

The background of the image is a night sky filled with stars and the Milky Way galaxy, which appears as a bright, blueish-white band of light stretching across the upper half of the frame. In the foreground, three large, white satellite dishes are positioned on a dark, rocky terrain. The dishes are angled upwards and outwards, pointing towards the sky. The overall scene is dark and atmospheric, with the bright stars providing the primary light source.

SAR TECH

Jim Warren
Yellowstone National Park
Search and Rescue

Hello, My Name is Jim

Branch Chief of Emergency Services
Yellowstone National Park



Disclosures

National Park Service

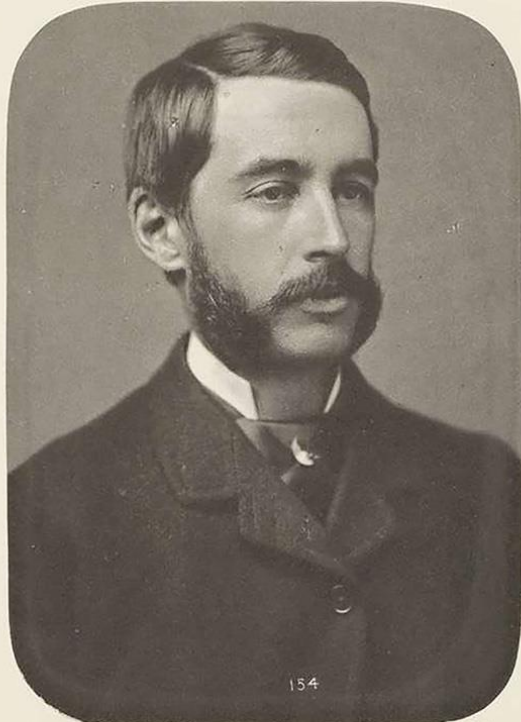
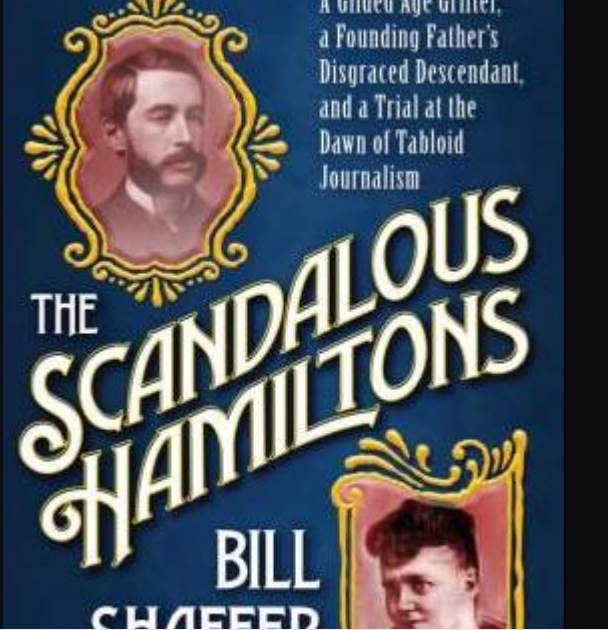
SARTopo

Proprietary Tech Gizmos

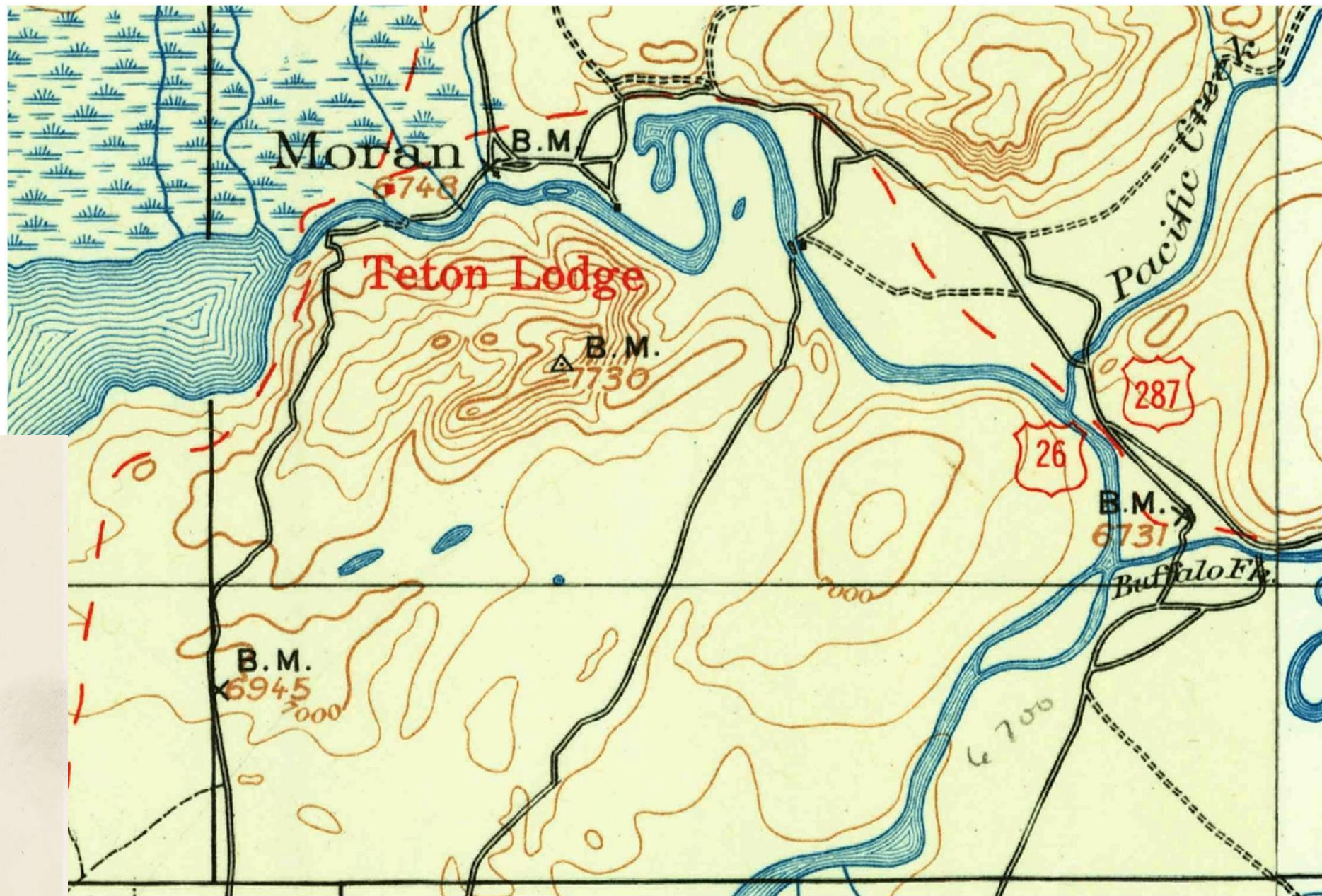


0:01 / 1:01:08





Robert Ray Hamilton



or Projection

ne 12T
IRTOPO



Scale 1:39872 1 inch = 3323 feet



MN
10.9°

Objectives

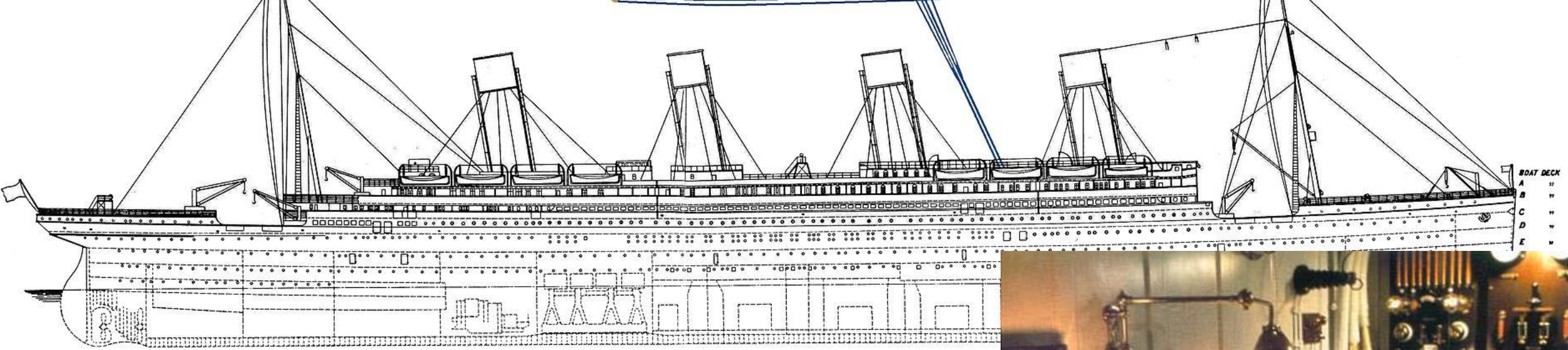
- Discuss historical and advancing technology that aids Search and Rescue Operations
- Understand notification pathways and limitations for geo-location
- Review tools that Search and Rescue Teams can use to aid in searching for the missing person

Origins of Search and Rescue





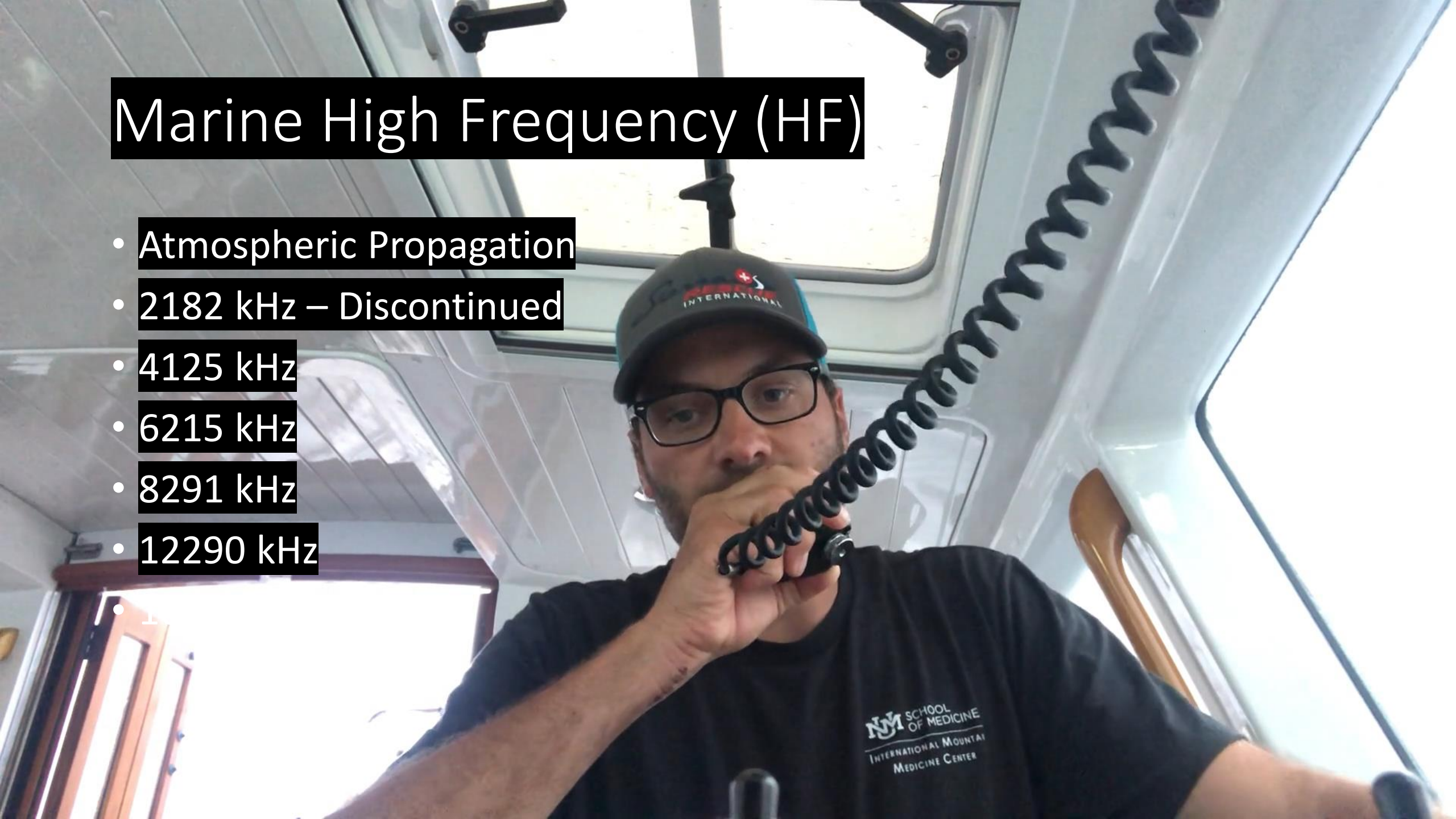
0 20 40 60 80 100 200 300 400 Feet



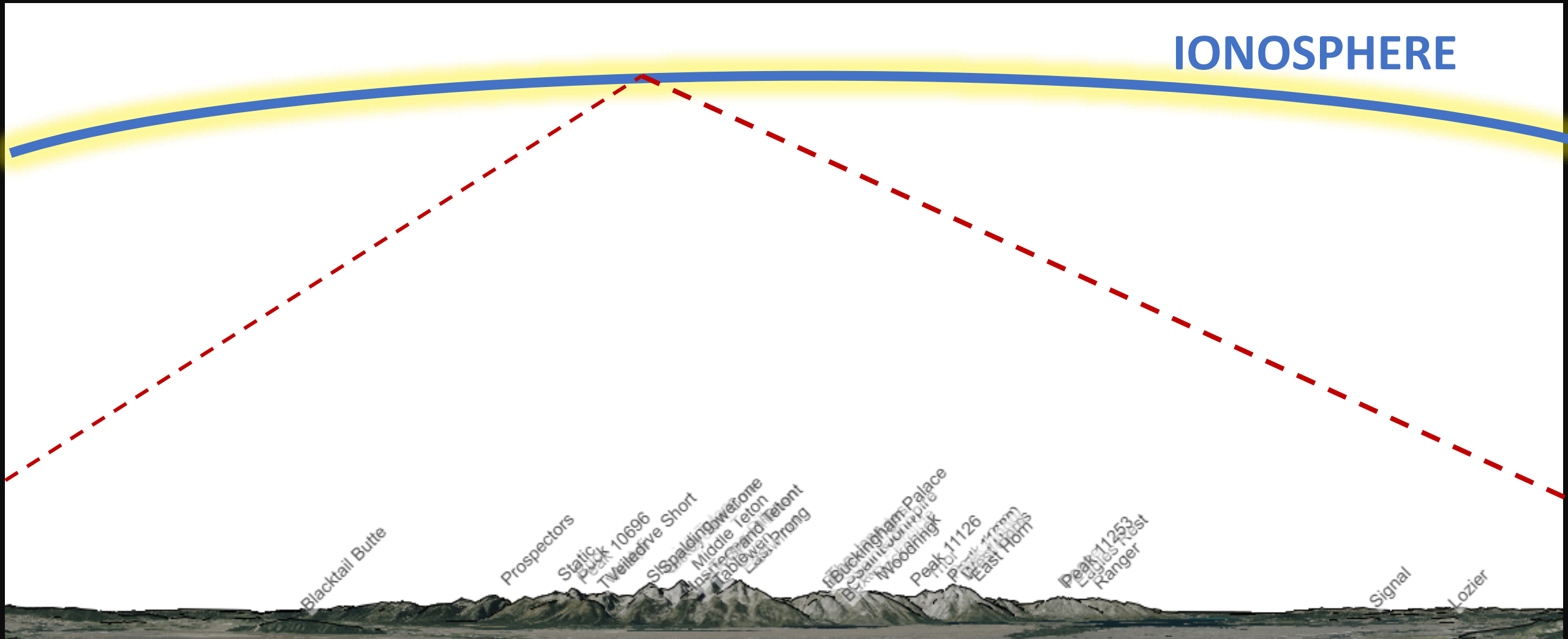
Marine High Frequency (HF)

- Atmospheric Propagation
- 2182 kHz – Discontinued
- 4125 kHz
- 6215 kHz
- 8291 kHz
- 12290 kHz

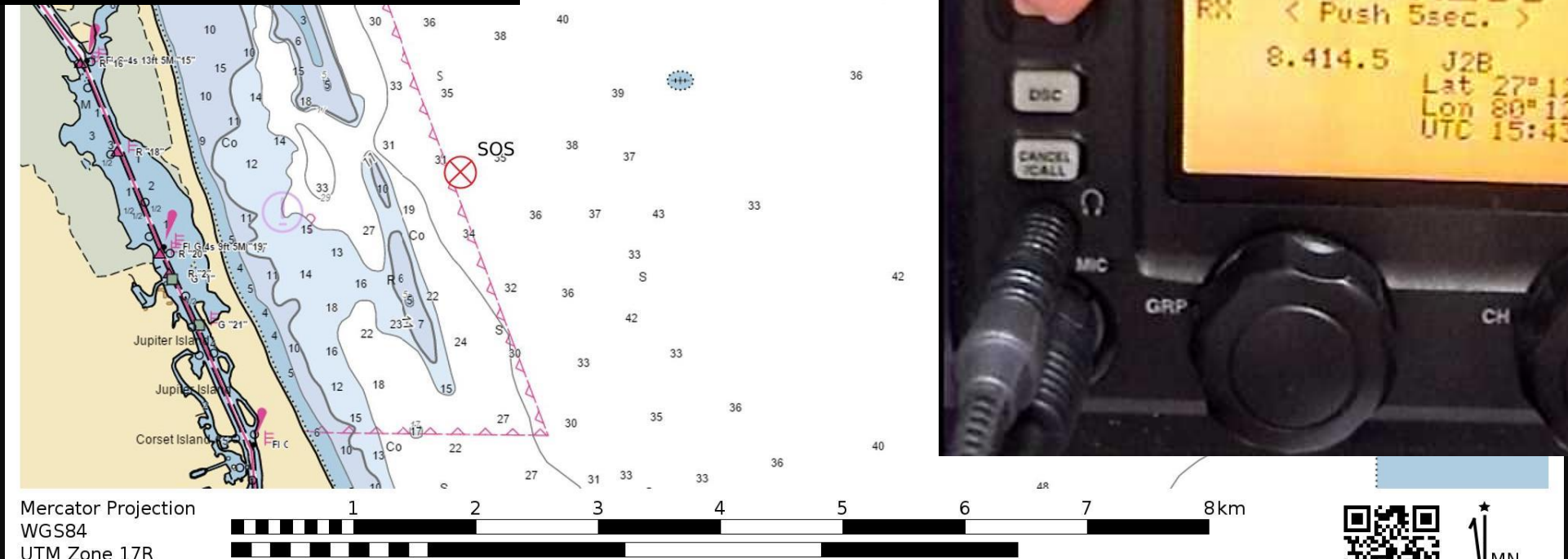
- 1



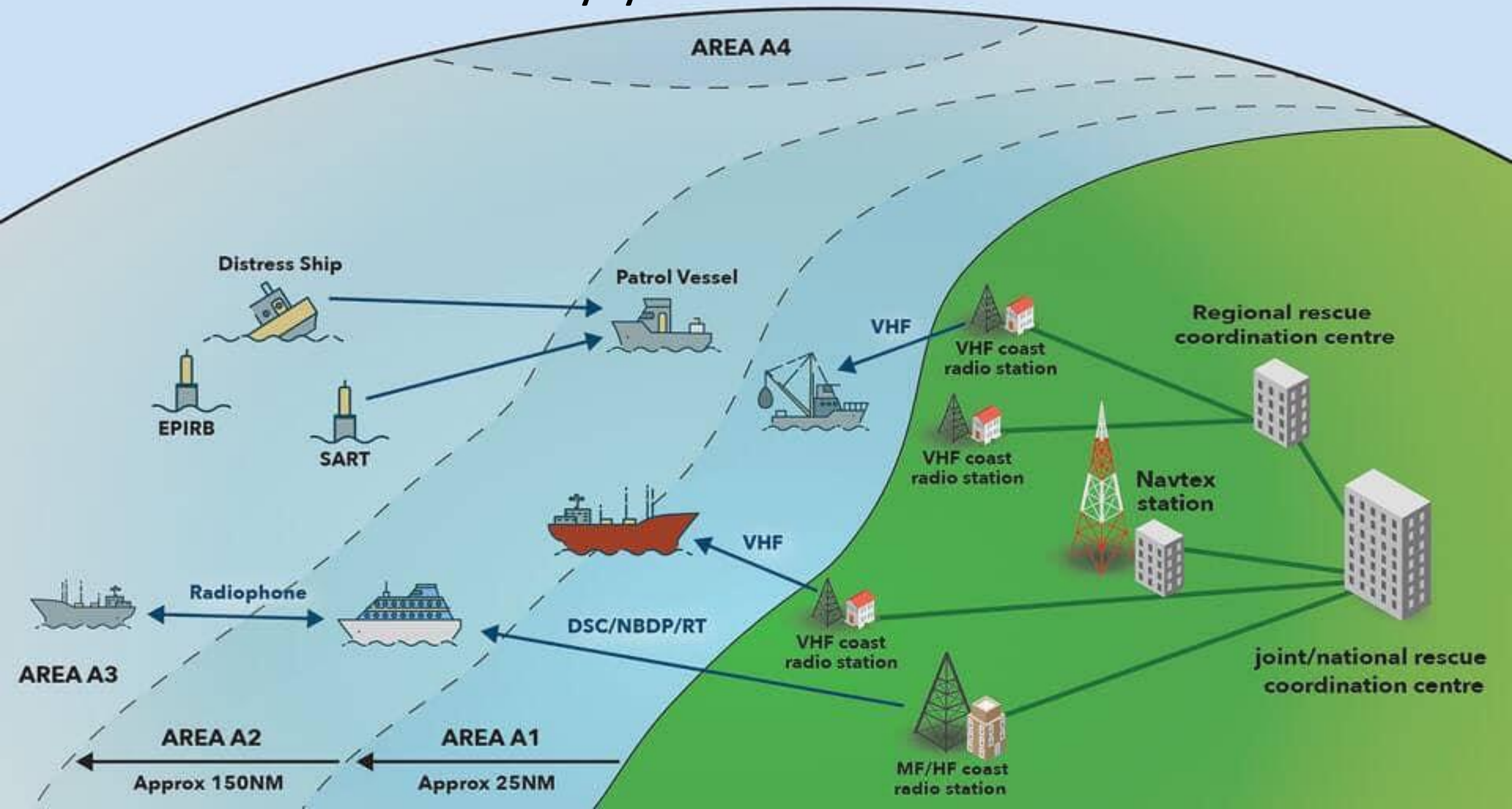
IONOSPHERE



-



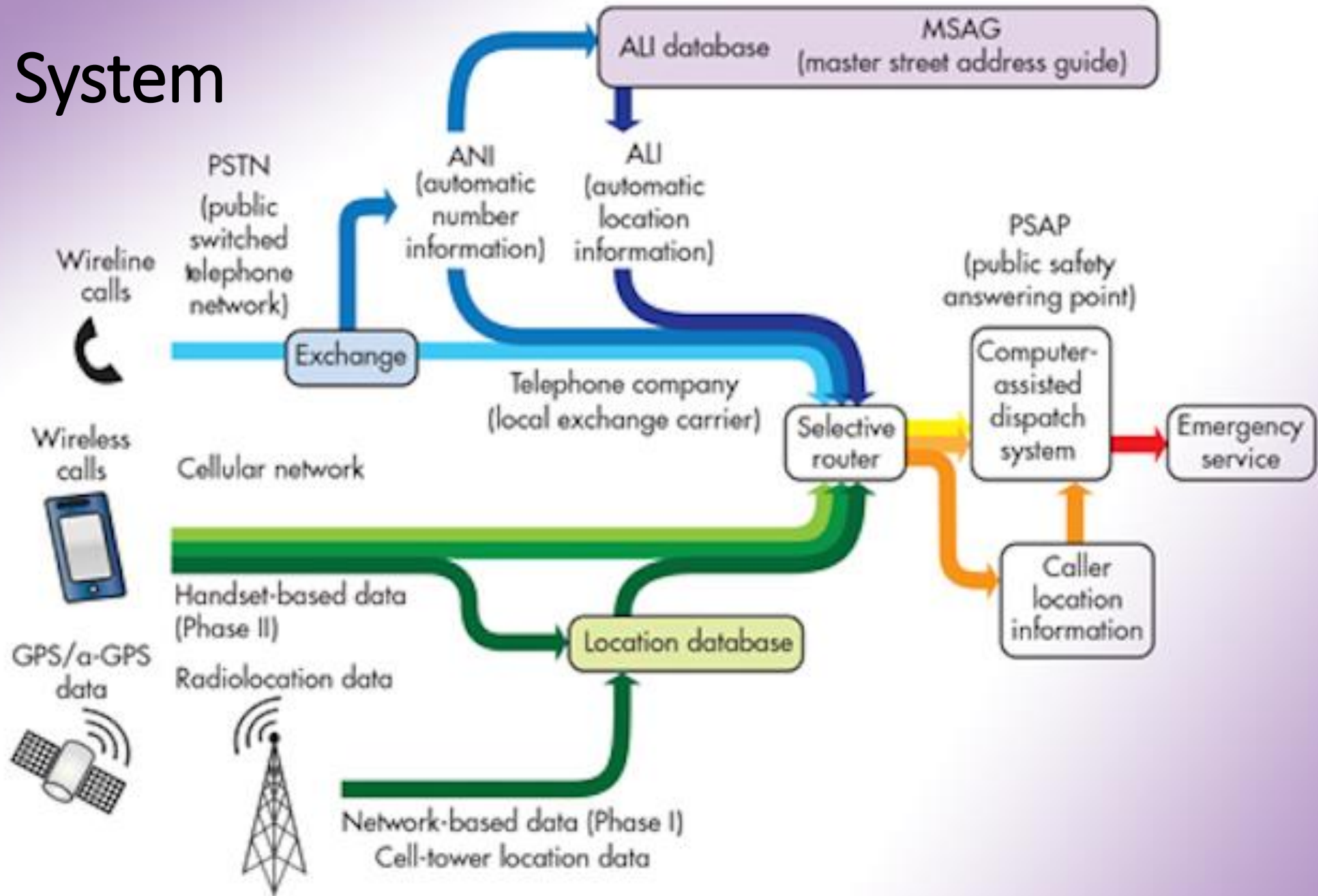
Global Maritime Distress and Safety System



121.5 MHz



911 System



ANI ESN Phone Display

CPN

Request AU Refresh AU Release Call

S2-202 ESN=282 67
 (815) 566-6485 09:04 10/20/2015
 SXL03127
 AT&T-W SECTOR-QF 515C5
 (830) 511-4122 WPH2
 WIRELESS-BEXAR CO TX

ATTMO
 ALT#=
 TELCO=ATTMO
 X=-98.5556459 CNF=068
 Y=29.58593487 UNC=9

WIRELESS CALLER
 VERIFY CALLERS NUMBER
 VERIFY CALLERS LOCATION



RightCAD - Sanborn - Trip Summary

Desktop: Edit View Modes Trip Customer Vehicle Map Billing Alarm Window Help

Vehicle Listing (12 Vehicles)

Veh #	Status	Location	Time	Type	Current Address
202	OK	Station 1	10:20:30	ALS	10711 STATE HWY 440
203	OK	Station 2	10:20:30	ALS	10711 STATE HWY 440
204	OK	Station 3	10:20:30	ALS	10711 STATE HWY 440
205	OK	Station 4	10:20:30	ALS	10711 STATE HWY 440
206	OK	Station 5	10:20:30	ALS	10711 STATE HWY 440
207	OK	Station 6	10:20:30	ALS	10711 STATE HWY 440
208	OK	Station 7	10:20:30	ALS	10711 STATE HWY 440
209	OK	Station 8	10:20:30	ALS	10711 STATE HWY 440
210	OK	Station 9	10:20:30	ALS	10711 STATE HWY 440
211	OK	Station 10	10:20:30	ALS	10711 STATE HWY 440
212	OK	Station 11	10:20:30	ALS	10711 STATE HWY 440

Map - Sanborn - Trip Summary

Priority Call Type Time Pick-Up Address Drop-Off Address Stop-Off

Priority	Call Type	Time	Pick-Up Address	Pick-Up City	Drop-Off
1	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
2	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
3	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
4	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
5	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
6	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
7	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
8	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
9	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
10	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
11	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
12	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL

Map - Sanborn - Trip Summary

Priority Call Type Time Pick-Up Address Drop-Off Address Stop-Off

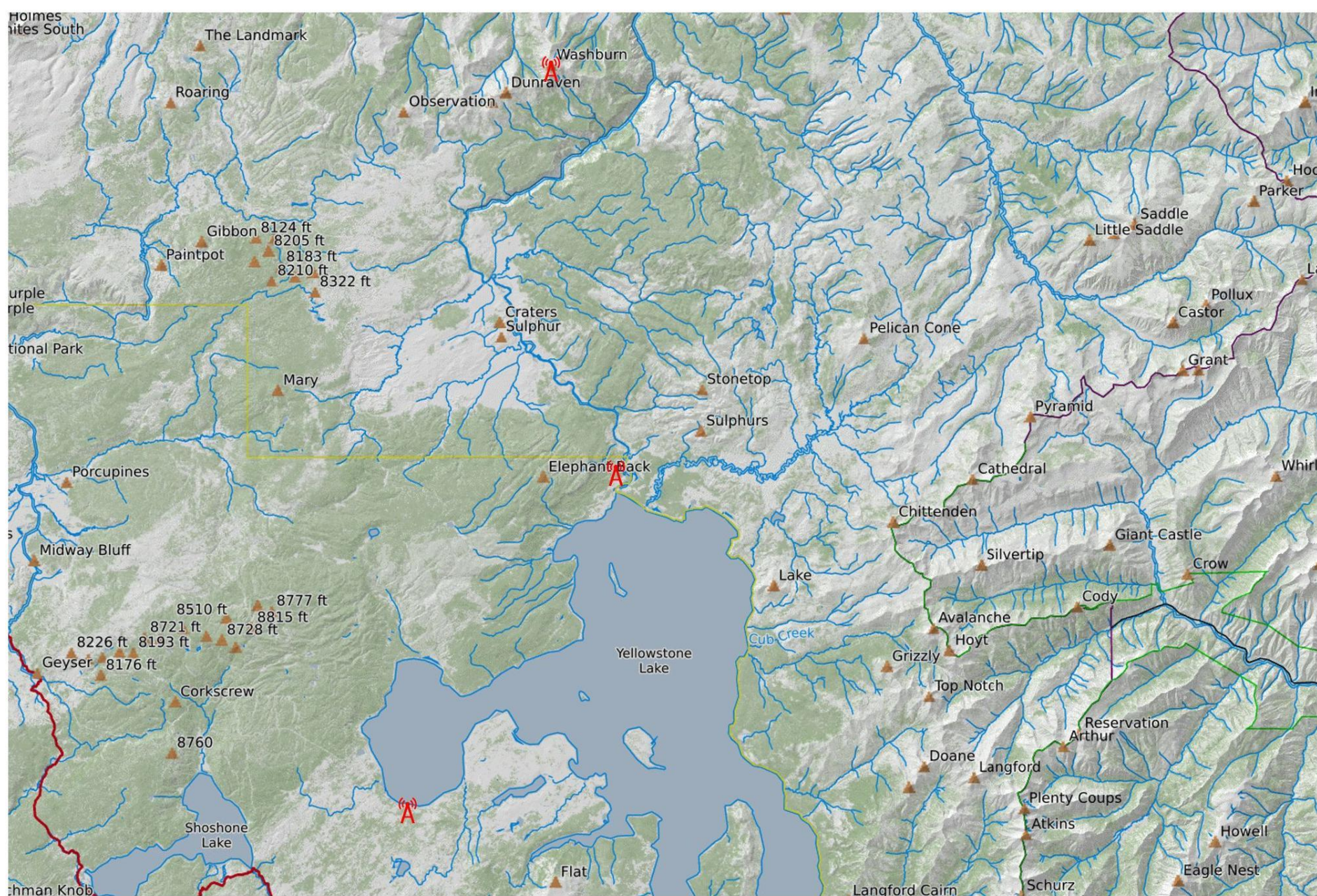
Priority	Call Type	Time	Pick-Up Address	Pick-Up City	Drop-Off
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2	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL
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Map - Sanborn - Trip Summary

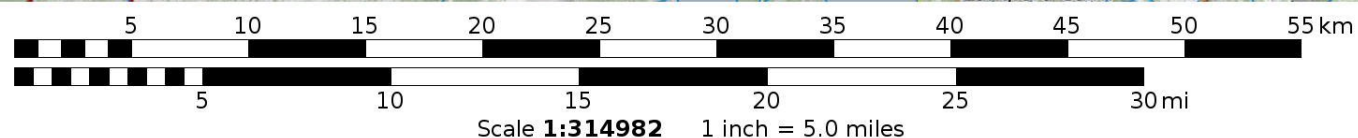
Priority Call Type Time Pick-Up Address Drop-Off Address Stop-Off

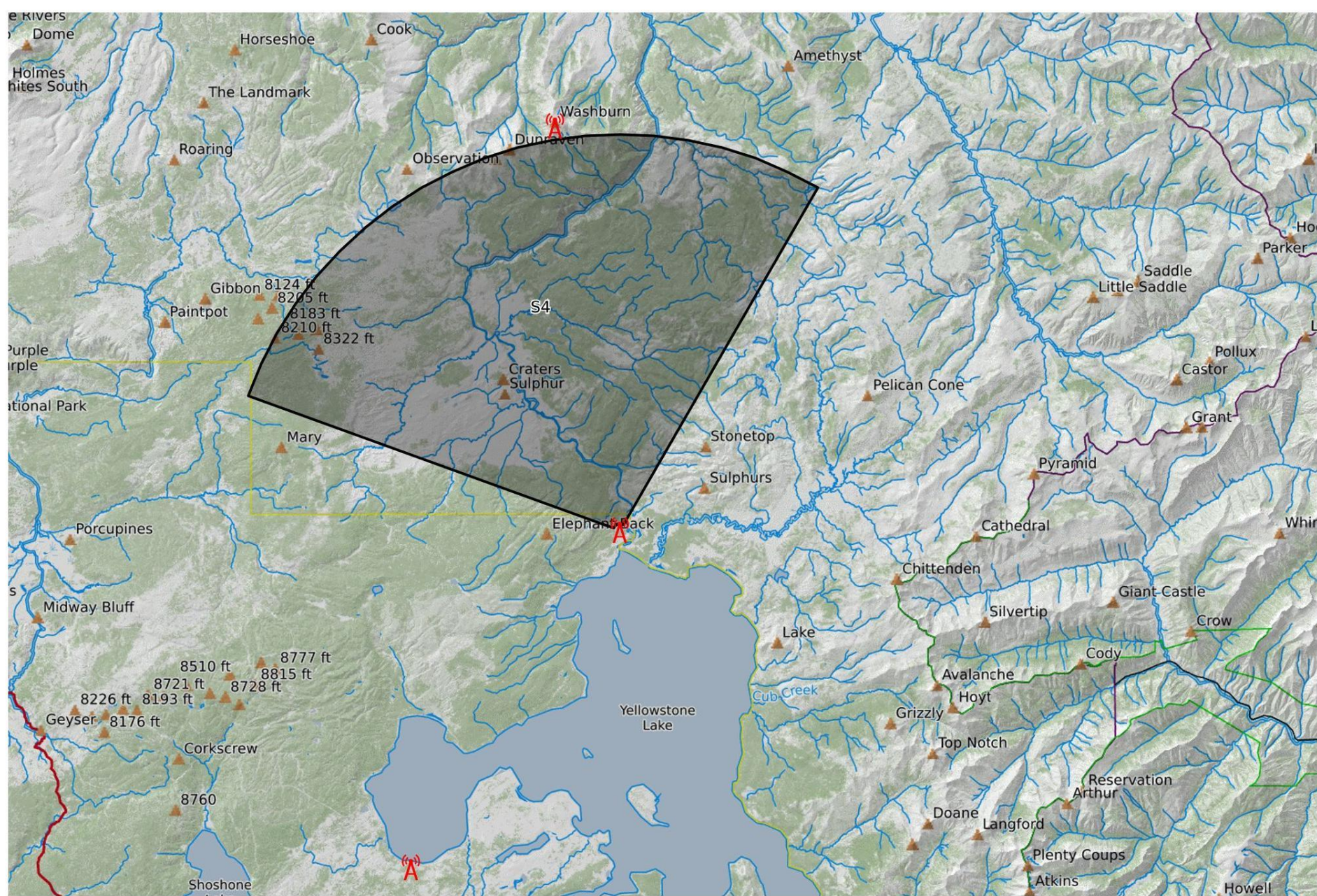
Priority	Call Type	Time	Pick-Up Address	Pick-Up City	Drop-Off
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12	Emergency	10:20:30	10711 STATE HWY 440	DEERFIELD	111 UNIVERSITY HOSPITAL



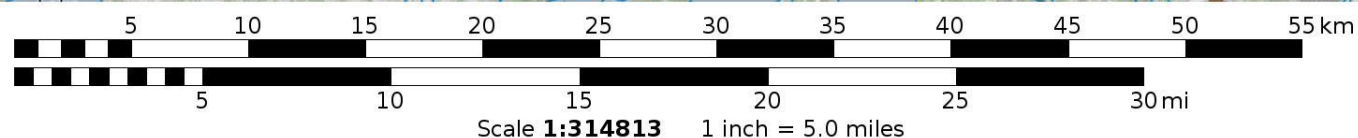


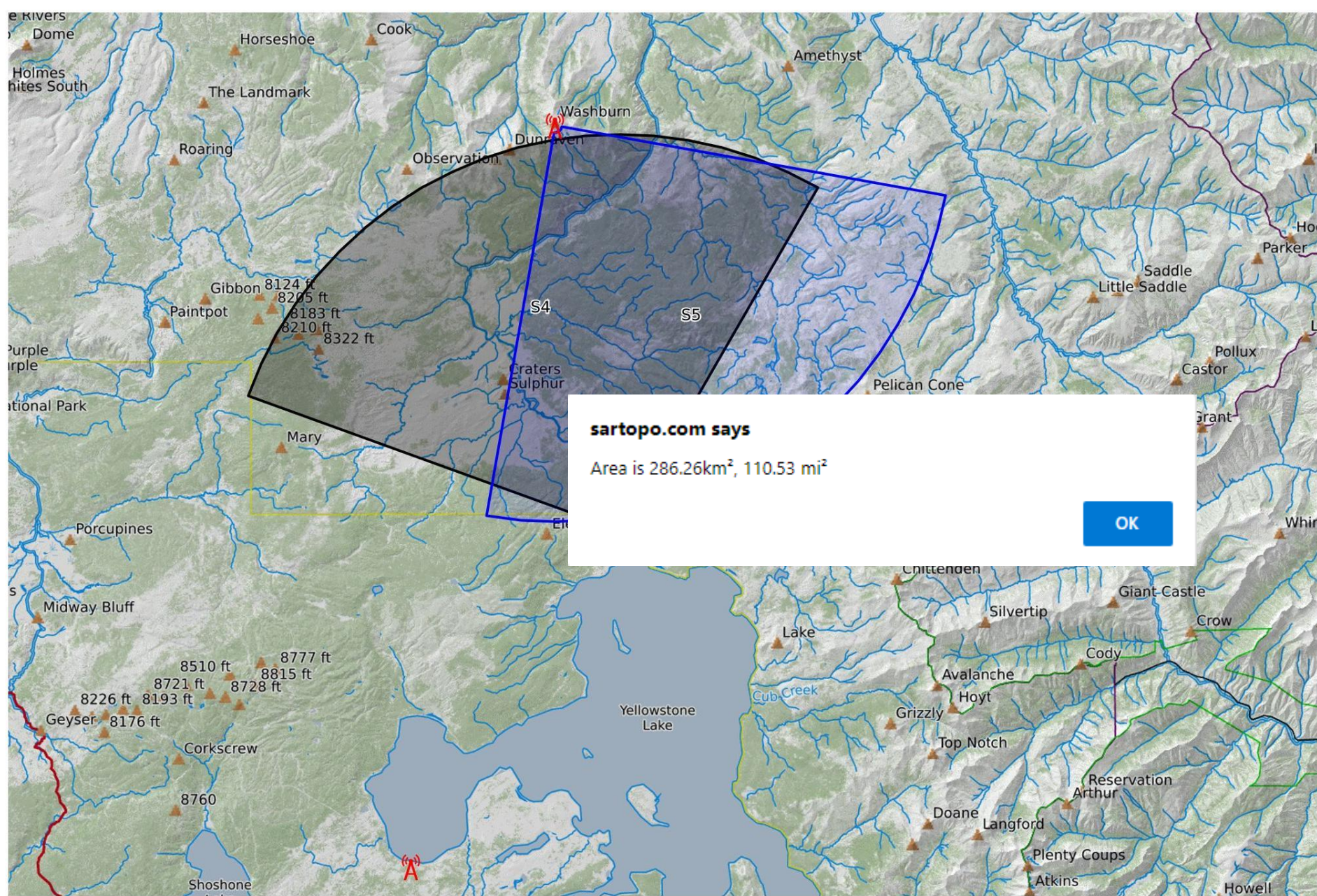
Mercator Projection
WGS84
UTM Zone 12T

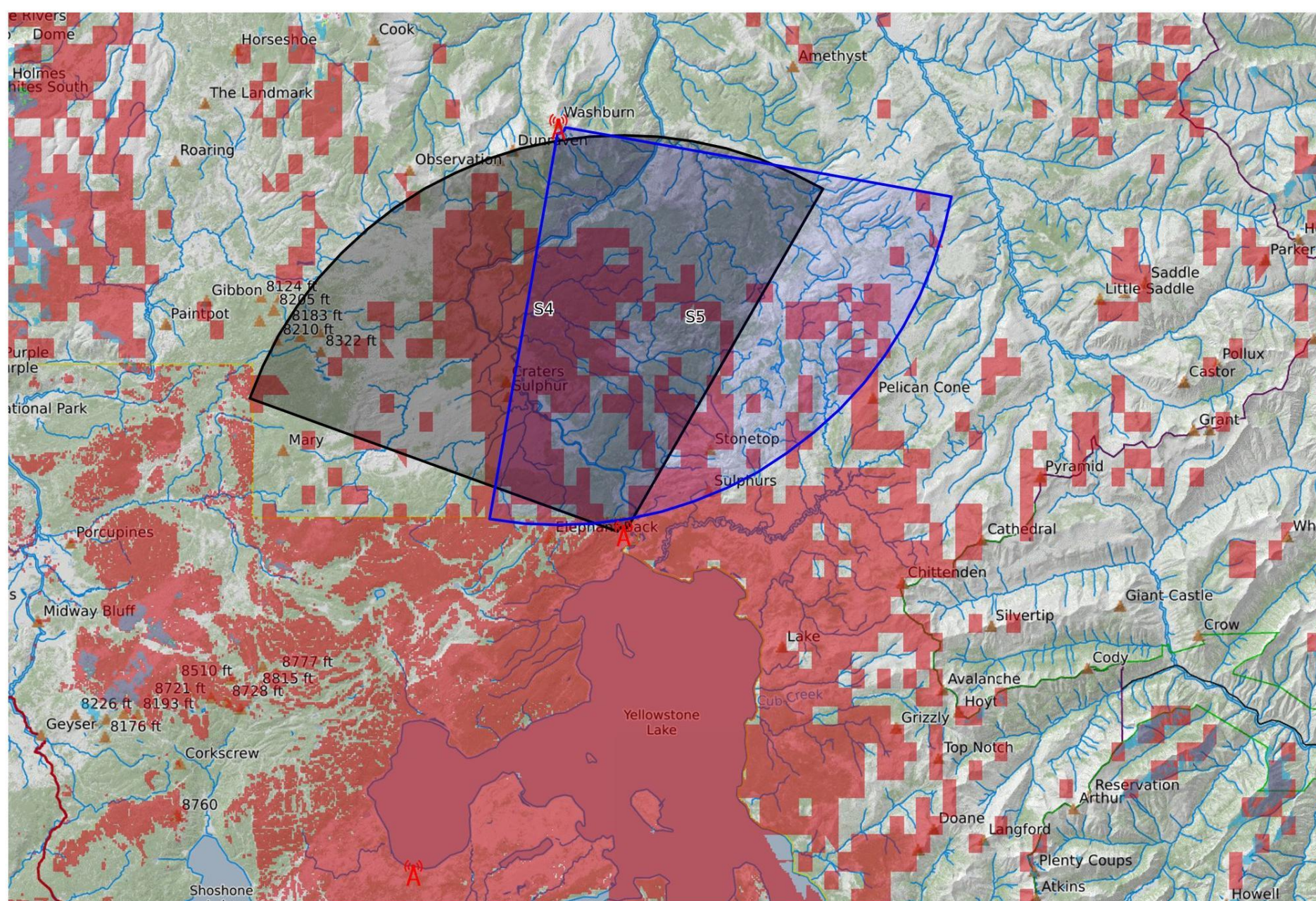





Mercator Projection
WGS84
UTM Zone 12T

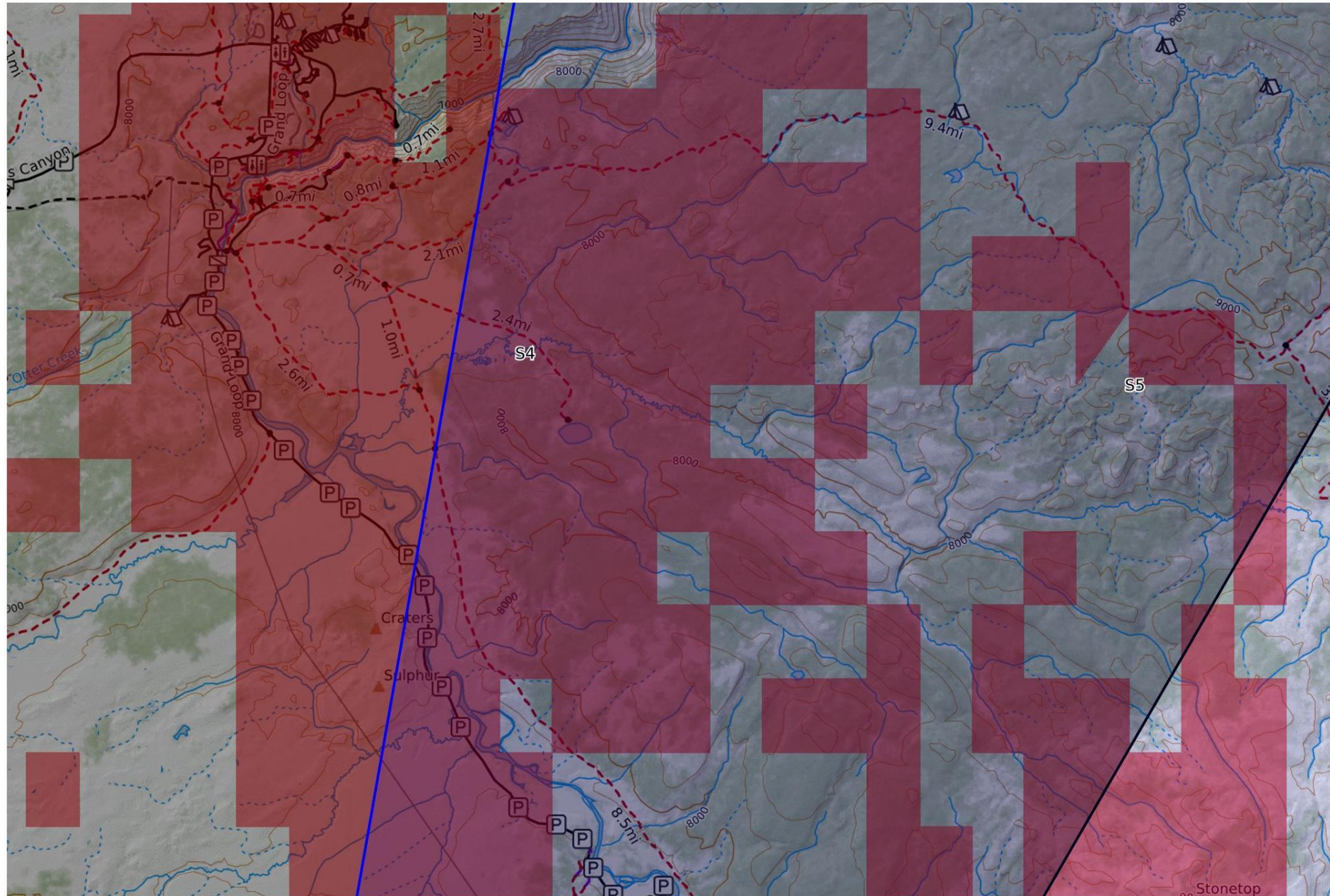





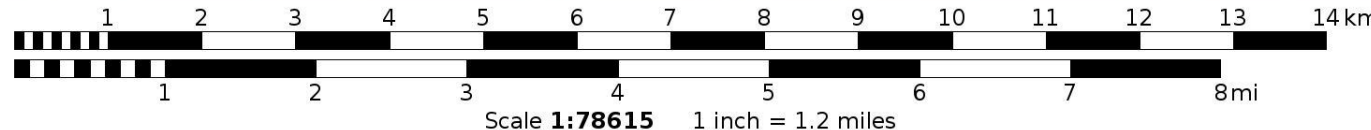


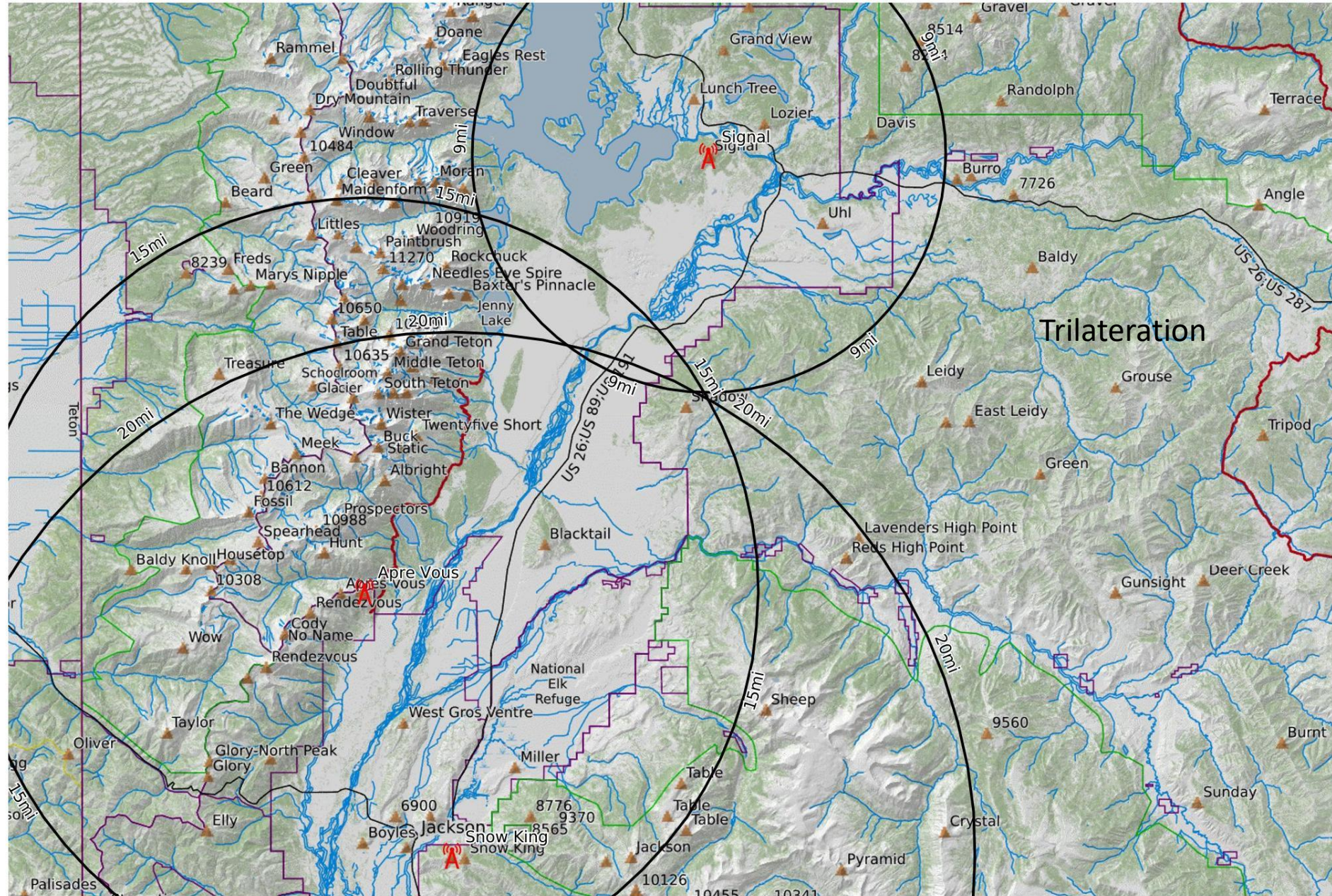
Mercator Projection
WGS84
UTM Zone 12T



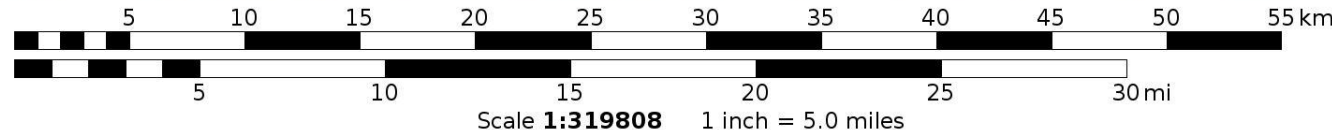



Mercator Projection
WGS84
UTM Zone 12T



Mercator Projection
WGS84
UTM Zone 12T

SMS Locator



Send someone a text message in order to record their location on the map. Their phone will need a web browser and an active data connection to respond.

Label

Name shown on the map

Target Phone #

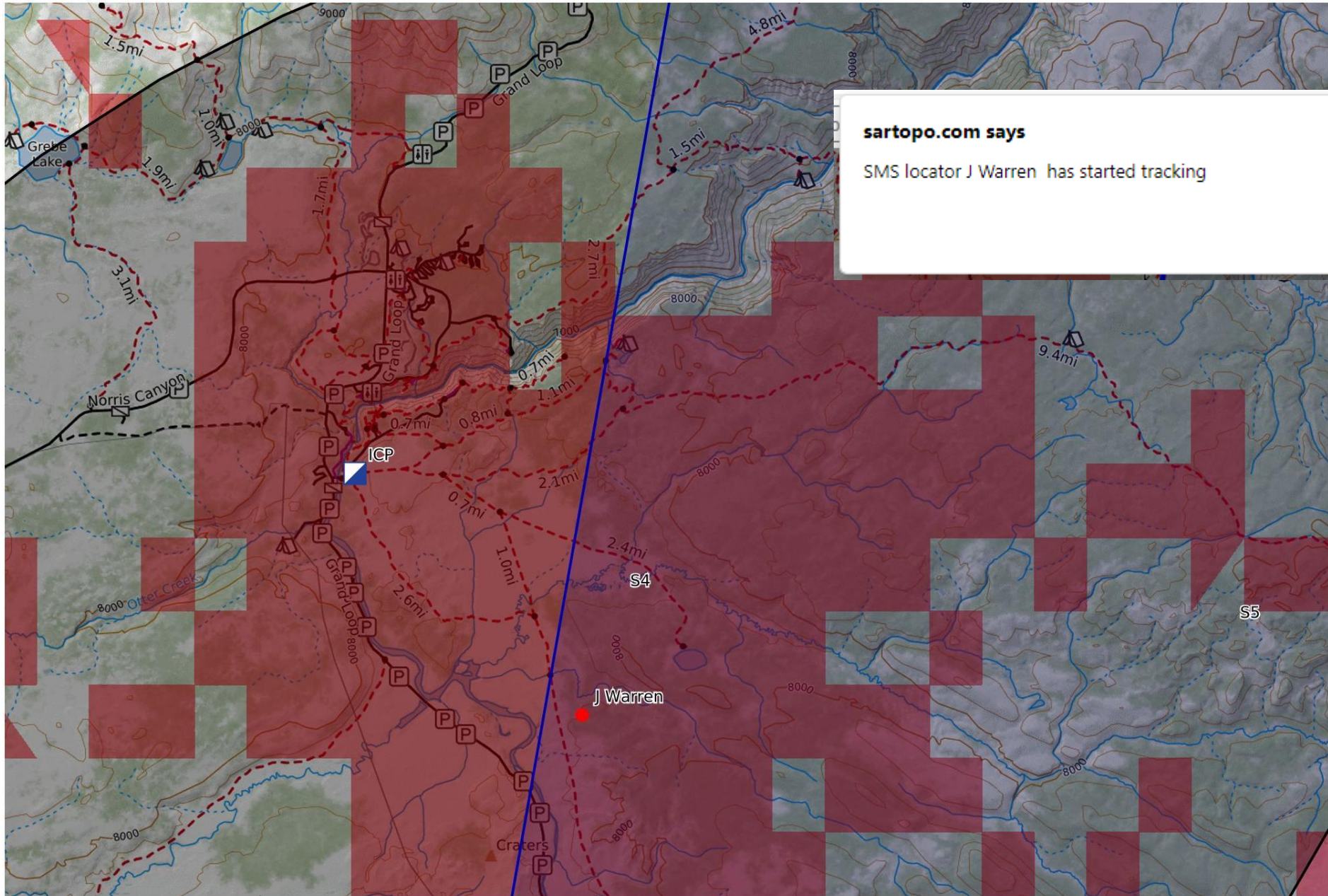
eg: 530-555-0123

Message

(80 char max)

Cancel

OK



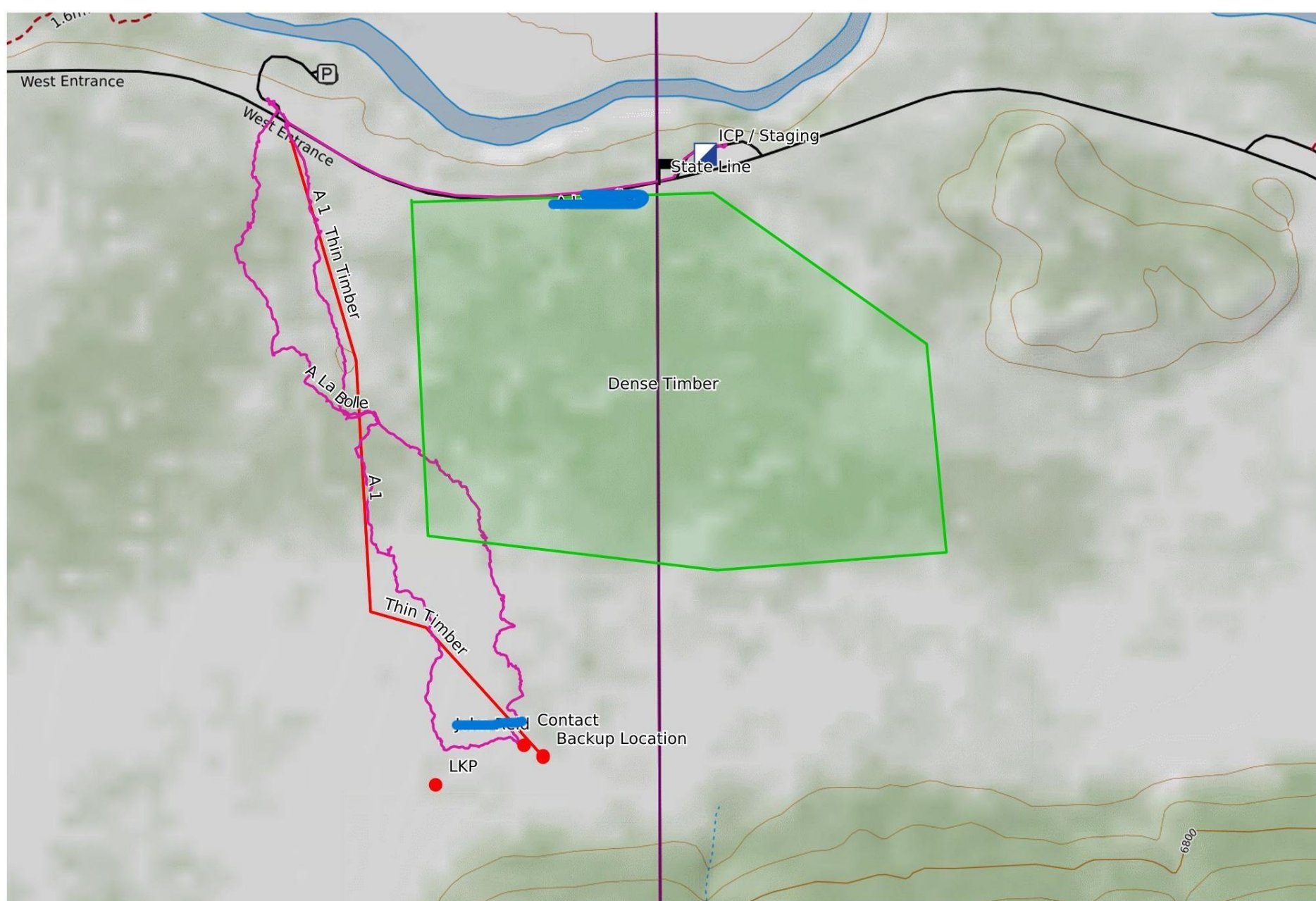
sartopo.com says

SMS locator J Warren has started tracking

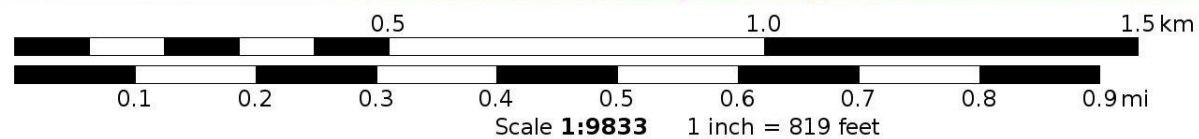
OK

Mercator Projection
WGS84
UTM Zone 12T

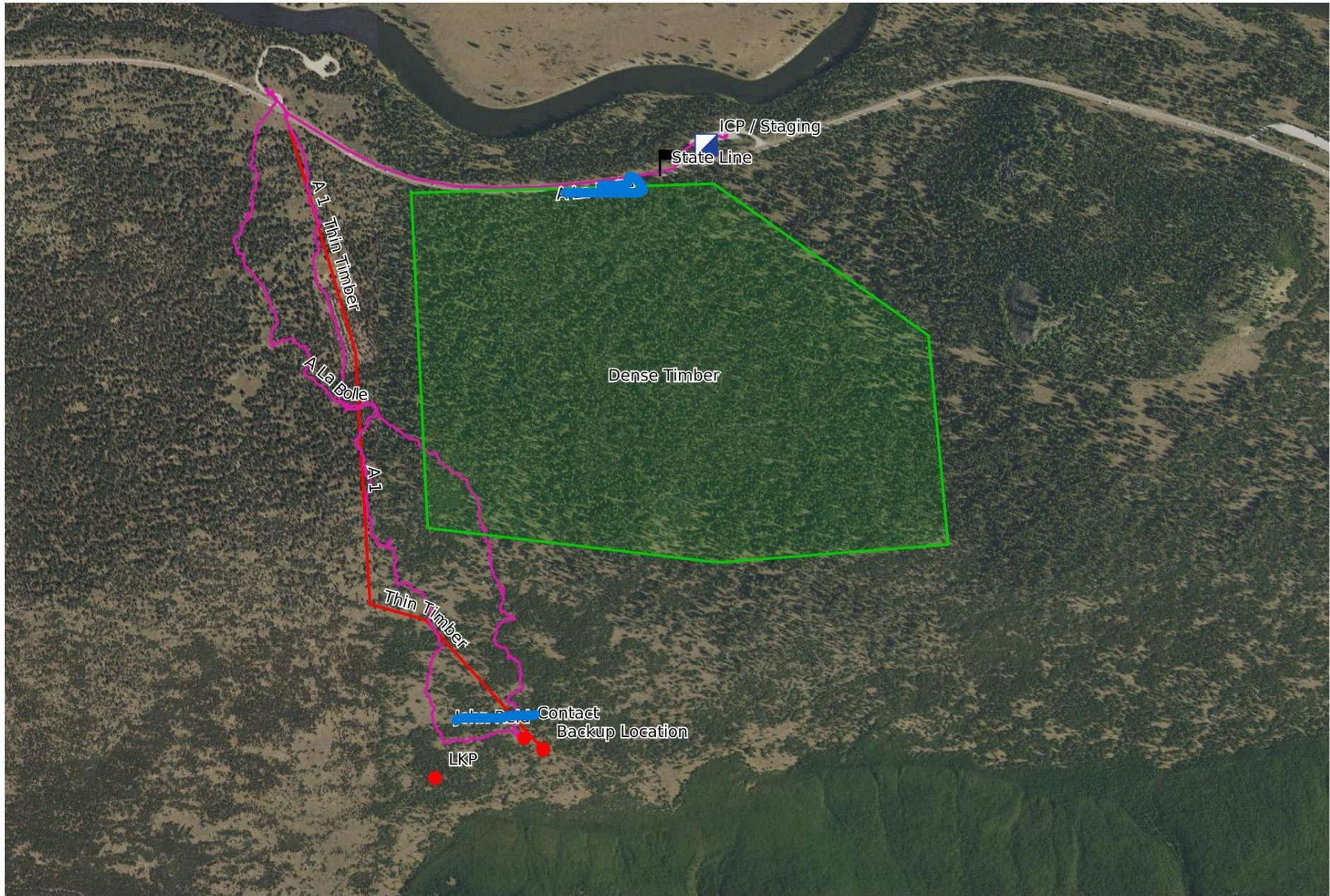


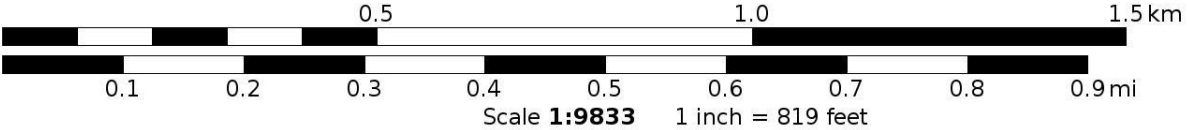
Mercator Projection
WGS84
UTM Zone 12T
 SARTOPO



MN
11.2°



Mercator Projection
WGS84
UTM Zone 12T

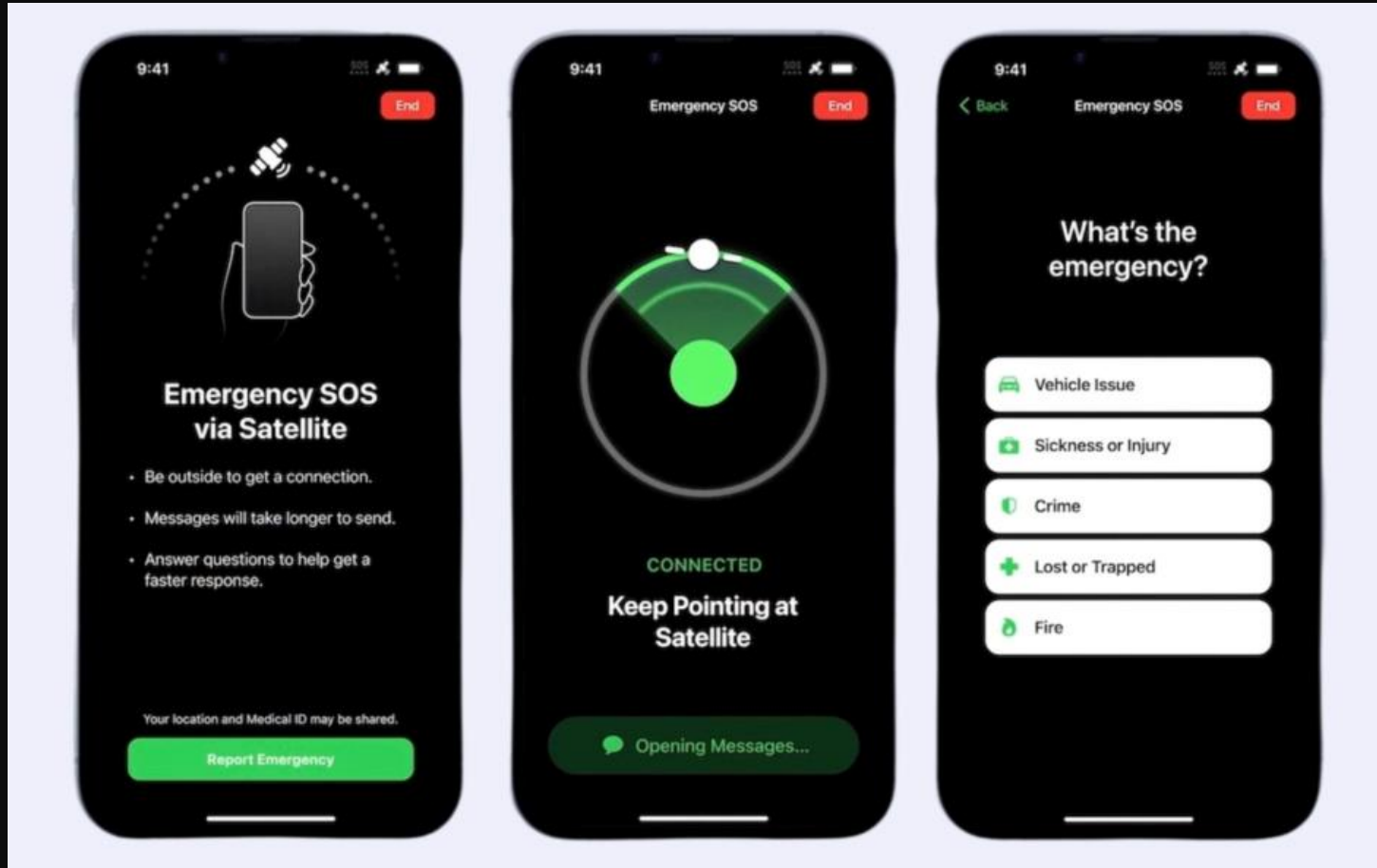
MN
11.2°



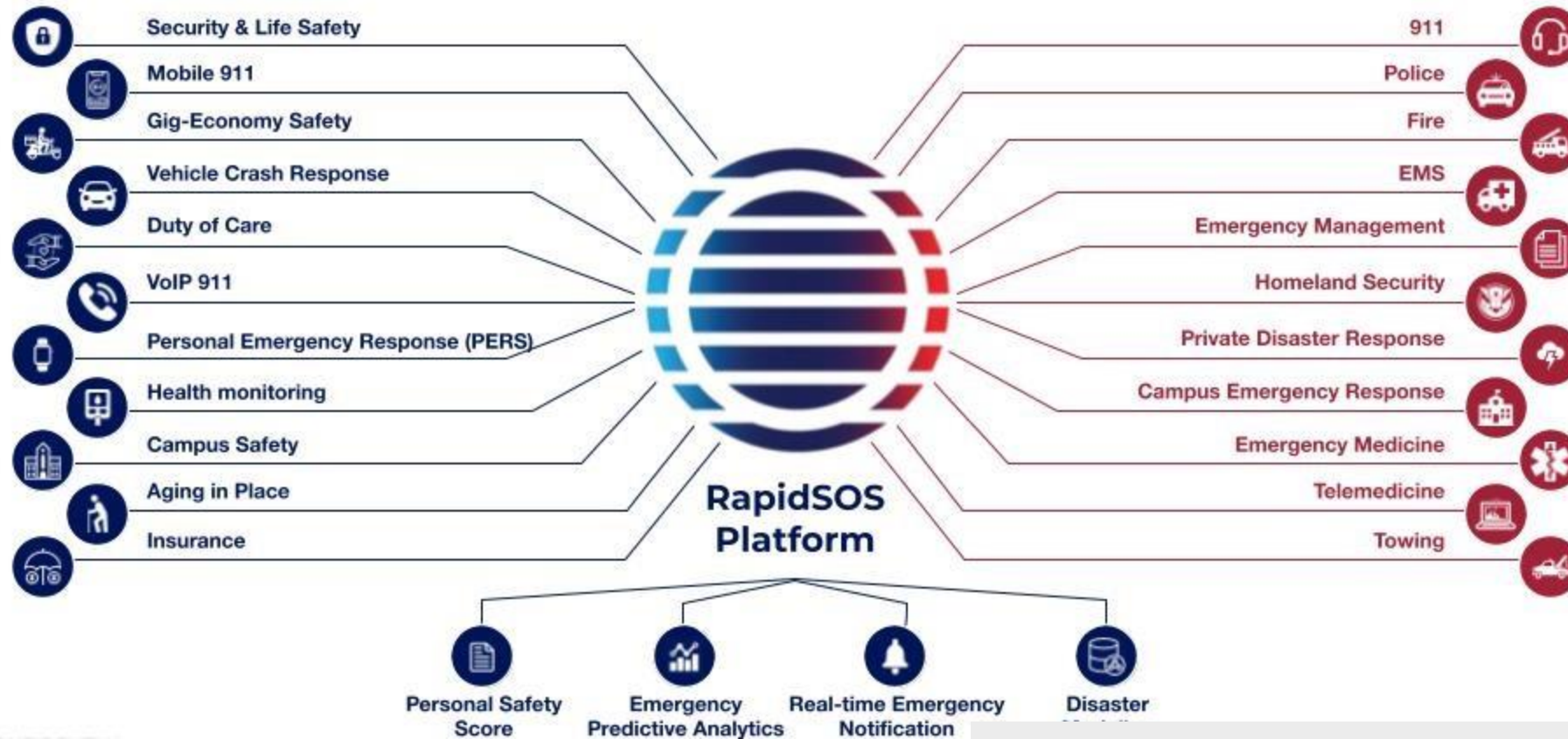
Ping

Exigent Circumstances
Submitted through Wireless Carrier
Investigations phase

iPhone 14 / Apple Watch

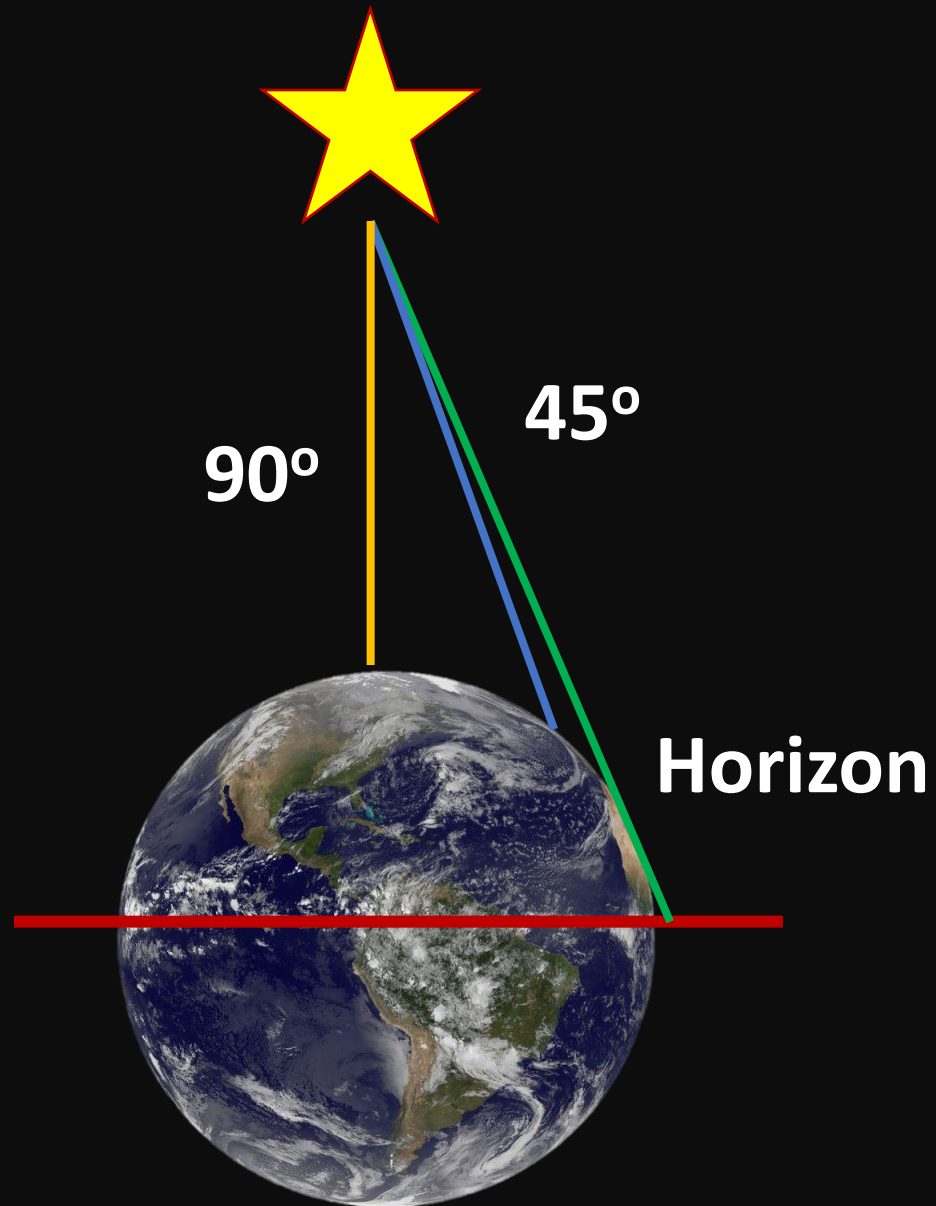


RapidSOS: Emergency Response Data Platform



GPS

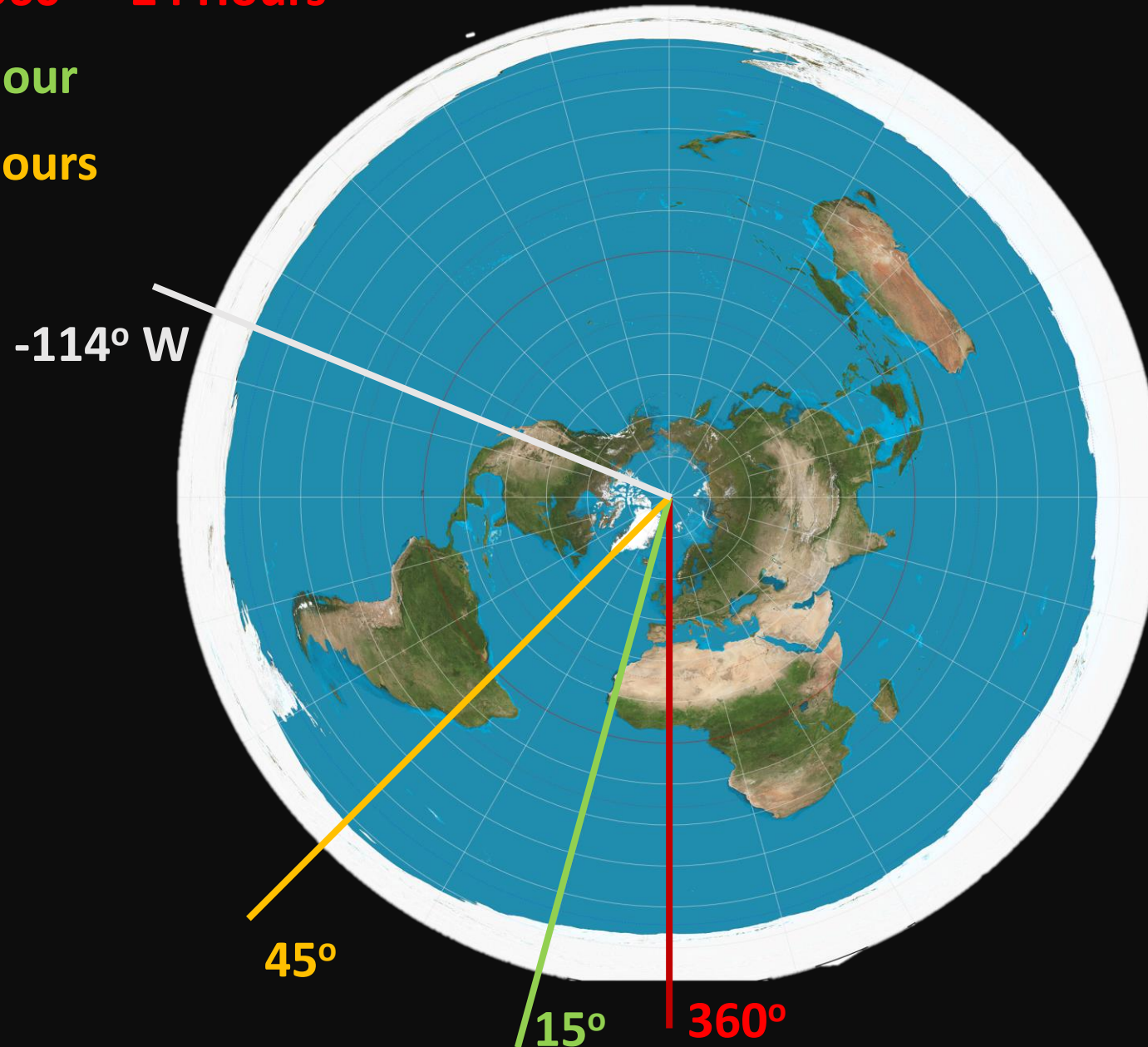




1 Revolution = 360° = 24 Hours

$1/24 = 15^\circ = 1 \text{ Hour}$

$3/24 = 45^\circ = 3 \text{ Hours}$



**Midnight at our
Position**

**0736 Hours in
Greenwich**

**0736 = 7.6
Hours Earlier**

**$7.6 \times 15 =$
 114° W**

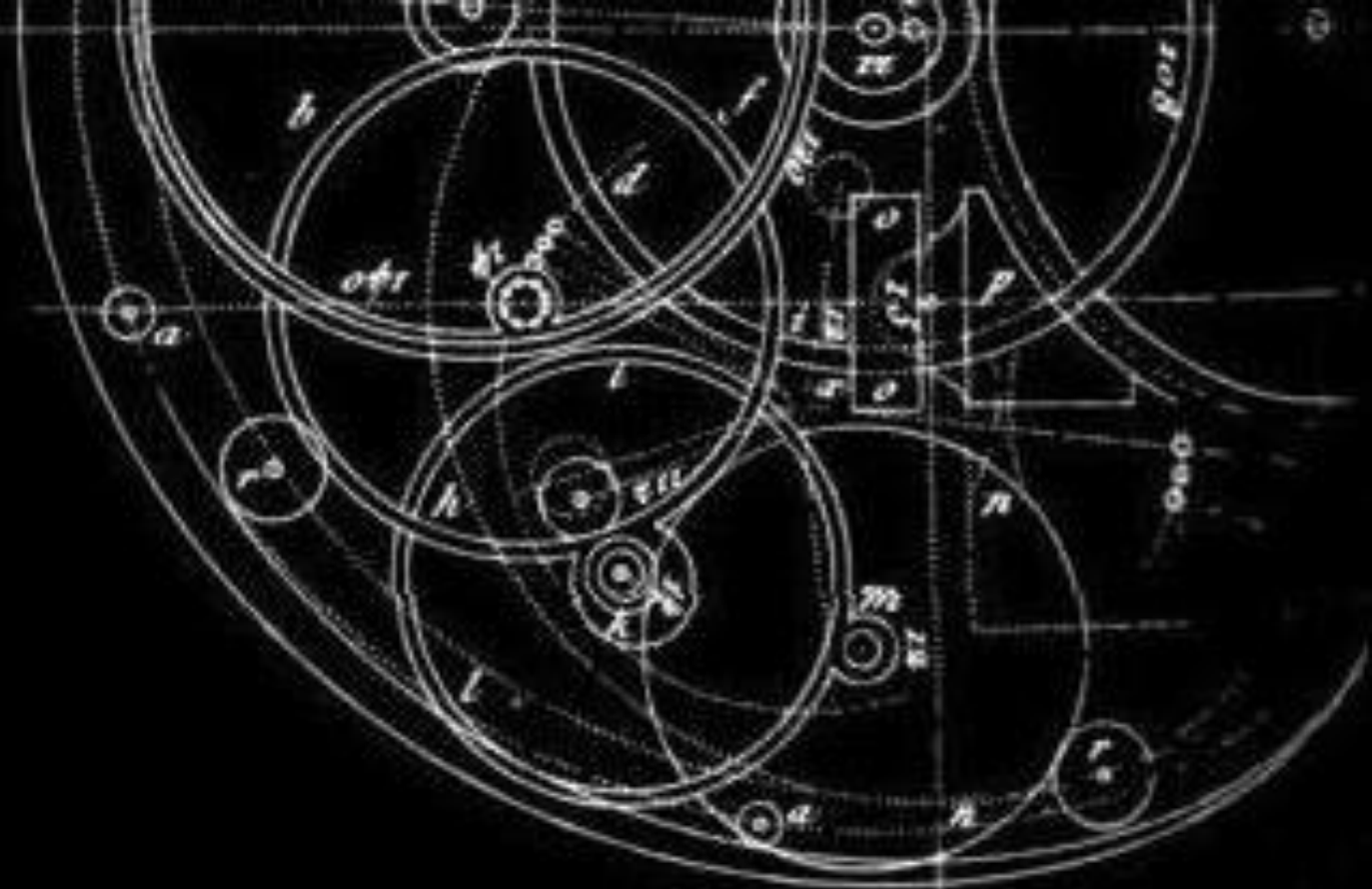
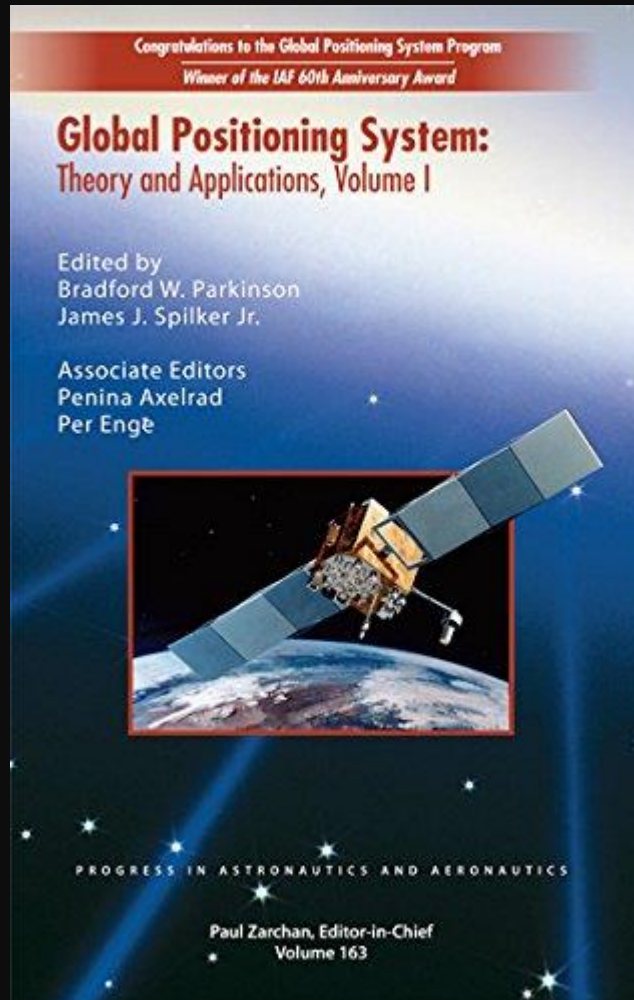


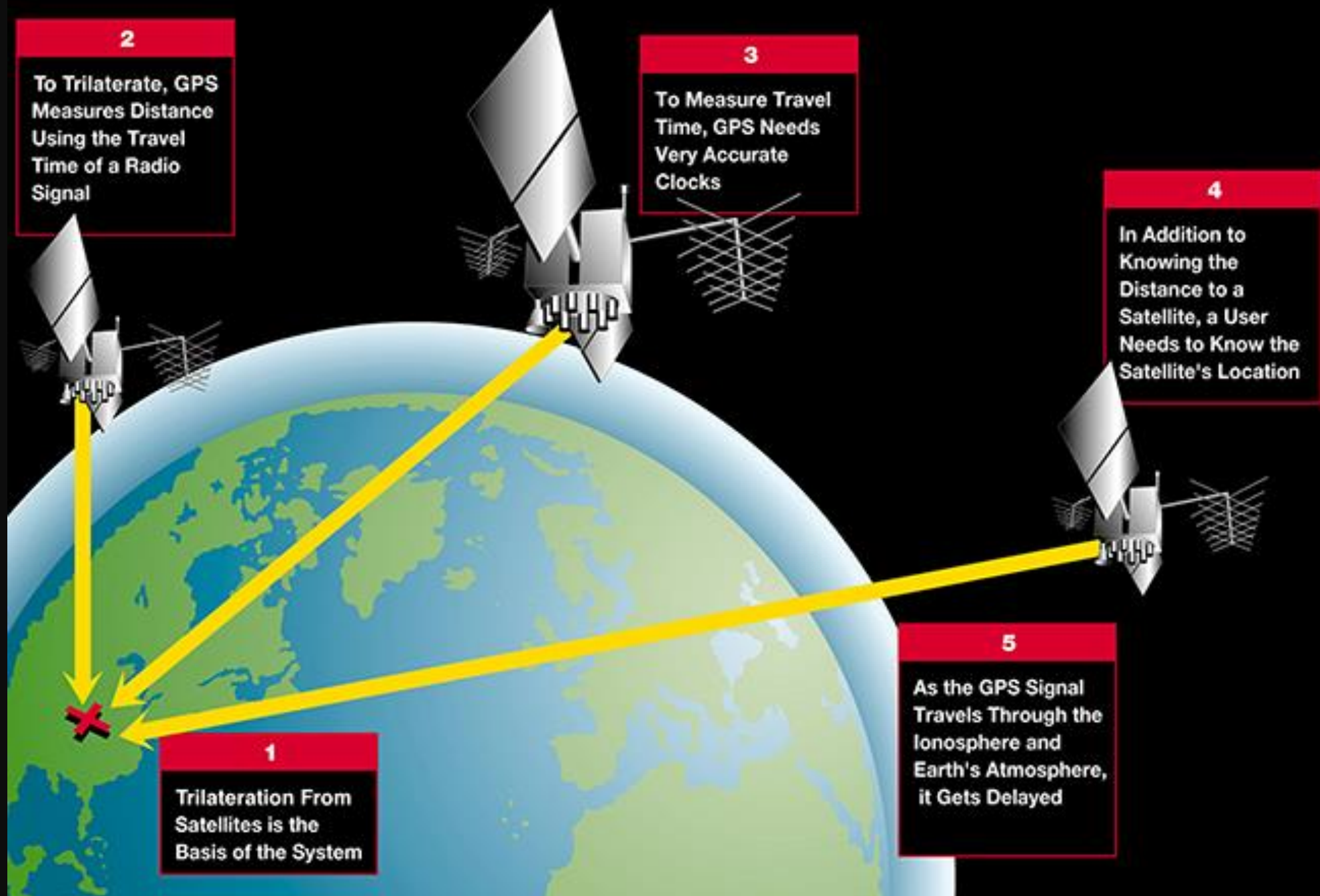
Fig. 4.

Ferdinand Berthoud's marine chronometer no.3, 1763

A short history of GPS

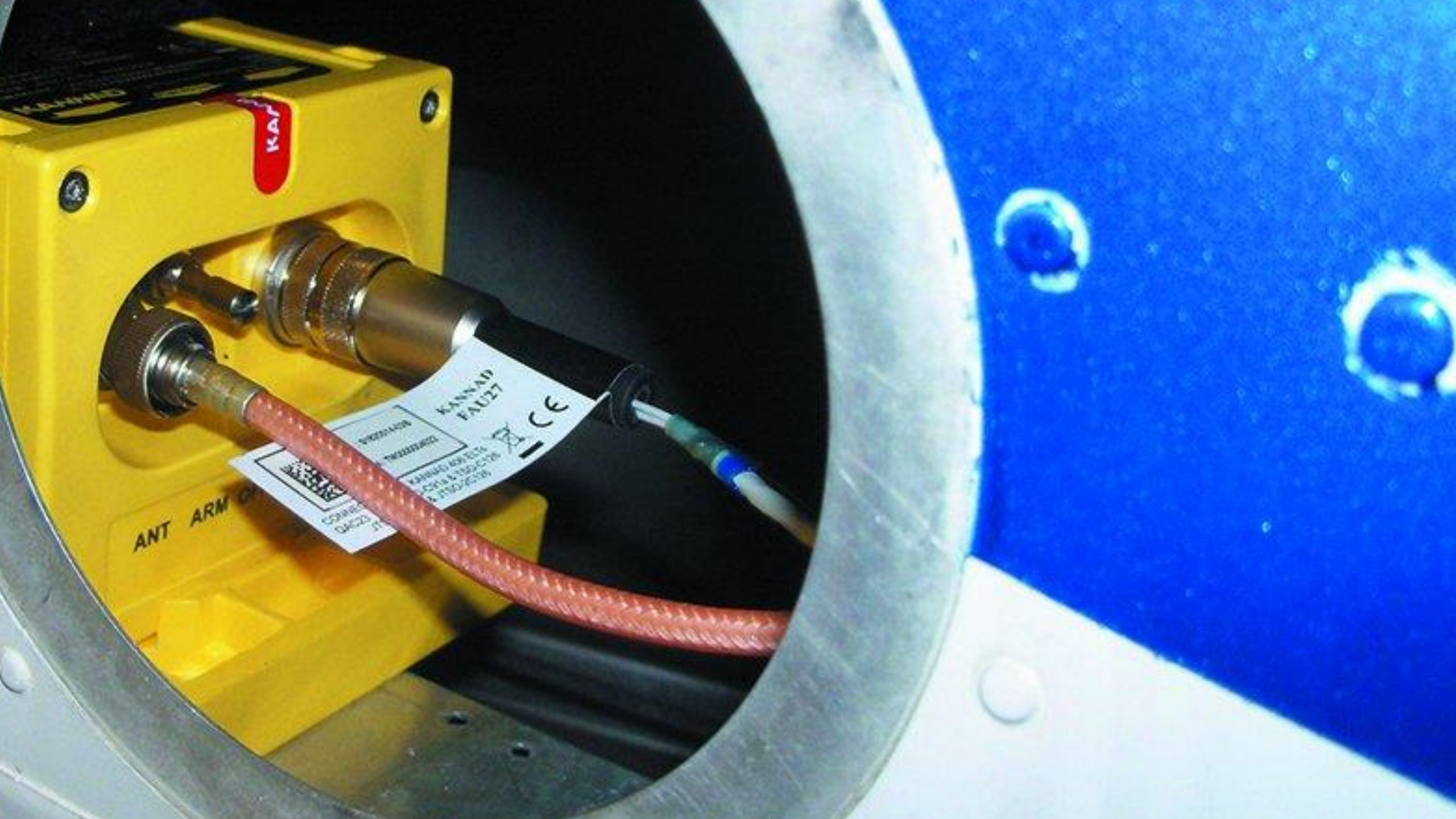


Brad Parkinson



Low Earth Orbit (200km-2000km)

- Iridium (66)
 - Worldwide Coverage
- Globalstar (48)
 - Limited Worldwide Coverage
- Inmarsat (13)
 - Major Continents
- COSPAS – SARSAT (65)
 - Global 406
 - Includes GPS



SKW3567
12/24/2017 ~6:00pm Local

- Legend
- Feature 1
 - Feature 2
 - Feature 3
 - SKW3567



BRKET



SQL

Clr

F1

Store

F2

Rep

DIM

page



RHOTHETA

SAR-DF 517

ON/OFF

RT-600.DCU



GPS
Satellite



Rescue Alert
Satellite



Rescue
Centre



Play (k)

0:00 / 0:20



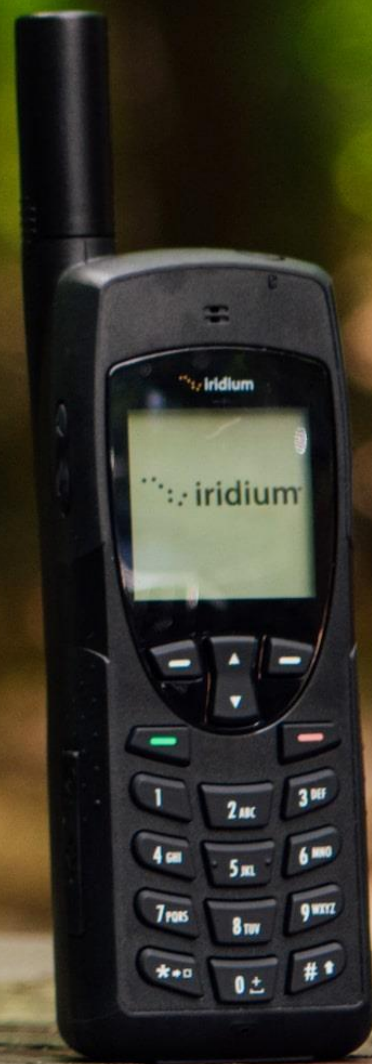


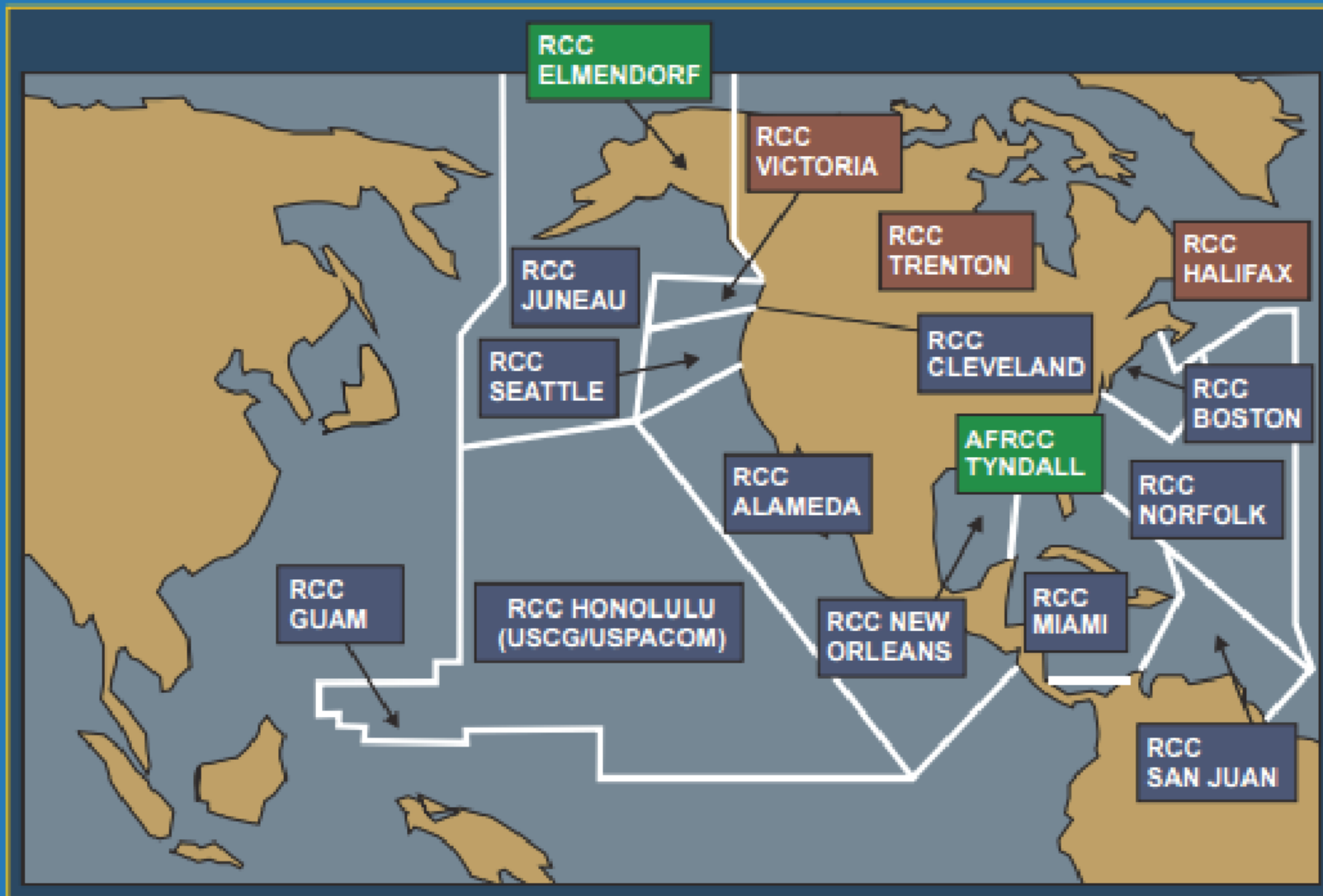
AquaLink™

DO NOT COVER
GPS RECEIVER
When clear used to dry

ACR







LEGEND

	United States Coast Guard RCCs
	United States Department of Defense RCCs
	Canadian RCCs

AFRCC	Air Force rescue coordination center
RCC	rescue coordination center
USCG	United States Coast Guard
USPACOM	United States Pacific Command

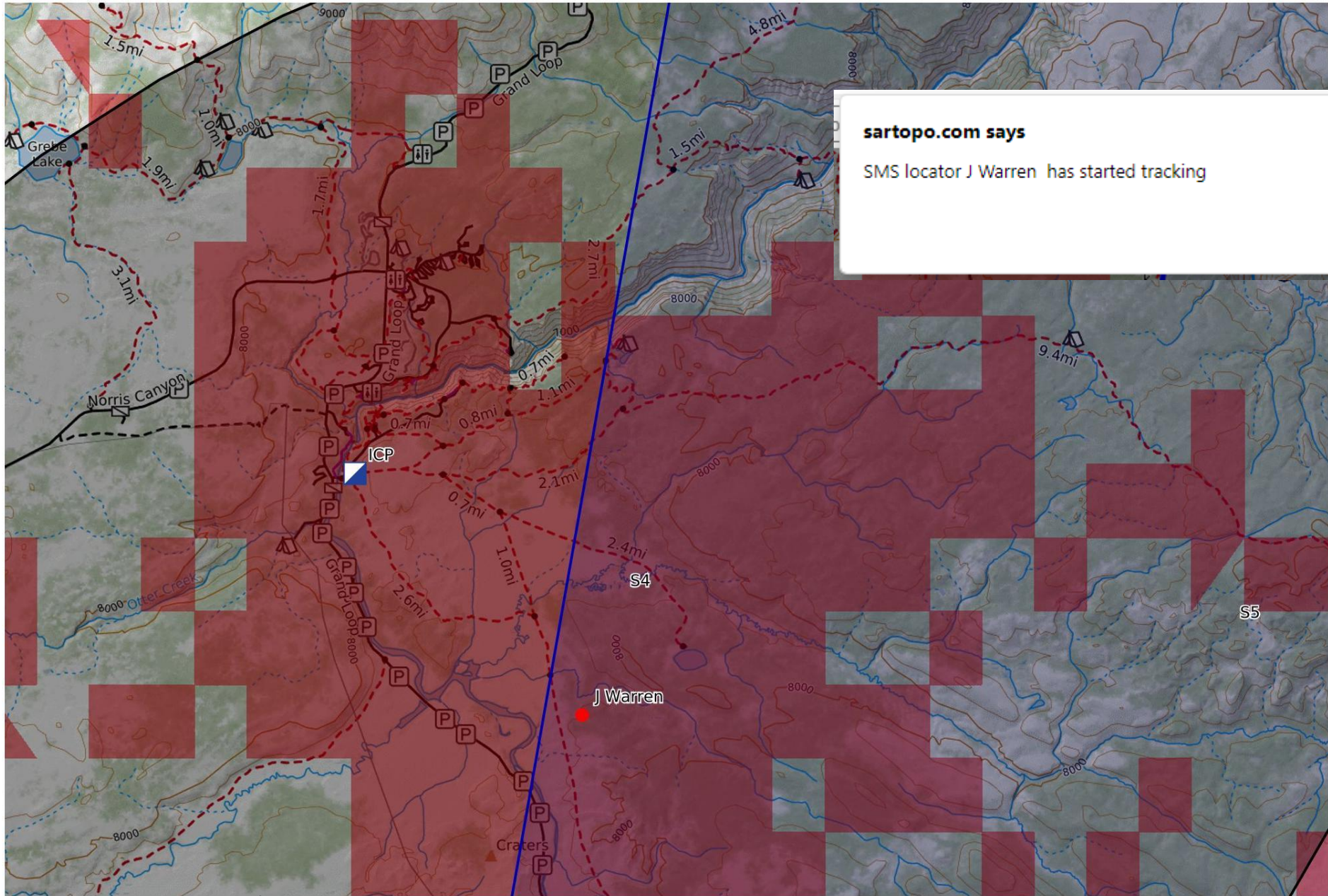


Resource Notification

- Nature of Emergency
- Location / Jurisdiction
- SOPs
- Mutual Aid Agreements
- International Cooperation
- Expertise and Equipment

Initial Planning Point

- Known Location
- Unknown Location
- Begin Focus on Linear Terrain Features



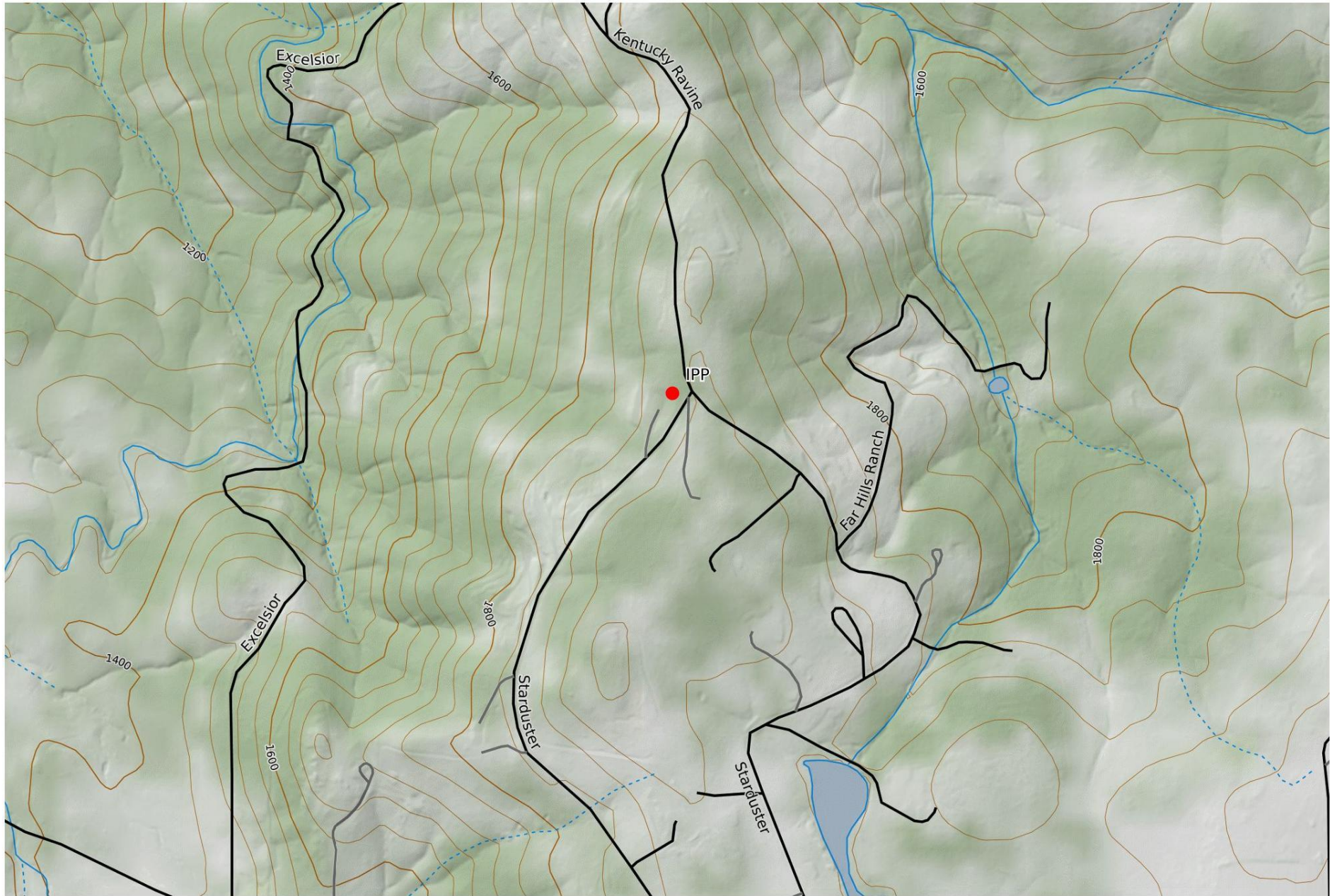
sartopo.com says

SMS locator J Warren has started tracking

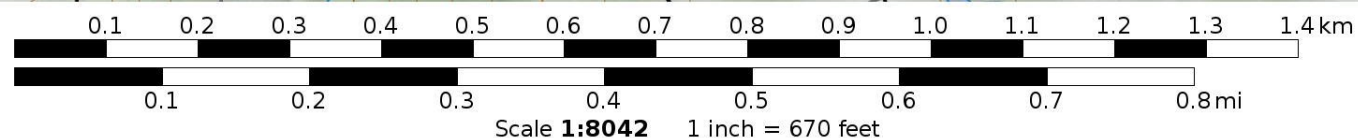
OK

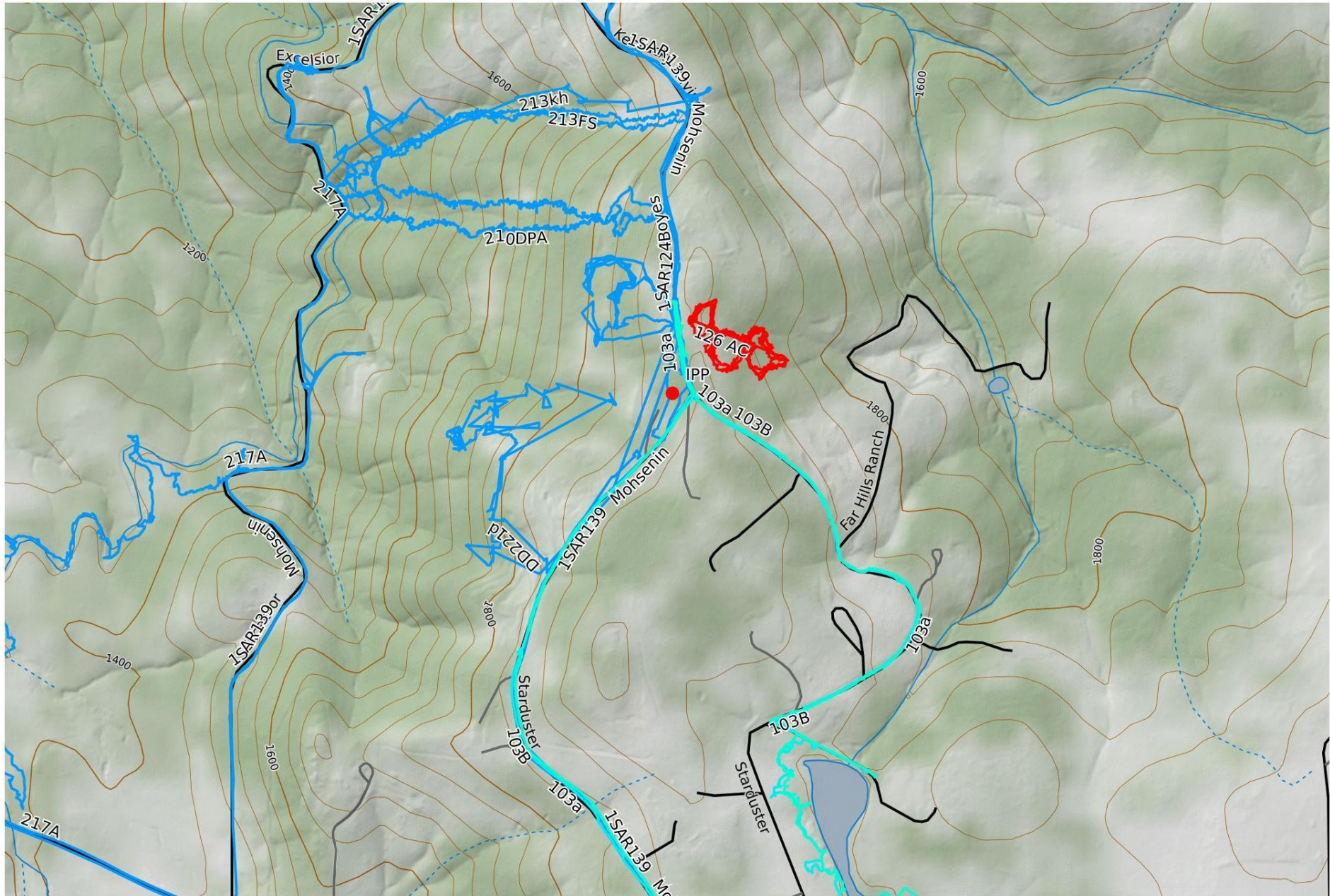
Mercator Projection
WGS84
UTM Zone 12T



Mercator Projection
WGS84
UTM Zone 10S

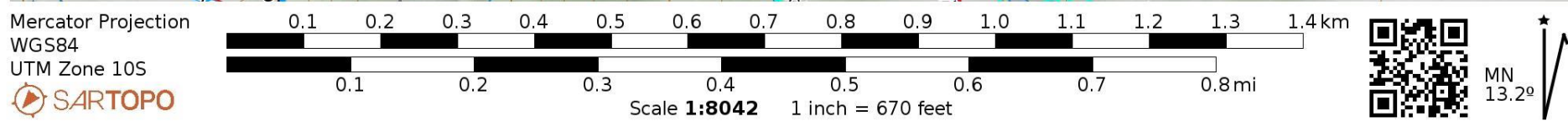





Mercator Projection
WGS84
UTM Zone 10S




MN
13.2°



0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 km

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 mi

Scale **1:8042** 1 inch = 670 feet





MN
13.2°

Revisiting Spurned Soaps

///revisiting.spurned.soaps



Share



Navigate



Save

This is an example of what you'll share

<https://w3w.co/revisiting.spurned.soaps>
43°41.8168'N, 114°21.1627'W



[Customise share settings](#)



Facebook



Facebook
Messenger



Whatsapp



Twitter



Copy Link



Email



SMS



Shrunk.Gazes.Zoomed

