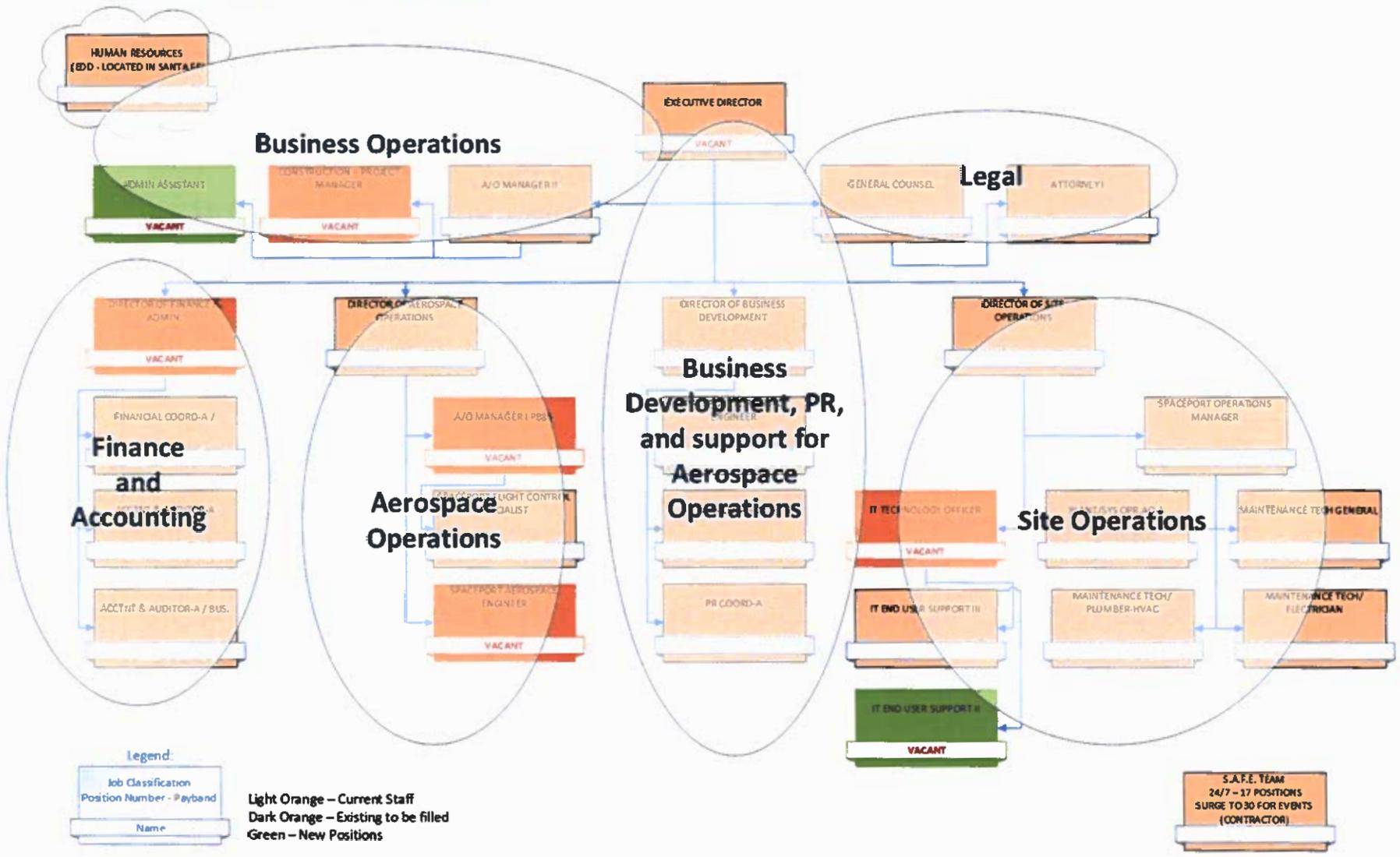


ADVANCED TECHNOLOGY AREA (ATA)

- 10 miles south of HLA, ~5 from VLA
- Location of SpinLaunch
- Needs more development
- Good location for kinetic launch and other activities needing isolation or separation



NMSA ORGANIZATION CHART



NMSA SECURITY, FIRE, AND EMS OBLIGATIONS

Examples:

- VG Lease Definitions: Par. 2.27: Crash, Fire and rescue and Security defined as an essential services to be delivered.
- VG Lease Deliverables: 4.1.3: Identifies essential services must be delivered
- VG Lease Deliverable: 12.1: Requires delivery of security services to protect airfield, facilities and equipment associated with Spaceport operations.
- VG Lease Deliverable: 12.1.1: requires 24/7 security
- SpinLaunch Lease: Par. 12 and Appendix C: Security Plan obligations delivered to SpinLaunch
- AV Lease Agreement: Par 11: Must provide security 24/7
- AV Lease Agreement: Appendix C: Security Program detailed
- EXOS lease Agreement: Paragraph 9: 24/7 security
- Up Aero Lease Agreement: Par. 4.1: Fire Response, ambulatory response and security mission support required
- And other short-term event contracts

This capability is critical for customer operations and an important competitive advantage.