



Concho Valley Council of Governments (CVCOG) – Spaceport Feasibility Study

Public Meeting – Edwards County

RS&H

June 24th, 2026

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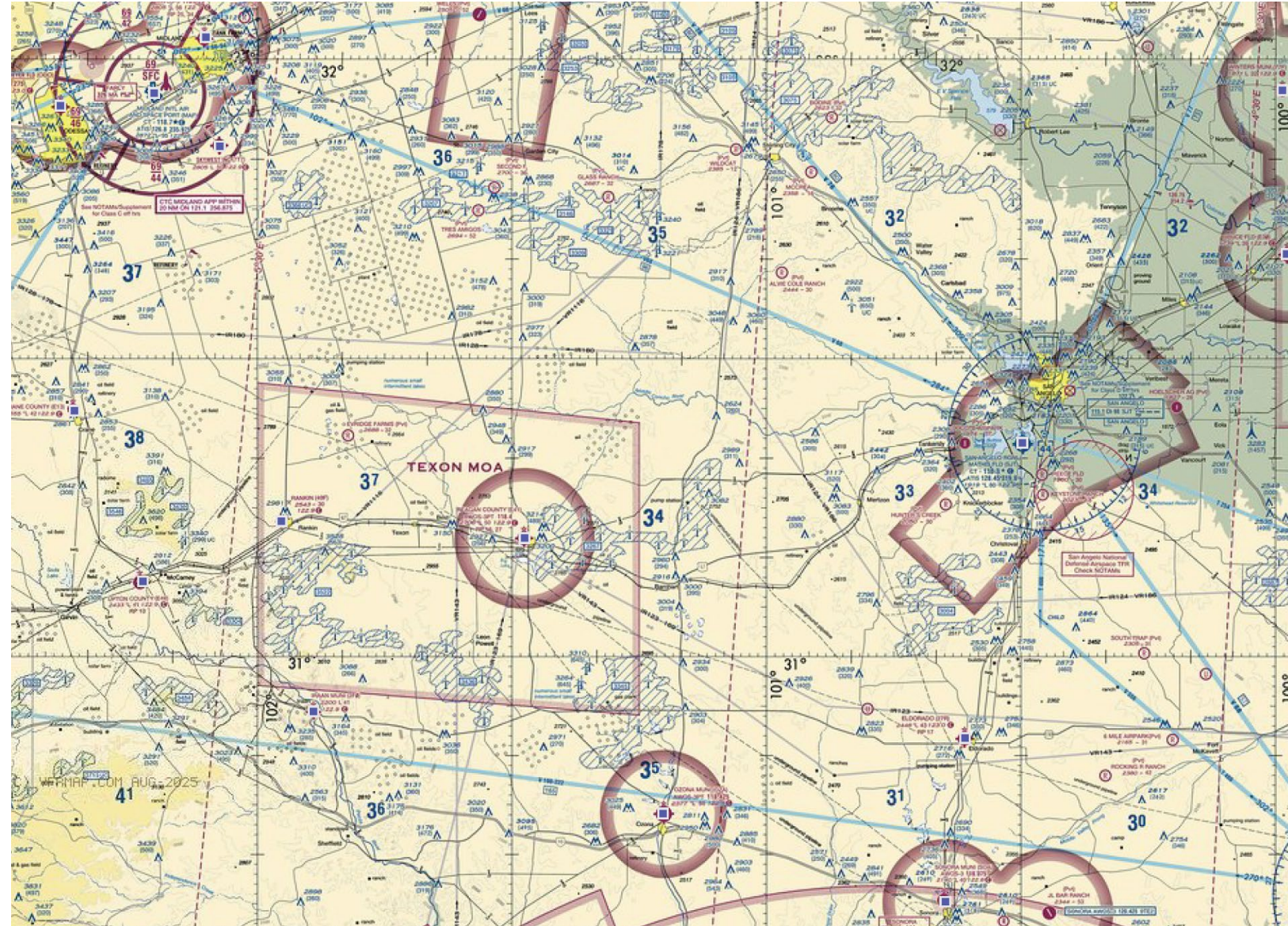


Agenda

- Public Meeting Objectives – Inform the Public, Solicit Feedback
- Project Background
- What is a Spaceport? Spaceport Use Cases
- Market Assessment / Competitiveness Evaluation
- Site Analysis Overview
- Questions / Feedback

Project Background

Overview



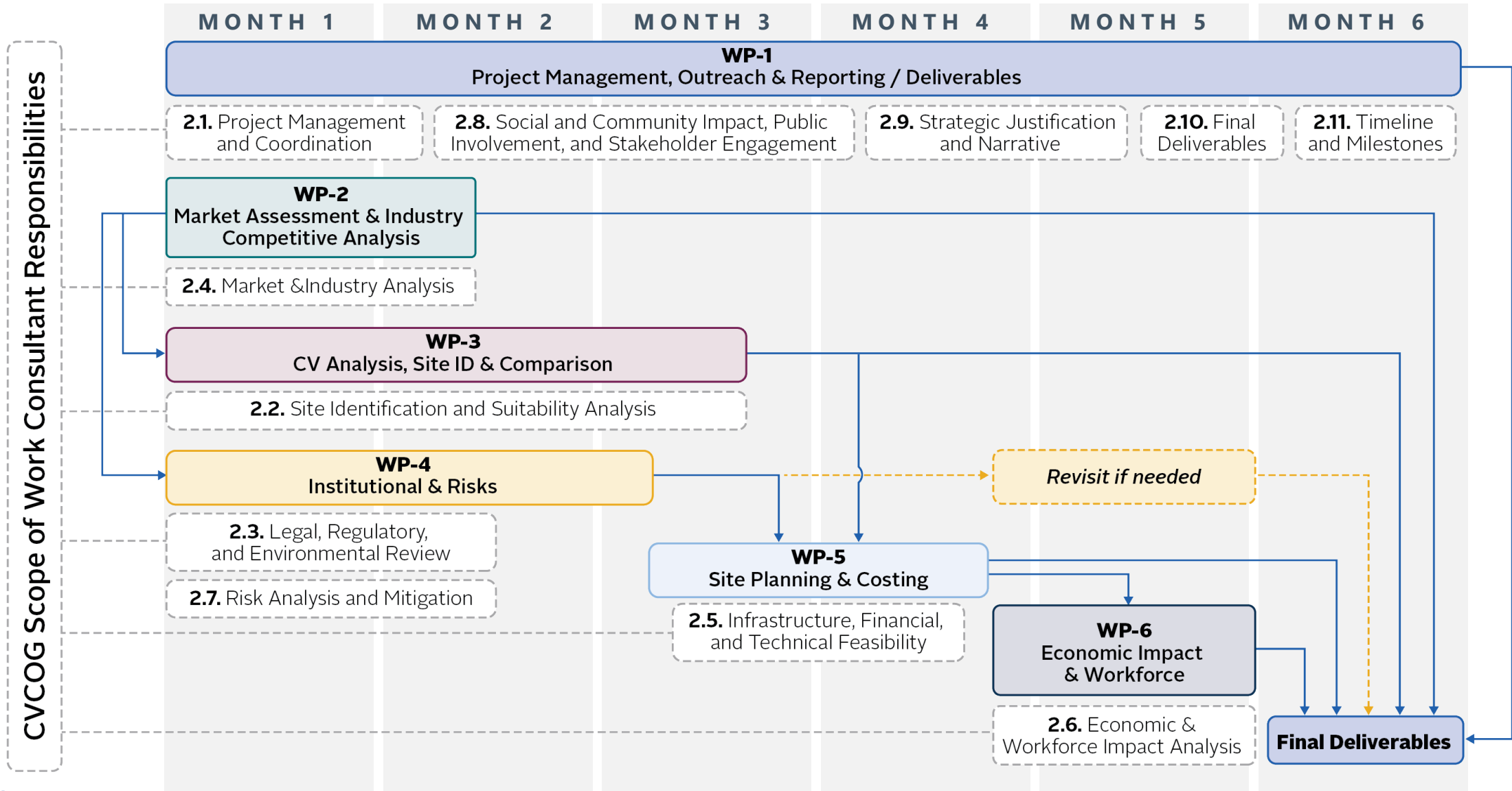
Concho Valley Spaceport Feasibility Study

- LEAD AGENCY: Concho Valley Council of Governments (CVCOG)
- FUNDING: Study Fully Funded by the Texas Space Commission
- STUDY BUDGET: \$500,000 (Grant amount includes CVCOG & Consultants)
- PURPOSE: Assess the feasibility of an inland orbital spaceport
- WHY: Rapid expansion of commercial space driving need for new sites
Reliability improvements and reusability of rockets

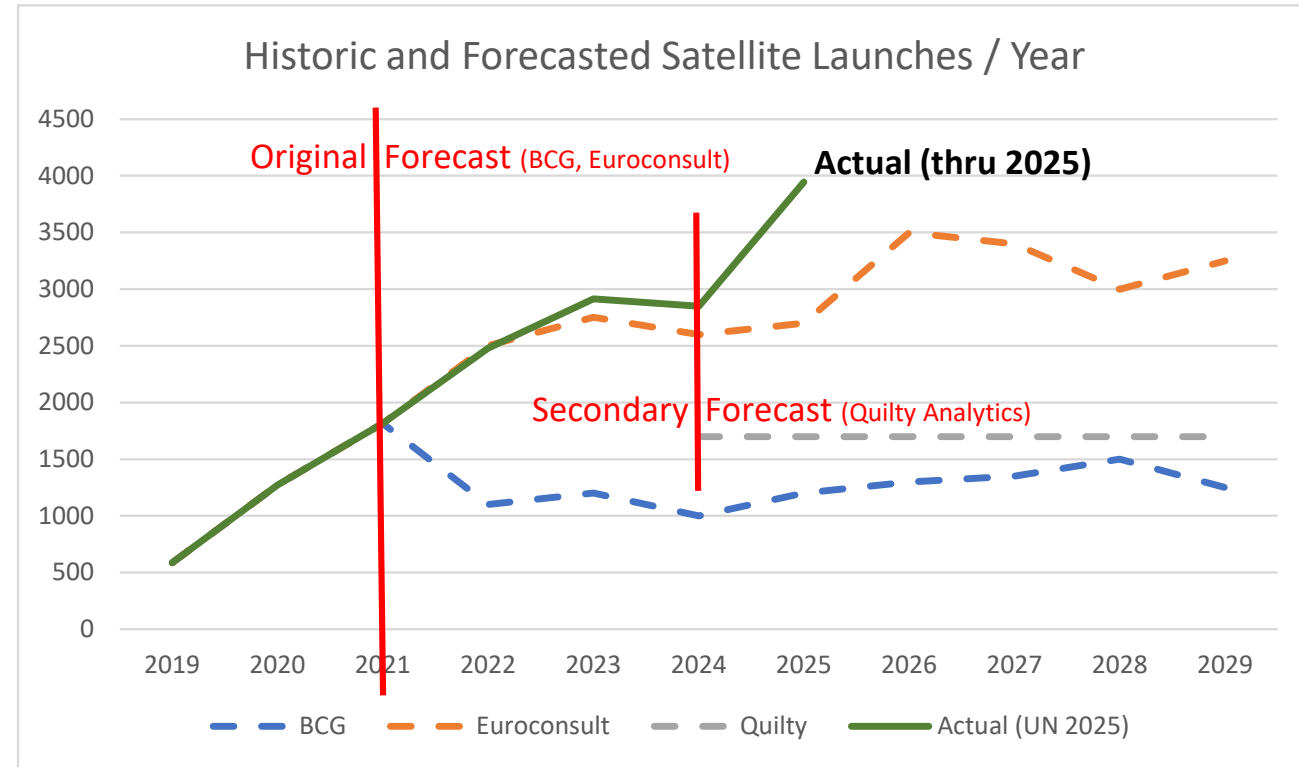
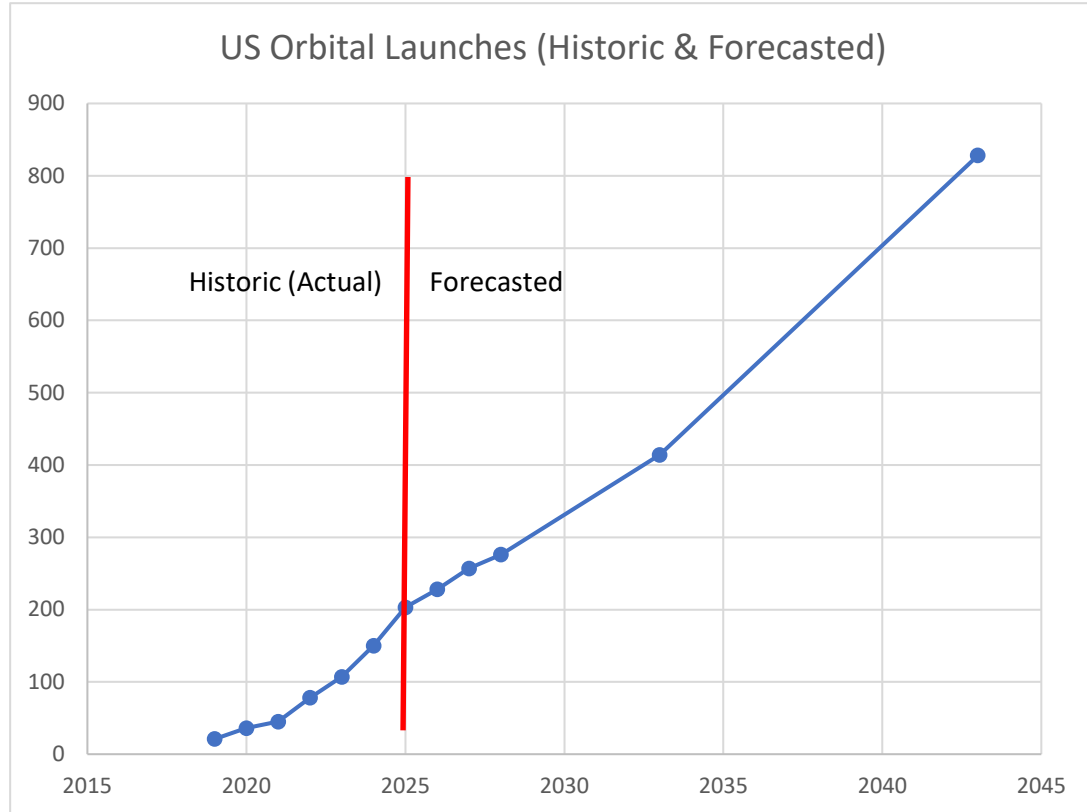
Project Approach

 CVCOG Required Scope of Work Task

 RS&H Proposed Scope of Work Task

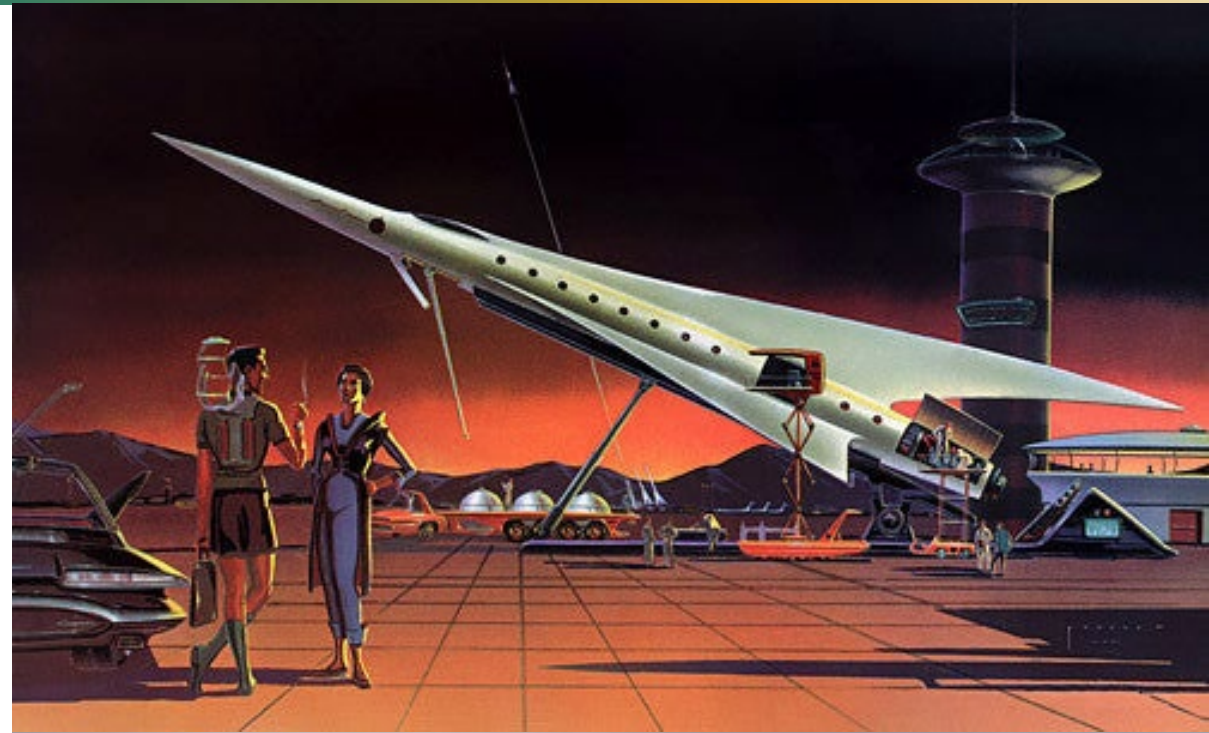


Summary of Key Space Market Drivers (Launch & Spacecraft)



What is a Spaceport?

Use Cases



Use Case 1 – Engine Test / Multi-Modal Proving Ground

- Spaceport initially utilized for rocket propulsion development / test
- Multi-modal proving ground operations are envisioned
 - Provides diverse revenue streams for activities attracted by remote site characteristics (low population, secure, safe)
- Energy, Research, & Miscellaneous other activities possible such as
 - “Green” Data Centers
 - Satellite Uplink/Downlink/Tracking
 - Advanced Solar, Nuclear (Fission & Fusion)
 - Destructive Testing
 - STEM initiatives / Workforce Development



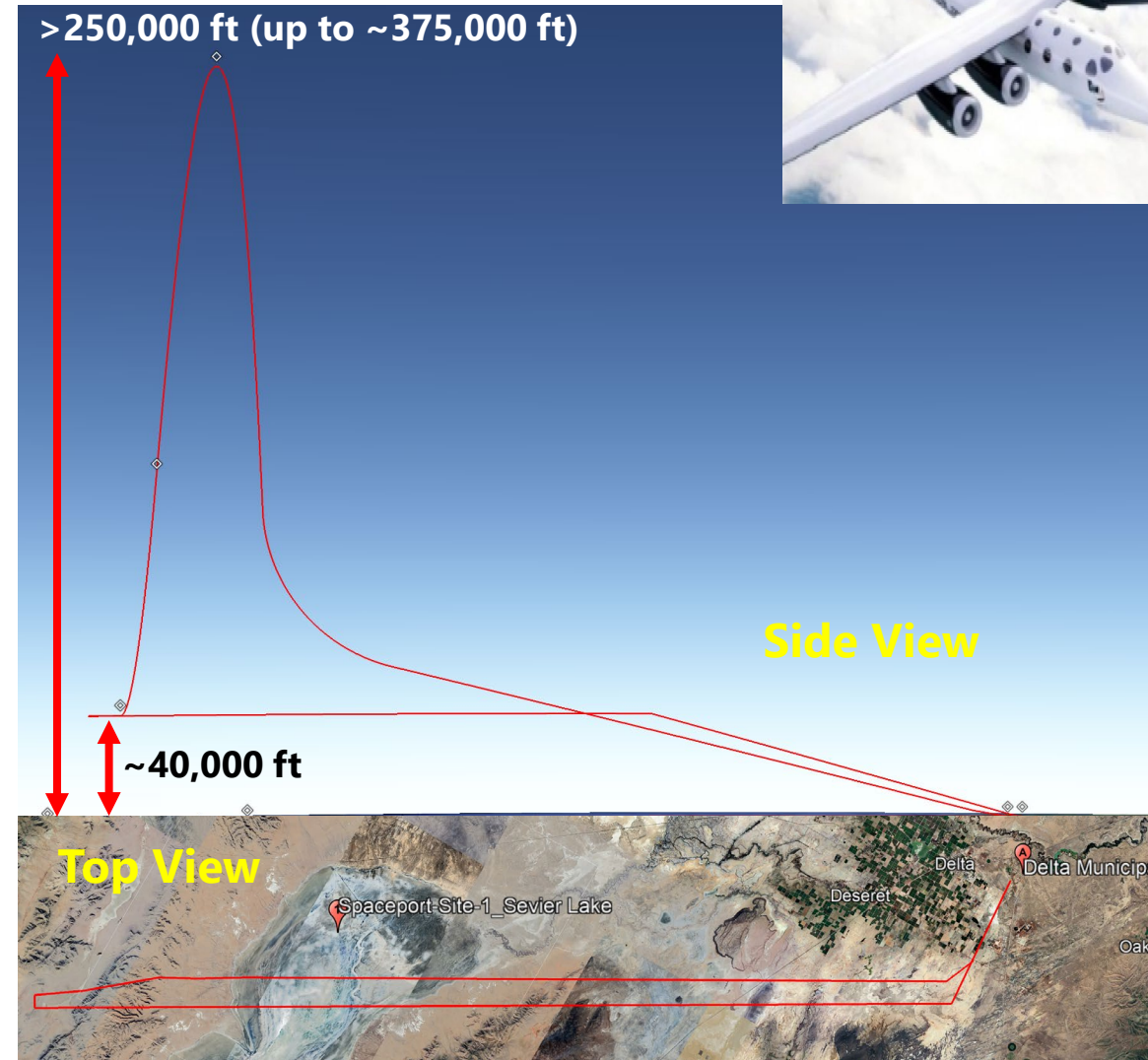
Use Case 2 – Aviation / Autonomous Aerial Operations

- Spaceport / Airport Dual-Use
 - Various aviation test applications
 - Supports STEM/Workforce Development
- Autonomous aerial operations
 - Some require proper runways
 - Others may use basic improved dirt strips
 - Low level and very high alt. ops possible
- Dual-use civil-military ops envisioned
 - Assumes an improved runway is available
 - Less than 5,000 feet runway may suffice for many UAS / UAM testing cases



Use Case 3 – Horizontal Launch & Landing / Suborbital

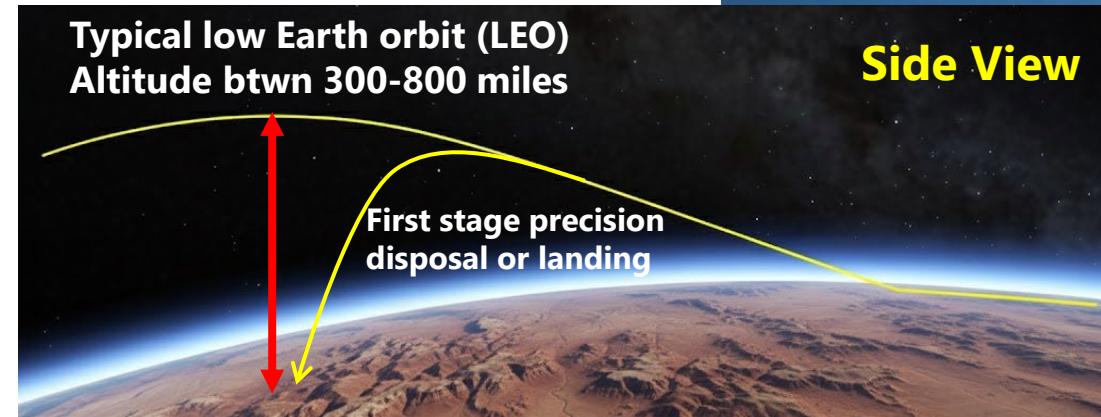
- Launch Vehicle (LV) Assumptions:
 - Virgin Galactic operations with combo of White Knight 2/Spaceship 2 (WK2/SS2)
 - Other example: Dawn Aerospace *
- WK2 Releases ~40,000+ ft
- SS2 Apogee >250,000 ft
- Track length = ~80-90 miles
- Airspace closure space characteristics ~100 x 30 miles box and ~2-4 hours
- Site needs (minimum):
 - Runway ~12,000 feet (concrete) + Apron
 - Hangar ~40,000 sqft
 - Comms/tracking/control/propellant/ARFF
 - Utilities + Roads



Use Case 4 – Horizontal Launch & Landing Orbital

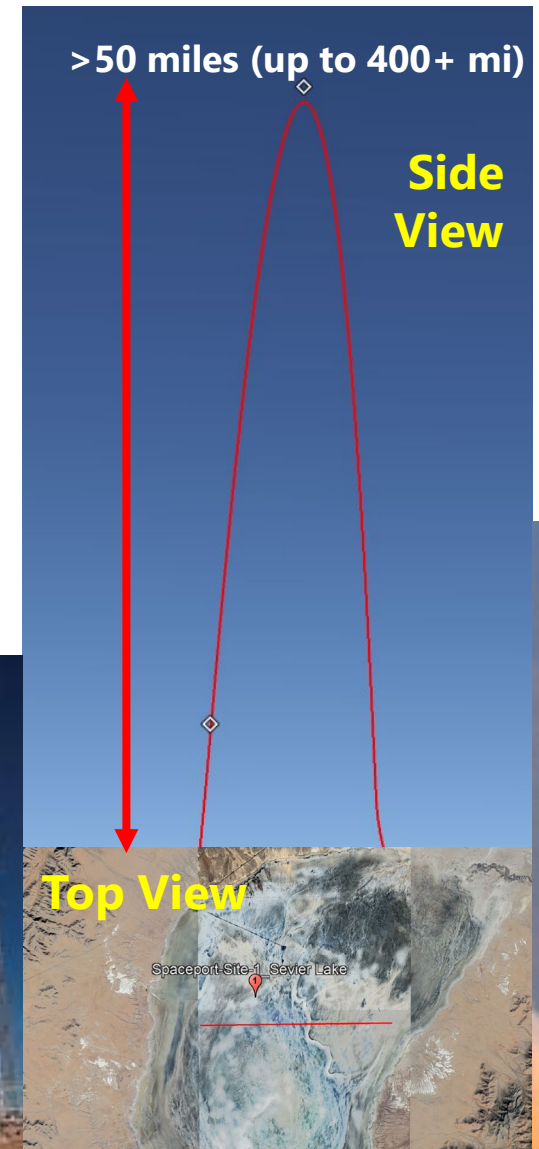


- LV Assumption(s)
 - Virgin Orbit or Stratolaunch CONOPs
 - Takeoff w/rocket, fly to ~40-45K ft, drop multi-stage rocket w/payload, and launch to LEO or other needed orbit.
- Assumes use of extended local municipal runways (up to 12,000 feet).
- Trajectory shown is for polar launch (0-degree north).
- Assumes first stage disposals in remote area and/or landing with a precision parafoil recovery system.
- Airspace closures along first 100-120 miles of trajectory & ~20 miles wide.



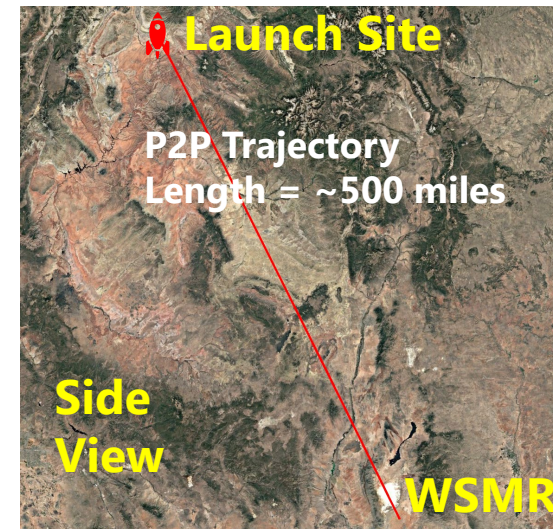
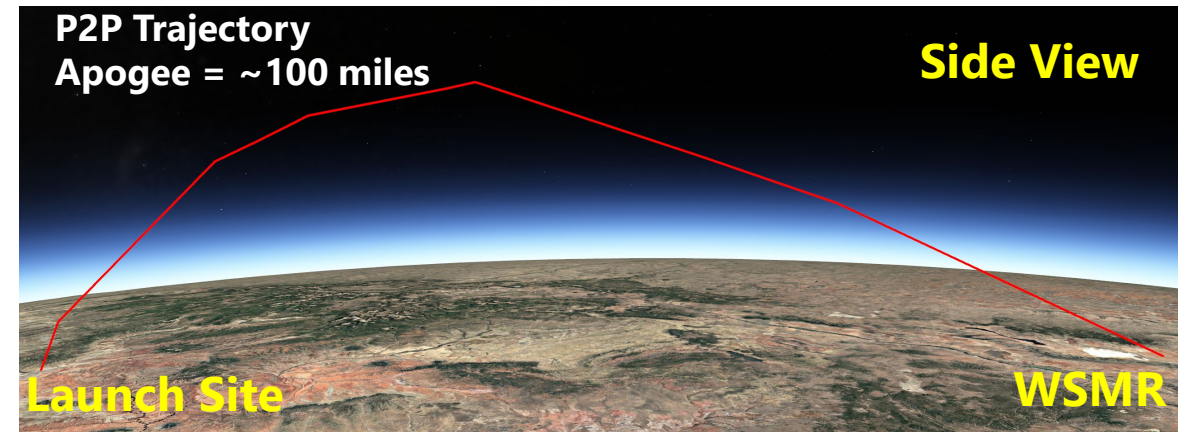
Use Case 5 – Vertical Launch & Landing / Suborbital

- LV Assumptions
 - Traditional Sounding Rocket operations
 - Could be Blue Origin New Glenn operations
- Apogee = 2 (typical 50) < x < 400 miles
- Downrange drift up to 10+ miles
- Airspace closure space characteristics
 - ~50 x 50 miles box and ~2 hours
- Site needs (minimum):
 - Concrete pad(s) + propellant
 - LV & payload prep facilities
 - Comms/tracking/control/propellant/ARFF
 - Utilities + Roads



Use Case 6 – Vertical Launch & Landing Suborbital P2P

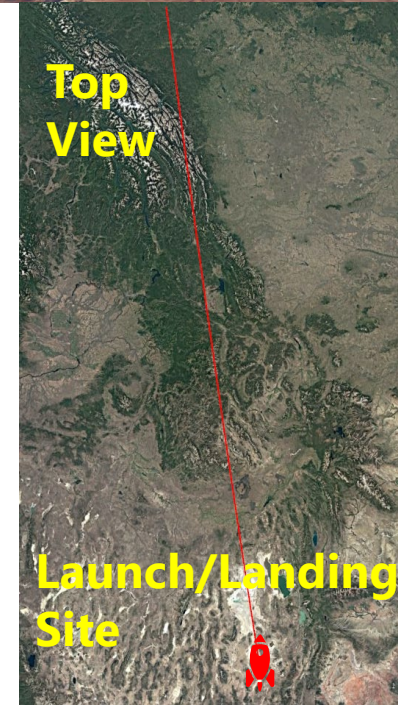
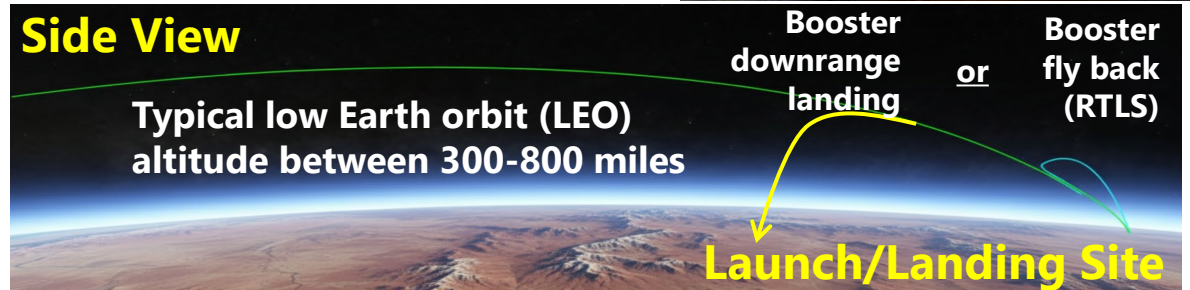
- LV Assumption(s) include:
 - Typical sounding rocket
 - Hypersonic test vehicle (eg., HASTE*)
- CONOPs model from 1970s-1980s tests in Utah under the Athena and Pershing test/training programs
- Launch with landing downrange; today called point to point (P2P)
- Airspace closures along path approximately 20 miles wide (min)
- Site needs like UC-5 plus downrange



Use Case 7 – Vertical Launch & Landing / Orbital



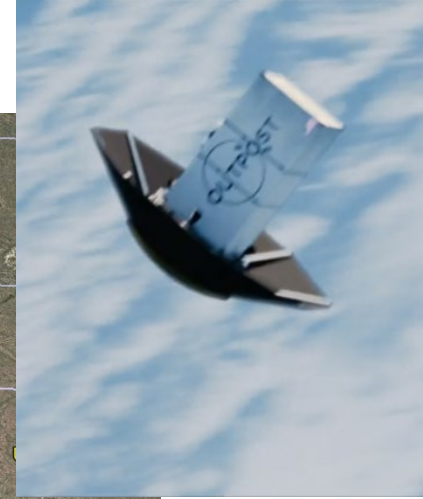
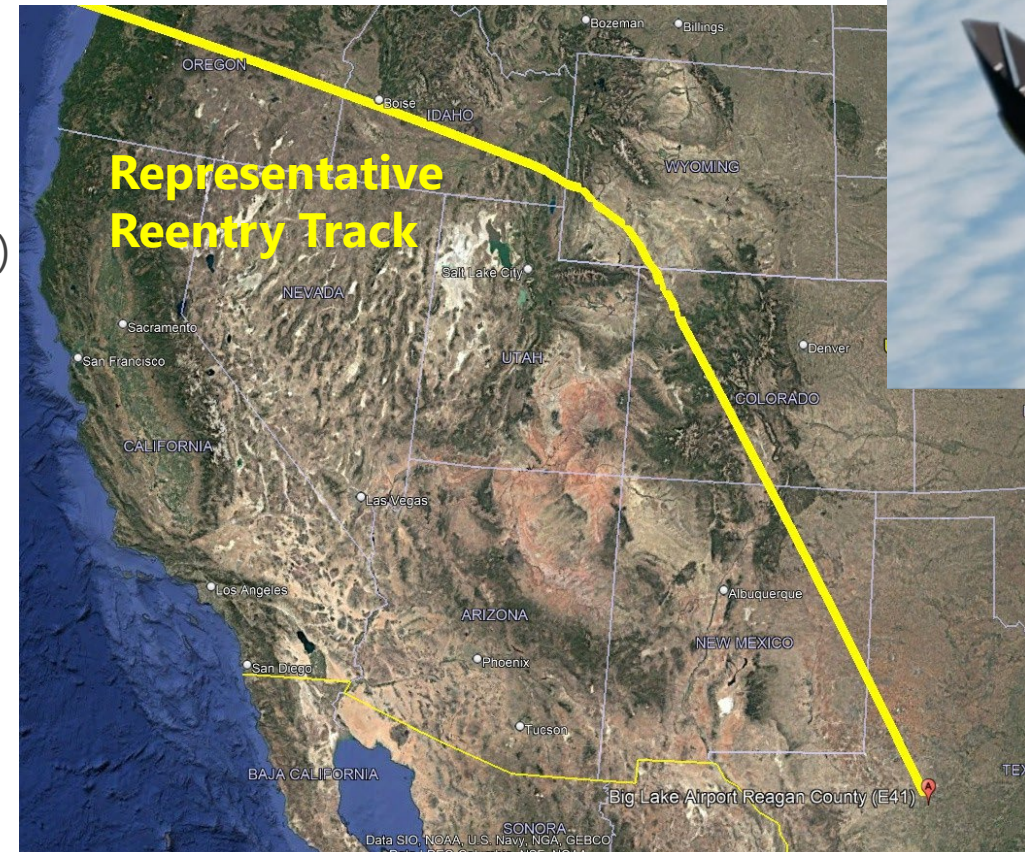
- LV Assumptions
 - Falcon 9 (F9) with RTLS or downrange landing of first stage booster
- Trajectory assumptions
 - Sun synchronous shown from Site 1
 - Either RTLS or downrange booster landing
 - Either site will generally work
- Airspace closures along first 100-120 miles of trajectory & ~20 miles wide (may be greater)
- Various trajectories are possible including northerly, southerly, and southeasterly



Use Case 8 – Orbital Reentry Operations



- LV Assumptions
 - Capsule or Winged “lifting body”
 - Precision landing capabilities
 - Horizontal glide to runway
 - Precision (parafoil) reentry (~50 yards CEP)
- Trajectory assumptions
 - West to east approach
 - Northern track with turn to south into Concho Valley
- Airspace closures along last 100-120 miles track & ~20 miles wide (may be greater)
- Various west-to-east reentry tracks are possible including from north or south

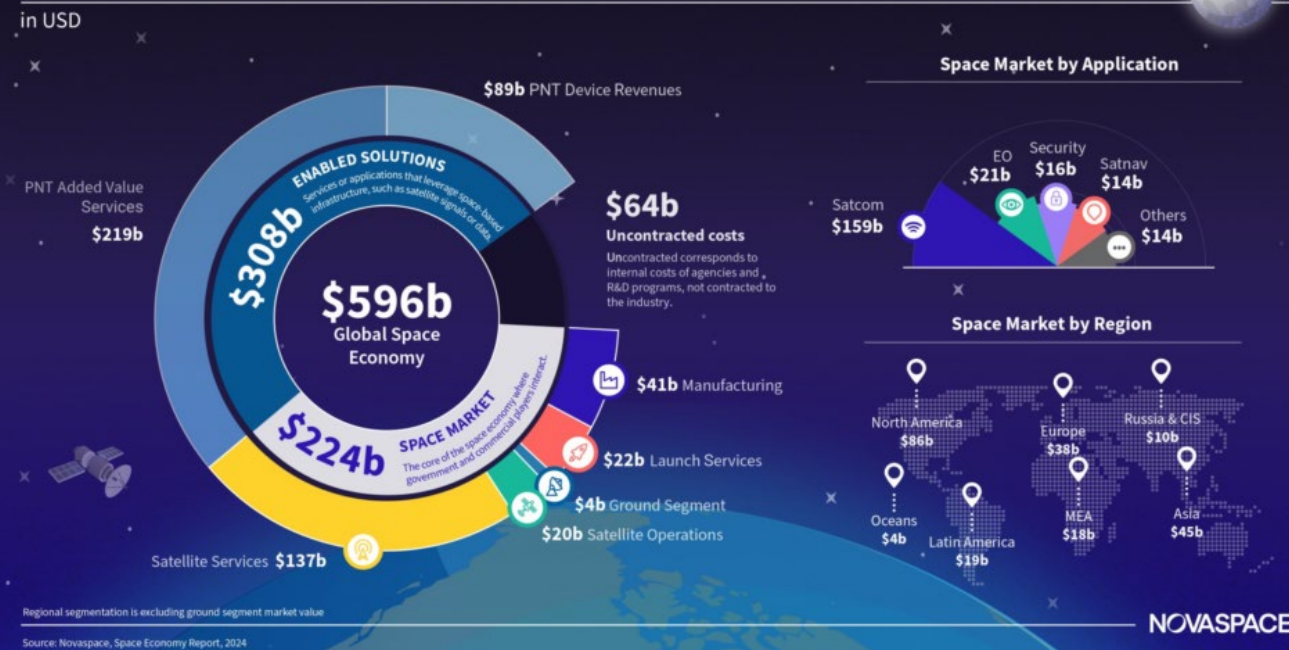


Markets

Market Assessment / Industry Competitiveness



2024 Space Economy Valuation



CV Primary, Secondary, & Opportunistic Markets (Initial View)

- There are multiple space and space-adjacent markets that rural inland spaceports pursue
- The Initial designation of focus for CV Market Opportunity by Primary, Secondary, and Opportunistic reflects near term market dynamics
- Additional assessments confirm this initial view of potential space-adjacent and space market opportunities.

MARKET/PRIORITY	PRIMARY	SECONDARY	OPPORTUNISTIC
SPACE	Suborbital Launch	Orbital Launch	Low Earth Orbit (LEO) CL Ground Testing
	Orbital Reentry	P2P / Hypersonics	Earth Observation Calibration
	Satellite Comms	Tracking / SSA-STM	Lunar / Mars Analogues
	Component/System Testing *		
AVIATION	HAPS	Electrified Aircraft (A/C)	Hydrogen Powered A/C
	Training	UAM	EMP Testing
	UAS (Traditional)	UAV (eVTOL, VTOL)	ATC/ATM-Space Launch Integration
	Component/System Testing *		
SURFACE / STEM / VENUE	Data Centers	Energy Systems (Solar & Small Fission)	Fusion R&D
	Events/STEM/ Venue (Mission)	National Security	Autonomous Vehicles
	Media	Rail	Venue (Off-Mission)
	Component/System Testing *		

Simplified Spaceport Use Cases and Operations - Overview

Use Case #	Use Case Description (Estimated Timing)	Required Infrastructure	Implementation Assumptions
1	Engine & Multi-modal terrestrial test site (immediate)	Baseline Infrastructure * 10-20k sf admin/control/lab/shop(s) (min) Concrete pad(s) + specialized facilities **	No airspace or launch operations Terrestrial operations only
2	Aviation / autonomous vehicle ops (immediate)	Use Case #1 + Runway ~5,000+ feet ~10k sf hangar (min) + aviation comms	Probable high-altitude ops (> 60,000 feet) 4D tracking system (ADS-B or equivalent) FAA coordination (coord.) & operations
3	Suborbital horizontal launch/landing (possible now, but ~3-5 years away)	Use Case #2 w/ Runway ~10-12,000 feet ~30-50k sf hangar (min) + hazardous siting	Virgin Galactic WK2/SS2 vehicle pair FAA coord. – launch ops airspace closure
4	Orbital horizontal launch/landing (possible now, but launch ~5-8 years way)	Use Case #3 + downrange landing site Launch vehicle (LV) & payload preparation facilities (PPF)	Virgin Orbit Launcher One-like ops *** FAA coord. – launch ops airspace closure
5	Suborbital vertical launch/landing (immediate)	Use Case #1 + vertical launch/landing site ~10-20k sf LV/PPF (min) + hazardous siting	Traditional high altitude sounding or LV FAA coord. – launch ops airspace closure
6	Suborbital vertical P2P (immediate)	Use Case #5 + downrange landing site	FAA coord. – launch ops airspace closure
7	Orbital vertical launch/landing (~10-15 yrs, min.)	Use Case #5 + downrange landing site Suitable LV/RTLS & PPF facilities (> 100k SF)	Falcon 9 with return to launch site (RTLS) FAA coord. – launch ops airspace closure
8	Orbital reentry (immediate)	Reentry site recovery/processing facilities appropriate for the vehicle	Sierra Space Dream Chaser winged reentry Intuitive Machines/similar precision reentry

* Baseline infrastructure = roads, water, power, comms, wastewater, propellant farm, emergency response, weather monitoring, and other appropriate needs

** Specialized facilities for specific client needs (e.g., unique commodities, test track, test tower, etc.)

*** Downrange disposal / precision guided landing of first stage required (e.g., precision parafoil landing)

Markets vs Use Cases vs Timing vs GO(Y)/NO-GO(N)/DD

BASELINE IMPLEMENTATION // MARKETS vs USE CASES vs TIMING														
							UCs 1, 2, 5, 6, 8		UC3-DD		UC4-DD		UC7	
OPPORTUNITIES		QUALITATIVE ESTIMATES			PURSUE	Years (Tot) -->	1	2	3	4	5	6	7	8
MARKETS	SUBMARKETS	SIZE	CAGR	TIMING (Yrs)	Y/N/DD	UC v Year -->	2027	2028	2029	2030	2031	2032	2033	2034
Space	Propulsion Testing	\$\$	+	0	Y	UC1	1							
	Suborbital - Horiz.-Small	\$	+	1-2	DD	UC3		1						
	Suborbital - Horiz.-Large	\$\$	++	1-2	DD	UC3			1					
	Suborbital -Vertical	\$\$\$	++	0	Y	UC5	1							
	Suborbital-P2P/Hypersonic	\$\$\$	++	0	Y	UC6	1							
	Orbital-Horizontal	\$	+	3-5	DD	UC4					1			
	Orbital-Vertical	\$\$\$\$	+++	5-8	Y	UC7								1
	Orbital-Reentry	\$\$\$	+++	0	Y	UC8	1							
	Suborbital-Kinetic	\$	-	0	N	UC5	1							
	SV Uplink/Downlink	\$\$\$\$\$	+++	0	Y	UC1	1							
	SV Tracking	\$\$\$	+++	0	Y	UC1	1							
	Habitat/Simulated Env.	\$	+	0	DD	UC1	1							
	EO Calibration	\$	+	0	DD	UC1	1							
	<i>spare</i>													
Aviation	Training	\$	+	0	DD	UC2	1							
	EMP Testing	\$	+	0	DD	UC2	1							
	Propulsion Testing	\$\$	++	0	DD	UC2	1							
	UAS (small)	\$\$\$	++++	0	Y	UC2	1							
	UAS (traditional)	\$\$\$\$\$	++	0	Y	UC2	1							
	UAM	\$\$\$\$\$	+++	0	Y	UC2	1							
	eVTOL/VTOL	\$\$\$	+++	0	DD	UC2	1							
	Supersonics	\$\$	++	0	DD	UC2	1							
	MRO	\$	-	0	N	UC2	1							
	Storage	\$	-	0	N	UC2	1							
	<i>spare</i>													

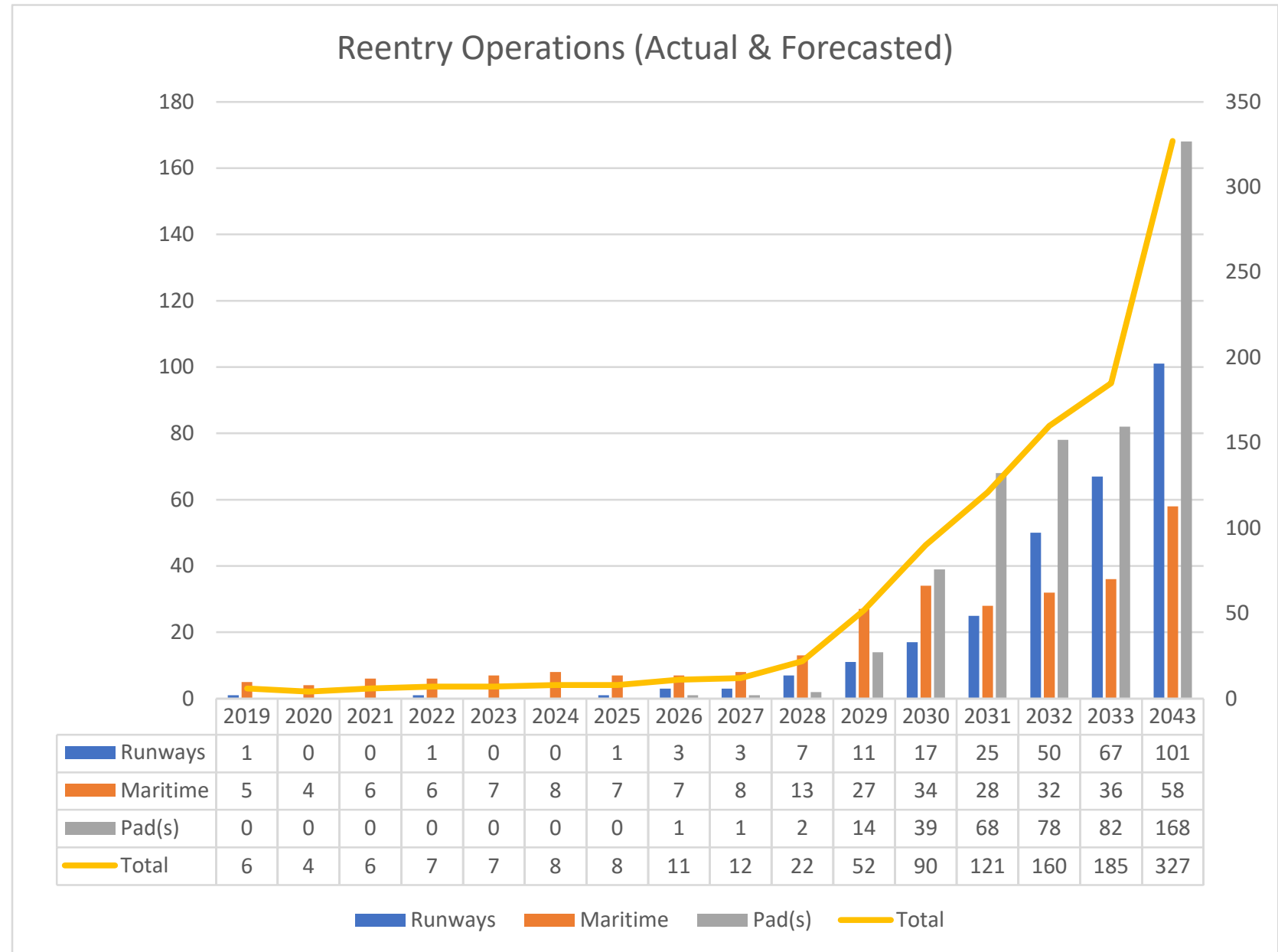
CV Characteristics Driving Market Opportunities / Activities Assessment Framework & Outcomes

		Concho Valley Characteristics Favorability or Applicability to Potential Markets and Submarkets											
MARKET	Submarket	Clear Weather	Remote	Secure	MOAs/Restricted Airspace	Runways (> 10K ft)	Runways (< 6K ft)	Launch Pads	Open Acentage	Low Population Density	Tracking Assets	Low RF Env.	Available Commodities
Space	Suborbital - Horizontal	✓	✓	✓	✓	X	✓	NA	✓	✓	X	✓	✓
	Suborbital - Vertical	✓	✓	✓	✓	NA	NA	✓-	✓	✓	X	✓	✓
	Orbital - Horizontal	✓	✓	✓	✓	X	✓	NA	✓	✓	X	✓	✓
	Orbital - Vertical	✓	✓	✓	✓	NA	NA	X	✓	✓	X	✓	TBD
	Reentry	✓	✓	✓	✓	X	✓	NA	✓	✓	X	✓	✓
	P2P / Hypersonics	✓	✓	✓	✓	X	✓	X	✓	✓	X	✓	✓
	Earth Observation	✓	✓	✓	NA	NA	NA	NA	✓	✓	NA	✓	NA
	Sats/spacecraft	NA	✓	✓	NA	NA	NA	NA	NA	NA	NA	✓	NA
	Space Comms (up/downlnks)	✓	✓	✓	NA	NA	NA	NA	✓	✓	NA	✓	NA
	Lunar (analog, landers)	✓	✓	✓	NA	NA	NA	NA	✓	NA	NA	✓	✓
Space data / processing	NA	NA	✓	NA	NA	NA	NA	✓	✓	NA	✓	NA	

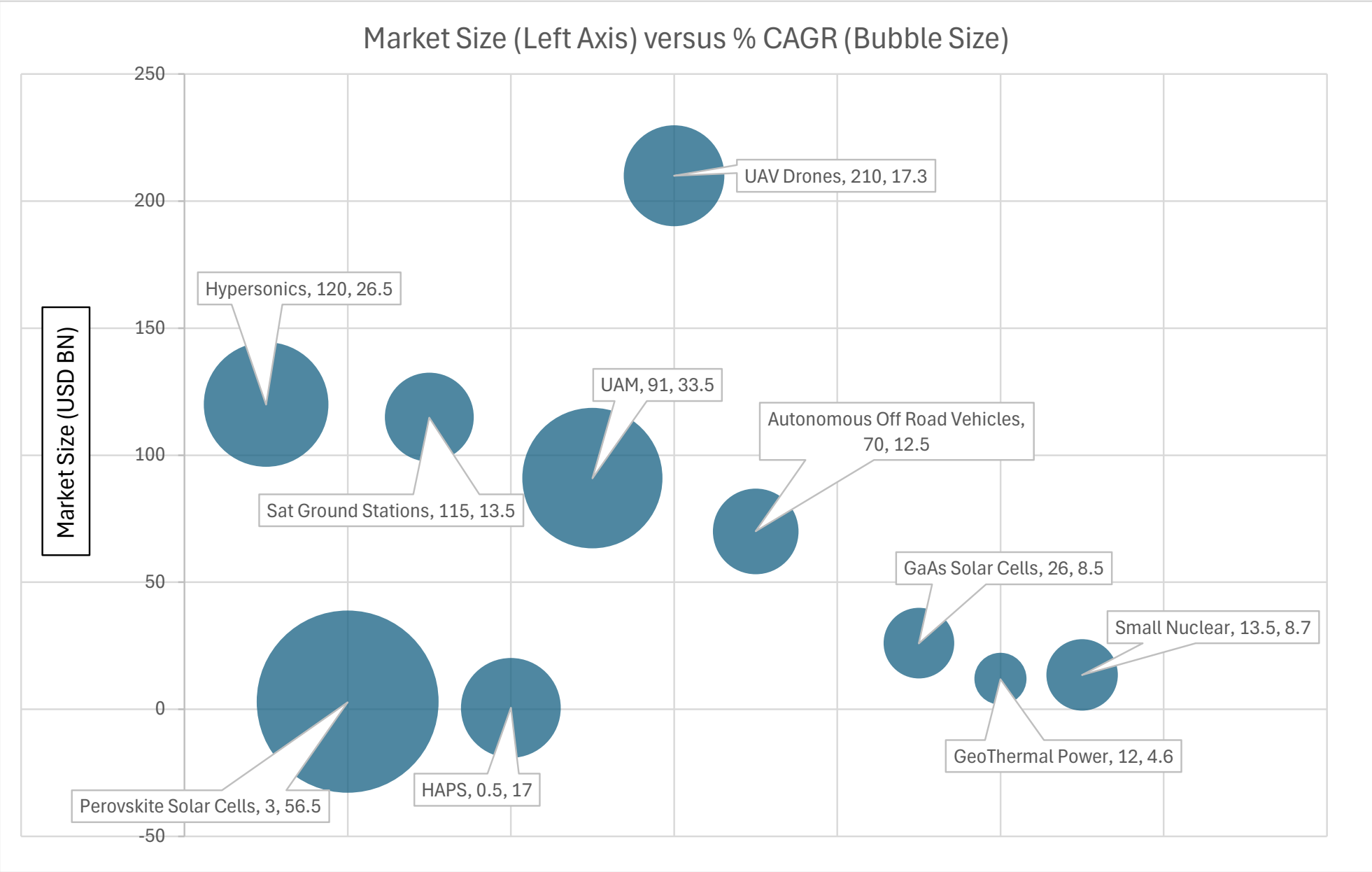
Aviation and "Other" Markets Also Being Developed

Reentry markets are anticipated to be robust in mid-term

- Most likely CV submarkets
- Traditional reentries using precision techniques to “pads” or landing zones
- Reentries to runways (smaller craft)



Summary of Individual Potential Submarkets (Space-Adjacent)

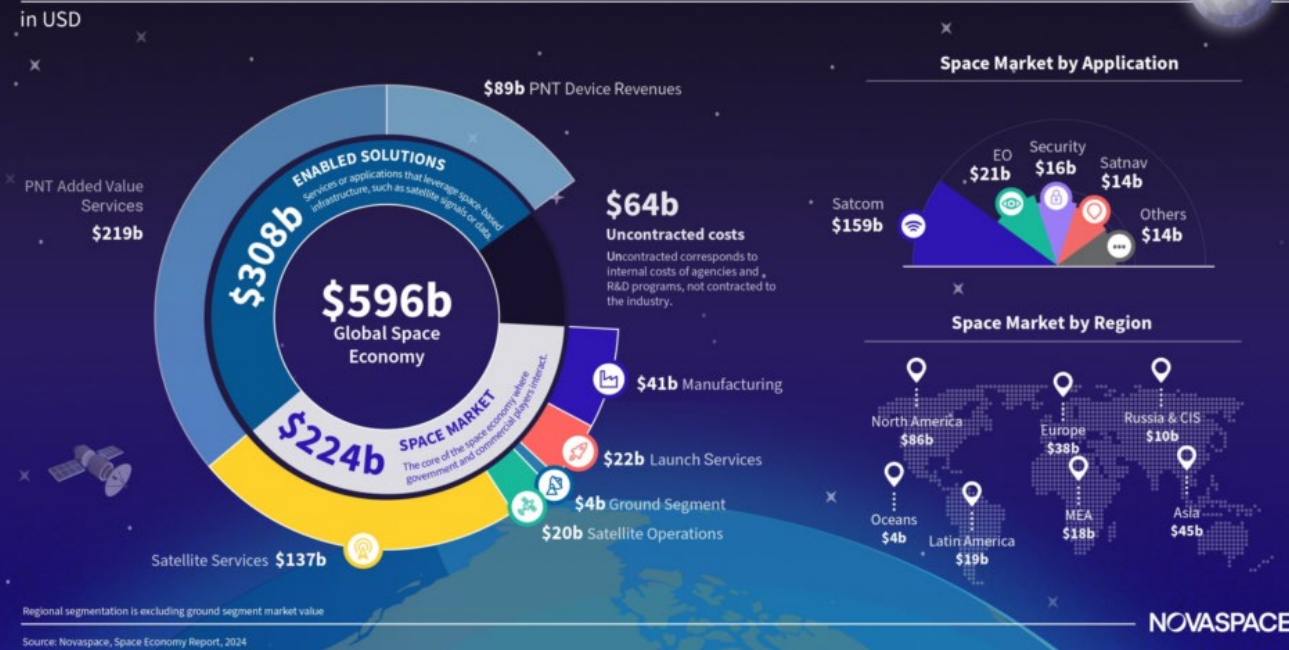


Competitiveness

Concho Valley Assessment



2024 Space Economy Valuation



CV Characteristics Driving Market Opportunities / Activities

- Remoteness
- Security
- Safety
- "Freedom to Operate"
- Low Population Density

CV Characterization / Competitive Assessment Framework

- General Concho Valley characterization (pros and cons exist)
 - Remoteness (double edged sword – specific potential sites TBD)
 - Low population density
 - Constrained water resources
- Initial environmental / species / cultural resources assessment
 - Generally good weather with ~250 days of sunshine / year
 - Limited environmental concerns
 - Limited concerns with state /federal listed species
- Infrastructure characterization
 - Existing road network is generally competitive versus other remote spaceport areas (e.g., Spaceport America, Mojave, Oklahoma)
 - Power/comms capacity generally good; specific sites need to be assessed for improvements
- Potential orbital flight corridors exist (North, South, Southeast)
 - More assessments to be performed

CV Competitiveness Assessment – SWOT

STRENGTHS

- Weather (clear days, low humidity, non-salt env.)
- Remoteness (low population, privacy) and large open land masses for operations/development
- Generally good infrastructure (roads, rail, aviation, comms) with some reserved airspace
- Historic aviation and current high-tech presence

OPPORTUNITIES

- Rising launch demand w/coastal site saturation
- Improved reliability of fully reusable rockets
- Increased demand for reentry/down-mass
- Advanced aviation ops/testing sites (UAS/UAM)
- Hypersonics/P2P growth – regional test corridors
- Leverage Texas' University Lands in CV (TBD)
- Texas' support of Texas Space Commission

WEAKNESSES

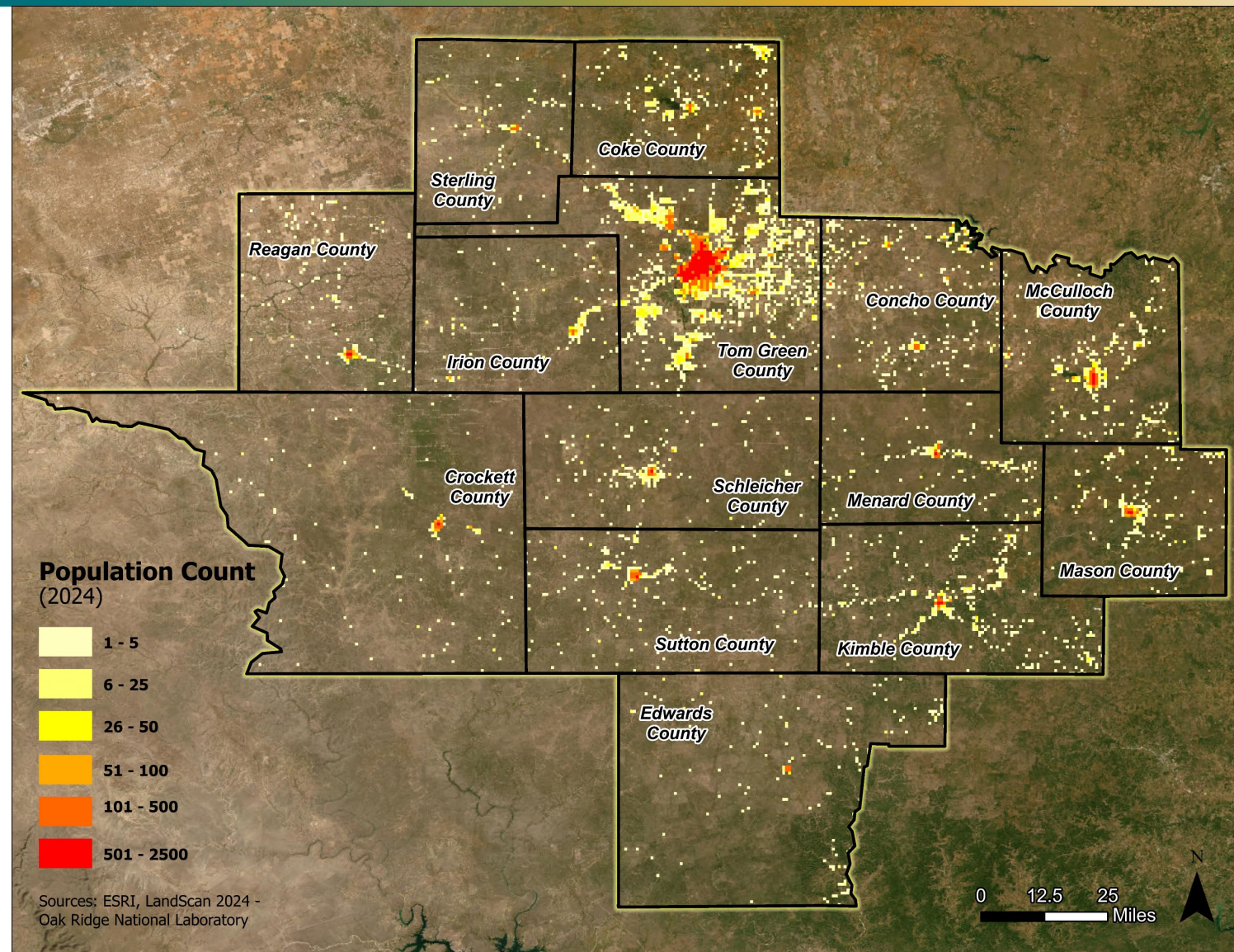
- Lack of test range instrumentation/infrastructure
- Limited convenient international connections
- CV space-centric workforce is limited
- Ability to make major investments in infrastructure w/o Fed, State and private sources

THREATS

- Other inland spaceports (e.g., TX, OK, NM)
- Re-emergence of maritime launch
- Too late to the opportunity?
- Are there enough “real” opportunities to attract companies/operations to a CV site
- Timeline to inland orbital launch too long

Site Analysis Overview

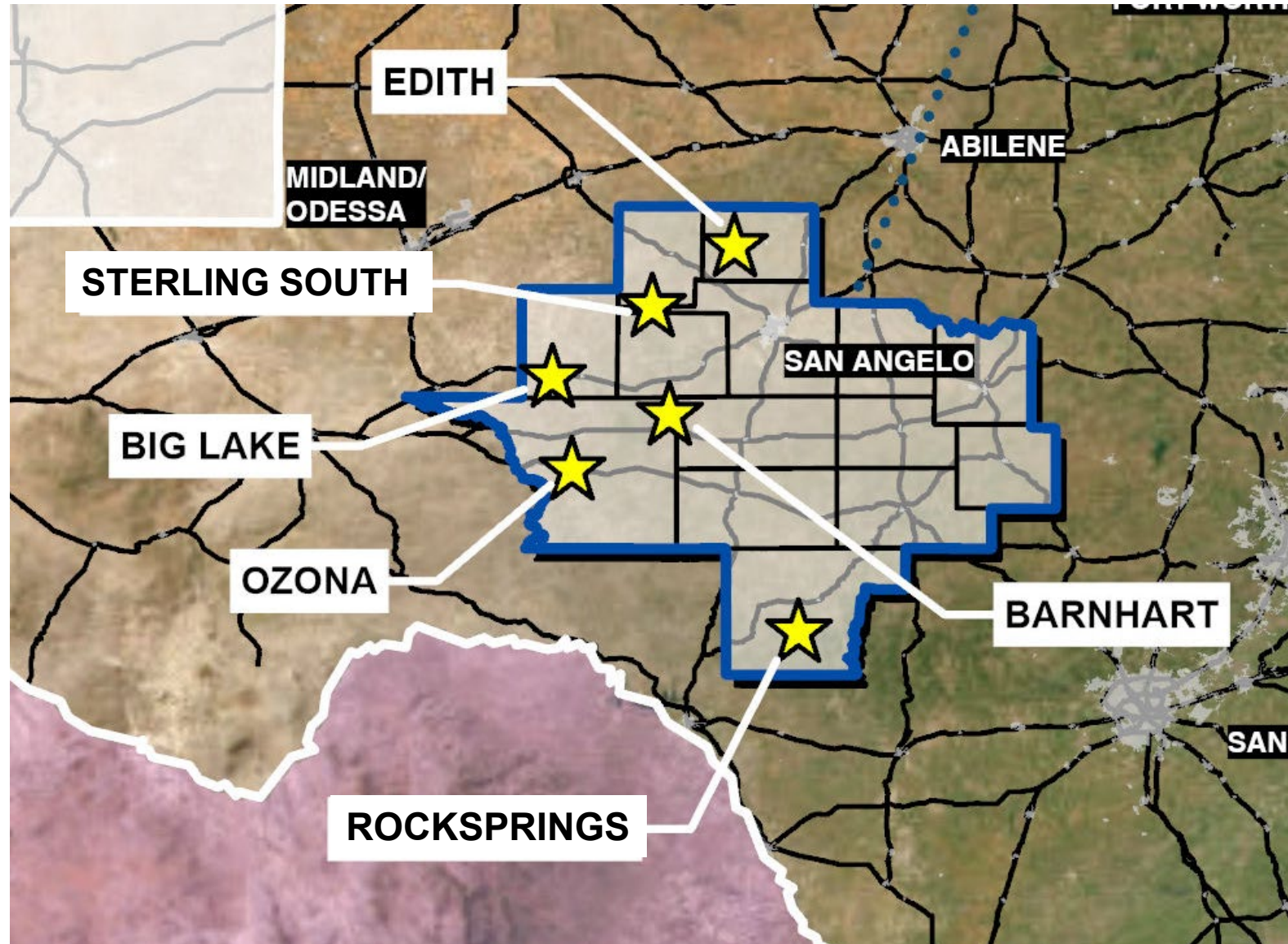
Sites Identification /
Evaluation / Down Select



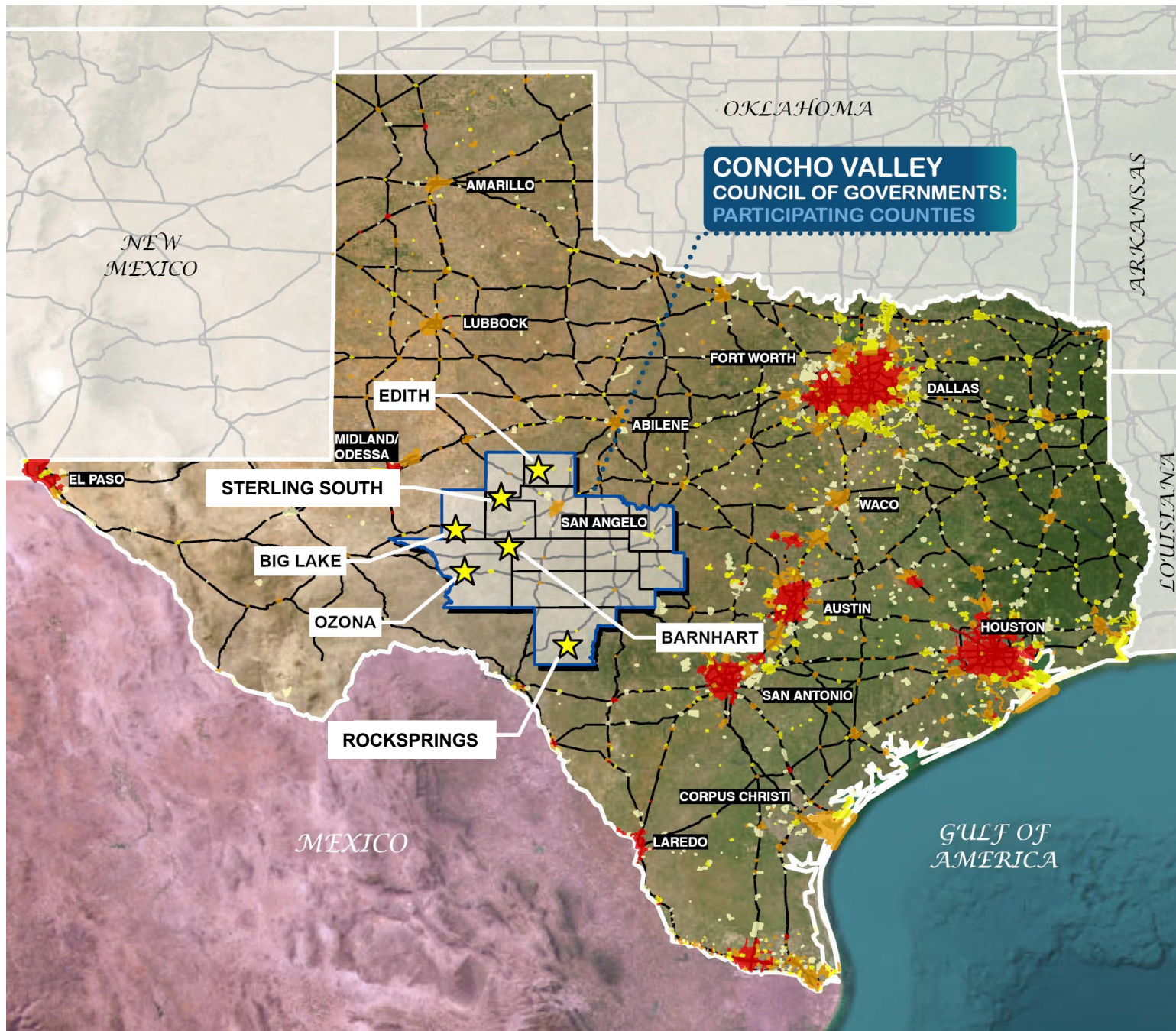
Population Density in the CVCOG Member Counties (2024)

Six Areas/Sites Identified for Further Evaluation

- Six sites identified (*alphabetical order*)
 - Barnhardt
 - Big Lake
 - Edith
 - Rocksprings
 - Sterling-South
 - Ozona
- Primary Criteria
 - Clear Trajectories (N, S, and/or SE)
 - Topography (flat vs hilly)
 - Population Density (low)
 - Utilities (available)
 - Water (available)
 - Available Lands (University and/or Public School Trust Lands)
 - Infrastructure Proximity
 - E.g., Oil & Gas, Highways, Interstates, Rail, Others



Six Sites Versus Population Density Statewide

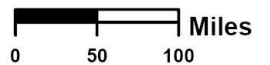
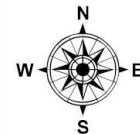


Legend

- CVCOG Boundary Limits
- USA State Boundary
- County Boundary

Population Density (per sq mi)

- 0 - 500
- 501 - 1,000
- 1,001 - 2,000
- 2,001 - 5,000



Initial Down Selection Conclusions & Fatal Flaws

■ Edith

- Location of I-20, I-27 & Highway 158 vs. Unproven & Initial lower reliability vehicles
- No University or Limited Permanent School Fund Lands (public purchase very expensive)
- High Pressure Gas Line (less of an issue)

■ Sterling South

- Close proximity to future I-27 & Highway 163
- San Angelo & Mertzon population density
- A significant nearby Oil/Gas well presence
- No University or Permanent School Fund Land (public purchase very expensive)

■ Barnhart

- Close proximity to future I-27, US 67 & US 190
 - Boxed in by three major roads
- Barnhart population density preventing Northerly trajectories
- Questionable water access

Down Select of Sites (6 → 3)

BEST OPTIONS BASED ON SCREENING CRITERIA

Criteria	Edith	Sterling South	Barnhart	Big Lake	Ozona	Rocksprings
Population Density	✓	✓+	✓+	✓+	✓+	✓+
Transportation (Access)	✓	✓	✓	✓+	✓+	✓
Transportation (Inhibitor)	—	—	—	✓+	—	✓
Readily Avail/ Affordable Land*	—	—	✓+	✓+	✓+	✓
Trajectory Options	✓	—	—	✓+	✓+	✓
Water Availability**	✓+	✓	✓	✓	✓	✓+
Favorable Terrain	✓+	✓+	✓+	✓+	✓	✓+
Favorable Airspace	✓	✓	✓	✓+	—	✓
Score	8	7	9	15	10	11

SCORING LEGEND: — = 0 ✓ = 1 ✓+ = 2

* Highest score to sites with available University Lands

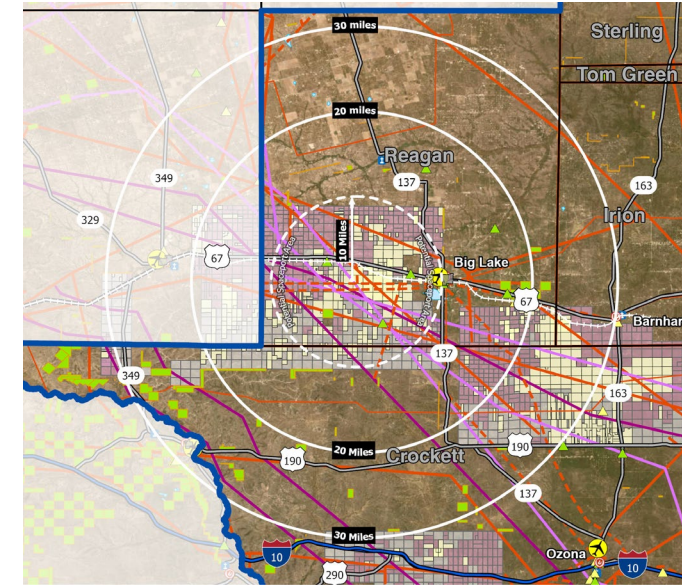
** Perceived availability of surface waters. All sites assumed to have aquifer access

Deeper Dive Big Lake, Ozona & Rocksprings

■ Big Lake

- Remote with low population density
- Generally flat terrain
- North, south & southeast trajectories appear possible
- MOA Airspace above and near by
- Road, rail, and airport access available
- Available University Lands
- “Straddle” siting strategy is possible

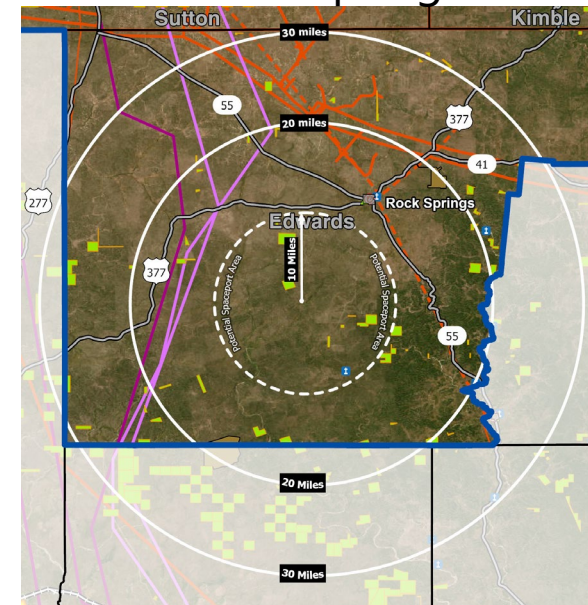
Big Lake



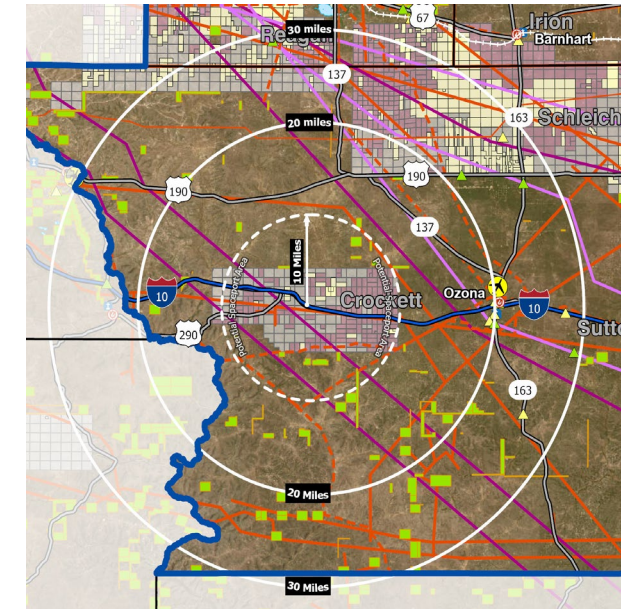
■ Ozona

- Remote with low population density
- North, south & southeast trajectories appear possible
 - TEXON MOA is a benefit
- Road and airport access available
- Limited/No Rail Service
- Available University Lands
- Terrain on available lands may be more rugged, with elevation change to be addressed
- Regarding I-10 “straddle” siting strategy is possible.

Rocksprings



Ozona

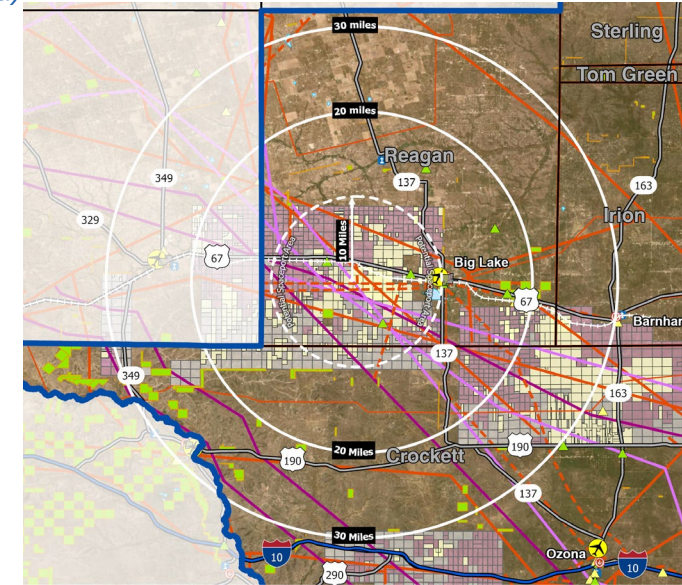


Big Lake, Ozona & Rocksprings Assessment *(cont.)*

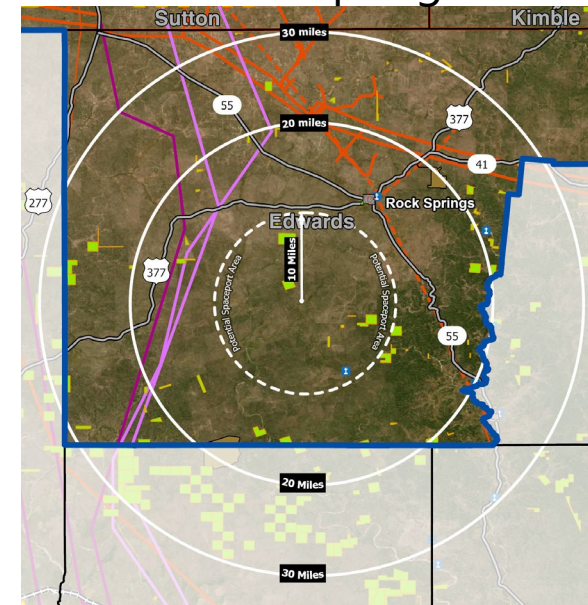
■ Rocksprings

- Remote with low population density
- Generally flat terrain
- Northwest, south & southeast trajectories appear possible
- North trajectories challenged by planned I-27 & San Angelo
- MOA Airspace above and near by
- Road and airport access available
- No available rail service
- No University Lands
- Family land donation in southern Edwards County provides leverage for siting in Edwards County.
 - Silver Lake Ranch (see next slide for location / layout)

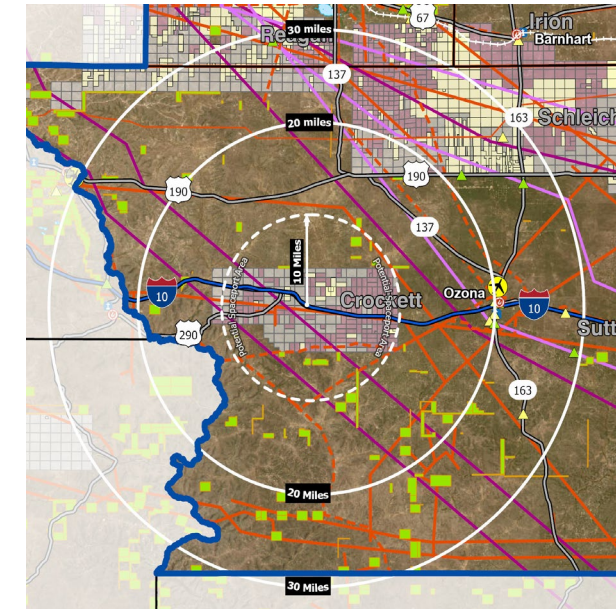
Big Lake



Rocksprings



Ozona



Big Lake & Rocksprings (Two Finalists)

Rankings

- 1st – Big Lake → Key differentiators are (not in order):
 - Rail Service
 - Quality Airport
 - Available Lands
 - TEXON MOA
 - Remoteness
 - Accessible
 - Technical factors (initial flight safety analysis, etc.)
- 2nd – Rocksprings → Key differentiators are (not in order):
 - Proximity to San Antonio Aerospace Cluster(s)
 - Promise of Moody Ranch (TBD – See below)
 - Water availability vs other finalist counties
 - Technical factors (initial flight safety analysis, etc.)

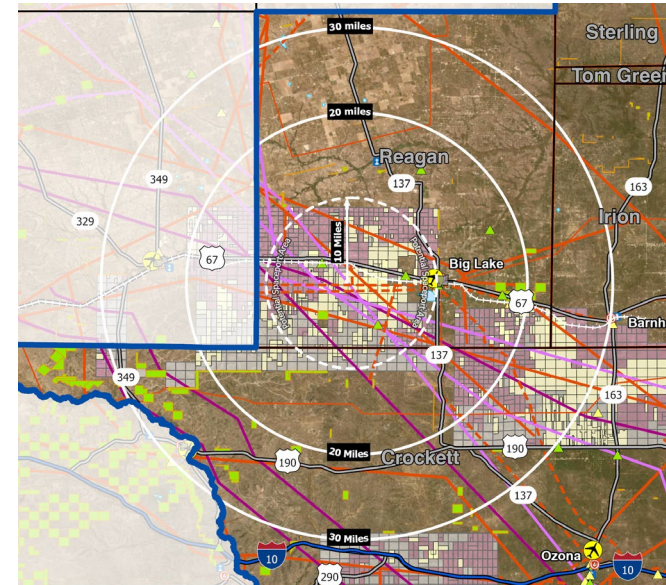
Big Lake Primary Risk Factor

- Must Complete University Lands Lease Process

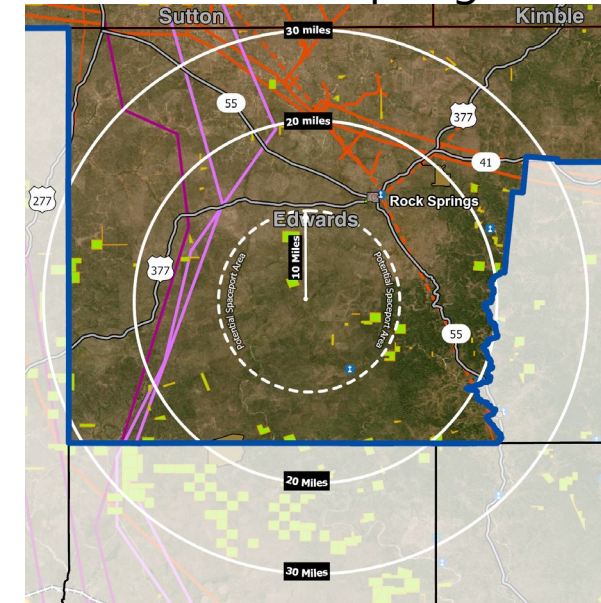
Rocksprings Primary Risk Factor

- Use conditions on Moody Foundation Gift of Silver Lake Ranch (54,000 acres) by Texas Parks & Wildlife Department

#1 Big Lake

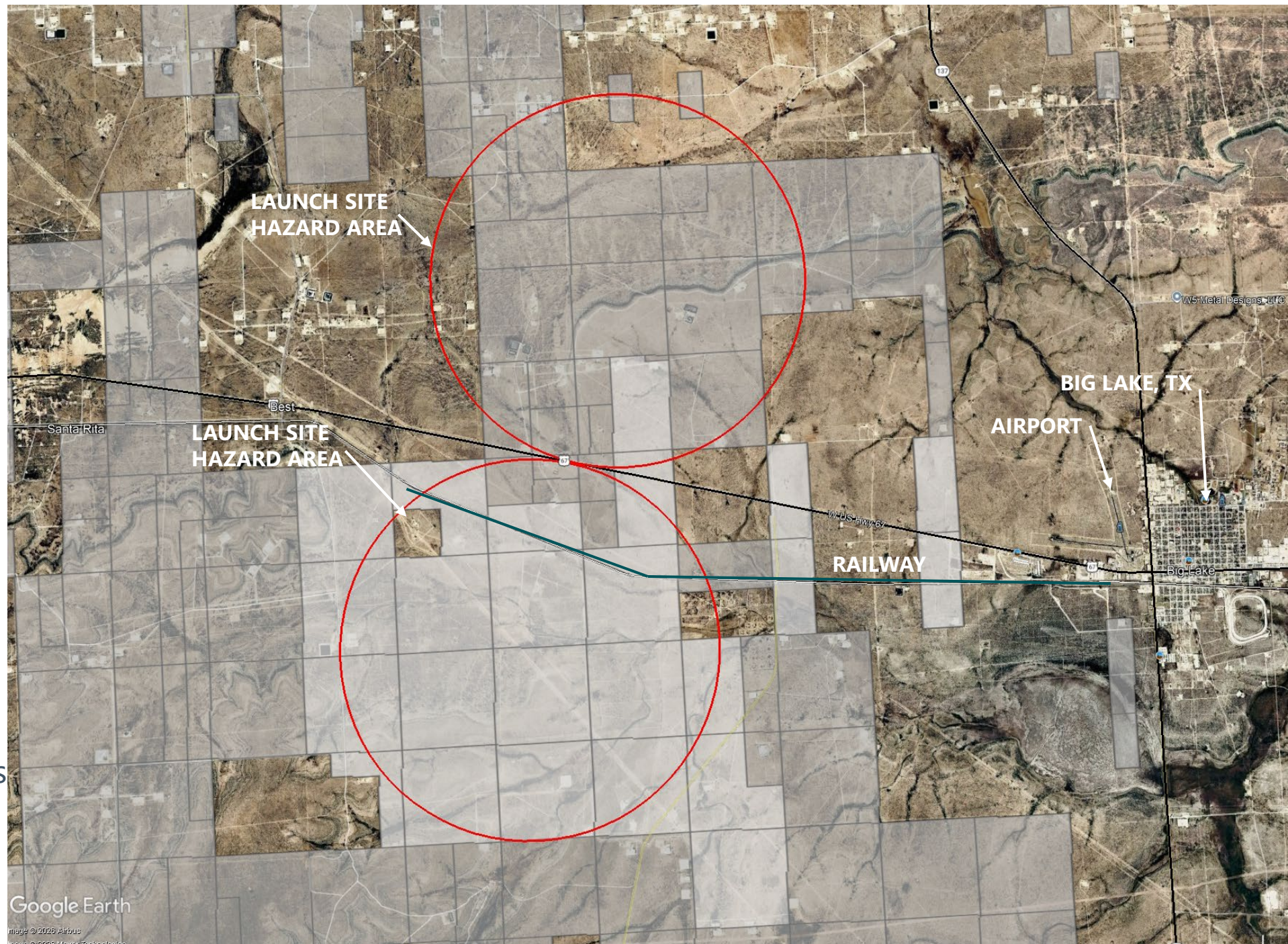


#2 Rocksprings



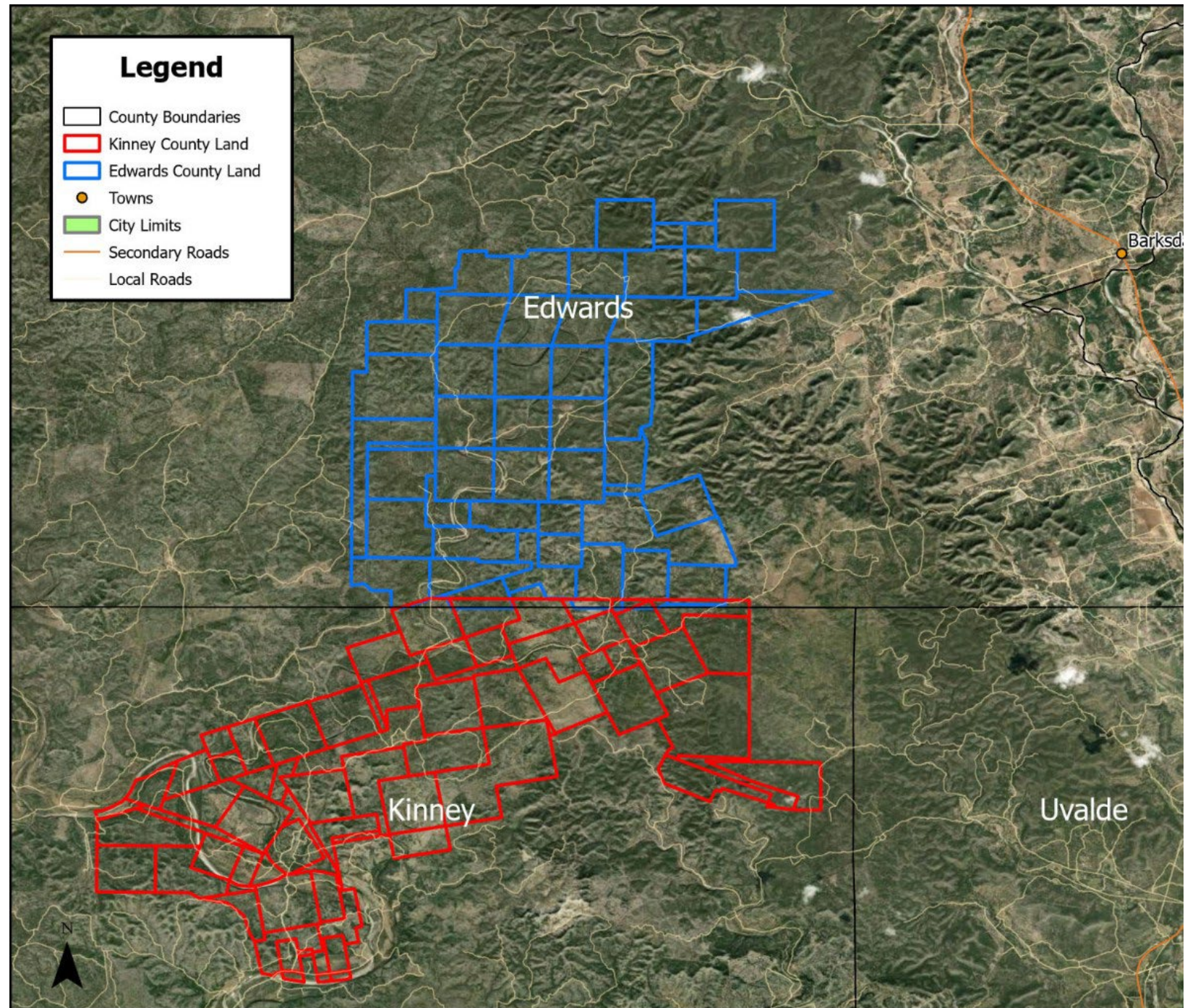
Big Lake - "Straddle Siting"

- Pads straddle major logistics path
- Enables north and south/southeast trajectories
- Overlaid on University Lands Available Lots
 - Multiple simultaneous use of lots possible



Rocksprings & The Silver Lake Ranch

- Lower probability site
 - Relies on use of gift for space operations (allowed?)
 - Less common transaction (gift of state park) & how to address alternative use
- Could present more flexible launch corridors than Big Lake
 - SE and SW
 - South
- Proximity factors:
 - San Antonio Aerospace Cluster
 - Major Airport



Questions ...

1.

2.

3.

4.

5.

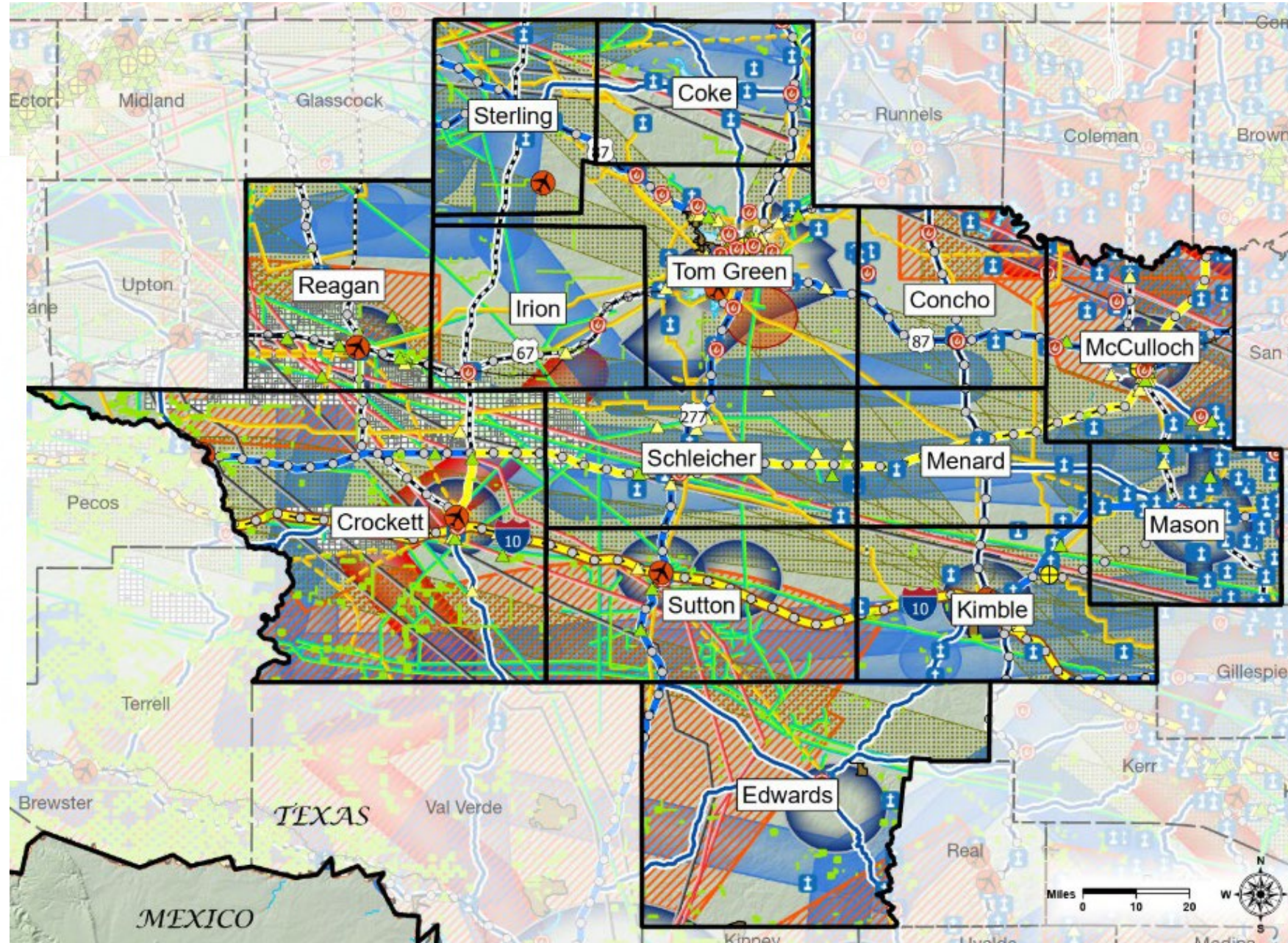
THANK YOU!

Andrew Nelson, Vice President
National Discipline Leader – Aerospace
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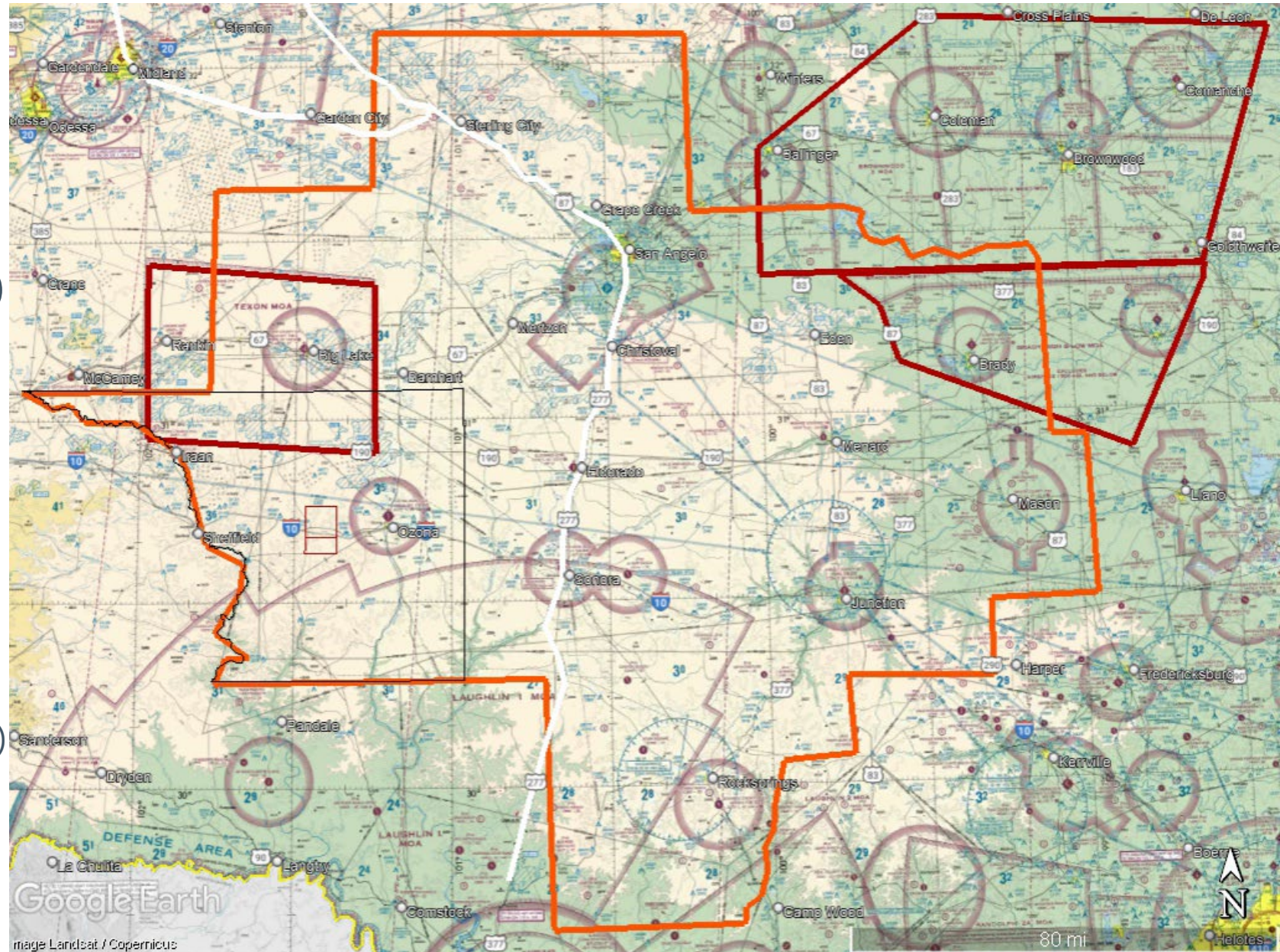
CV Site Assessment

- Legend**
- Texas State Boundary
 - CVCOG Counties
 - County Boundary
 - City Limit Boundary
 - Military Boundary
 - Metropolitan Planning Organization
 - Texas State Parks Boundaries
 - Permanent School Fund Lands
 - University Lands - Available Parcel
 - University Lands - Oil/Gas Lease
 - Primary Roadway
 - Secondary Roadway
 - Railroad
 - Lake/Pond
 - Airport
 - Fire/EMS Station
 - Cemetery
 - Superfund Site
 - Brownfields Site
 - RCRA - ACTIVE
 - RCRA - INACTIVE
 - Hard Minerals
 - Highway Freight Network
 - TxDOT Connectivity Corridors
 - Texas Space Industry Network - Primary
 - Texas Space Industry Network - Secondary
 - TxDOT Energy Sector Corridors
 - Electrical Transmission - In Service
 - Electrical Transmission - Not Available
 - HGL Pipeline
 - Crude Oil Pipeline
 - NaturalGas Pipeline
 - Petroleum Pipeline
 - FAA Class E Airspace
 - FAA Class D Airspace
 - FAA Special Use Airspace - MOA
 - FAA Route Airspace
 - FAA National Defense Airspace
 - FAA Military Training Route
 - FAA Low Altitude Training Route



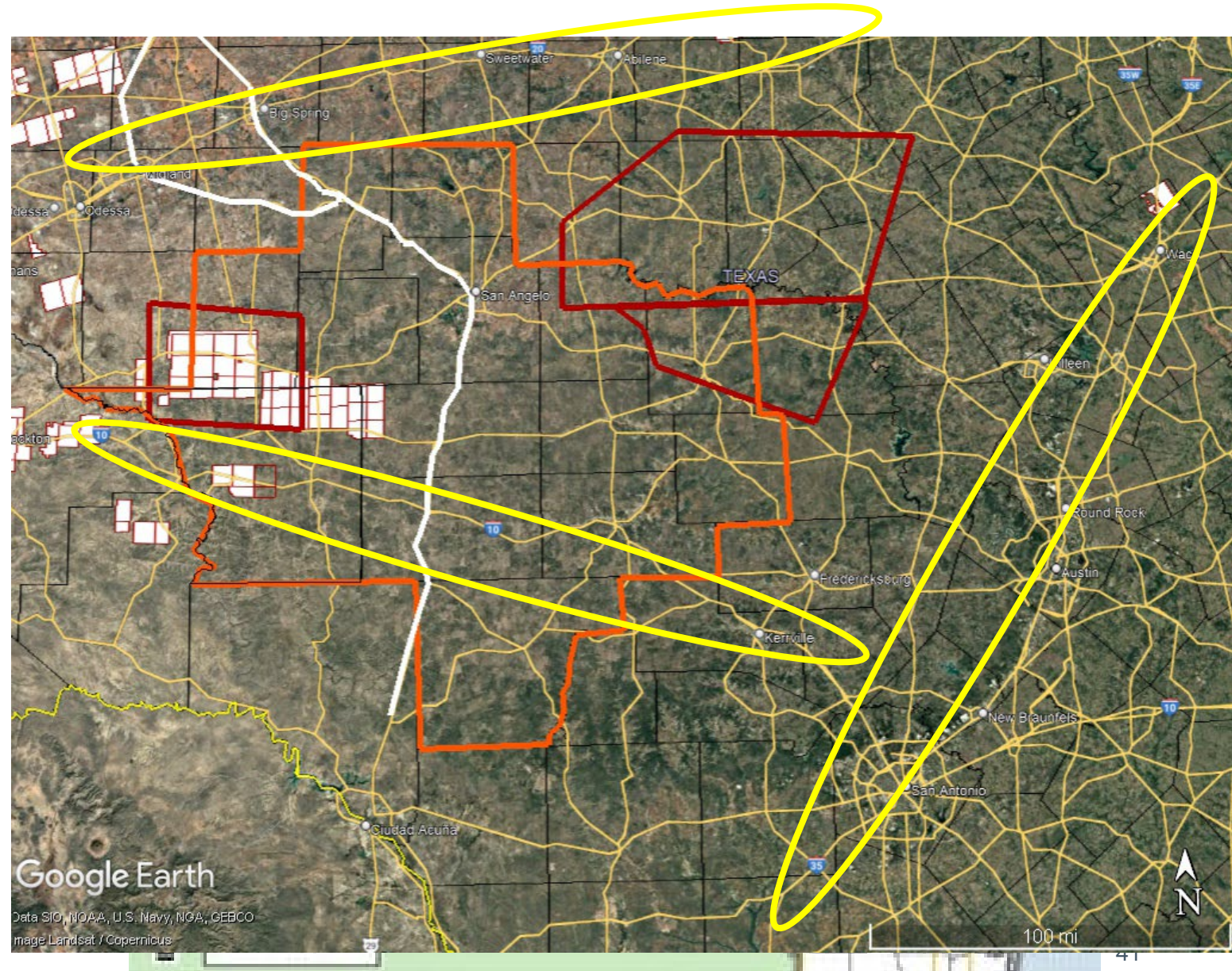
CV Airspace Opportunities & Airports (Initial Indicators)

- CV has three MOAs (partial)
 - TEXON (west)
 - Brownwood & Brady (east)
- San Angelo (SJT) airport (>8k ft)
 - Helpful for UAS & maybe reentry
 - Horizontal orbital and suborbital w/RW extension may be possible (more eval needed)
- Many (smaller) airports ($\leq 6k$ ft)
 - E41 (Big Lake / Reagan County)
 - 27R (Eldorado / Schleicher County)
 - T50 (Menard County Airport)
 - OZA (Ozona Muni, Crockett County)
 - JCT (Kimball County Airport)

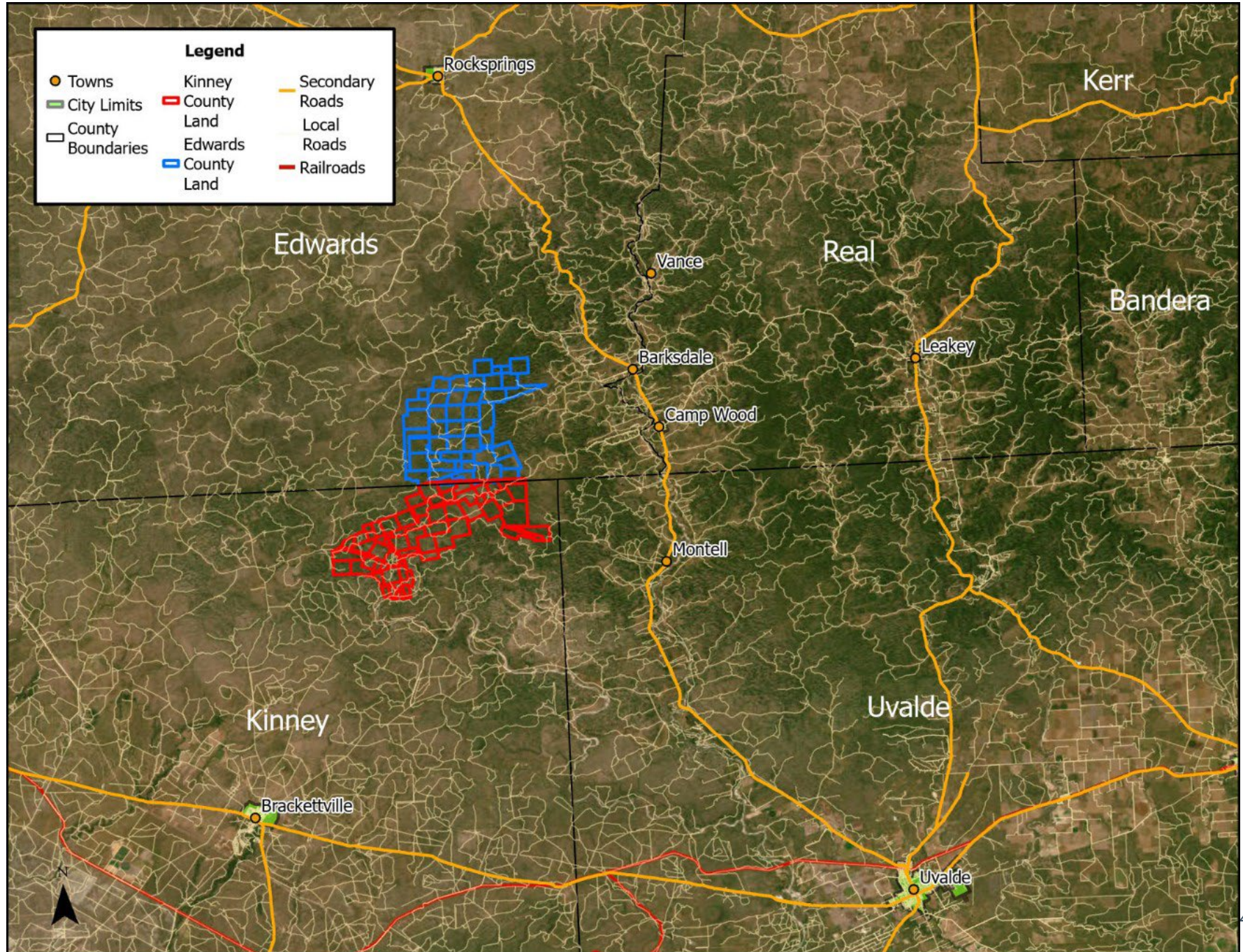


Other Site Considerations

- Criteria for Assessment
 - Trajectory limitations (N, S, and SE)
 - Overflight of populations, major routes
 - Terrain ruggedness
 - Lack of, or presence of, other key elements / characteristics
 - Population density locally
 - Challenging terrain
 - Lack of infrastructure
 - Flood zones
 - Aquifer access
- Many layers of data being assessed



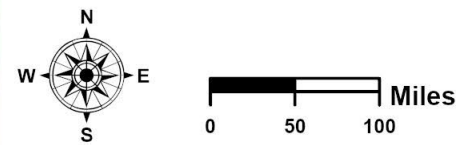
Silver Lake Ranch



Six Selected Sites



- ### Legend
- CVCOG Boundary Limits
 - USA State Boundary
 - County Boundary
 - City Limits Boundary



Project Objectives / Understanding



Comprehensive
Feasibility
Study



Launch Site
Operations
Alternatives –
*Suborbital, Orbital,
Vertical, Horizontal
Launch, Landing, Reentry*



Local Insights
and Engagement
with National
Spaceport
Expertise



Experienced
Alternatives
and Phased
Development
Analysis