Digital Equity

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E-connectivity: A modern-day necessity

The COVID-19 pandemic shed light on what many Americans already knew: access to the internet is a necessity for everyday life.

- The government-backed and funded *Internet for All* effort will meaningfully address fundamental economic, educational, social and health-related inequities in our country by connecting Americans and closing the digital divide.

- The rural broadband initiative will provide an investment that will create an economy where Americans can participate from anywhere… and compete everywhere.

Why rural access is so important, to everyone, and not just rural residents

- Increase U.S. productivity by fostering economic development, job growth, rural entrepreneurship, and innovative technologies.
- Improved operations to allow reliable, real-time information to oversee operations, manage finances, and respond to international market conditions.
- Telemedicine opportunities, both preventive and reactive to controlled substance registries and remote addition treatment for an overall healthier country and state.
- Educational opportunities for children and adult learners requires modern connectivity to compete on a global basis.
- The global digital marketplace can allow for e-commerce products and services from rural businesses.

What is 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.

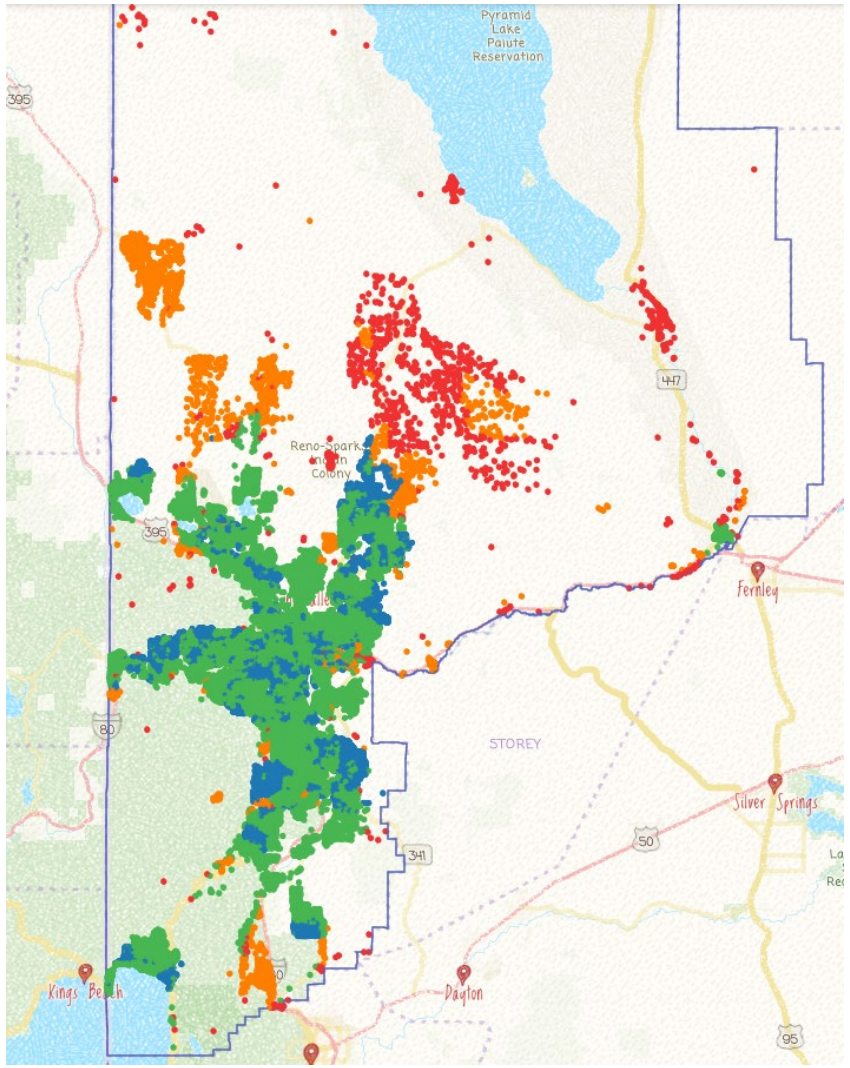
- In the context of Internet access, broadband is used to mean any high-speed Internet access that is always on and faster than dial-up access over traditional analog or traditionally copper phone lines.

Common 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.

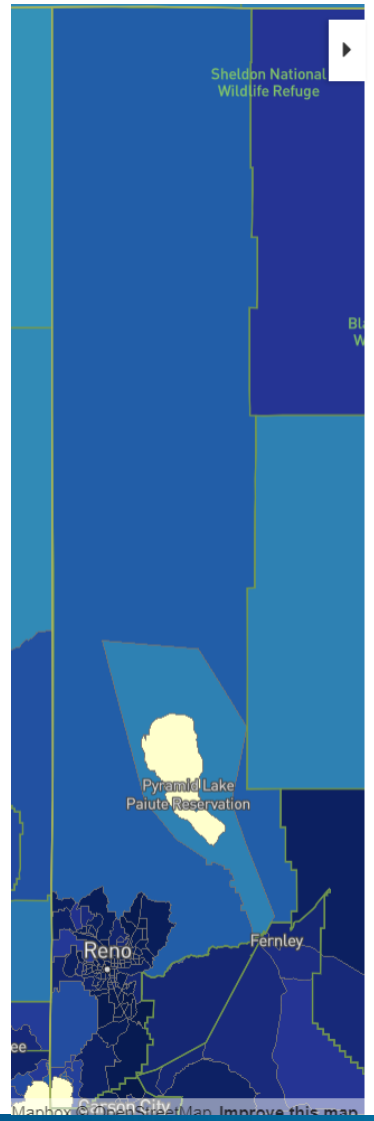
WC Connectivity Fabric

- 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

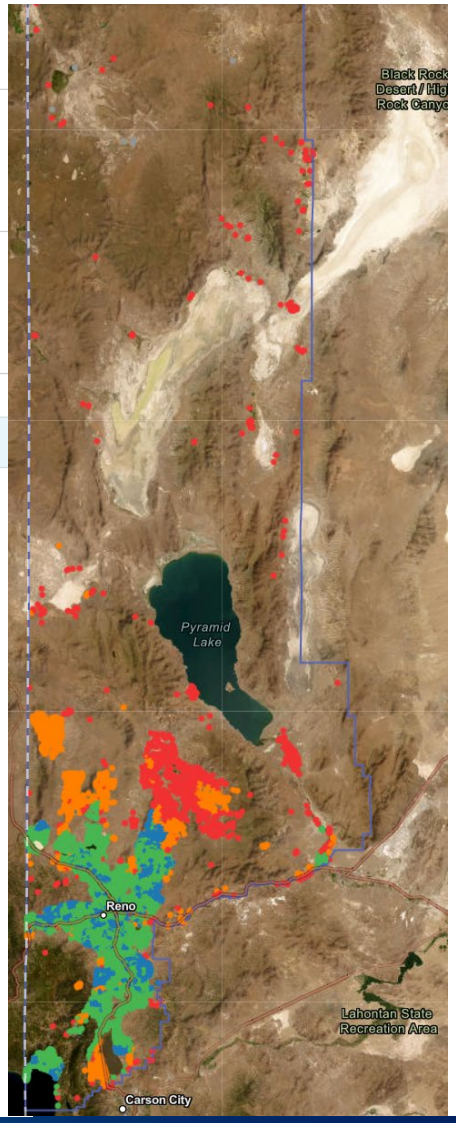
Number of Fixed Residential Broadband Providers

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

- PLAN:
  - Use PLPT fiber from i-80 to Nixon PLPT fiber
  - Build 55 miles of aerial fiber from Nixon to Gerlach
  - Light up Library, School District, Community Center, and Public Safety Stations, and other Cunty facilities
  - Apply for BID grant to pull fiber to homes in Gerlach
  - Vendor to offer affordable high-speed Internet to the community

- STATUS - 12/12/2022
  - Completed installation of 5 miles of fiber
  - Pole Inspection – Done - Replacing 85 poles
  - BLM Approval – Completed
  - PLPT City Council Approval – Completed
  - Fiber and Equipment – Received Nov 5th
  - NV Energy pole permit approved 132 poles - Nov 8th
  - NV Energy pole permit approved 120 poles on 15 Nov
  - NV Energy pole permit approval 160 poles 18Nov
  - Permission to change poles height over RR Crossing from 18.6 to 20.6ft – approved.
  - Construction Start Date – November 7th
  - Pending Items:
    - Remaining pole (440) permit approvals from NV Energy
    - Concrete pad permit on Road lot permit submitted
    - Building (modular building) permit in Gerlach
    - NV Energy authorization for electricity in Gerlach Building
    - DTS Bond required – Pending
    - BIA Approval for tribe land (3.4 miles) – pending Bond and application review
    - RR Crossing permits in Gerlach (2) Approval – Pending

Broadband - Gelach Timeline

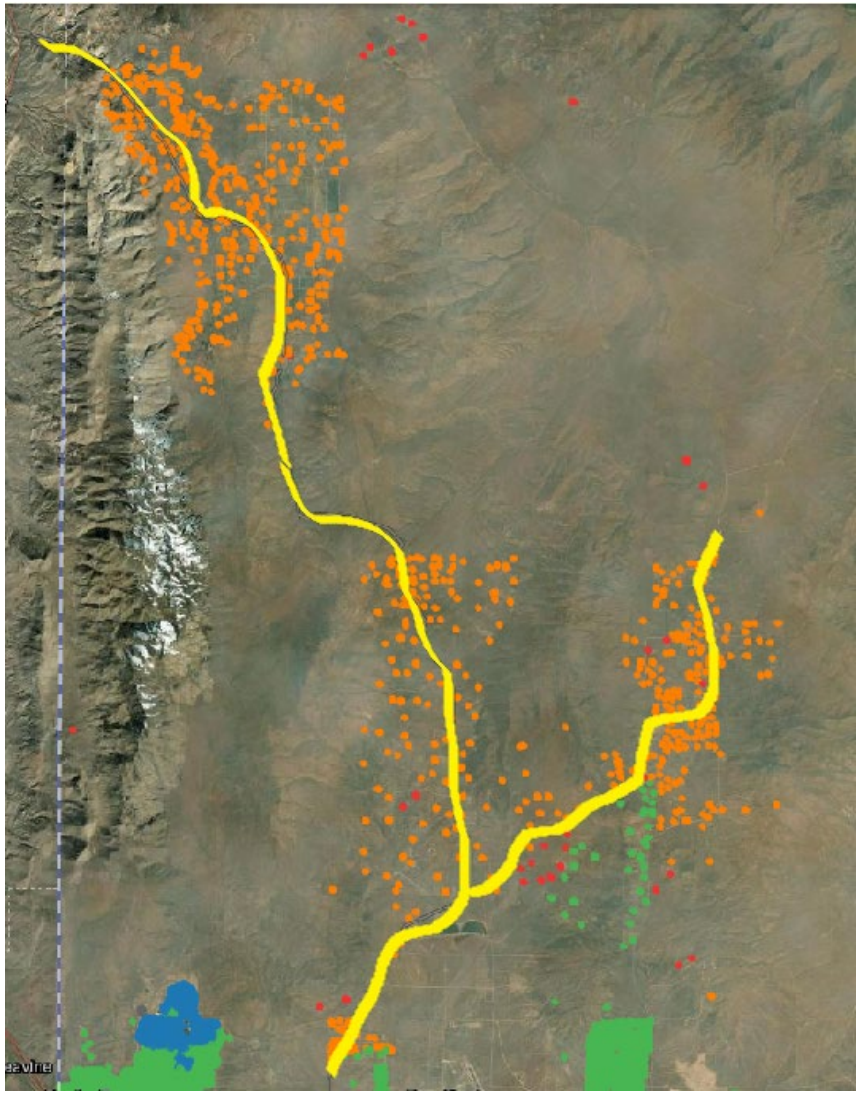
- Developed a working committee – February
- Developed and published RFP - March-April
- Reviewed proposals - April-May
- Awarded RFP to Digital Technology Solutions (DTS) – May
- Established MOU with PLPT on 6/17
- County Approval – June 28, 2022
- Implementation Timeline July 22 – June 23

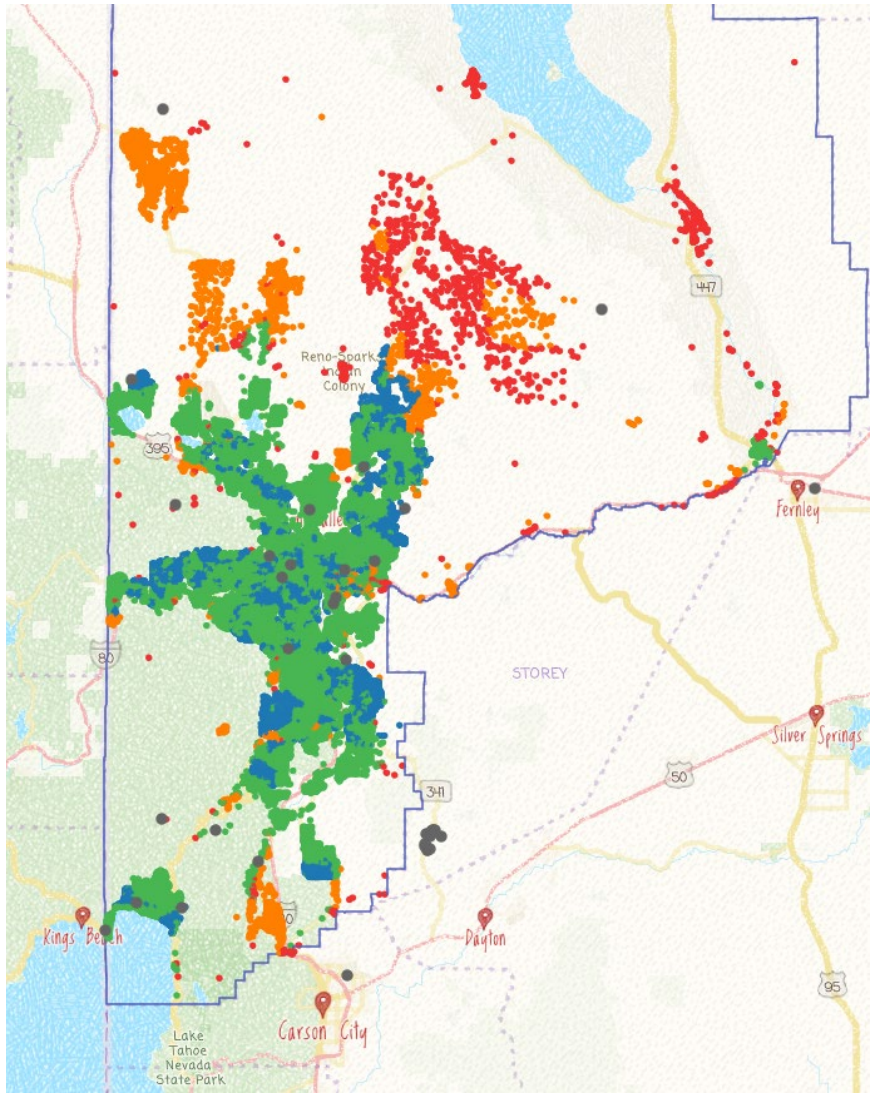
	Year 1			
	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Contact Award				
Federal / State / Local Permits / Environmental Assessment				
Engineering / Access / Civil / Structural Designs				
Develop and Submit EA Package to State, Federal, and Tribal Authorities				
Acquire Approval				
Tribal/County / City / ADOT ROW 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

- Red Rock Rd
- Antelope Valley Rd

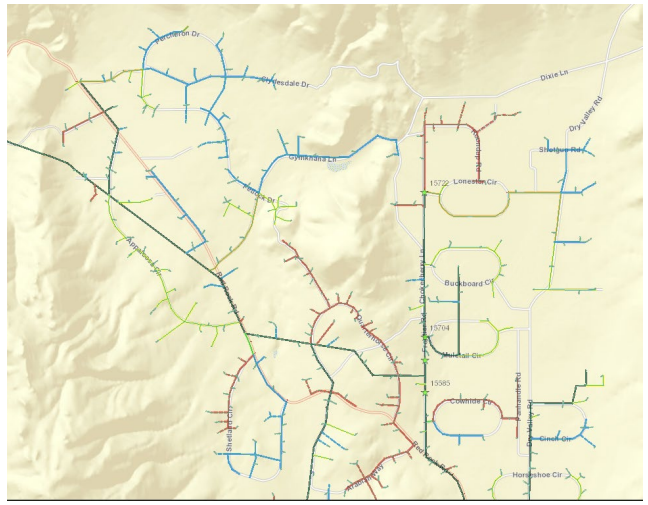
- Local Options
  - RTI
  - Plumas-Sierra
  - Starlink





Potential Projects / Options

- 18-24 months proposed option



- Short Term Options
  - Wireless 50mbps
  - Starlink partnership program???

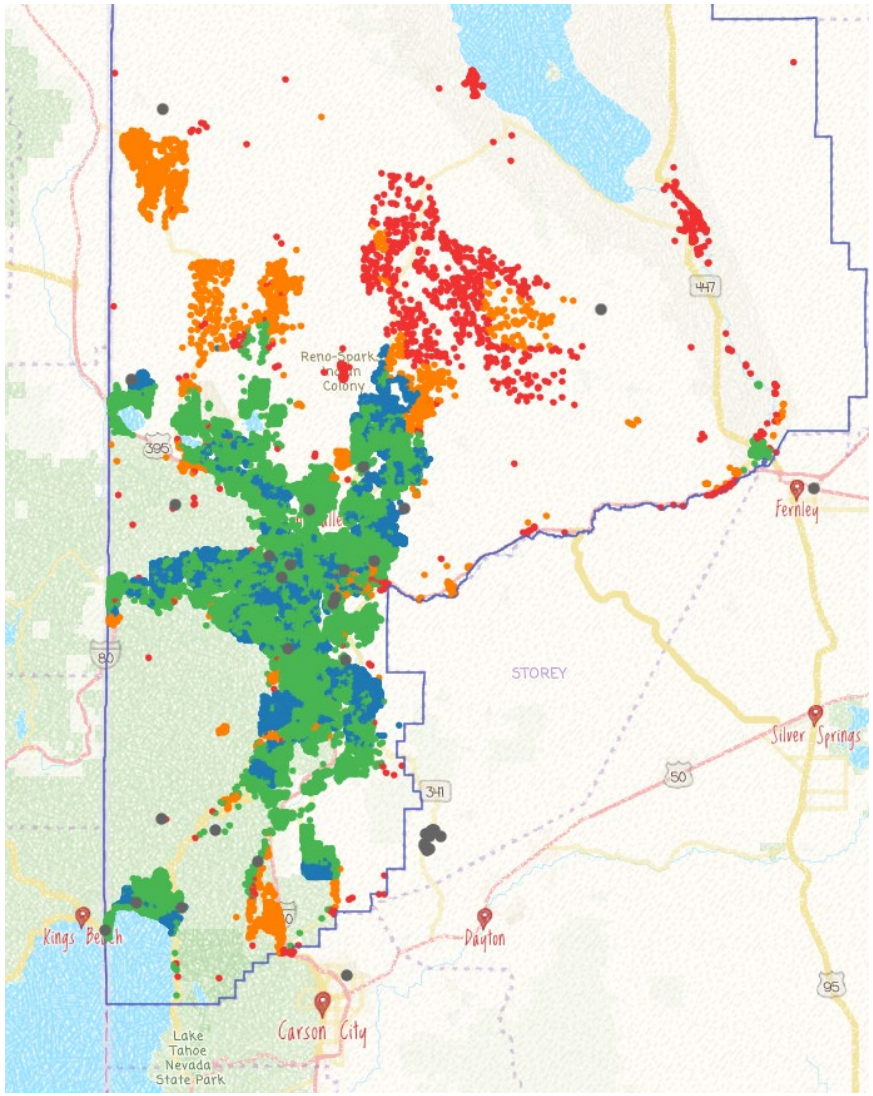
Residential Wireless Internet (Blue Areas on the Coverage Map Above)

Product	Monthly Cost	Equipment/Activation Fee	Install Fee	Download Speeds As Fast As
Pioneer 15	$65	$99	~~$125~~ Now Free	15 Mbps
Innovation 20	$75	$99	~~$125~~ Now Free	20 Mbps
Broadband 50	$85	$99	~~$125~~ Now Free	50 Mbps
Service Plan	$6.50	Service Repair Plan Information (PDF)		

Broadband – Spanish Springs

- Proposed Solution
  - Fiber/High Speed
  - Cellular

- Local Options
  - AT&T
  - Charter
  - PLPT
  - State
  - Others



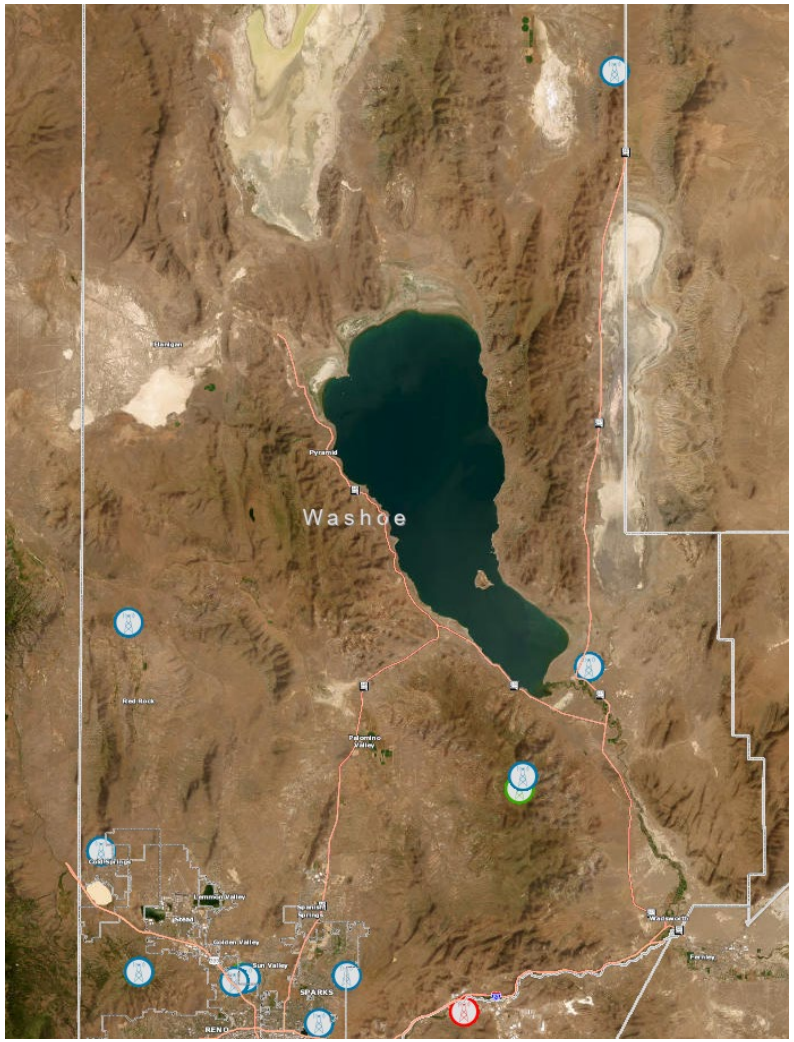
Radio and Cellular

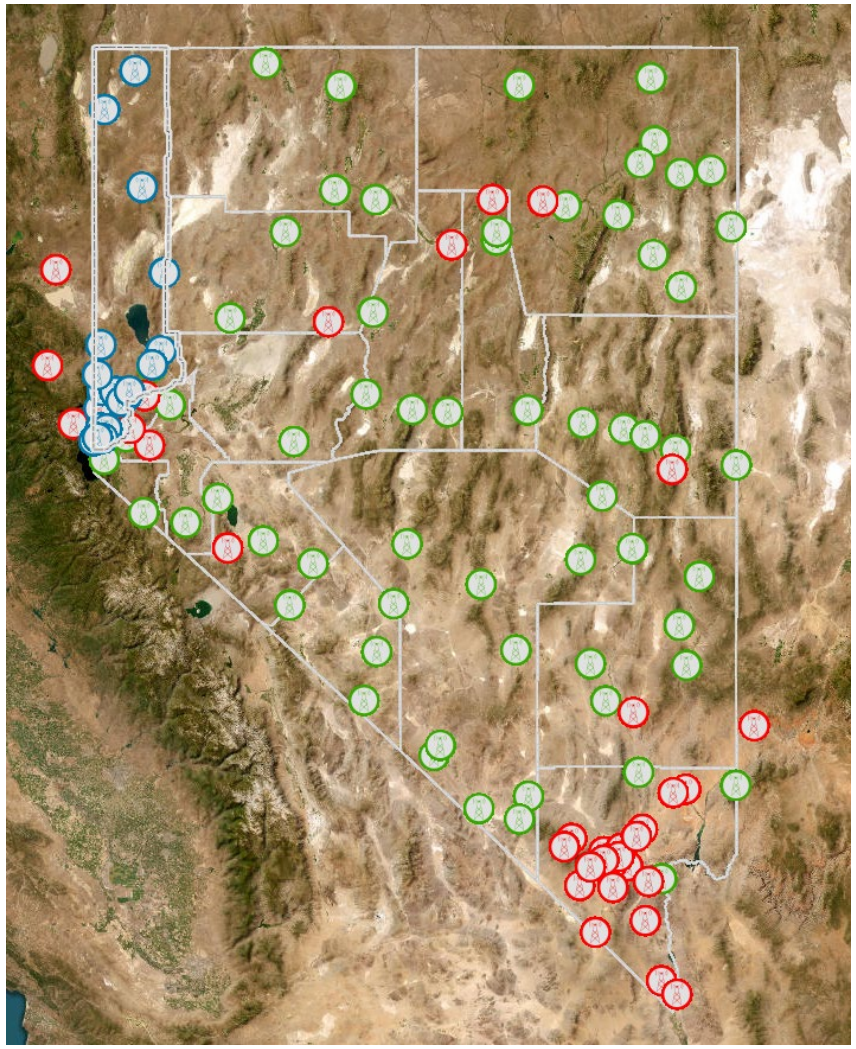
- **800MHz Regional Radio System**
  - Public safety radio systems (such as those used by police, firefighters and emergency medical technicians) operate in several portions of the 800 MHz band, which consists of spectrum at 806-824 MHz paired with spectrum at 851-869 MHz.

- **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.

800 MHz Radio Sites

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





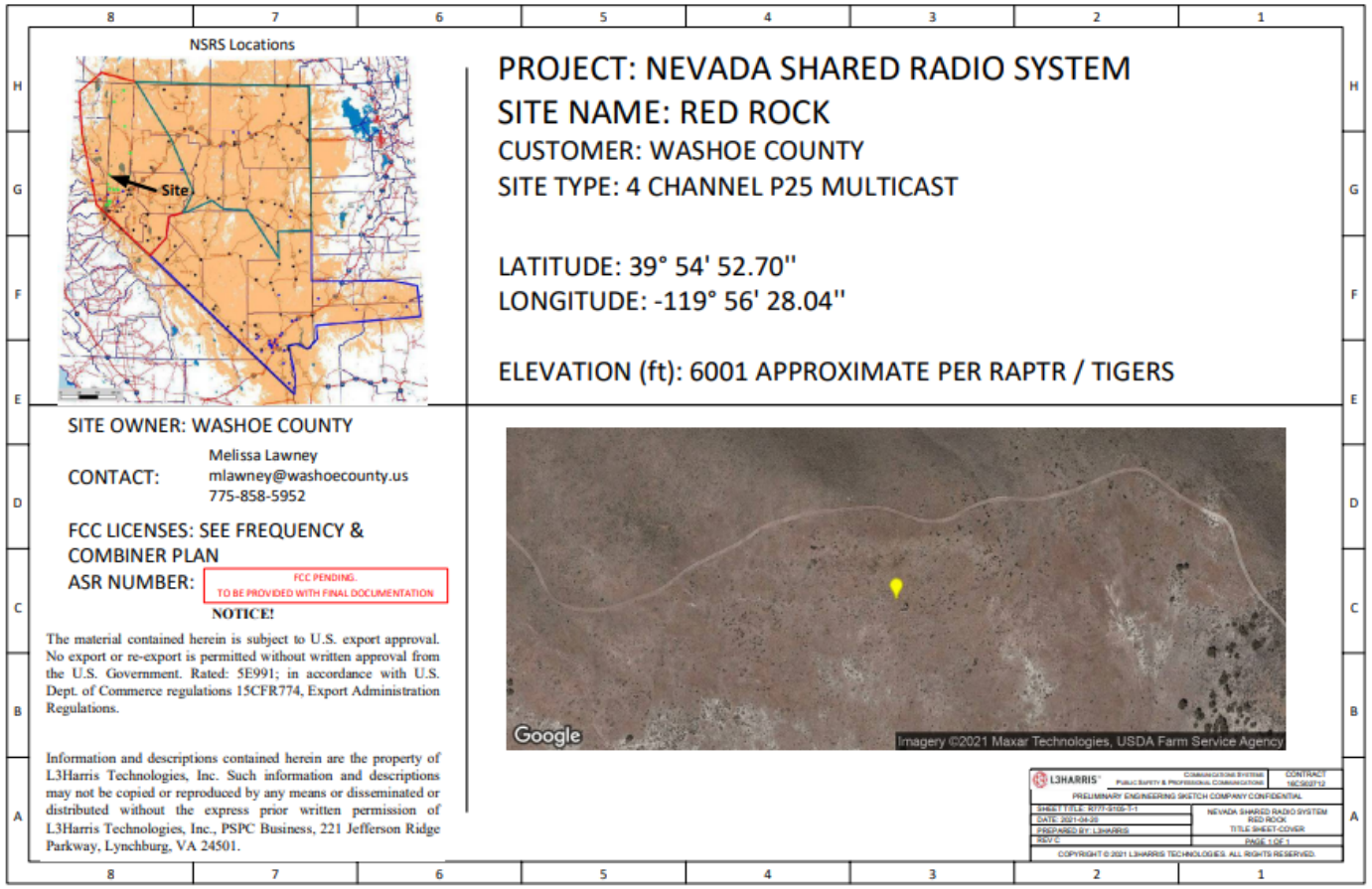
Red Rock Radio

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

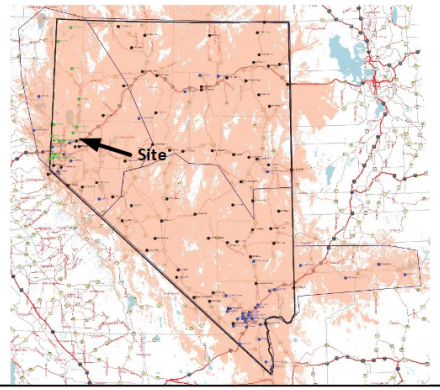


Virginia Pk. Radio

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



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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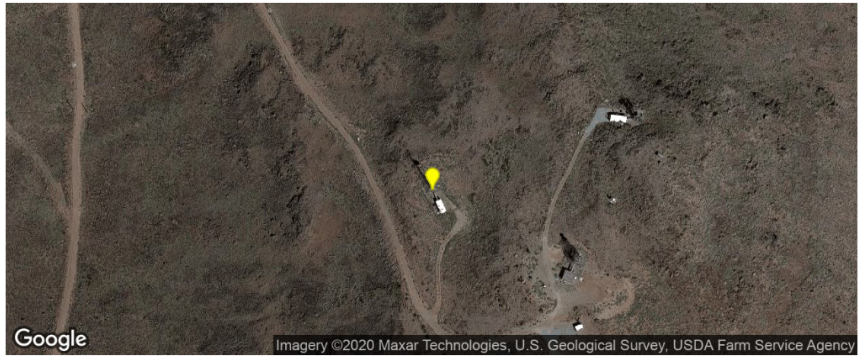


L3HARRIS Communications Systems Public Safety & Professional Communications | CONTRACT 16CS02712
PRELIMINARY ENGINEERING SKETCH COMPANY CONFIDENTIAL
SHEET TITLE: R77-S091-T-1 | NEVADA SHARED RADIO SYSTEM
DATE: 2020-11-02 | VIRGINIA PEAK
PREPARED BY: L3HARRIS | TITLE SHEET-COVER
REV B | PAGE 1 OF 1

Smokey Ct.

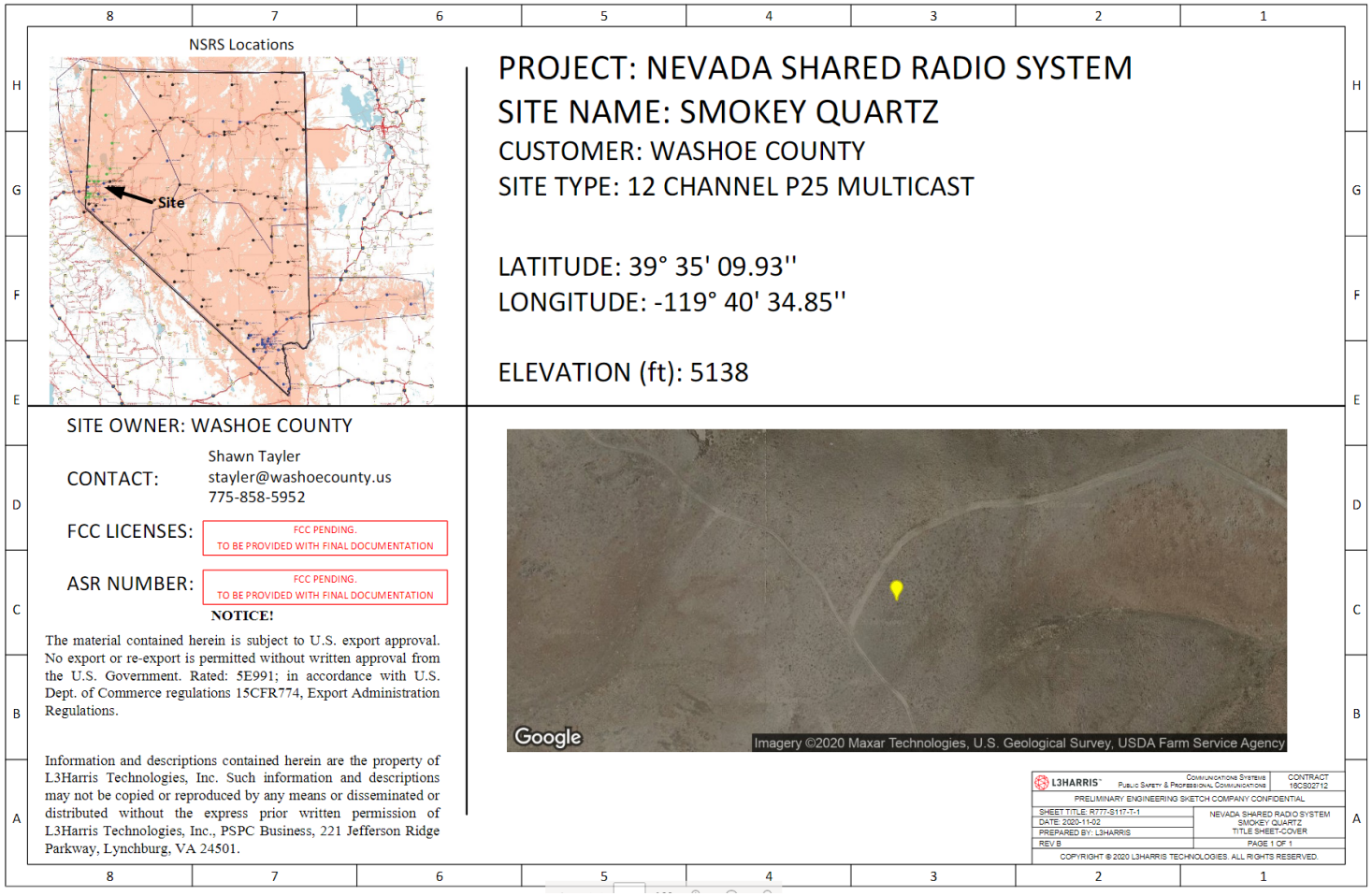
These sites will provide public safety communication to Warm Spring area:

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

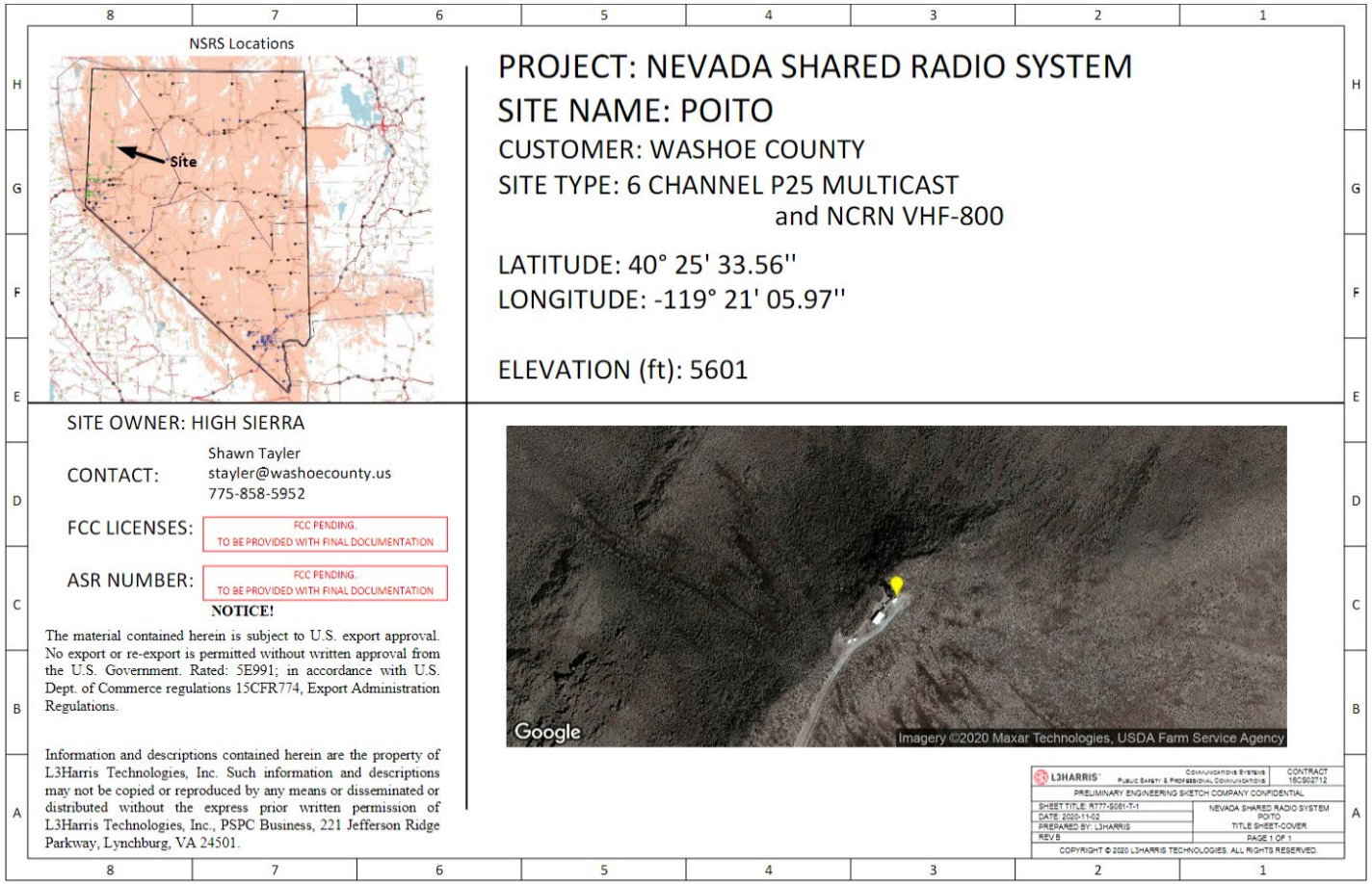
These sites will provide public safety communication to Warm Spring area:

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

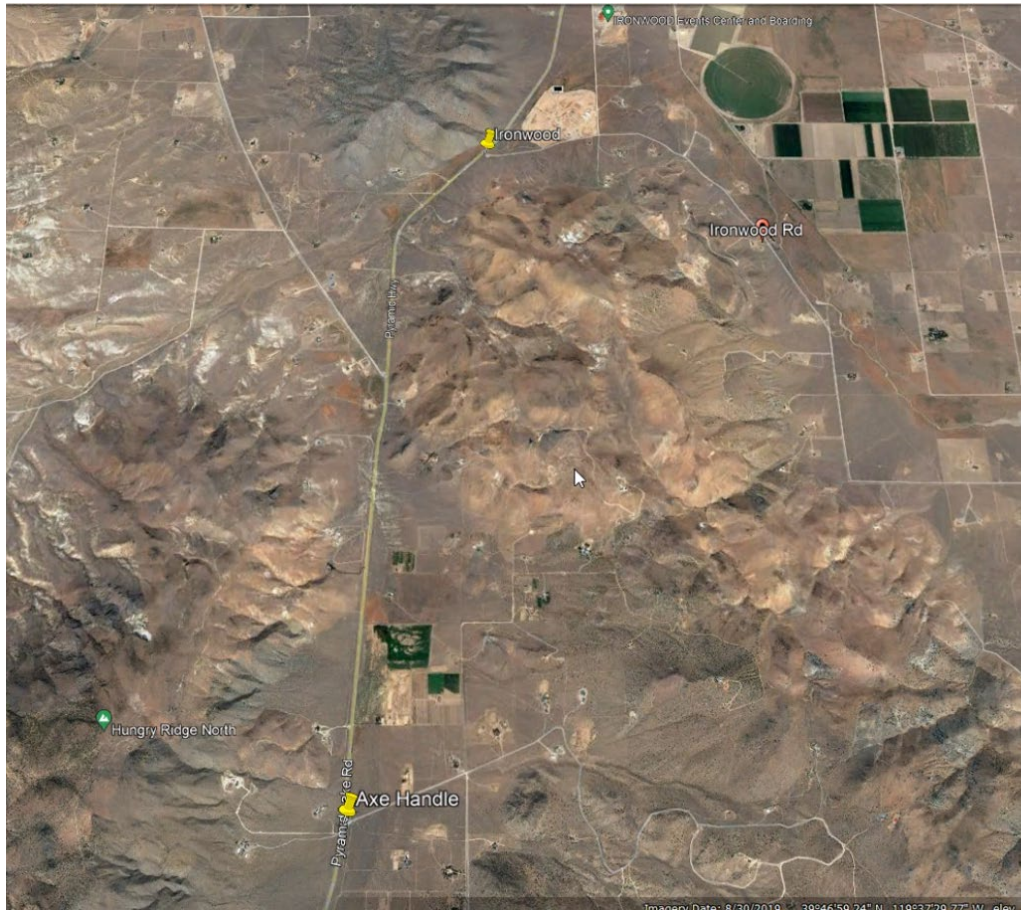
Timeline Dependencies:

- BLM Permit process delays
- Budget approval for increased costs



Cellular Issues (Dead Zone)

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



Emergency SOS

- Emergency SOS
  - Apple

[Apple installing ground station in Reno-Sparks for Emergency SOS (rgj.com)]
[Use Emergency SOS via satellite on your iPhone 14 - Apple Support]

Next Step

- Radio:
  - Push BLM for permit process start
  - Address budget needs for Radio funds in FY 23-24
- Broadband:
  - Meetings with vendors (RTI, Plumas-Sierra, Charter, Starlink, AT&T, others)
  - Grant opportunities
  - Partnership with Tribes, NDOT, State, and other agencies
  - Identify options for Spanish Springs
- 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

What Can You Do?

- If you aren't using ACP and would qualify, reach out to your provider
- Current challenges, connectivity in general (Telephone, Broadband, Etc.)
- Preferred provider in the region
- Provide the name of local providers or options
- Provide a list of cellular "Dead Zones"

Affordable Connectivity Program (ACP)

- **Qualification Options:**

1 - Based on your household income

Household Size	48 Contiguous States, D.C., and Territories	Alaska	Hawaii
1	$27,180	$33,980	$31,260
2	$36,620	$45,780	$42,120
3	$46,060	$57,580	$52,980
4	$55,500	$69,380	$63,840
5	$64,940	$81,180	$74,700
6	$74,380	$92,980	$85,560
7	$83,820	$104,780	$96,420
8	$93,260	$116,580	$107,280
For each additional person, add:	$9,440	$11,800	$10,860

2 - If you or your child or dependent participate in certain government assistance programs such as SNAP, Medicaid, WIC, or other programs

- Supplemental Nutrition Assistance Program (SNAP), formerly known as Food Stamps
- Medicaid
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Supplemental Security Income (SSI)
- Federal Public Housing Assistance (FPHA) (including Housing Choice Voucher (HCV) Program (Section 8 Vouchers), Project-Based Rental Assistance (PBRA)/202/811, Public Housing, and Affordable Housing Programs for American Indians, Alaska Natives or Native Hawaiians)
- Veterans Pension and Survivors Benefit
- Free and Reduced-Price School Lunch Program or School Breakfast Program, including at U.S. Department of Agriculture (USDA) Community Eligibility Provision schools
- Received a Federal Pell Grant in the current award year

3 - If you or anyone in your household already receives a Lifeline benefit

4 - Tribal Assistance Programs

https://www.affordableconnectivity.gov

Thank you

Questions?

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