




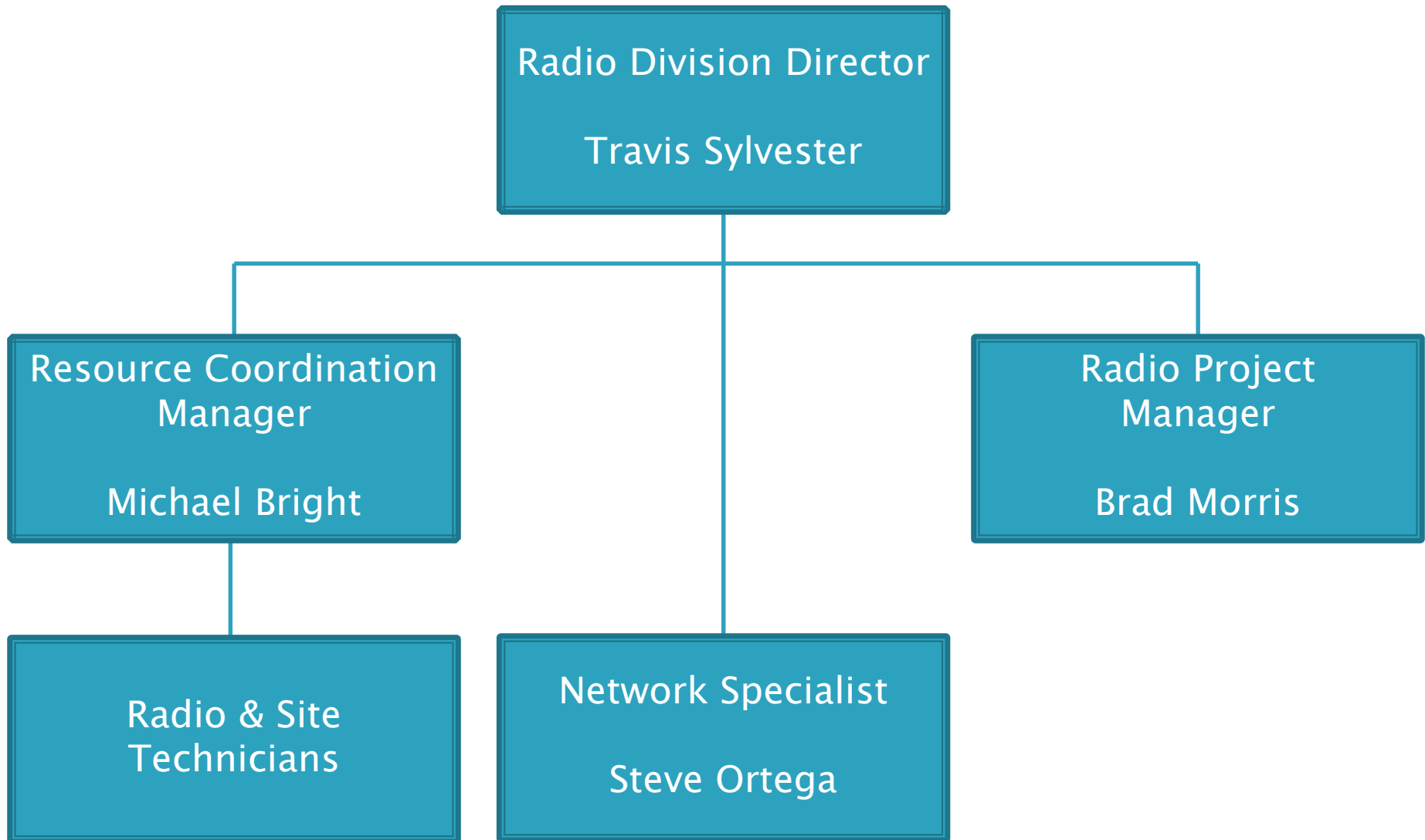
Radio Division

Utah Communications Authority
November 4th, 2019

A little about me

- ▶ I started working for the State of Utah in 1987 mowing lawns at the capital
 - ▶ In '92, after going to school for electronics, I was hired by DTS to work at "The Radio Shop" in Salt Lake installing radios and other equipment in UHP, UDOT, DNR, and other vehicles.
 - ▶ Since then, I have spent many years as a bench technician working on portable and mobile radios. I also spent several years certifying radar and laser equipment. I worked on a statewide mobile data project, I spent one whole summer as a field technician, and I spent 6 years as a project manager / planner.
 - ▶ I have been the Radio Division Director since 2017
 - ▶ I enjoy camping, hiking and fly fishing all over the state. I am an artist in my spare time, and I prefer to draw trout.
- 

Radio Division Org Chart



Radio Division Experience

Mike Christensen	42 years	Radio Technician	Salt Lake
Paul Smuin	40 years	Radio Technician	St. George
Wayne Diamond	37 years	Radio Technician	Salt Lake
Travis Sylvester	27 years	Division Director	Salt Lake
Jeremy White	27 years	Site Technician	Salt Lake
Eric Larson	25 years	Radio Technician	Salt Lake
Mike Lindquist	21 years	Radio Technician	Salt Lake
Brad Morris	20 years	Project Manager	Salt Lake
Trevor Pollock	20 years	Radio Technician	Cedar City
Michael Bright	19 years	Coordination Manager	Salt Lake
Kirk Rogers	18 years	Radio Technician	Salt Lake
Loren Lamoreaux	16 years	Radio Technician	Price
Travis Colby	13 years	Radio Technician	Salt Lake
Sean O'Neill	13 years	Site Technician	Salt Lake
Steve Ortega	6 years	Network Specialist	Salt Lake
Phil Singleton	6 years	Radio Technician	Richfield
Tice Guymon	4 months	Radio Technician	Price

****Needing to fill 2 vacant spots, Salt Lake, and Central Utah**

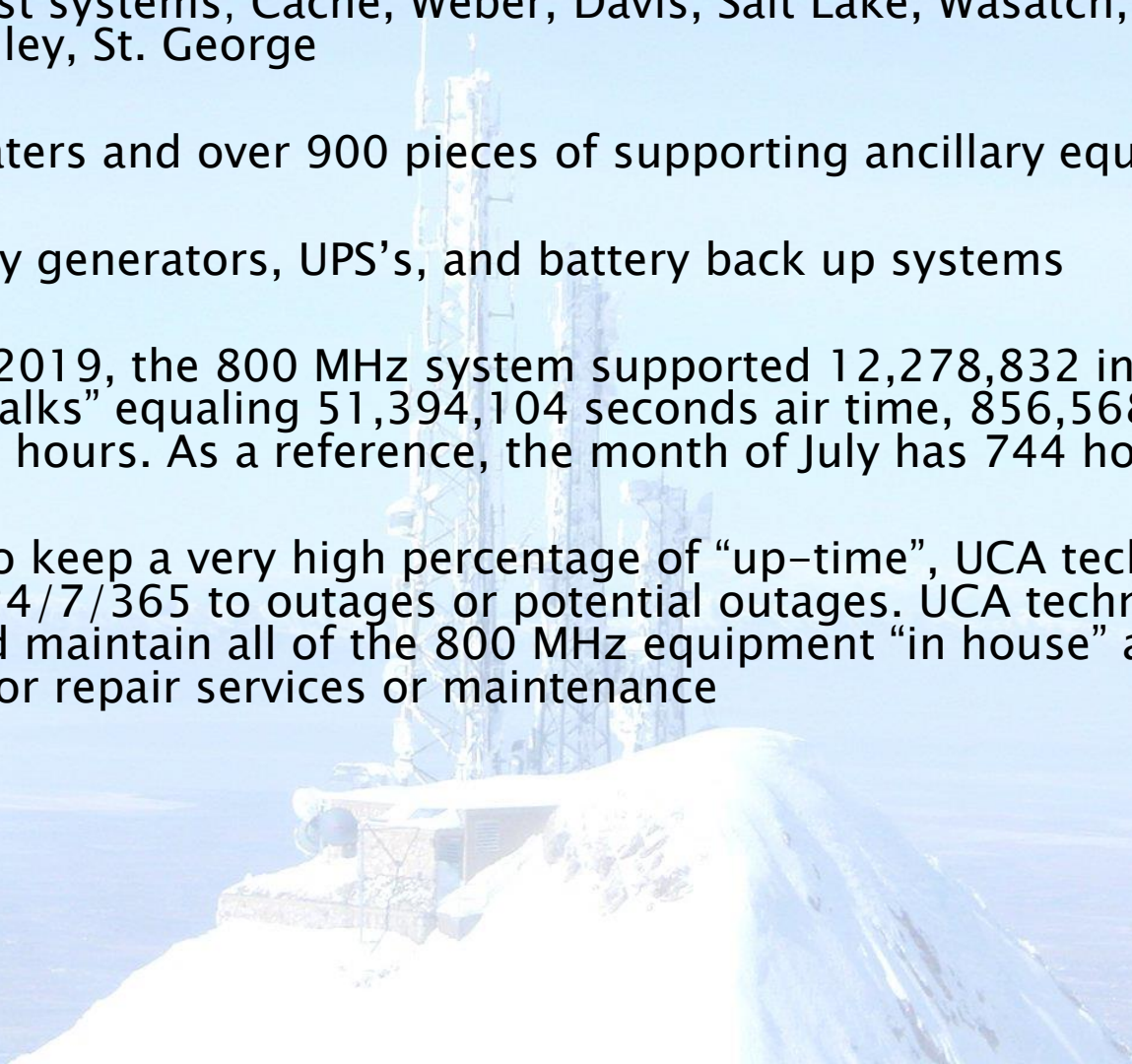
What we do



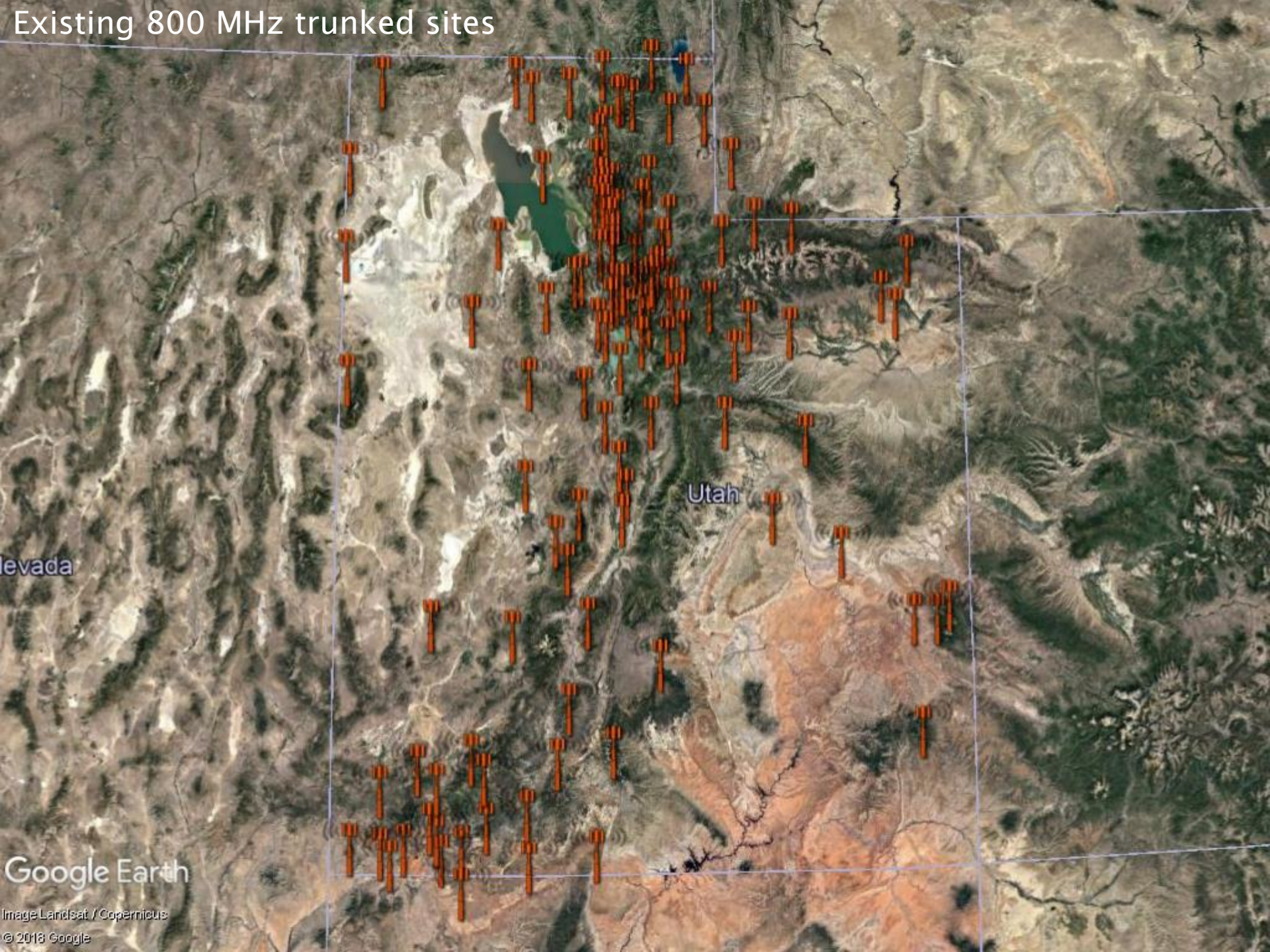
Cal Mountain, Box Elder Co.

Maintain the UCA 800 MHz trunked radio system

- ▶ 119 existing site locations
- ▶ 8 Simulcast systems; Cache, Weber, Davis, Salt Lake, Wasatch, Lake Mtn, Happy Valley, St. George
- ▶ 879 repeaters and over 900 pieces of supporting ancillary equipment
- ▶ emergency generators, UPS's, and battery back up systems
- ▶ In July of 2019, the 800 MHz system supported 12,278,832 individual “push to talks” equaling 51,394,104 seconds air time, 856,568 minutes, or 14,276 hours. As a reference, the month of July has 744 hours total
- ▶ In order to keep a very high percentage of “up-time”, UCA technicians respond 24/7/365 to outages or potential outages. UCA technicians install and maintain all of the 800 MHz equipment “in house” and do not contract for repair services or maintenance



Existing 800 MHz trunked sites



Nevada

Utah

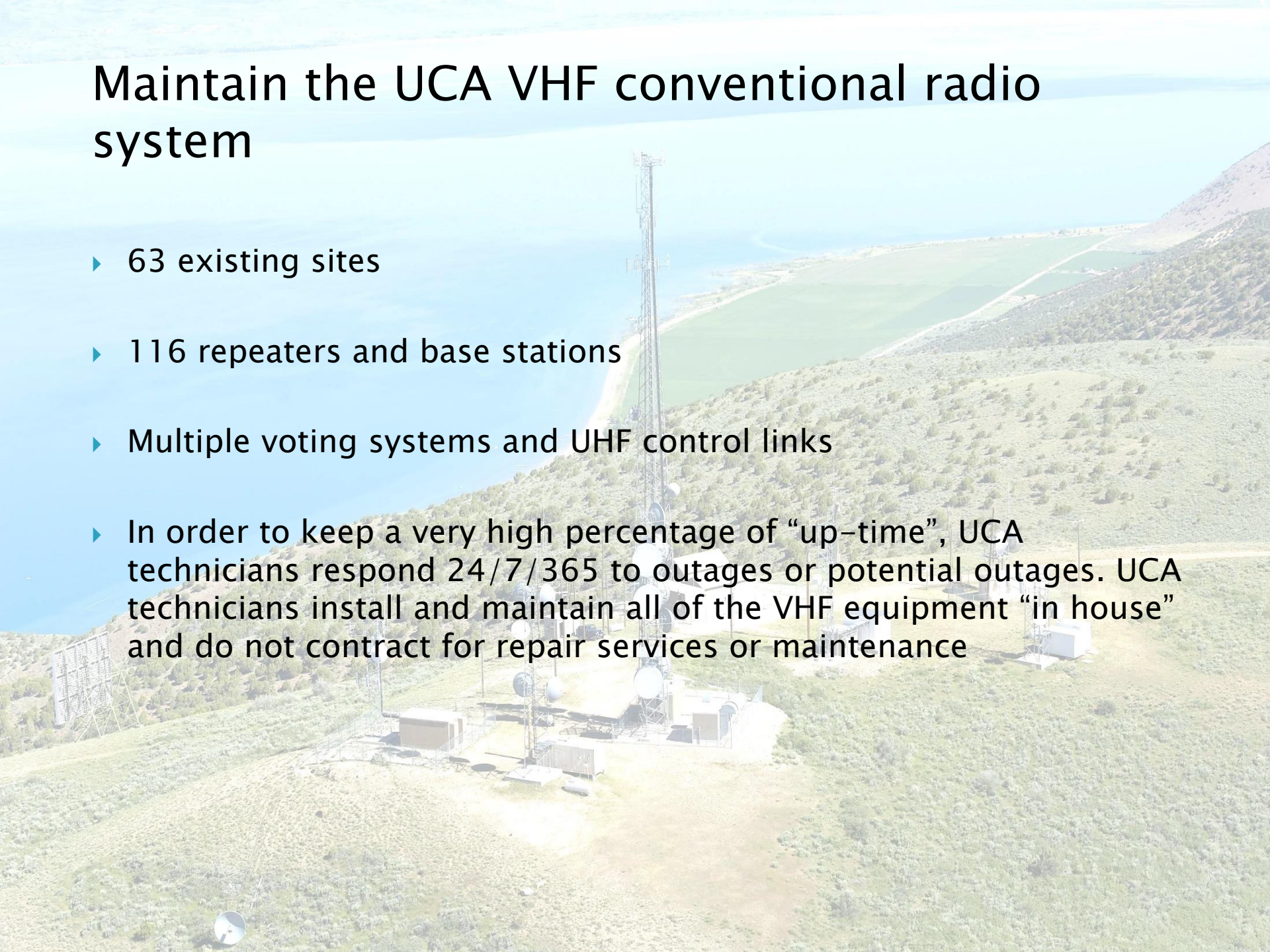
Google Earth

Image Landsat / Copernicus

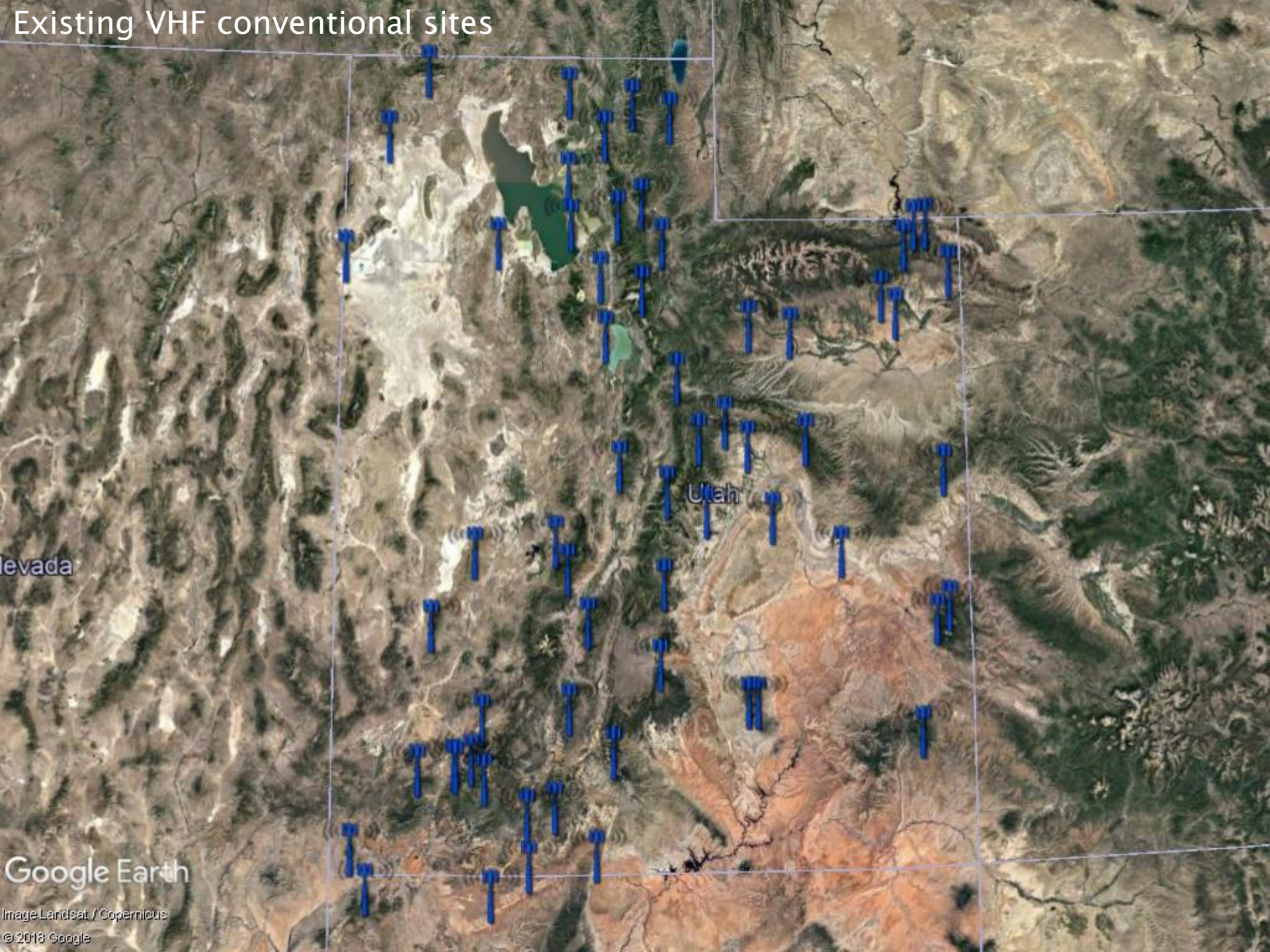
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Maintain the UCA VHF conventional radio system

- ▶ 63 existing sites
- ▶ 116 repeaters and base stations
- ▶ Multiple voting systems and UHF control links
- ▶ In order to keep a very high percentage of “up-time”, UCA technicians respond 24/7/365 to outages or potential outages. UCA technicians install and maintain all of the VHF equipment “in house” and do not contract for repair services or maintenance



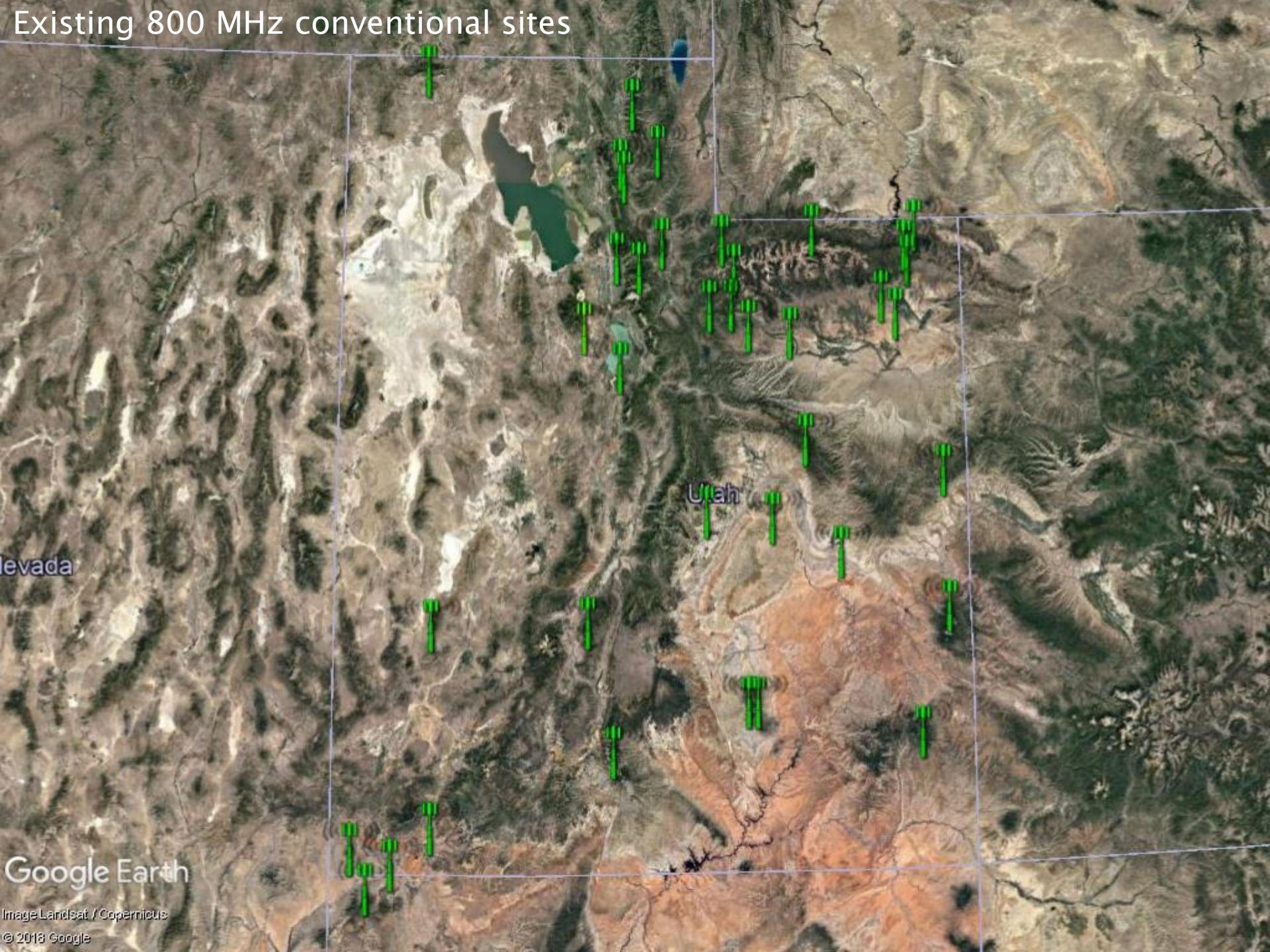
Existing VHF conventional sites



Maintain the UCA 800 MHz conventional and interoperable repeaters

- ▶ 38 existing 8-Call and 8-TAC repeater sites
- ▶ In order to keep a very high percentage of “up-time”, UCA technicians respond 24/7/365 to outages or potential outages. UCA technicians install and maintain all of the conventional 800 MHz repeater equipment “in house” and do not contract for repair services or maintenance

Existing 800 MHz conventional sites



Nevada

Utah

Google Earth

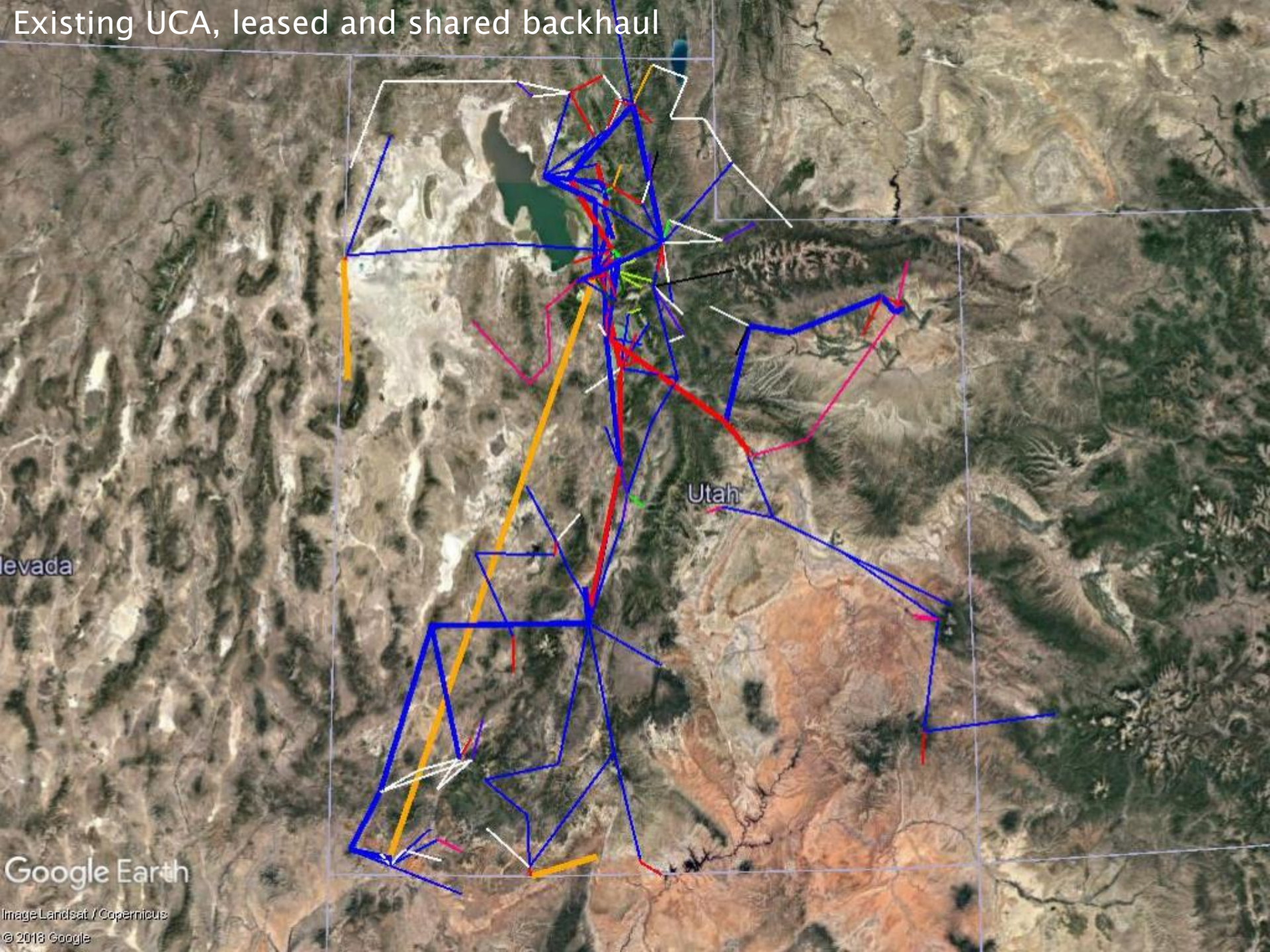
Image Landsat / Copernicus

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Maintain the UCA microwave network

- ▶ 165 sites
- ▶ 463 individual paths
- ▶ 10,042 miles of licensed paths
- ▶ Hundreds of channel banks, muxing devices, multiple DAC systems, and optical networking service devices
- ▶ UCA assists with the maintenance of several state, county and federally owned microwave paths
- ▶ In order to keep a very high percentage of “up-time”, UCA technicians respond 24/7/365 to outages or potential outages. UCA technicians install and maintain all of the microwave equipment “in house” and do not contract for repair services or maintenance

Existing UCA, leased and shared backhaul



Nevada

Utah

Google Earth

Image Landsat / Copernicus

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Humpy in winter



West Mtn. Utah Co.



MegaStar 155

150000
20W Slot

150000
20W Slot

150000
20W Slot

150000
20W Slot

Whiteboard with text and diagrams.

Red Spur, Rich Co.



Blackcrook, Tooele Co.



TRANSECTOR
Hayden, ID 83855 208-772-8515
1101 - 439 - 321
APEX III X6 120TMR
TVBS SUPPRESSOR CUL US
FBCM 30982 PAT. NO. 4,797,773 1047-606

TRANSECTOR
SUPERIOR SURGE SUPPRESSION

Transient Voltage Surge Suppressor
Model Name: APEX III 120TMR
Requires Suppressor Cards:
Qty. 1ea, PN 1000-783-31
Qty. 1ea, PN 1000-784-31
Qty. 1ea, PN 1000-682-4
Qty. 1ea, PN 1000-682-5



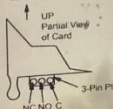
LED Indicators:
Yellow - Power On. Power is applied to the suppressor.
Green - Protected. The suppressor is operational.

If the LED's on any Card fail to illuminate call Transector immediately.
(800) 882-9110 - USA
(208) 772-8515 - INTERNATIONAL
10701 Airport Drive
Hayden Lake, ID 83835

Danger - High Voltage

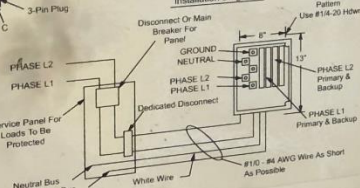
Warning:
Use 120V Suppressor Cards only.
Shut off electrical power before servicing.
Service by authorized personnel only.

Relay Contact Wiring



Contact Positions Shown With AC Power Off.
Contacts Change State With Loss Of AC Power Or
Suppressor Non-operational.
Contact To Coil Isolation: 4000V
Contact Rating: 3A 250VAC

Installation Diagram



2003-439-321 Rev 0

U.S.A. 1-800-882-9110

L2

L1

120V
PHASE
L1

120V
PHASE
L1

120V
PHASE
L2

120V
PHASE
L2

↑ TOP
APEX
MOV

↑ TOP
APEX
III

↑ TOP
APEX
MOV



When lightning strikes

Tower workers,
Cache Co.

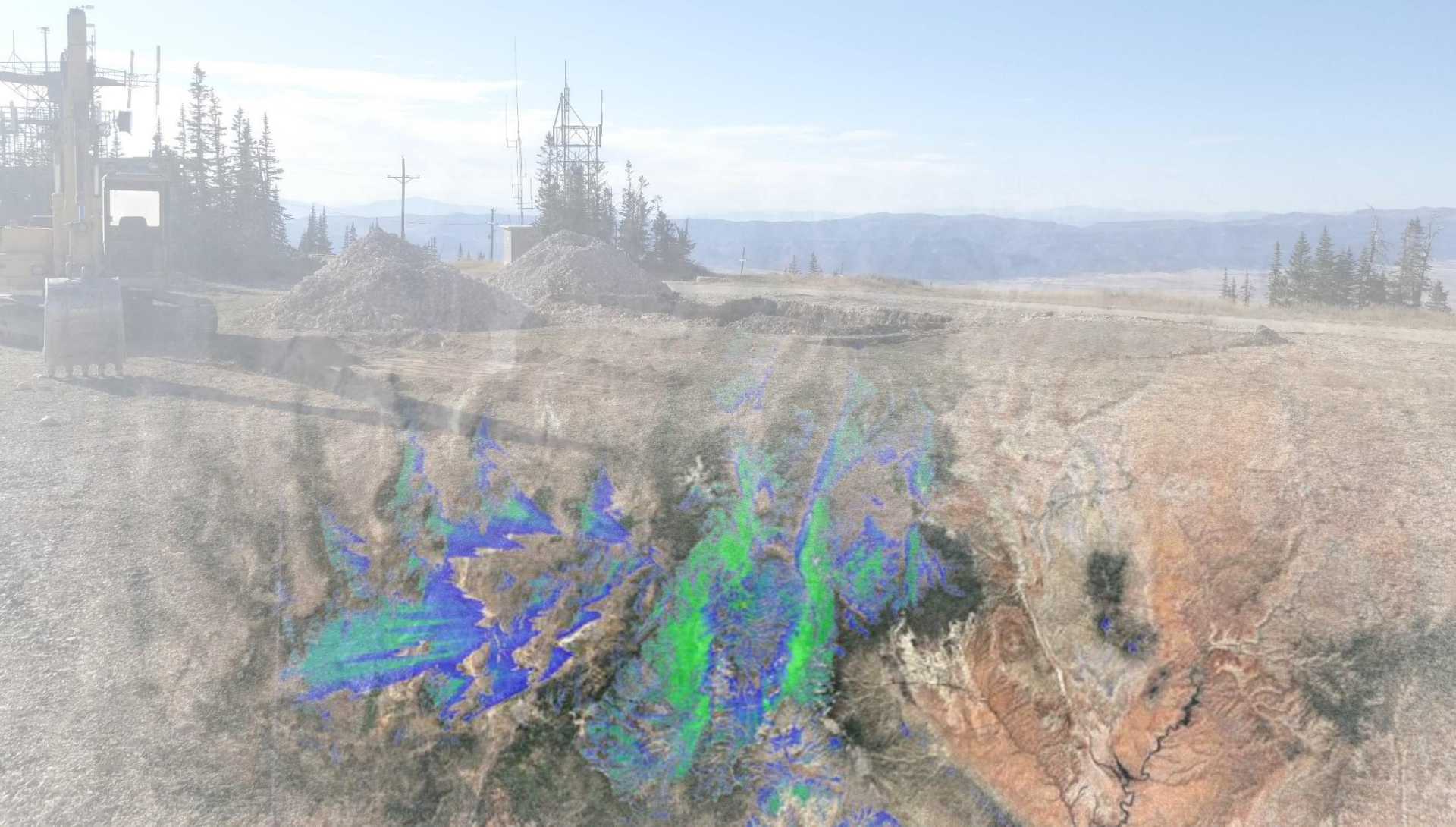




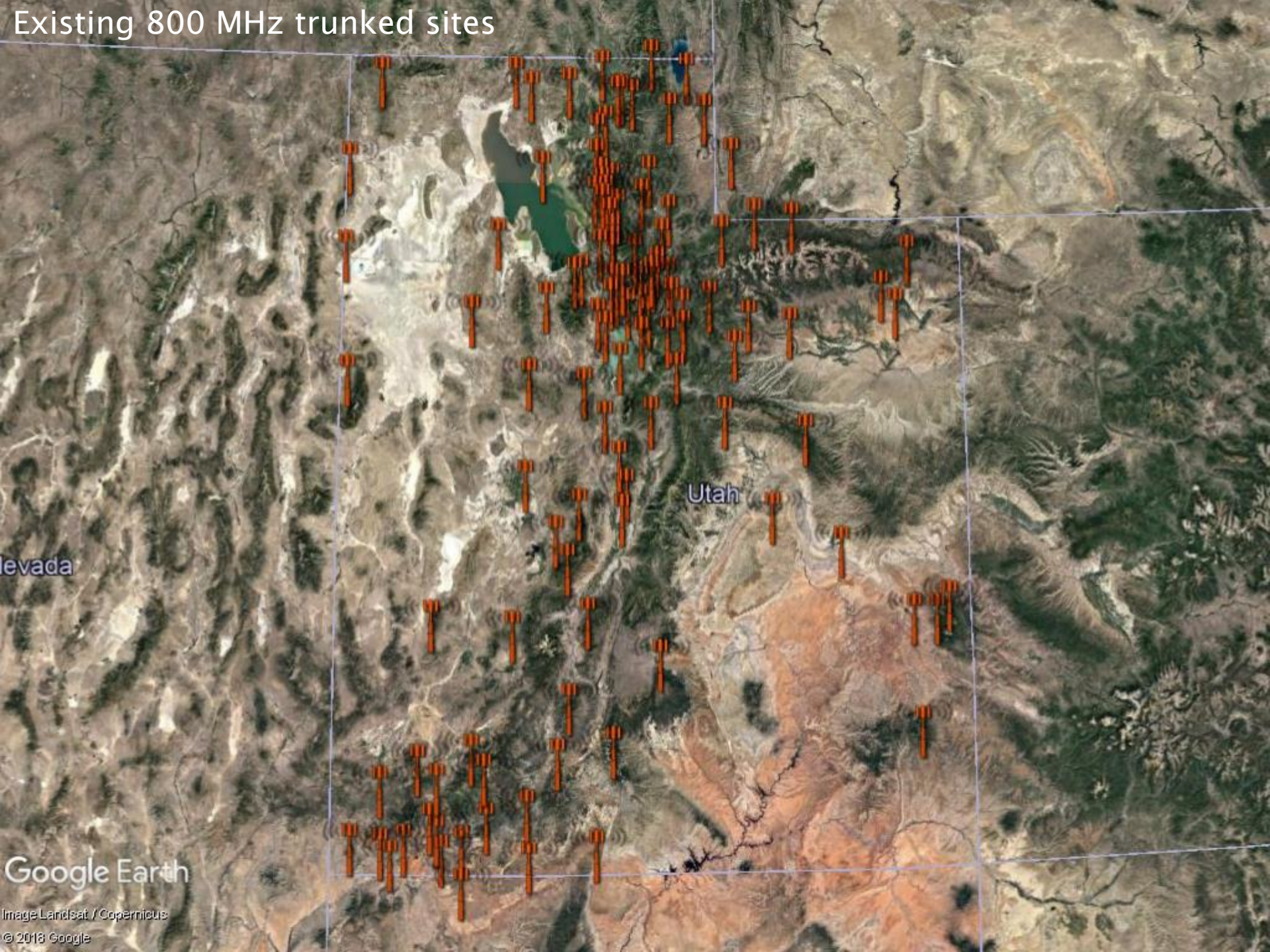
Strawberry Peak, Wasatch Co.



Existing sites, future sites and coverage maps



Existing 800 MHz trunked sites



Google Earth

Image Landsat / Copernicus

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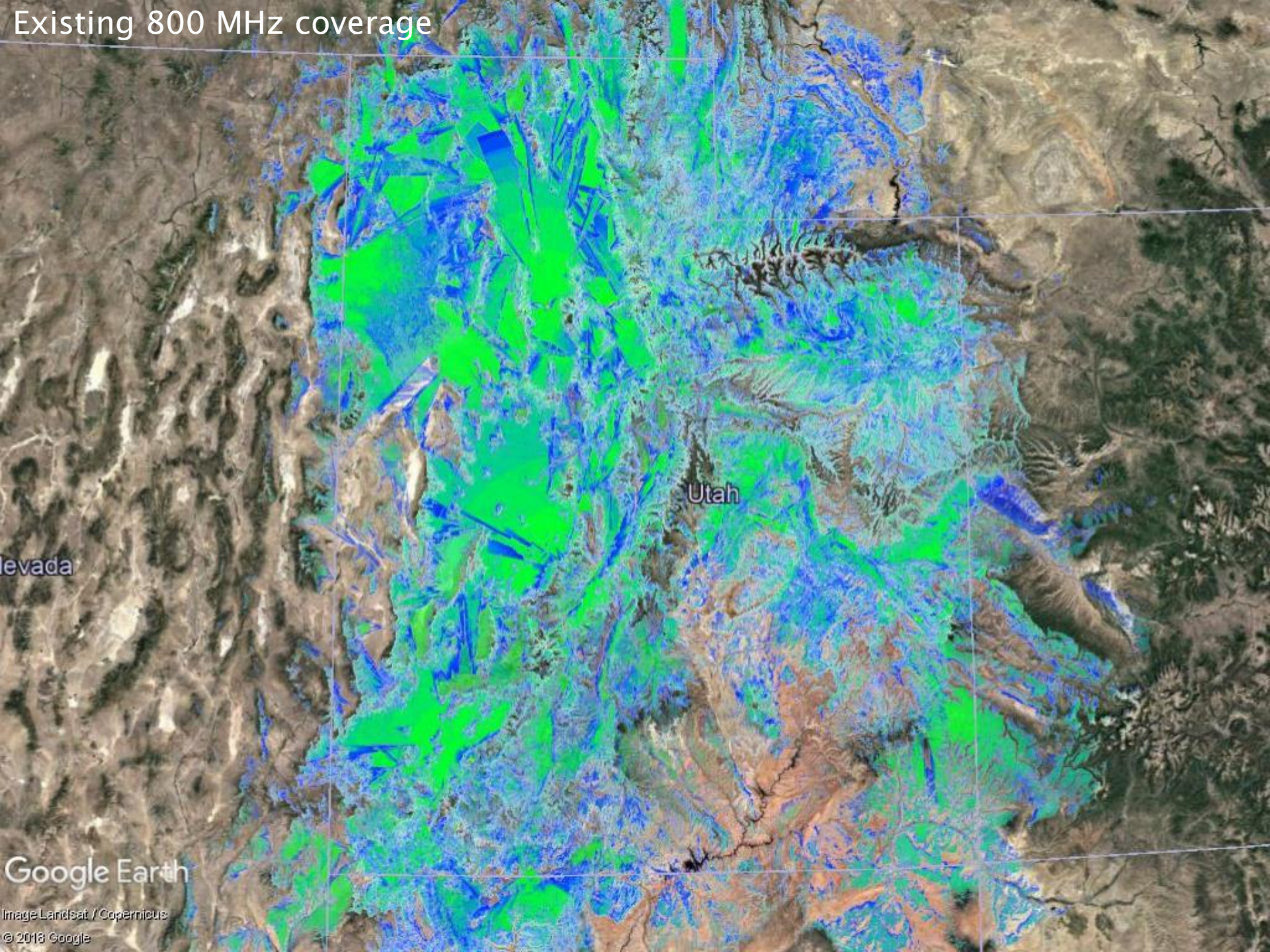
Existing 800 MHz coverage

Nevada

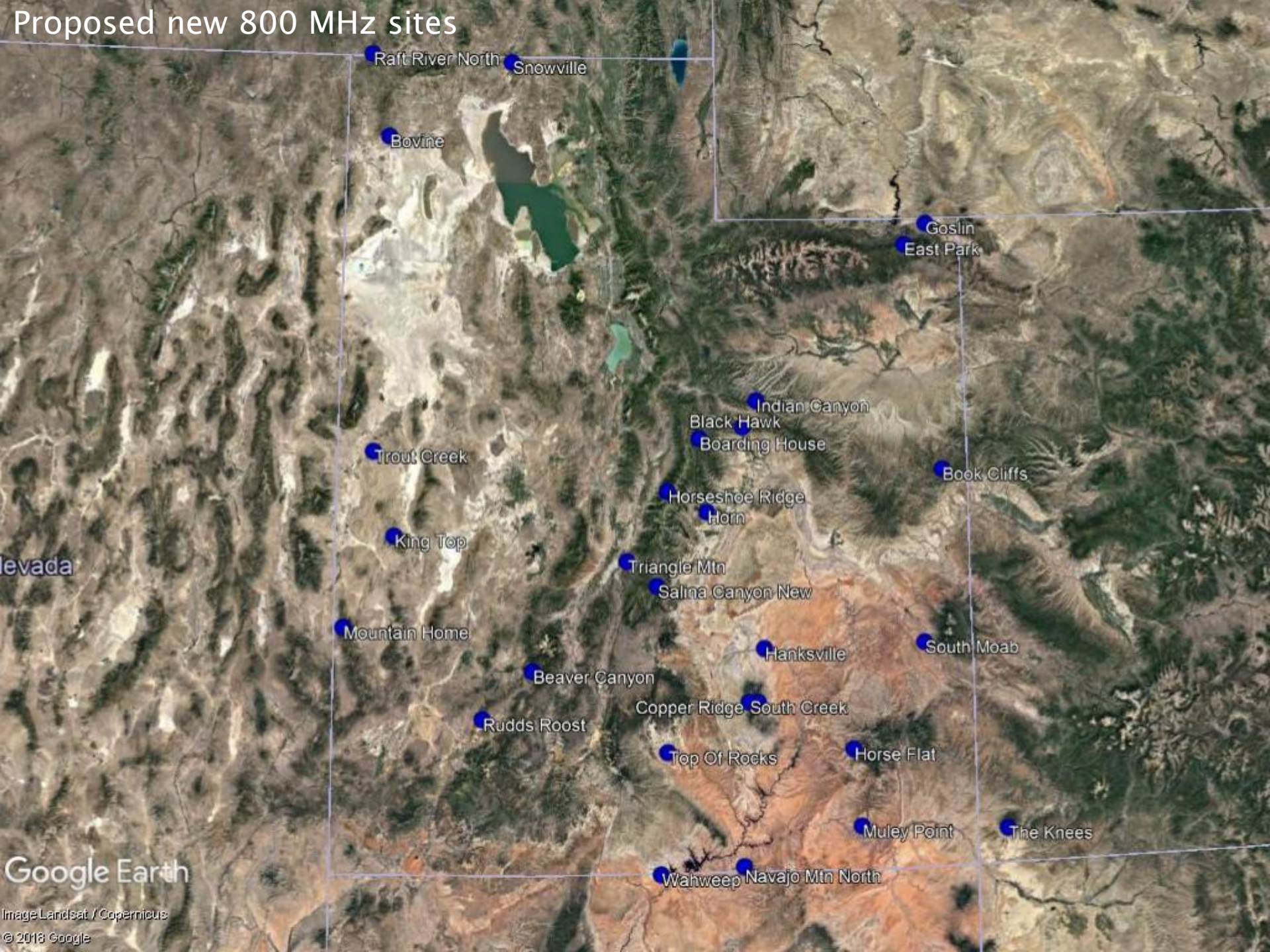
Utah

Google Earth

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Proposed new 800 MHz sites



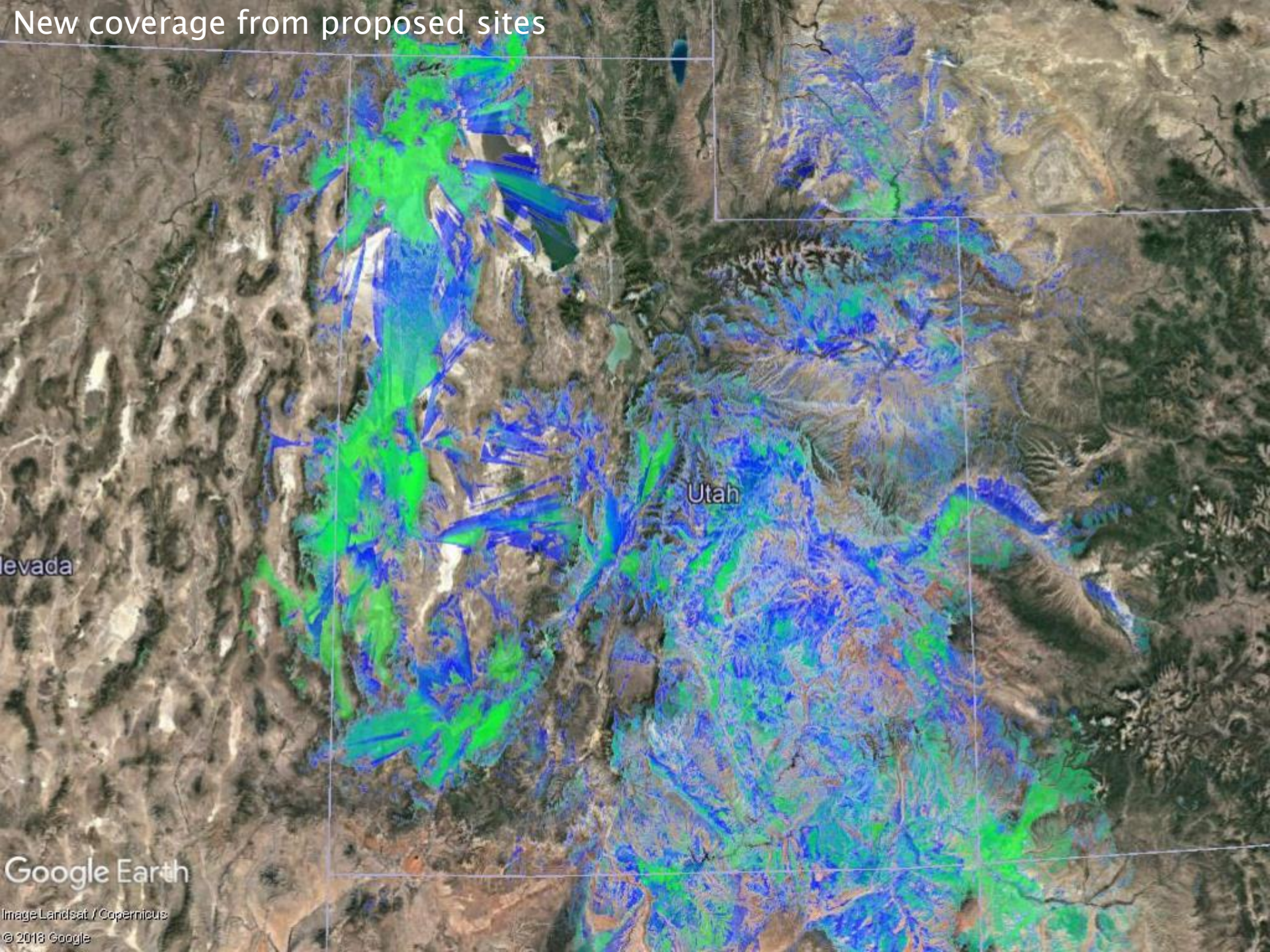
evada

Google Earth

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New coverage from proposed sites



Nevada

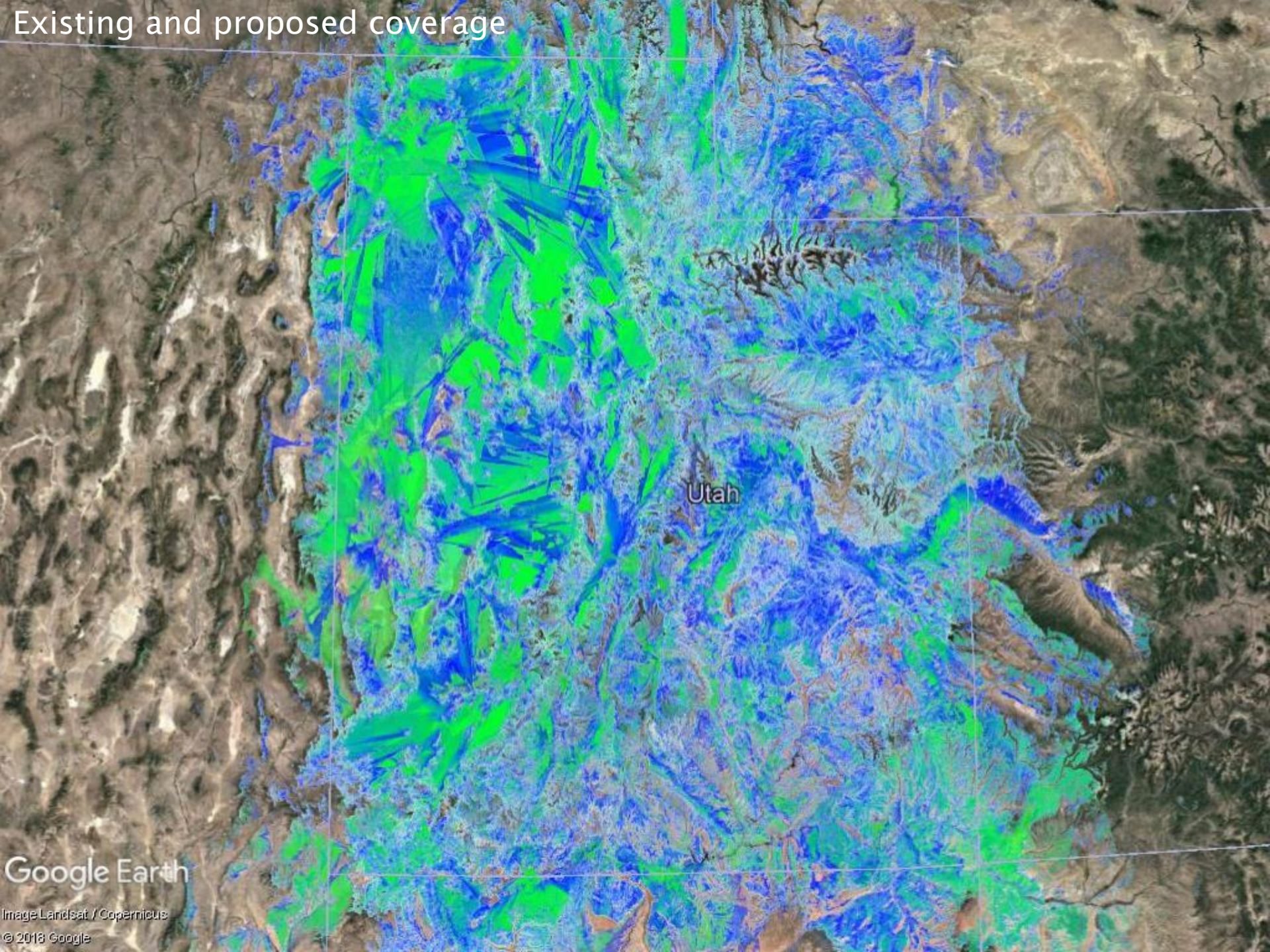
Utah

Google Earth

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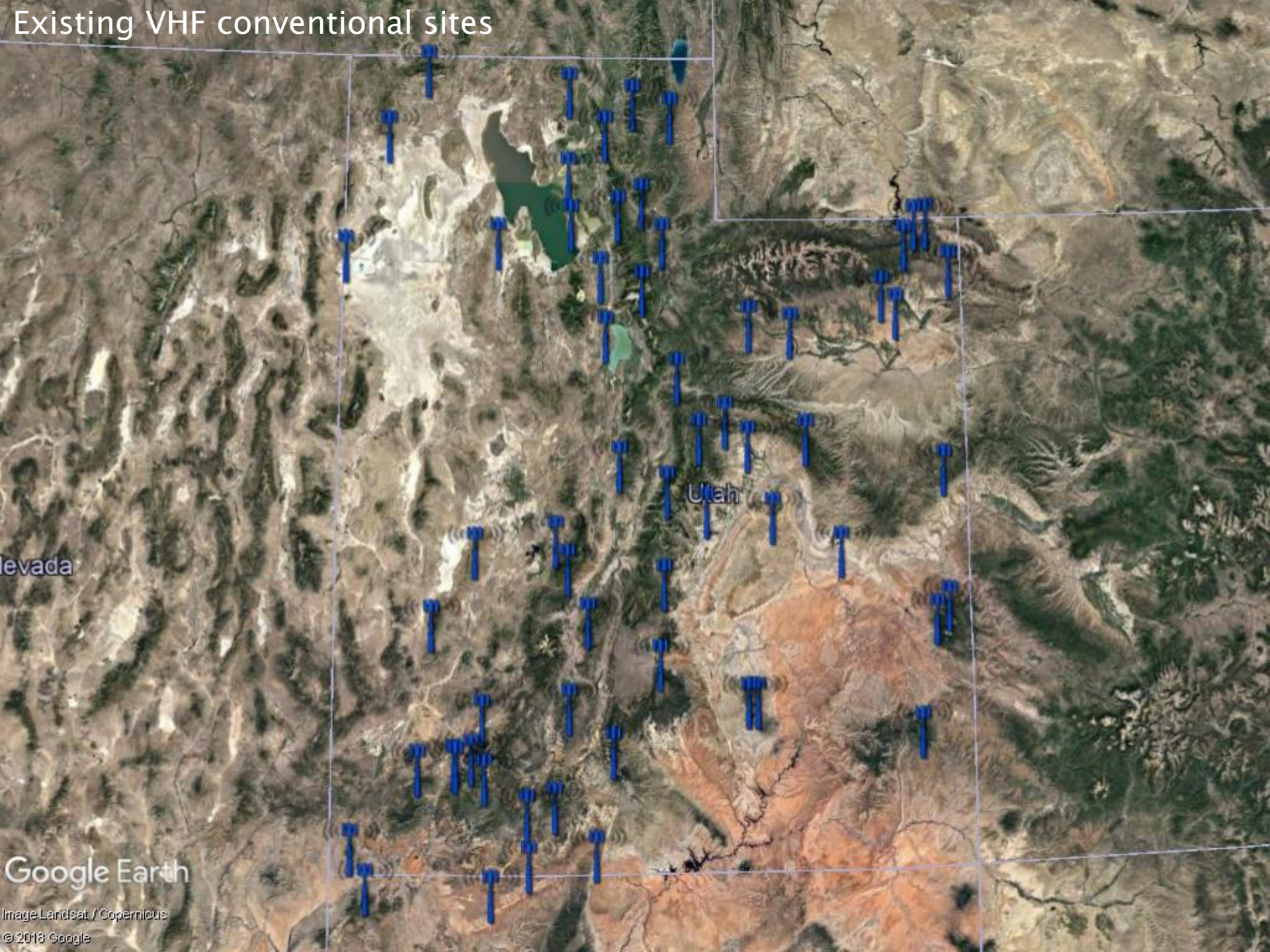
Existing and proposed coverage



Google Earth

Image Landsat / Copernicus
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Existing VHF conventional sites



Nevada

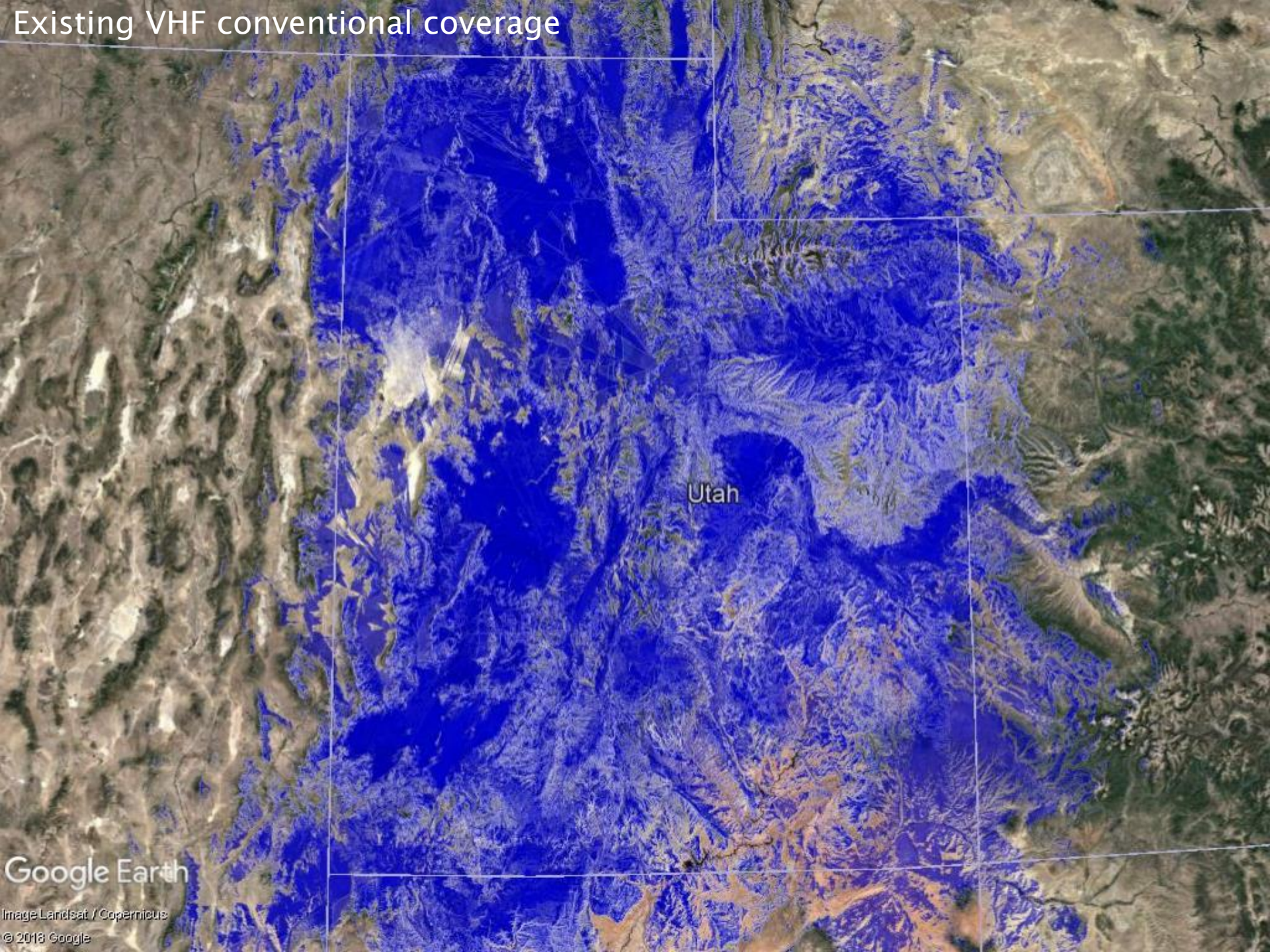
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Existing VHF conventional coverage

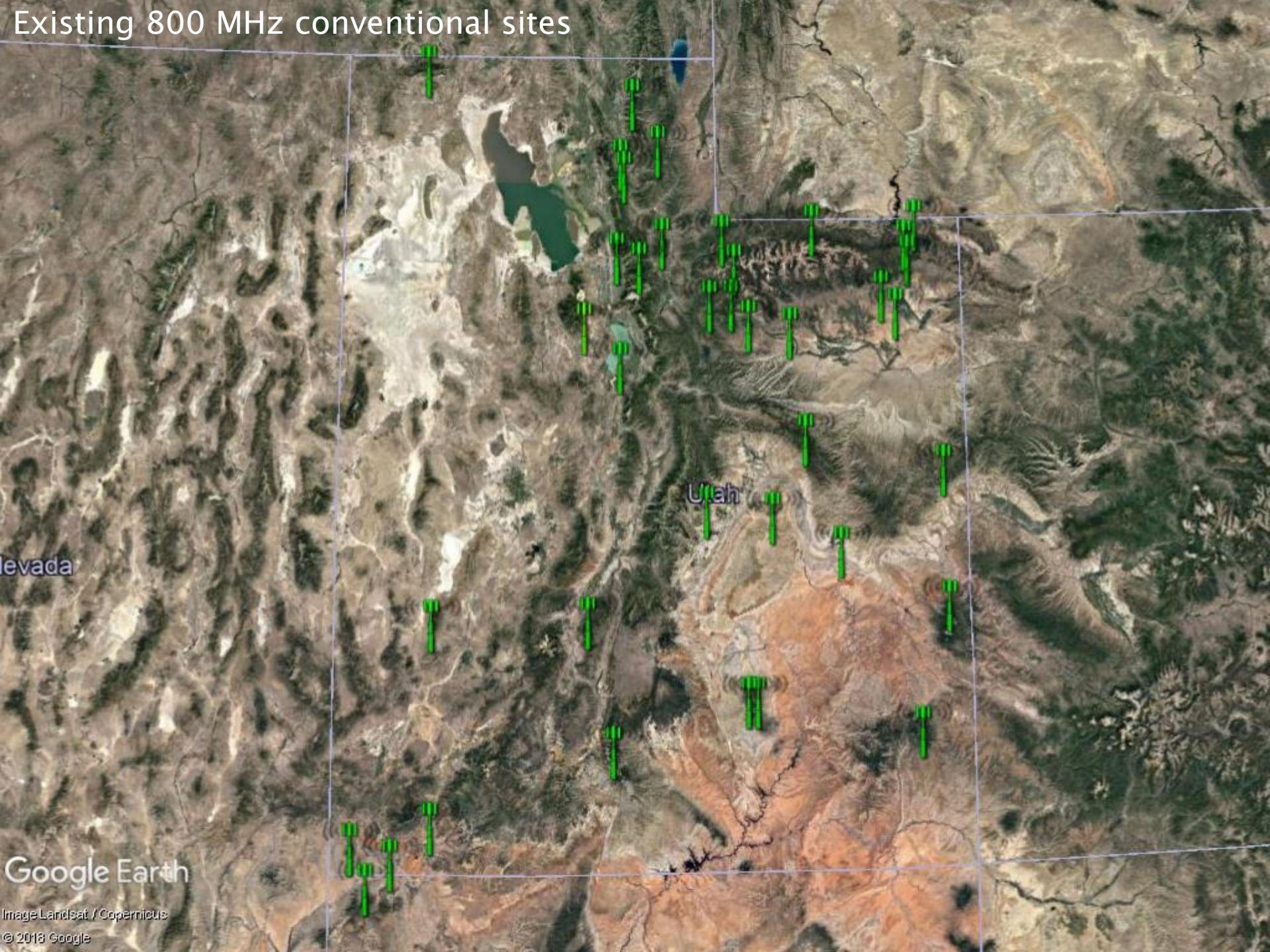


Utah

Google Earth

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Existing 800 MHz conventional sites



Nevada

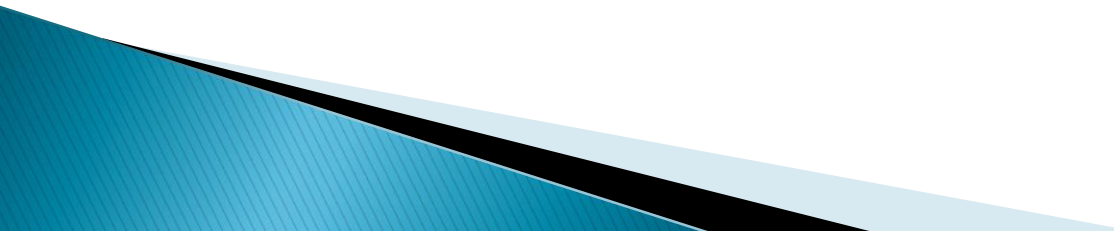
Utah

Google Earth

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Timeline of new sites

- ▶ UCA is diligently working internally, along with state, federal, local, and private partners to complete the new sites by the end of 2020
 - ▶ Some of the new sites may take longer to develop and build depending on permitting and other external restrictions
- 

What's next?

- ▶ Dutton – 95% complete
- ▶ Horseshoe – 70% complete
- ▶ Rudds Roost
- ▶ Hanksville
- ▶ Snowville
- ▶ Horn
- ▶ Boarding house
- ▶ Wahweep
- ▶ Triangle Mtn.
- ▶ King Top
- ▶ East Park
- ▶ South Moab
- ▶ Book Cliffs
- ▶ Blackhawk
- ▶ South Creek

Garfield County
Sanpete County
Iron County
Wayne County
Box Elder County
Emery County
Carbon County
Kane County
Sevier County
Millard, Juab
Daggett County
San Juan County
Grand County
Carbon County
Garfield County

Thank you

