Digital Equity

Behzad Zamanian
Chief Information Officer
Washoe County

bzamanian@washoecounty.gov

Definitions

- **Broadband**
  - In telecommunications, broadband is wide bandwidth data transmission which transports multiple signals at a wide range of frequencies and Internet traffic types, that enables messages to be sent simultaneously, used in fast internet connections. The medium can be coaxial cable, optical fiber, wireless Internet (radio), twisted pair or satellite. In the context of Internet access, broadband is used to mean any high-speed Internet access that is always on and faster than dial-up access over traditional analog or traditionally copper phone lines.

- **800MHz Regional Radio System**
  - Public safety radio systems (such as those used by police, firefighters and emergency medical technicians) operate in several portions of the 800 MHz band, which consists of spectrum at 806-824 MHz paired with spectrum at 851-869 MHz.

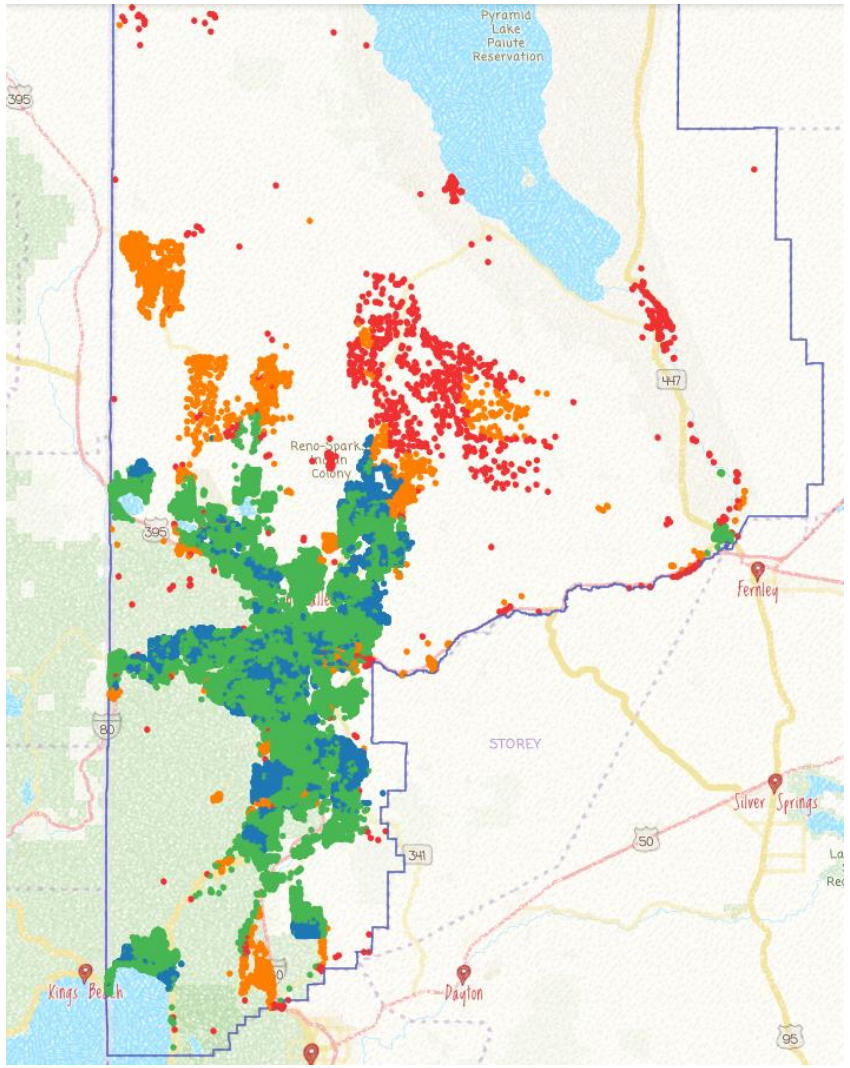
- **Cellular Network**
  - Cellular refers to a network technology that facilitates mobile device communication over areas comprised of cells and transceivers, which are also known as base stations or cell sites. In a cellular network, the most widely used mobile transceivers are mobile phones, or cell phones.

Broadband Types

- **Digital Subscriber Line (DSL)**
  - DSL is a wireline transmission technology that transmits data faster over traditional copper telephone lines already installed to homes and businesses. The availability and speed of your DSL service may depend on the distance from your home or business to the closest telephone company facility. Types ADSL, SDSL, HDSL, VDSL
- **Cable Modem**
  - Cable modem service enables cable operators to provide broadband using the same coaxial cables that deliver pictures and sound to your TV set.
- **Fiber**
  - Fiber optic technology converts electrical signals carrying data to light and sends the light through transparent glass fibers about the diameter of a human hair. Fiber transmits data at speeds far exceeding current DSL or cable modem speeds. Telecommunications providers sometimes offer fiber broadband in limited areas and have announced plans to expand their fiber networks and offer bundled voice, Internet access, and video services. Variations of the technology run the fiber all the way to the customer's home or business, to the curb outside, or to a location somewhere between the provider's facilities and the customer.
- **Wireless**
  - Wireless broadband connects a home or business to the Internet using a radio link between the customer's location and the service provider's facility. Wireless broadband can be mobile or fixed. Wireless technologies using longer-range directional equipment provide broadband service in remote or sparsely populated areas where DSL or cable modem service would be costly to provide. Speeds are generally comparable to DSL and cable modem. An external antenna is usually required. Wireless broadband Internet access services offered over fixed networks allow consumers to access the Internet from a fixed point while stationary and often require a direct line-of-sight between the wireless transmitter and receiver. These services have been offered using both licensed spectrum and unlicensed devices. For example, thousands of small Wireless Internet Services Providers (WISPs) provide such wireless broadband at speeds of around one Mbps using unlicensed devices, often in rural areas not served by cable or wireline broadband networks.
- **Satellite**
  - Just as satellites orbiting the earth provide necessary links for telephone and television service, they can also provide links for broadband. Satellite broadband is another form of wireless broadband, and is also useful for serving remote or sparsely populated areas. Downstream and upstream speeds for satellite broadband depend on several factors, including the provider and service package purchased, the consumer's line of sight to the orbiting satellite, and the weather. While new technology offers decent speed, it could be slower than DSL and cable modem. Service can be disrupted in extreme weather conditions.

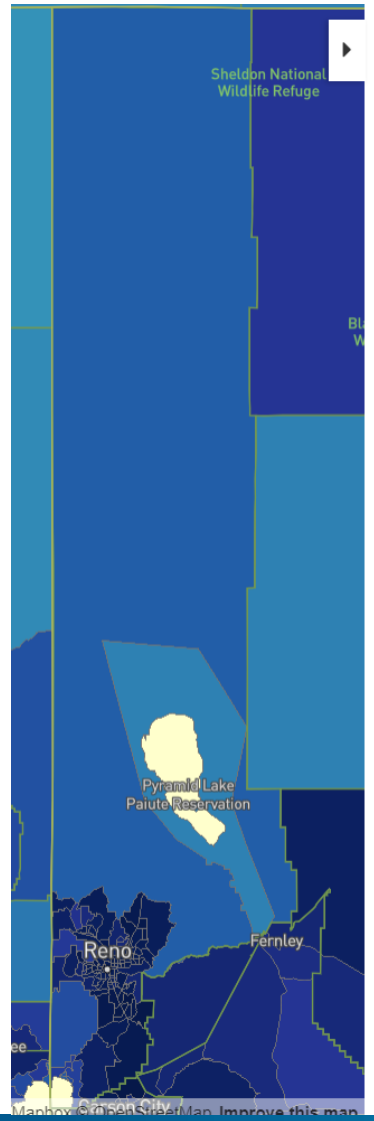
WC Connectivity Fabric

- Orange = Copper / Telephone Line / DSL
- Red = Fixed Wireless
- Green = Cable Modem
- Blue = Fiber



Broadband Priorities

1. Gerlach
2. North Valleys
3. Warm Springs / Spanish Springs
4. Washoe Valley
5. Downtown Reno
6. Echo Loder School / Yori Park
7. Deer Park
8. Governor's Bowl Park
9. Lake Virginia
10. Reno housing Authority
11. Wooster High School



All Providers Reporting Service

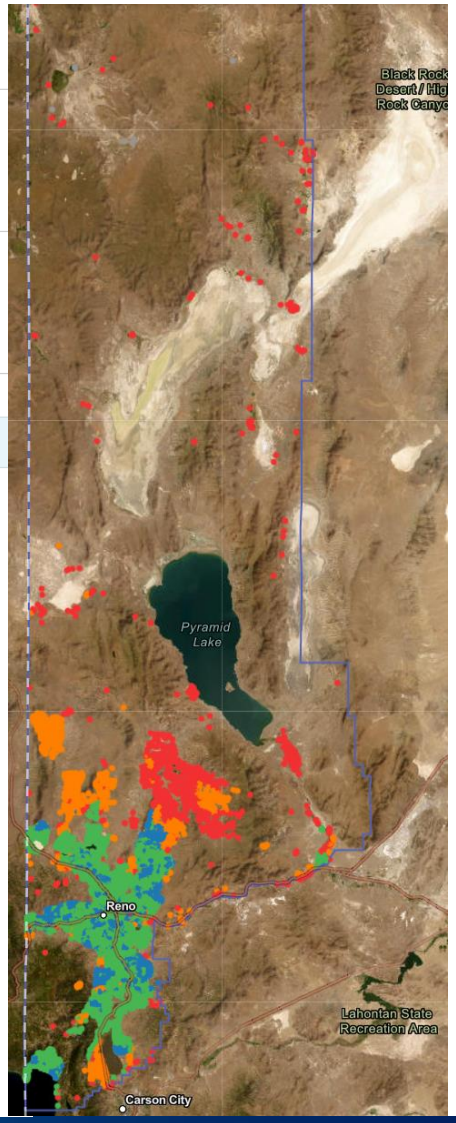
Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2021 *(latest public release)*

Please click on the map or search for a location.



Broadband – Gerlach

OBJECTIVE:

- To provide high speed Internet access for County facilities in Gerlach and construct technology infrastructure needed to offer reasonably-priced high speed Internet option to Gerlach residents.

PROPOSED SOLUTION:

- Use PLPT fiber from i-80 to Nixon
- Build 55 miles of aerial fiber from Nixon to Gerlach
- Light up Library, School District, Community Center, and *other County facilities on the main path*

Status April 1, 2023:

- 46/55 miles fiber installed
- Go-live July 2023

Next Step:

- Apply for BID grant to pull fiber to homes in Gerlach
- Vendor to offer affordable high-speed Internet to the community

Broadband - Gelach Timeline

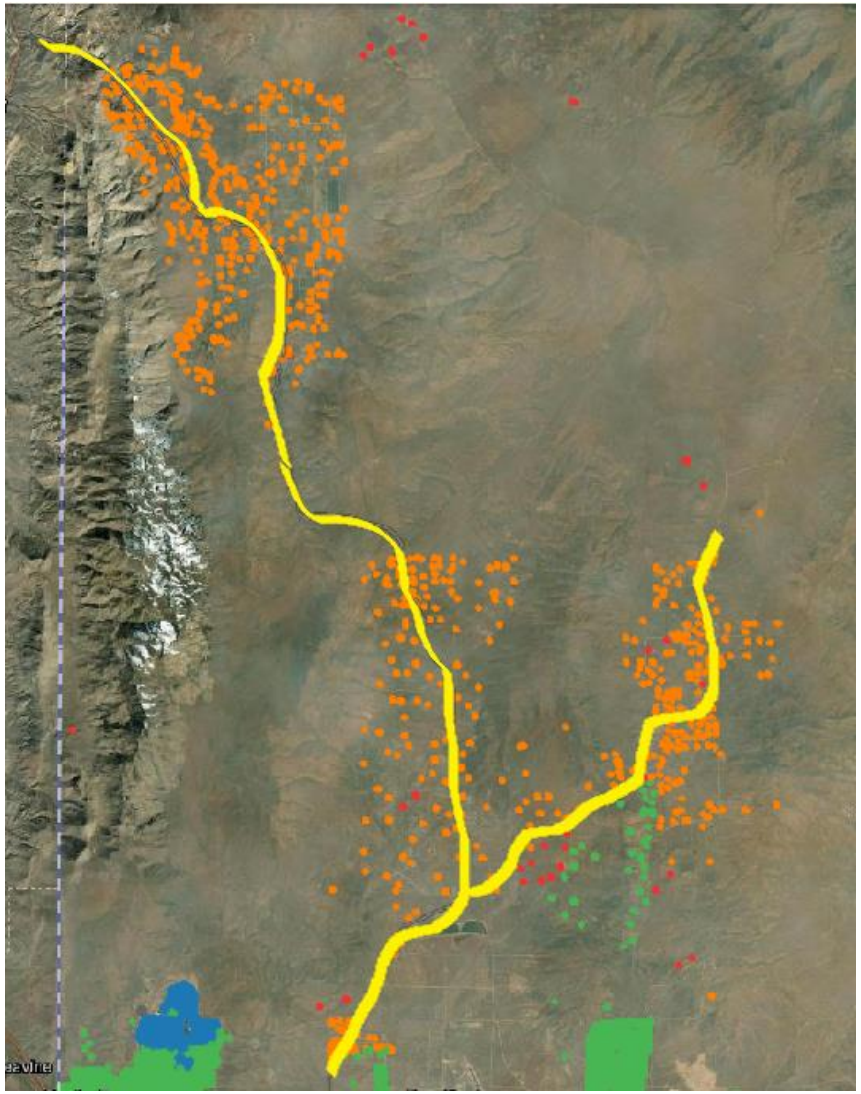
- Developed a working committee – February
- Developed and published RFP - March-April
- Reviewed proposals - April-May
- Awarded RFP to Digital Technology Solutions (DTS) – May
- Established MOU with PLPT on 6/17
- County Approval – June 28, 2022
- Implementation Timeline July 22 – June 23

	Year 1			
	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Contact Award				
Federal / State / Local Permits / Environmental Assessment				
Engineering / Access / Civil / Structural Designs				
Develop and Submit EA Package to State, Federal, and Tribal Authorities				
Acquire Approval				
Tribal/County / City / ADOT ROW Application and Permitting Process				
Acquire ROW's				
Make Ready / New Line Build				
Make Ready Assessment / Remedy any Issues of Existing Line				
Fiber Optic Engineering				
Site Visit				
Engineering Fiber Backbone				
Procurement				
Finalize Fiber Optics Design Documents and Procure Materials				
Material / Delivery				
Outside Plant Construction				
Underground Construction				
Conduit / Fiber Installation				
Aerial / Fiber Installation				
Distribution Line Installation				
Fiber Optic Build-out				
Splicing & Testing				
Splicing of Fibers				
OTDR Testing				
Certification of Project				
Certification by Licensed P.E.				
Project Close Out				

Broadband - North Valley / Warm Spr

- Red Rock Rd
- Antelope Valley Rd
- Spanish Springs

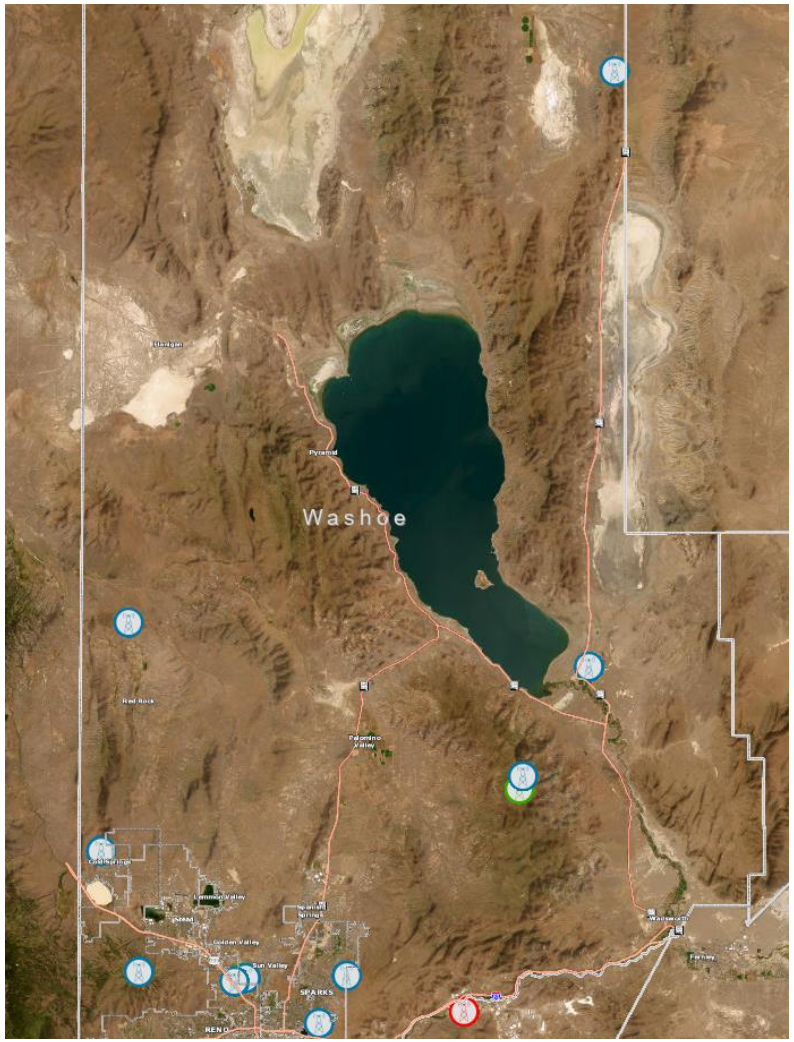
- Local Options
  - RTI
  - Plumas-Sierra
  - AT&T
  - Charter

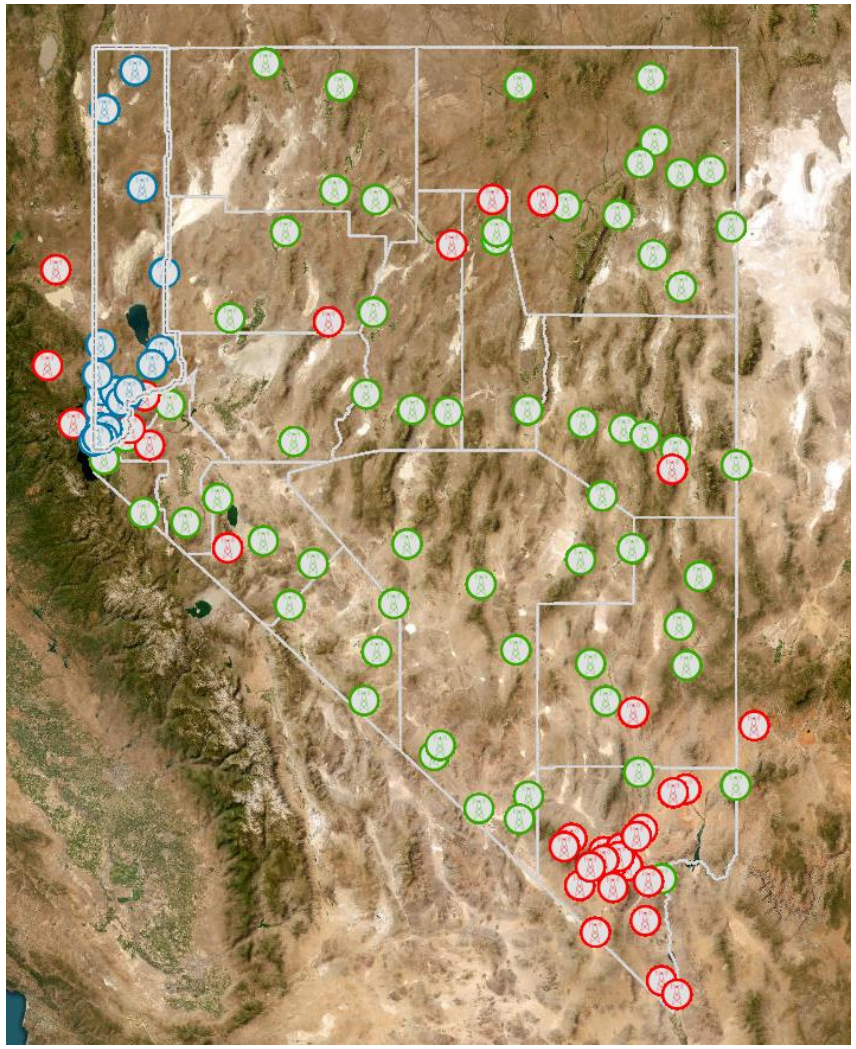


800 MHz Radio Sites

Sites impacting North Valleys & Warm Springs Sites:

- Red Rock
- Virginia Pk.
- Poito
- Smokey Ct.





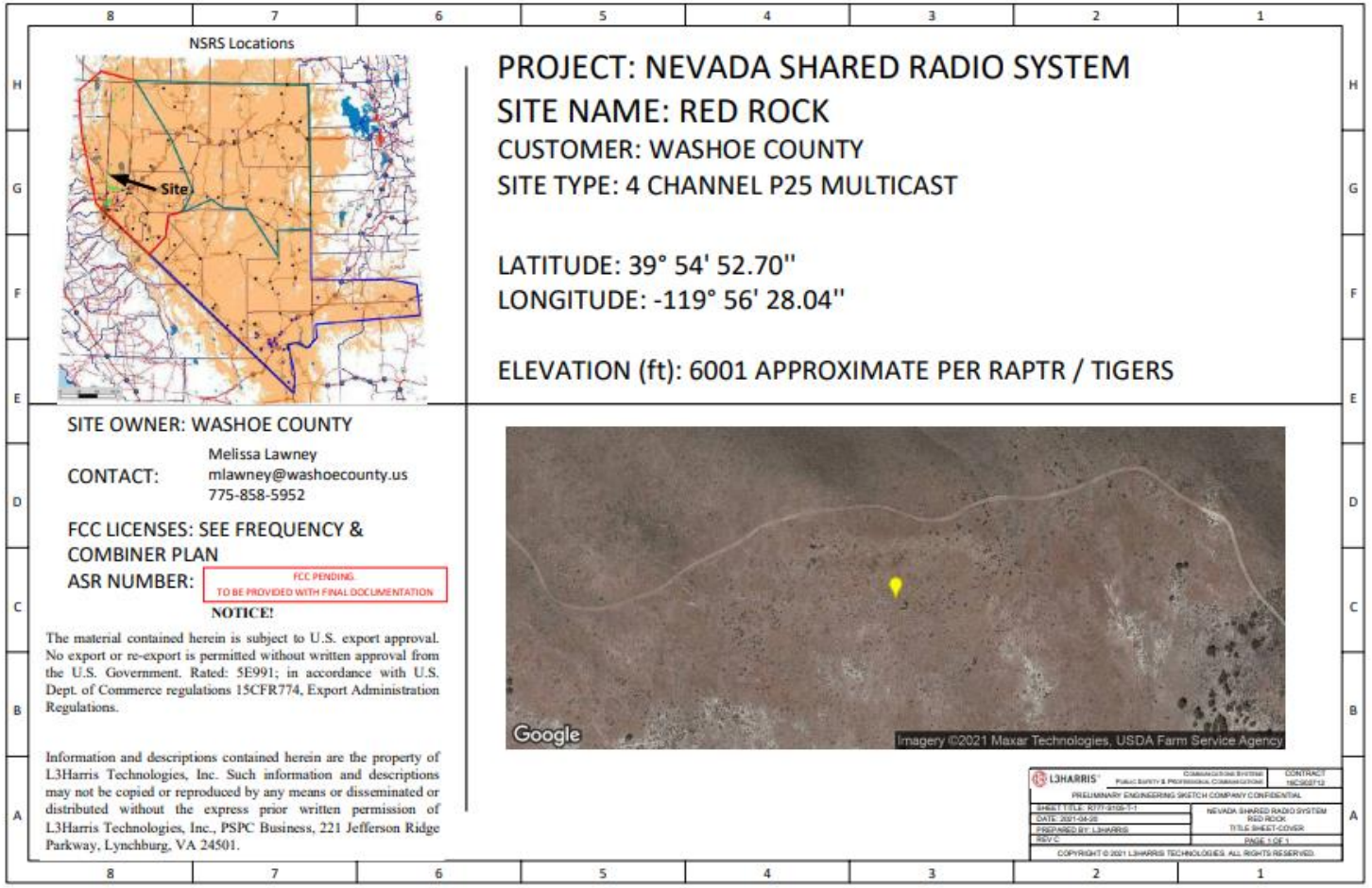
Red Rock Radio

This site will provide public safety communication to Fish Spring & Red Rock area

- Architectural detail design completed
- Geotechnical study completed
- Environmental (NEPA) & Archeological report underway
- BLM Registration Completed
- BLM Pending Approval
- Planned construction date: July 2023 - May 2024
- Planned go-live date: July 2025 - May 2026

Timeline Dependencies:

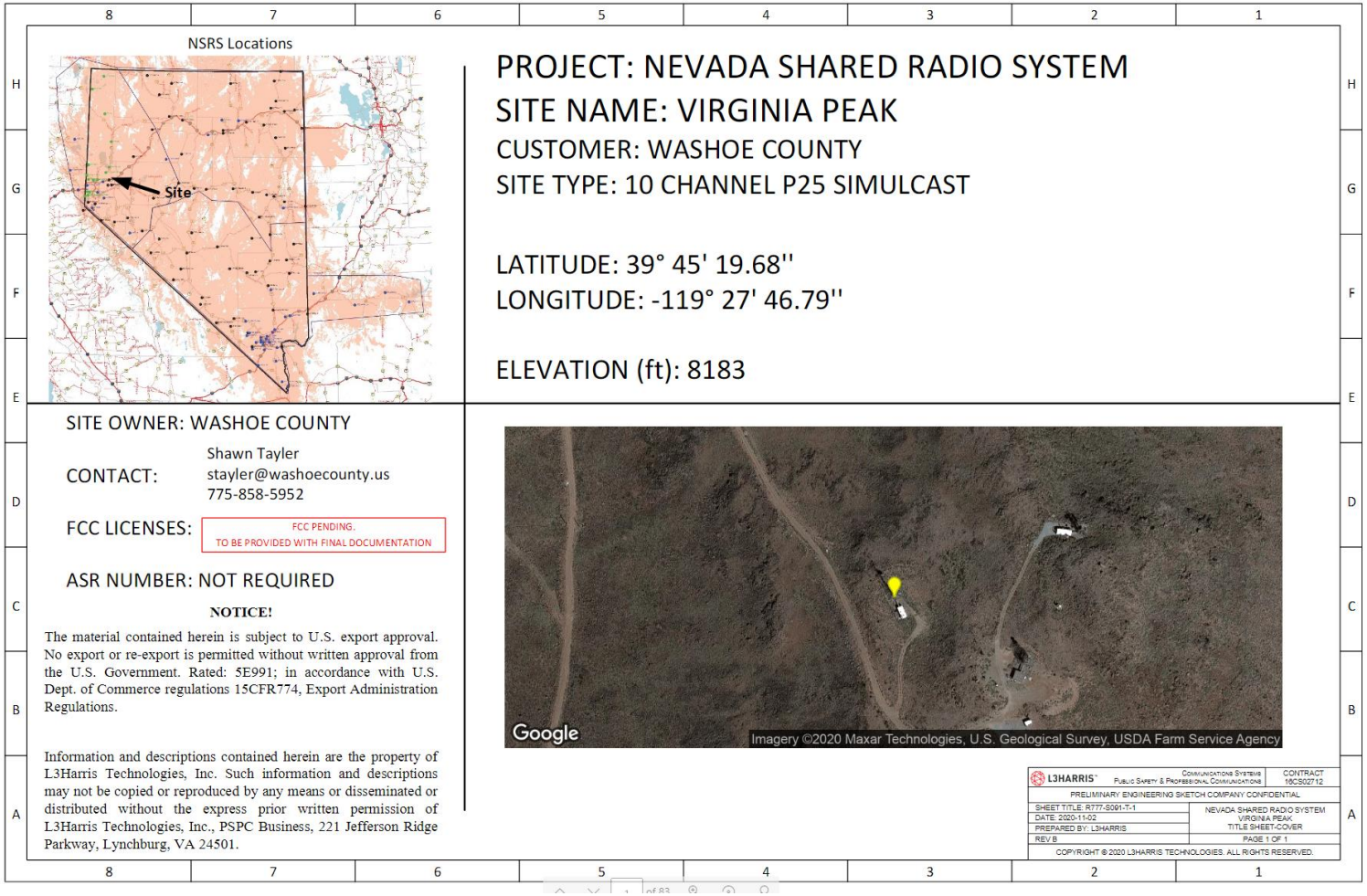
- BLM Permit process delays
- Budget approval for increased costs



Virginia Pk. Radio

This site will provide public safety communication to Warm Springs area

- Architectural detail design completed
- Geotechnical study completed
- Environmental (NEPA) & Archeological report Completed
- BLM Registration Completed
- BLM Permit Completed
- Planned construction date: Completed
- Planned go-live date: Summer 2024
- 100% Done



NSRS Locations

Site

PROJECT: NEVADA SHARED RADIO SYSTEM
SITE NAME: VIRGINIA PEAK
CUSTOMER: WASHOE COUNTY
SITE TYPE: 10 CHANNEL P25 SIMULCAST

LATITUDE: 39° 45' 19.68''
LONGITUDE: -119° 27' 46.79''

ELEVATION (ft): 8183

SITE OWNER: WASHOE COUNTY

CONTACT: Shawn Tayler
stayler@washoecounty.us
775-858-5952

FCC LICENSES: FCC PENDING.
TO BE PROVIDED WITH FINAL DOCUMENTATION

ASR NUMBER: NOT REQUIRED

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L3HARRIS Communications Systems Public Safety & Professional Communications | CONTRACT 16CS02712

PRELIMINARY ENGINEERING SKETCH COMPANY CONFIDENTIAL

SHEET TITLE: R777-S091-T-1	NEVADA SHARED RADIO SYSTEM VIRGINIA PEAK TITLE SHEET-COVER
DATE: 2020-11-02	
PREPARED BY: L3HARRIS	
REV B	PAGE 1 OF 1

Smokey Ct.

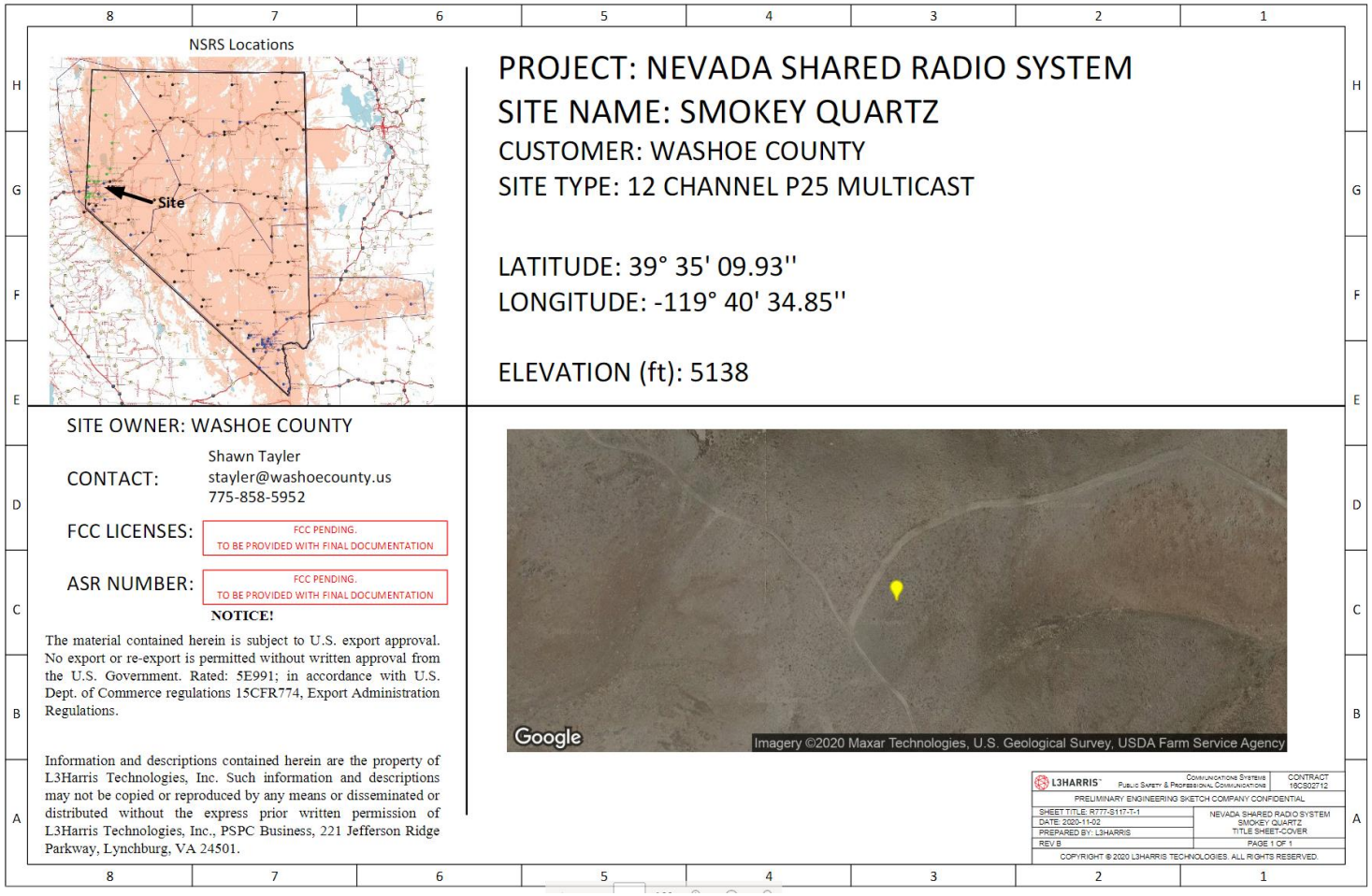
These sites will provide public safety communication to Warm Spring area:

Smokey Courts

- Architectural detail design completed
- Geotechnical study completed
- Environmental (NEPA) & Archeological report underway
- BLM Registration Completed
- BLM Pending Approval
- Planned construction date: July 2023 - May 2024
- Planned go-live date: July 2025 - May 2026

Timeline Dependencies:

- BLM Permit process delays
- Budget approval for increased costs



POITO

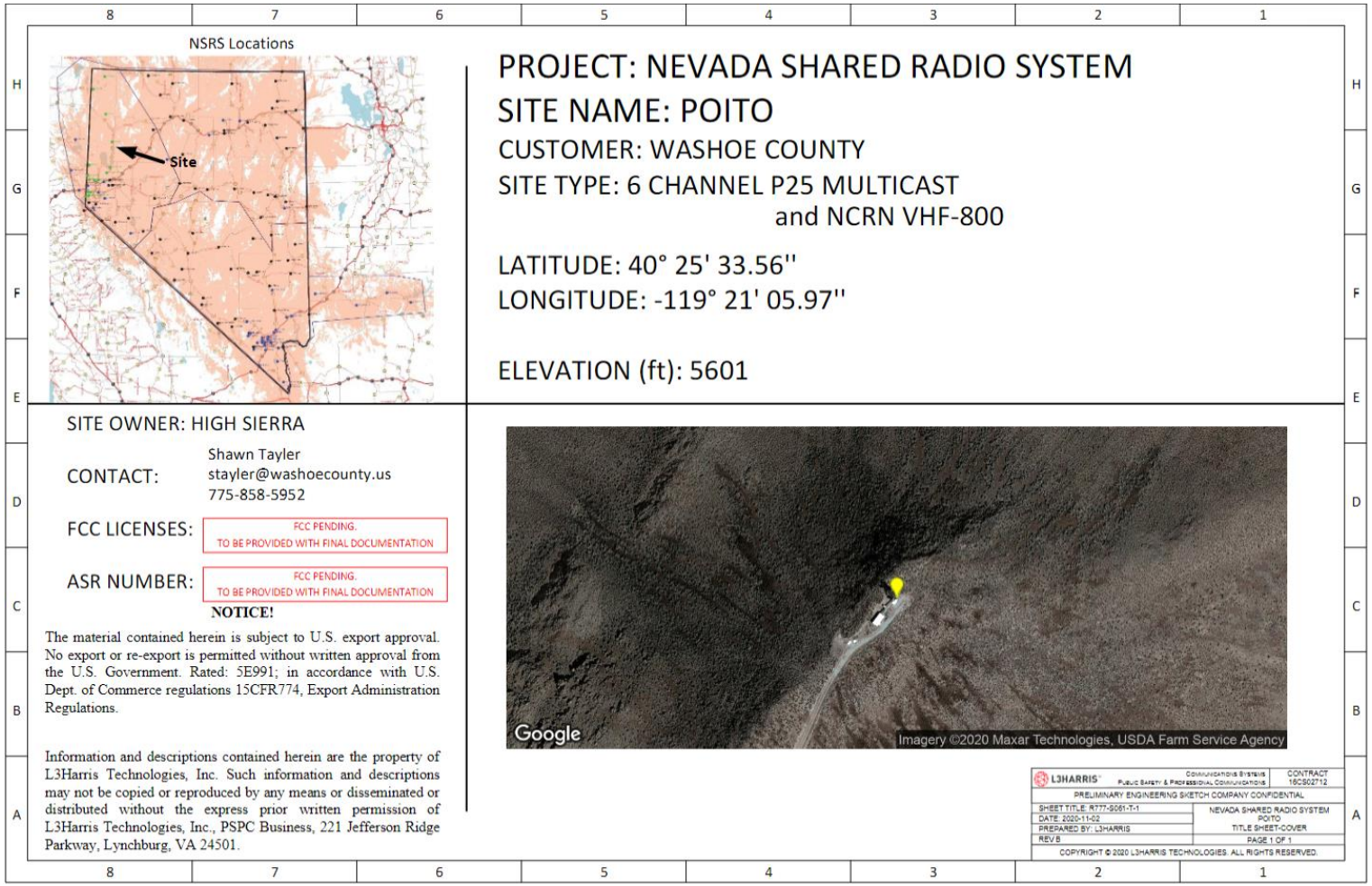
These sites will provide public safety communication to Warm Spring area:

POITO

- Architectural detail design completed
- Geotechnical study completed
- Environmental (NEPA) & Archeological report underway
- BLM Registration Completed
- BLM Pending Approval
- Planned construction date: Jan 2024 - Dec 2024
- Planned go-live date: July 2026 – June 2027

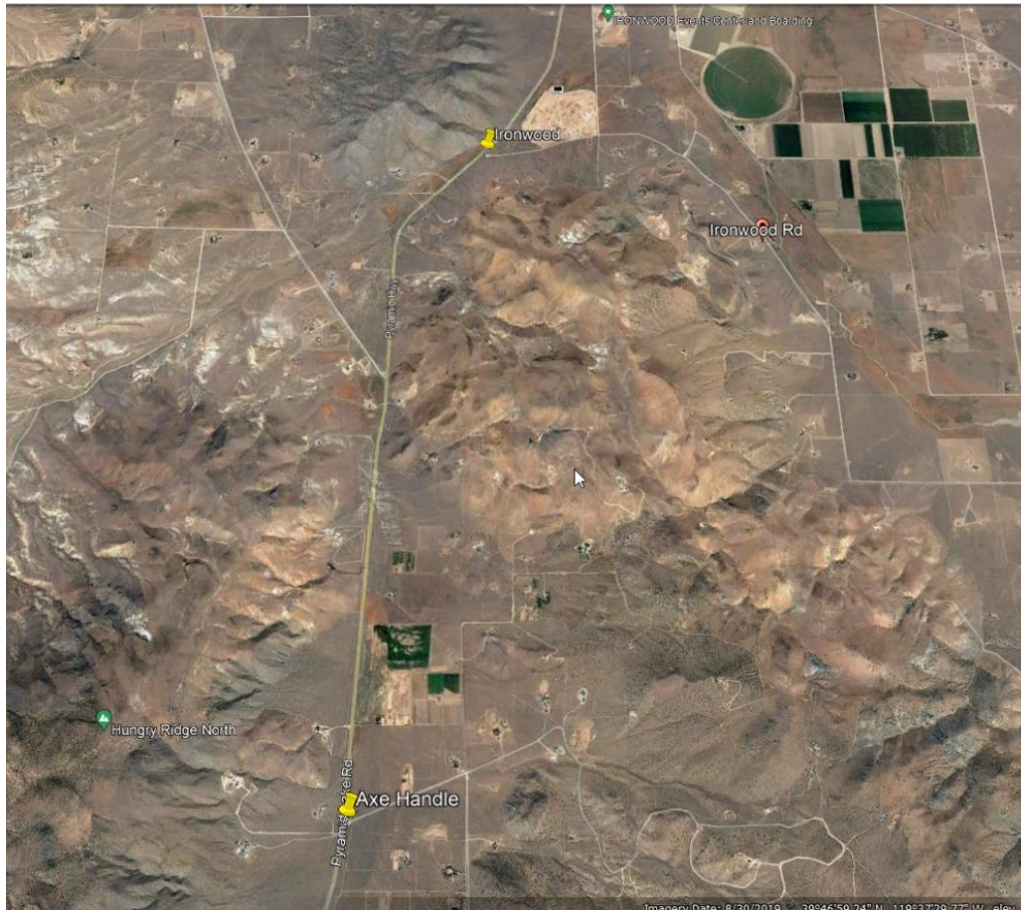
Timeline Dependencies:

- BLM Permit process delays
- Budget approval for increased costs



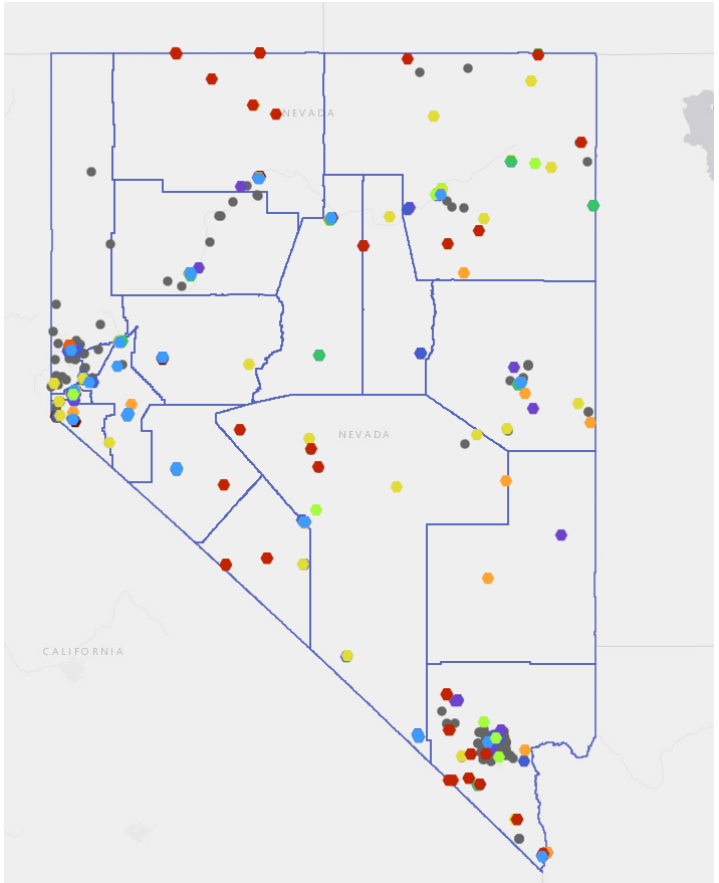
Cellular Issues (Dead Zone)

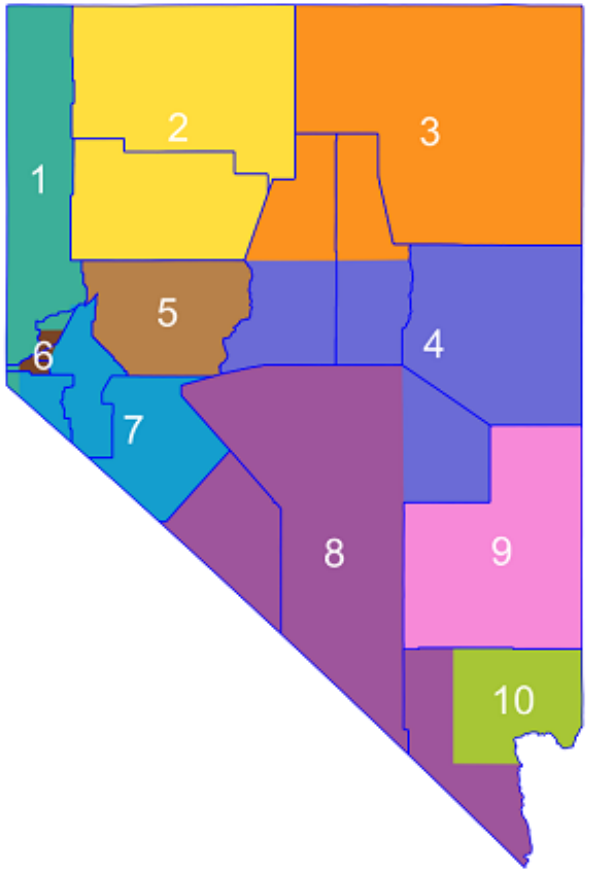
- AT&T
- Verizon
  - Adjustments to existing sites
  - Additional cell site partnership



High Speed Nevada Initiative (HSNI)

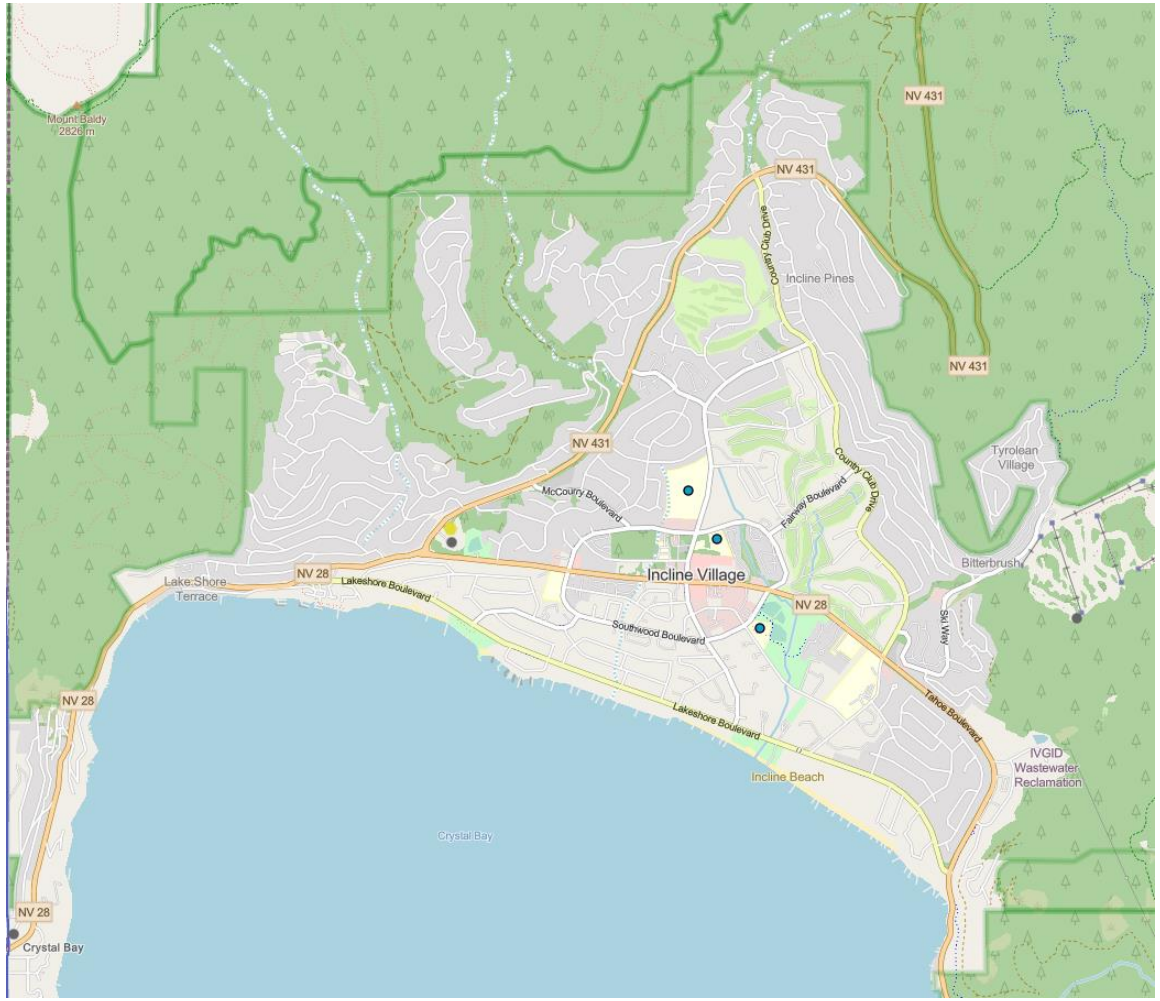
- High Speed Nevada Initiative Phase I
- In Phase I of this project OSIT solicited bids from internet service providers to bring fiber based broadband transport services to over 1,000 State and Local Government Facilities, Schools and Libraries, and other community anchor institutions. These 1,000 facilities are located in every county and in nearly every community of the state. OSIT issued RFPs for 10 regions and solicited bids to serve every facility in the region.
- High Speed NV Initiative Phase II
- In Phase II of HSNV, OSIT will work with County Broadband Action Teams to identify unserved residential and business locations. Counties will select a service provider partner(s) in a fair, open, and competitive process. The County-provider partnership together will submit a plan to OSIT for last-mile funding. OSIT will not award funding directly to an individual provider. County-provider partnerships will be the only eligible applicants for BEAD and other last-mile funding.

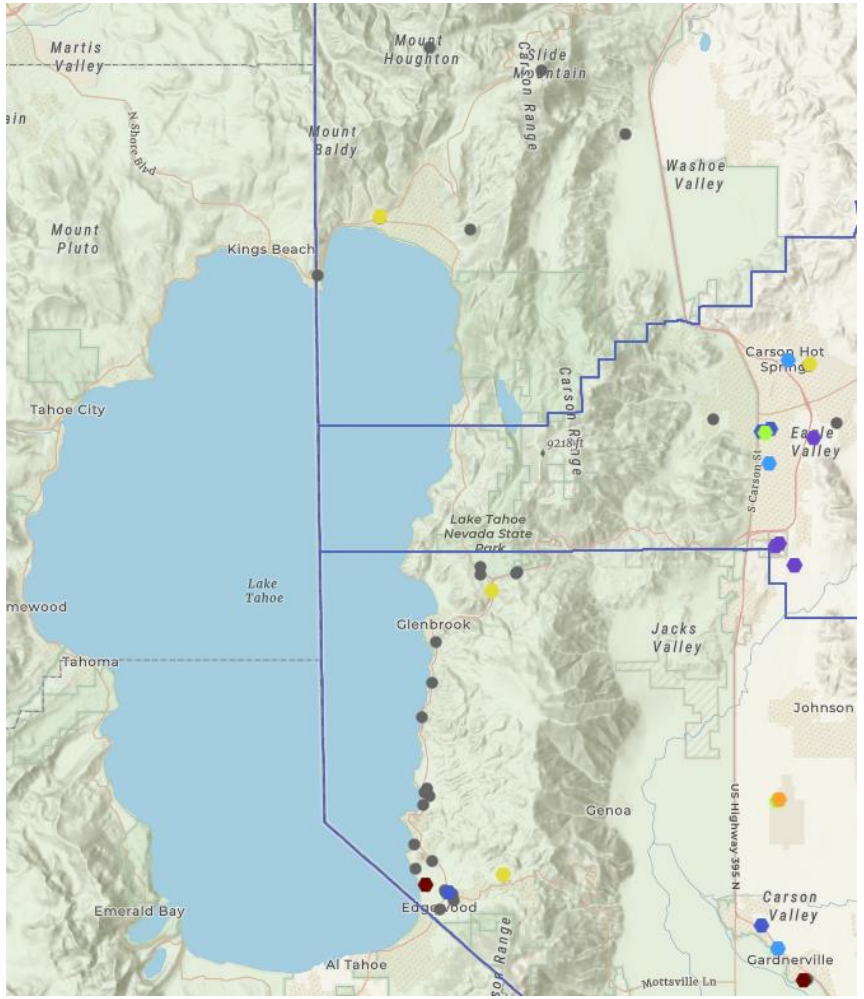




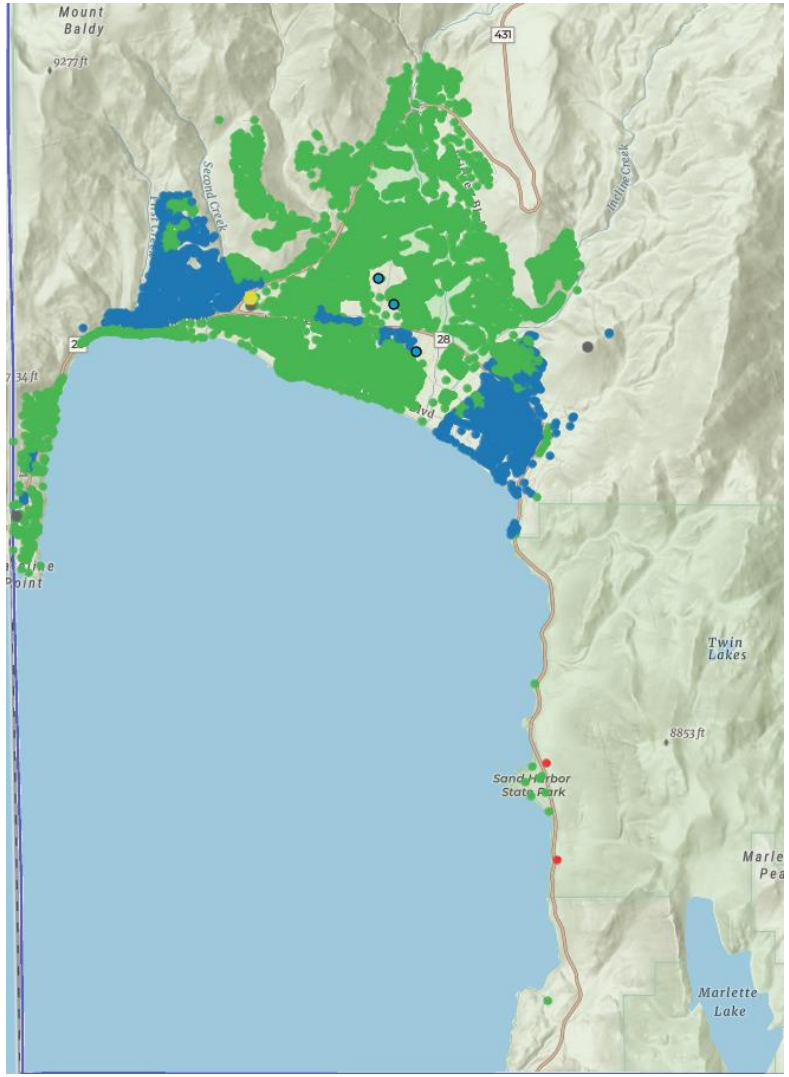
Region Facilities Impacted

- State facilities
- County facilities

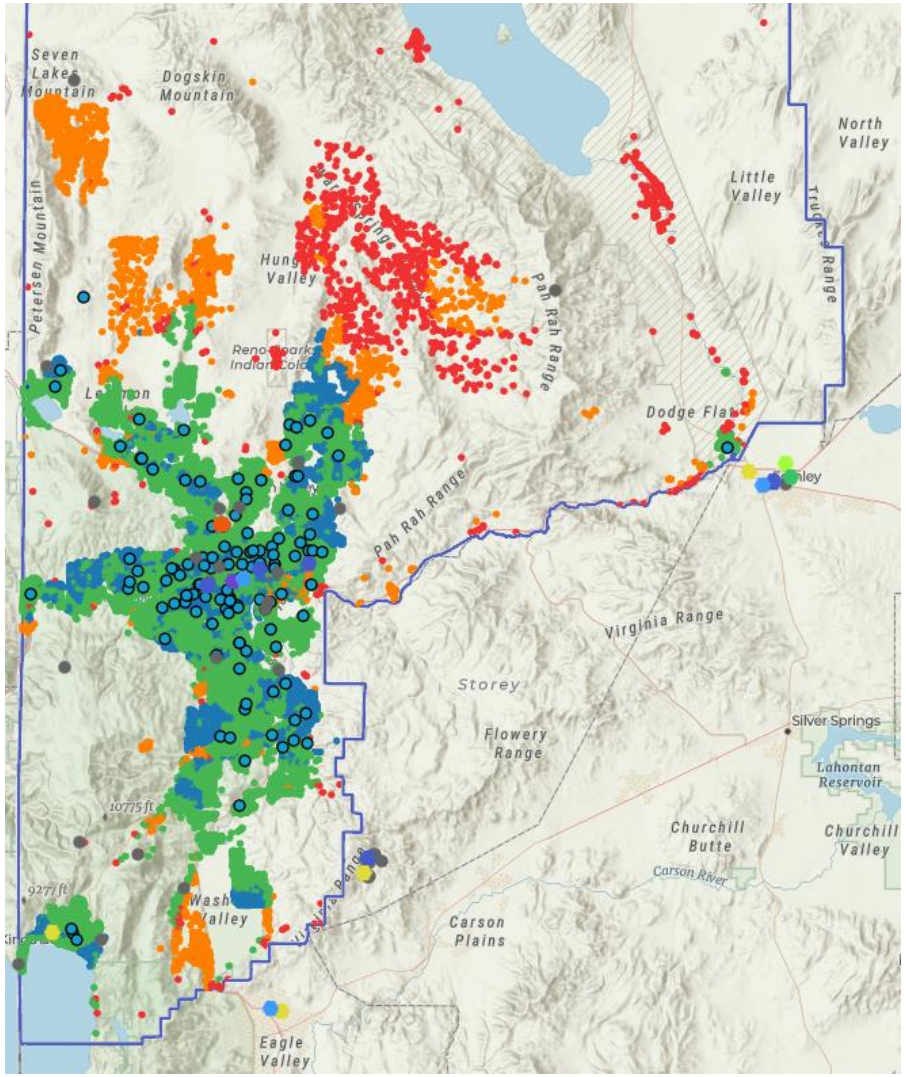




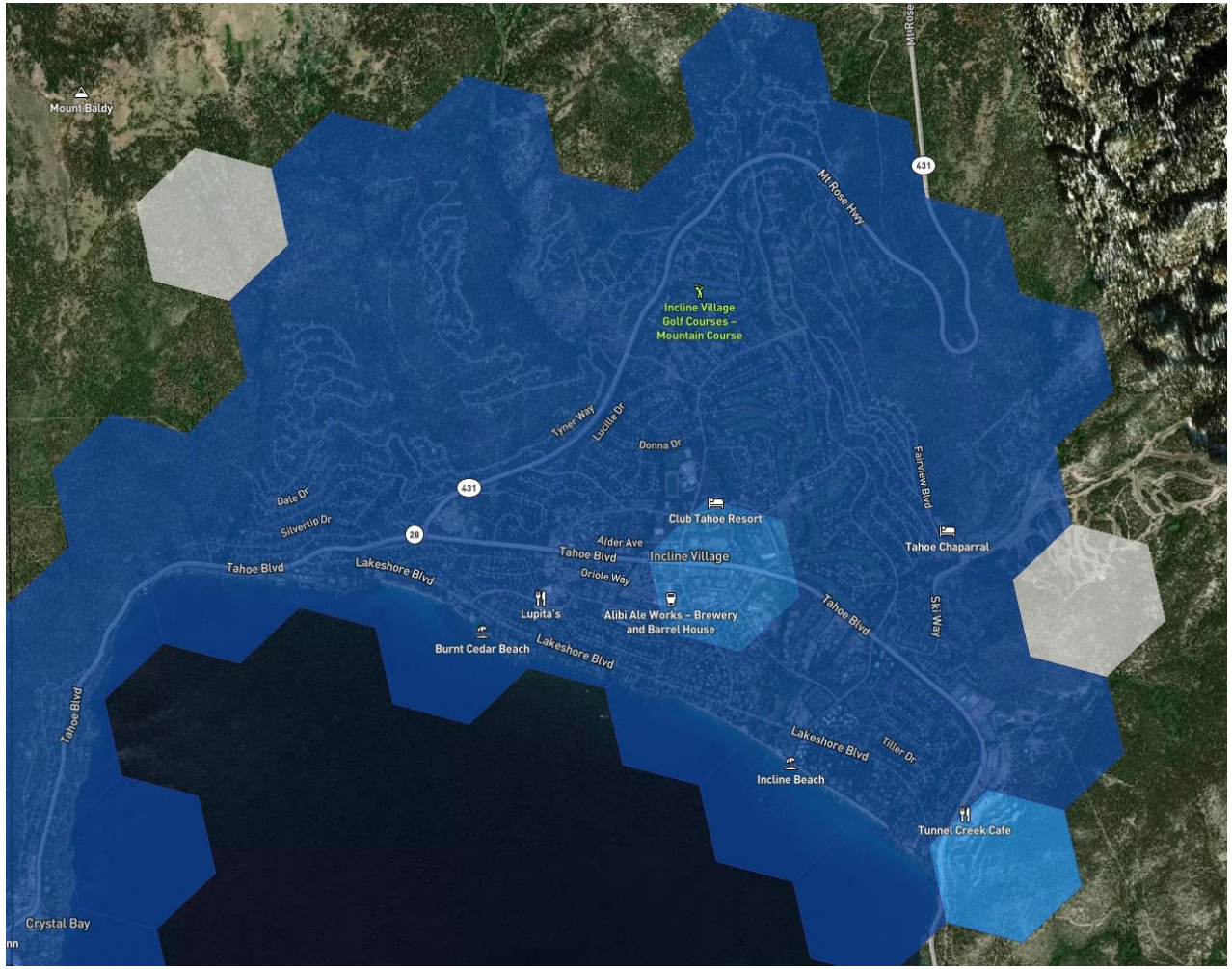
Community Broadband Fabric



Orange = Copper / Telephone Line / DSL
Red = Fixed Wireless
Green = Cable Modem
Blue = Fiber



Incline Coverage FCC Map



Charter is enhancing service at the Lake and specifically in Incline.

Map Legend

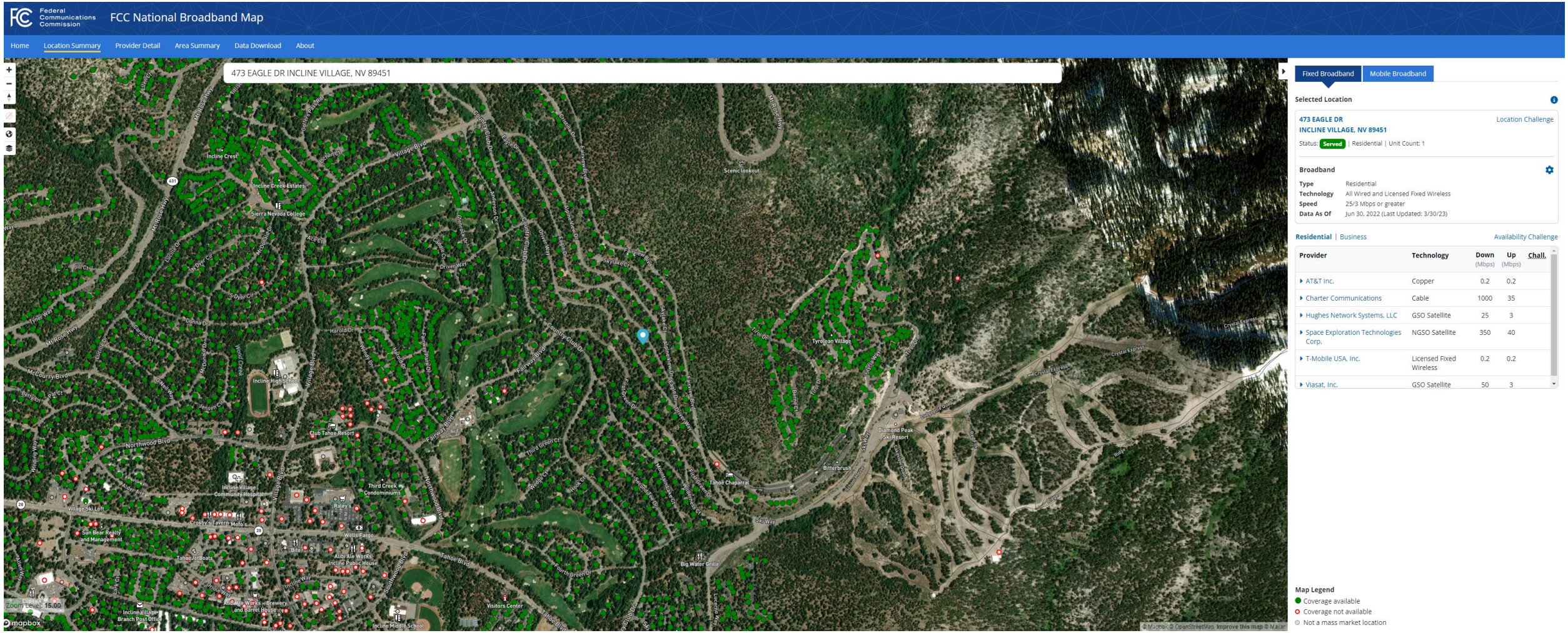
Served Units Percentage

- 0%
- 0 - 20%
- 20 - 40%
- 40 - 60%
- 60 - 80%
- 80 - 100%

What Can You Do?

- If you aren't using ACP and would qualify, reach out to your ISP
- Research broadband option in your area
  - Home | FCC National Broadband Map
- Challenge ISP broadband claim
  - Home | FCC National Broadband Map
- State's website
  - Broadband (nv.gov)
- OSIT broadband map
  - Nevada Broadband Map (arcgis.com)

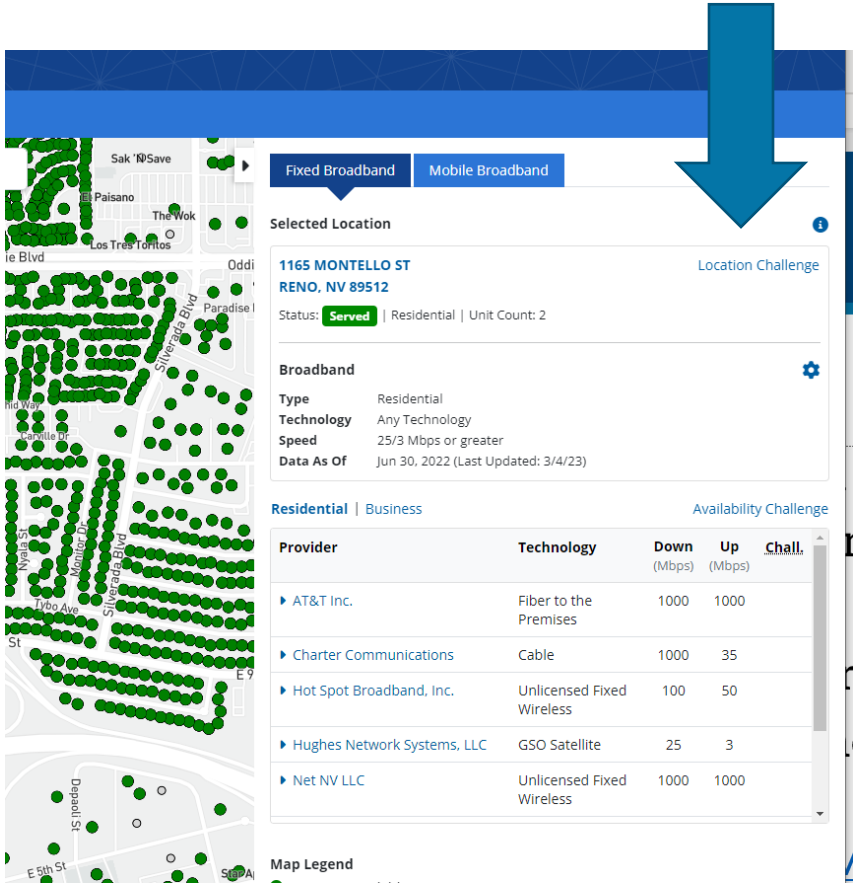
Research Broadband Options / Challenge

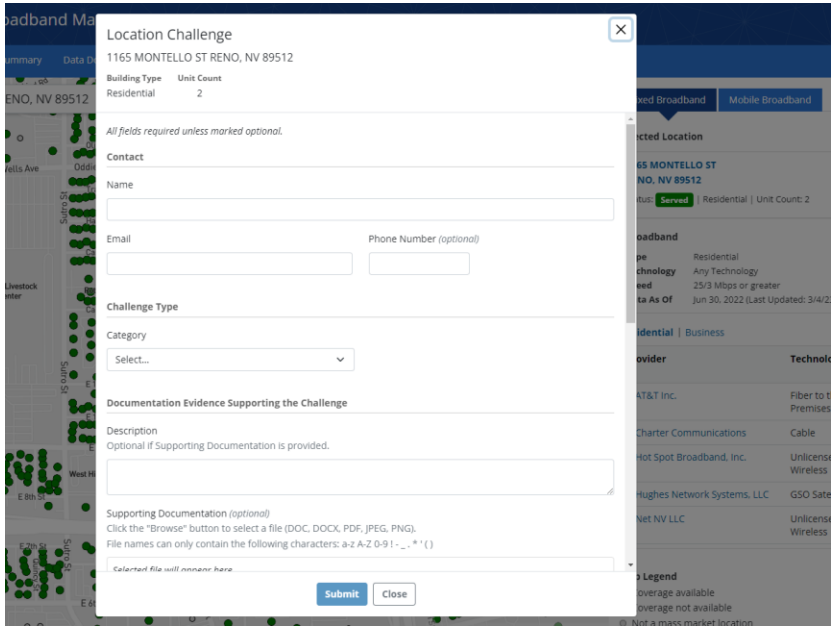


Home | FCC National Broadband Map

ISP Broadband Challenge Option

- Go to the FCC Broadband map:
  - [Home | FCC National Broadband Map]
- Find your address on the map
- Review ISP claim on the right.
- If it's inaccurate, click on "Location Challenge" link
- Fill out the form and submit





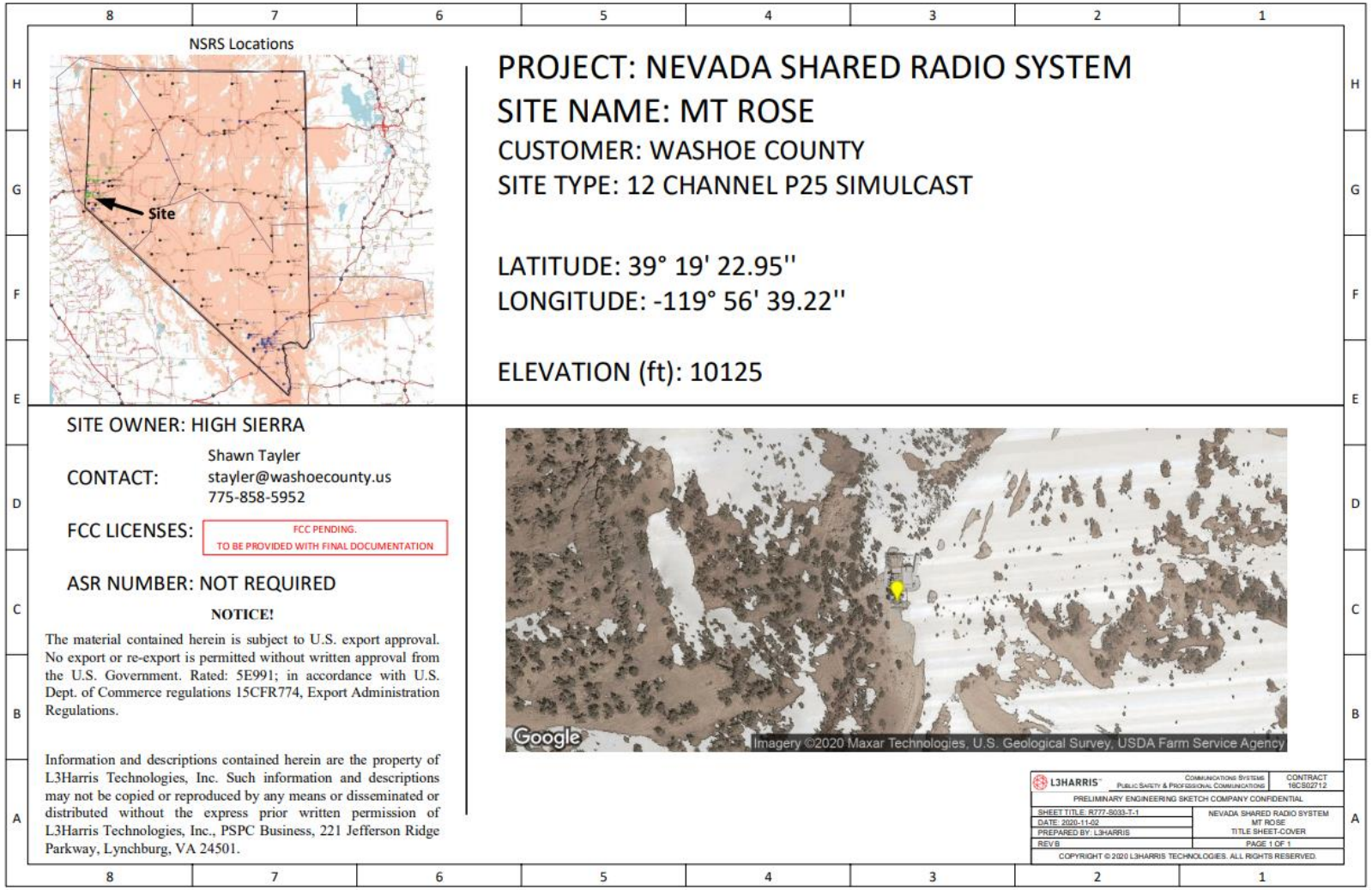
800 Mhz Radio Upgrade

Sites impacting Incline Village

- Radio Sites
- Mt. Rose
- Slide Mtn.
- Snowflake
- Biltmore (Pending ELK decision)
- Incline Dispatch / Sheriff Substation (temp)
- Current schedule: October 2024

Mt. Rose 800MHz Radio Upgrade

- Mt. Rose:
- All site remediation complete.
- Microwave Backhaul install complete.
- To be Completed:
  - Install racks
  - Install and Ground P25 equipment
  - Connect power
  - Connect alarms
  - Hang antennas
  - Timeline



NSRS Locations

PROJECT: NEVADA SHARED RADIO SYSTEM
SITE NAME: MT ROSE
CUSTOMER: WASHOE COUNTY
SITE TYPE: 12 CHANNEL P25 SIMULCAST

LATITUDE: 39° 19' 22.95"
LONGITUDE: -119° 56' 39.22"

ELEVATION (ft): 10125

SITE OWNER: HIGH SIERRA

CONTACT: Shawn Tayler
stayler@washoecounty.us
775-858-5952

FCC LICENSES: FCC PENDING.
TO BE PROVIDED WITH FINAL DOCUMENTATION

ASR NUMBER: NOT REQUIRED

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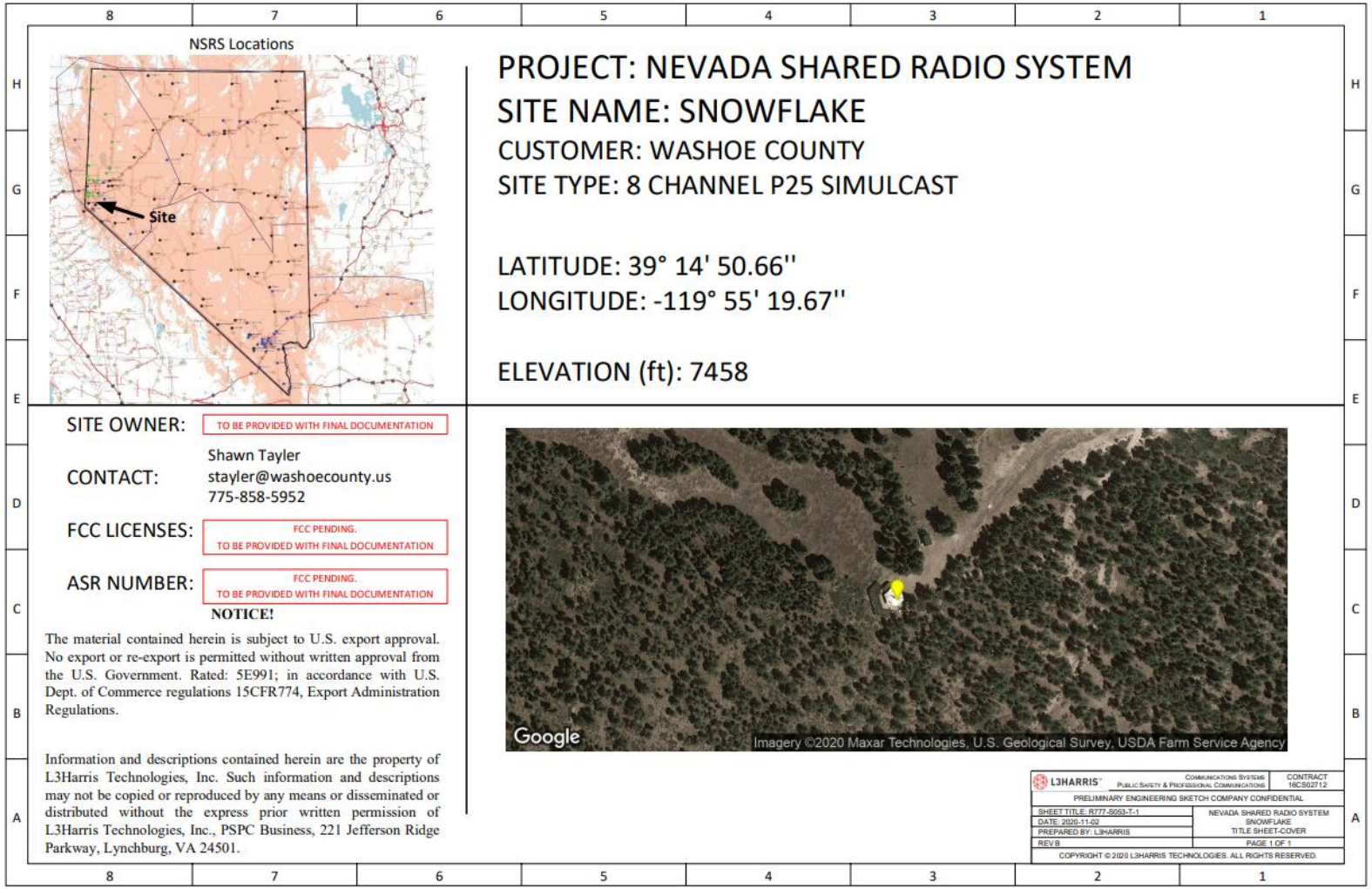
L3HARRIS COMMUNICATIONS SYSTEMS PUBLIC SAFETY & PROFESSIONAL COMMUNICATIONS
CONTRACT 18CS02712
PRELIMINARY ENGINEERING SKETCH COMPANY CONFIDENTIAL
SHEET TITLE: R777-S033-T-1
DATE: 2020-11-02
PREPARED BY: L3HARRIS
REV B
NEVADA SHARED RADIO SYSTEM
MT ROSE
TITLE SHEET-COVER
PAGE 1 OF 1

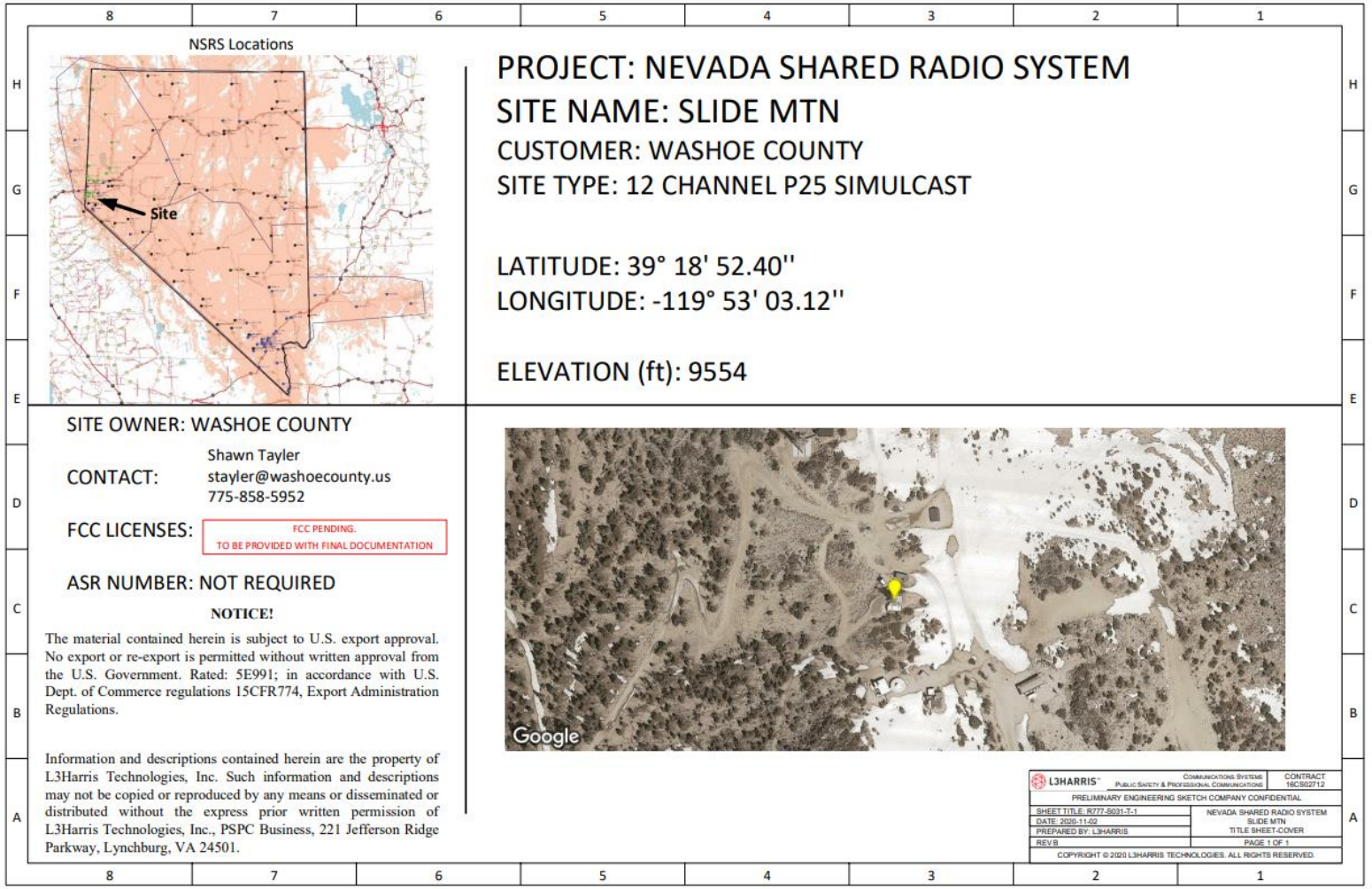
Snowflake 800MHz Radio Upgrade

- All site remediation complete
- Microwave Backhaul install complete
- To be completed:
  - Install racks
  - Install and Ground P25 equipment
  - Connect power
  - Connect alarms
  - Hang antennas



Slide Mtn. 800MHz Radio Upgrade

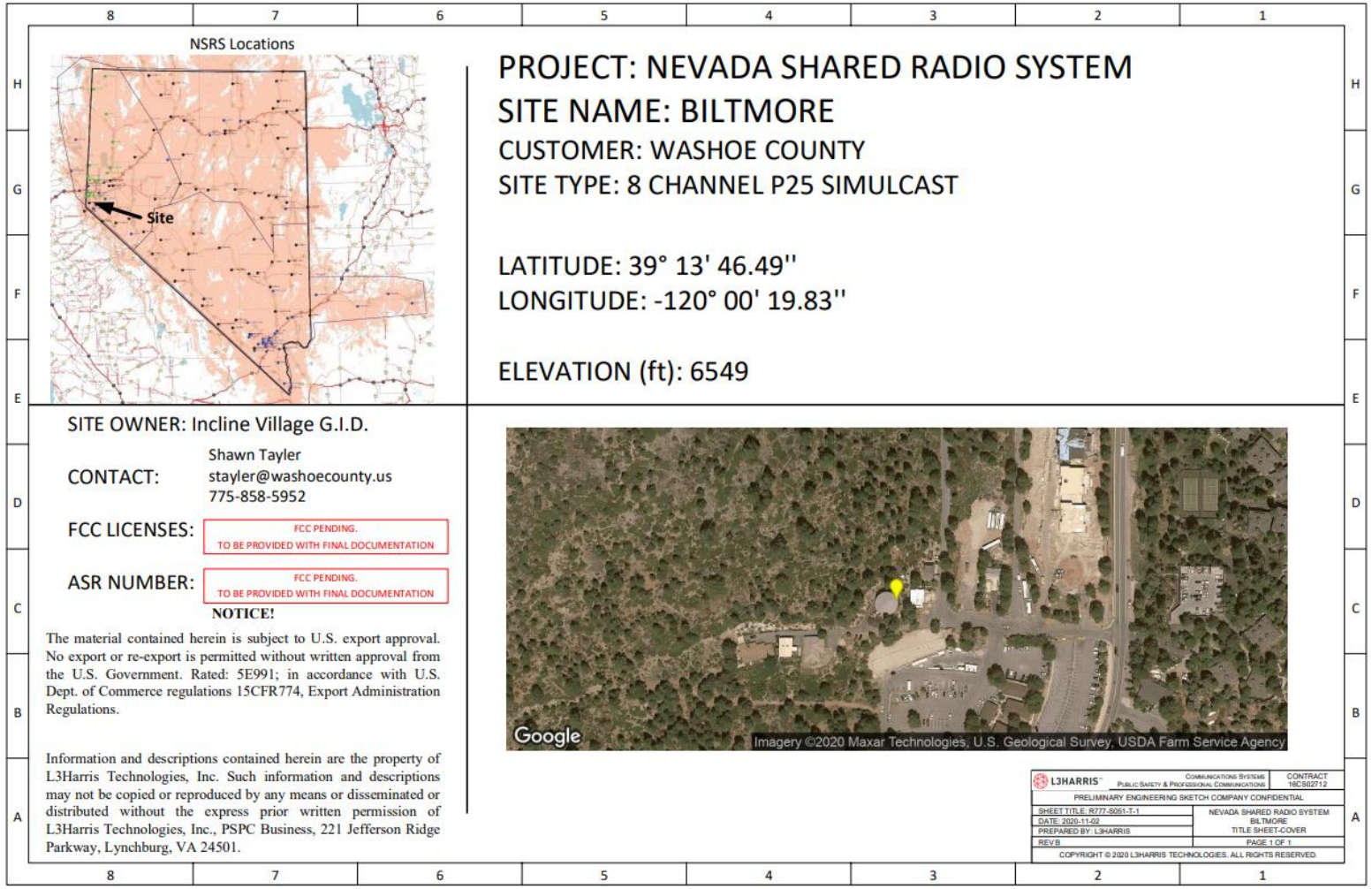
- All site remediation complete, exception – new generator install in July or August (when site is accessible).
- Microwave Backhaul install complete.
- To be Completed:
  - Install racks
  - Install and Ground P25 equipment
  - Connect power
  - Connect alarms
  - Hang antennas



Biltmore 800MHz Radio Upgrade

- Biltmore on hold because of the property ownership change. Ideally, at Biltmore, we're able to stay at the same location and only build a shelter for radio equipment.

- We're planning to use a temporary P25 site at the Sherriff's substation on Hwy 431 until the Biltmore situation is resolved.



Next Step

- Radio:
  - Push BLM for permit process start
  - Address budget needs for Radio funds in FY 23-24
- Broadband:
  - Work with the State OSIT regarding WC facilities
  - Identify vendors for partnership opportunities for community broadband in North Valleys & Spanish Springs
  - Community broadband grant opportunities
  - Partnership opportunities with businesses and agencies
- Cellular:
  - Identify dead spots
  - Push providers for additional cell sites
- Digital Equity Program / Website
  - Access to affordable, high-speed internet
  - Access to affordable technology requirements
  - Access to relevant and high quality, effective training and support for digital skill development and use

Thank you

Questions?

Behzad Zamanian
bzamanian@washoecounty.gov