TOWN OF TRUCKEE

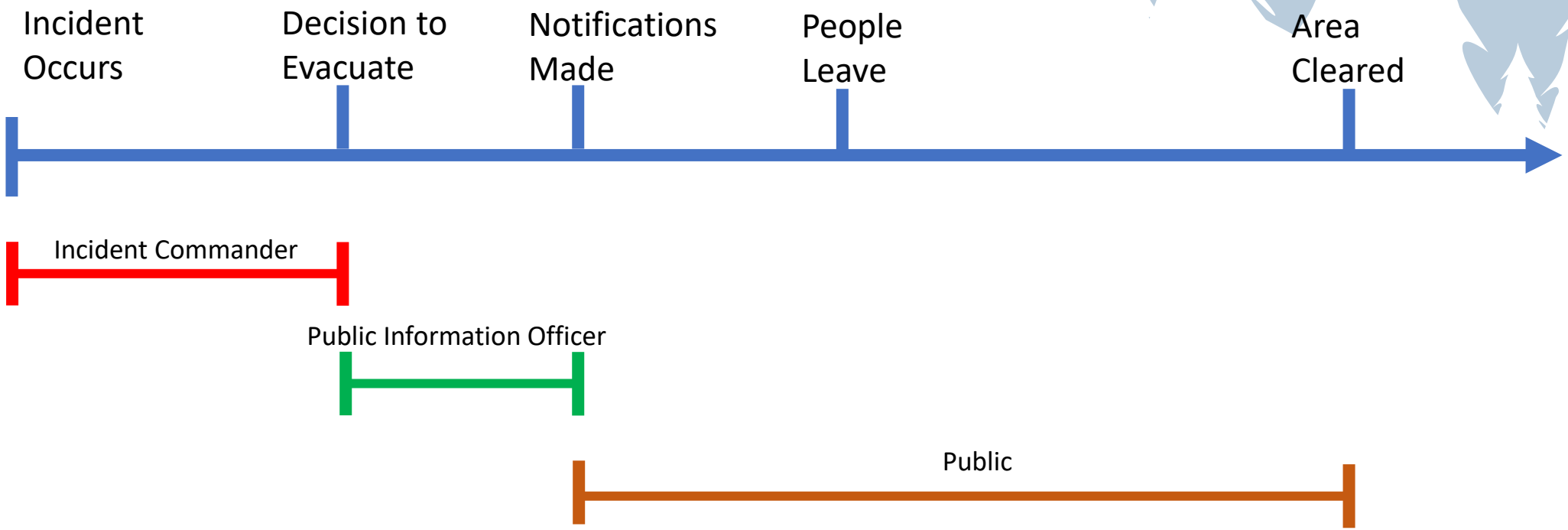
Tahoe Donner 2024

Emergency Management Presentation

What are we going to talk about?

- Anatomy of an evacuation
- What is the “Safe Zone”
- What are expected times (agency vs public sites)
- Why the 3rd egress may not be all that we think and when does it help
- Updated evacuation and wildfire modeling
- How can the HOA help with evacuation times

Anatomy of an Evacuation



"Modernizing Public Warning Messaging"
PrepTalks: Dr. Dennis Mileti
01/29/2018

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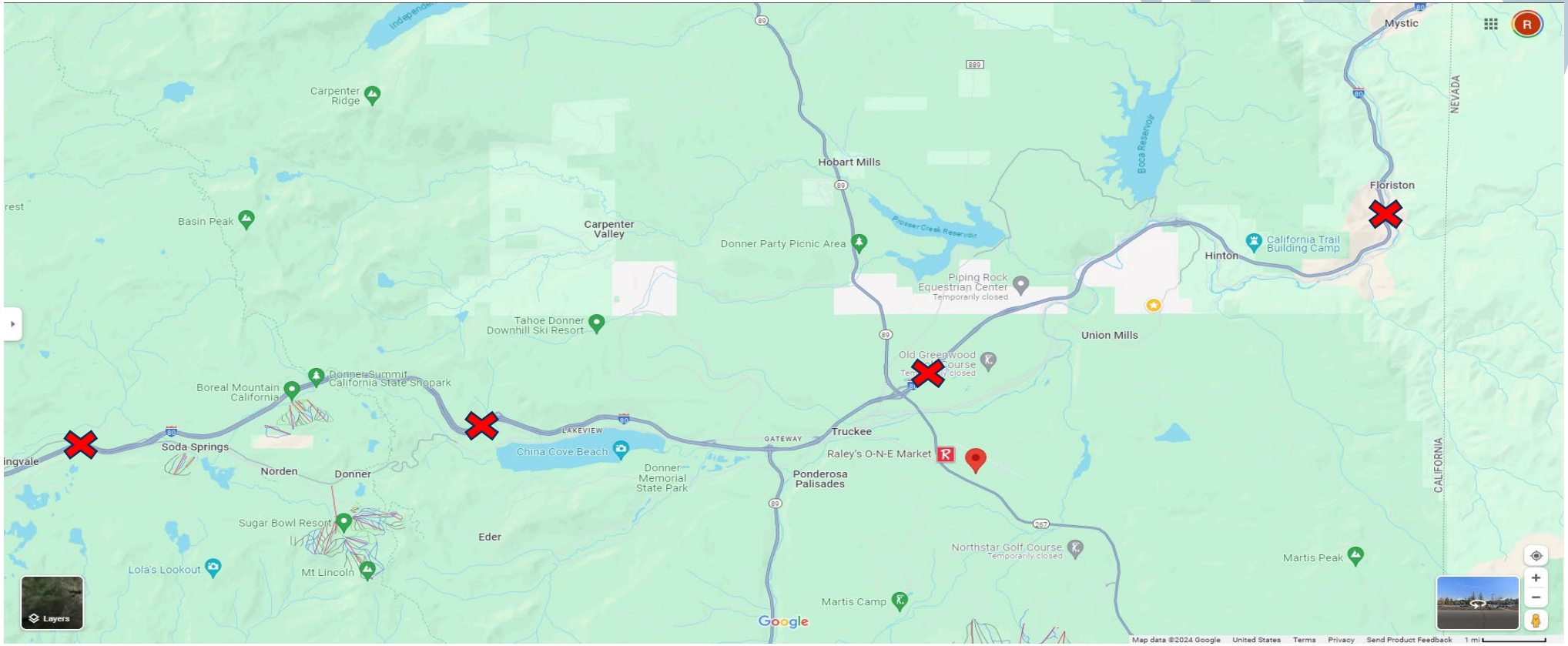
What is the “Safe Zone”



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Counting Cars and Why?

Old Ways – often WAGs

- Air tube car counts
- Residential Structures
- Census Data
- Sewer Flushes
- Hand counts

New Ways – A.I.

- Cell Phone Data
  - Slow to get information
  - Need to anonymize for ownership
- License Plate Readers
  - Real-time,
  - Cost for service
  - Still need to anonymize

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License Plate Reader (LPR) counts

Unique Plate Reads Summary

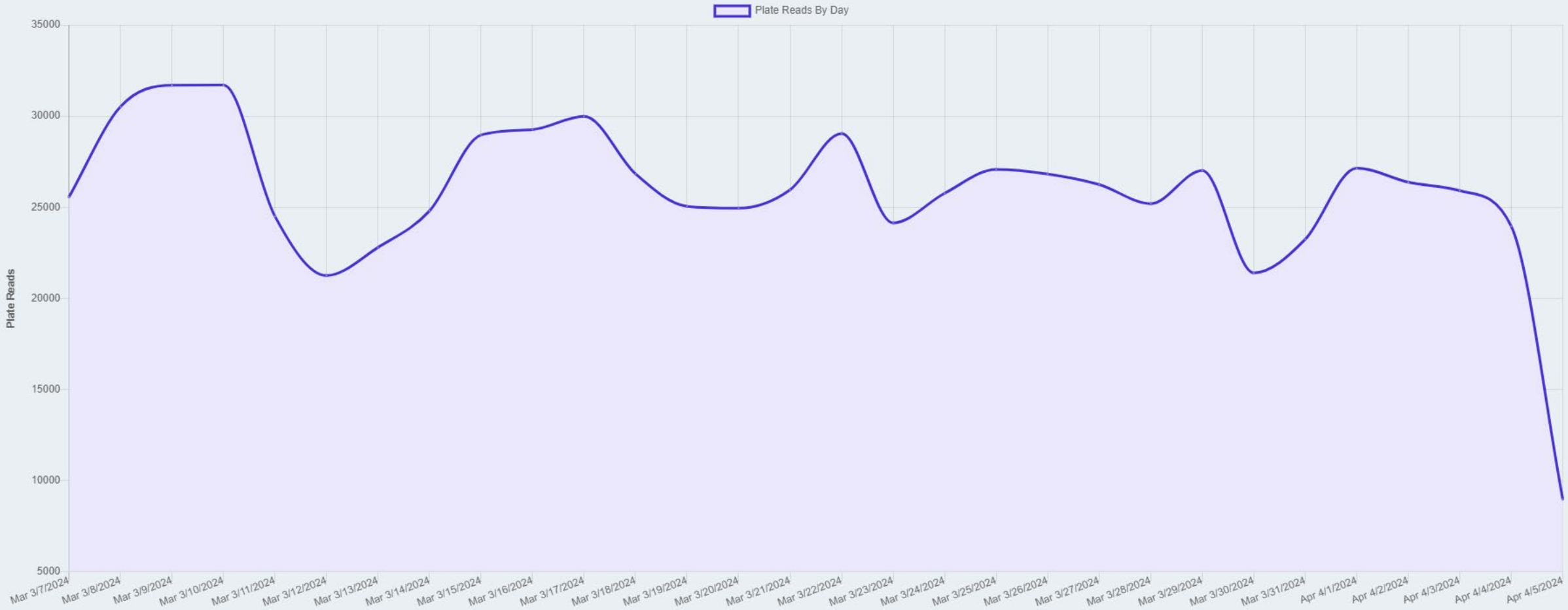
Total Unique Plate Reads:
228,431

DOWNLOAD CSV

Mar 7 - Apr 5

Devices (34)

Search



Deeper dive – 2 cameras

Cameras Include: #01 Alder Creek Rd @ Stony Creek Ct - WB, #14 Northwoods Blvd ...

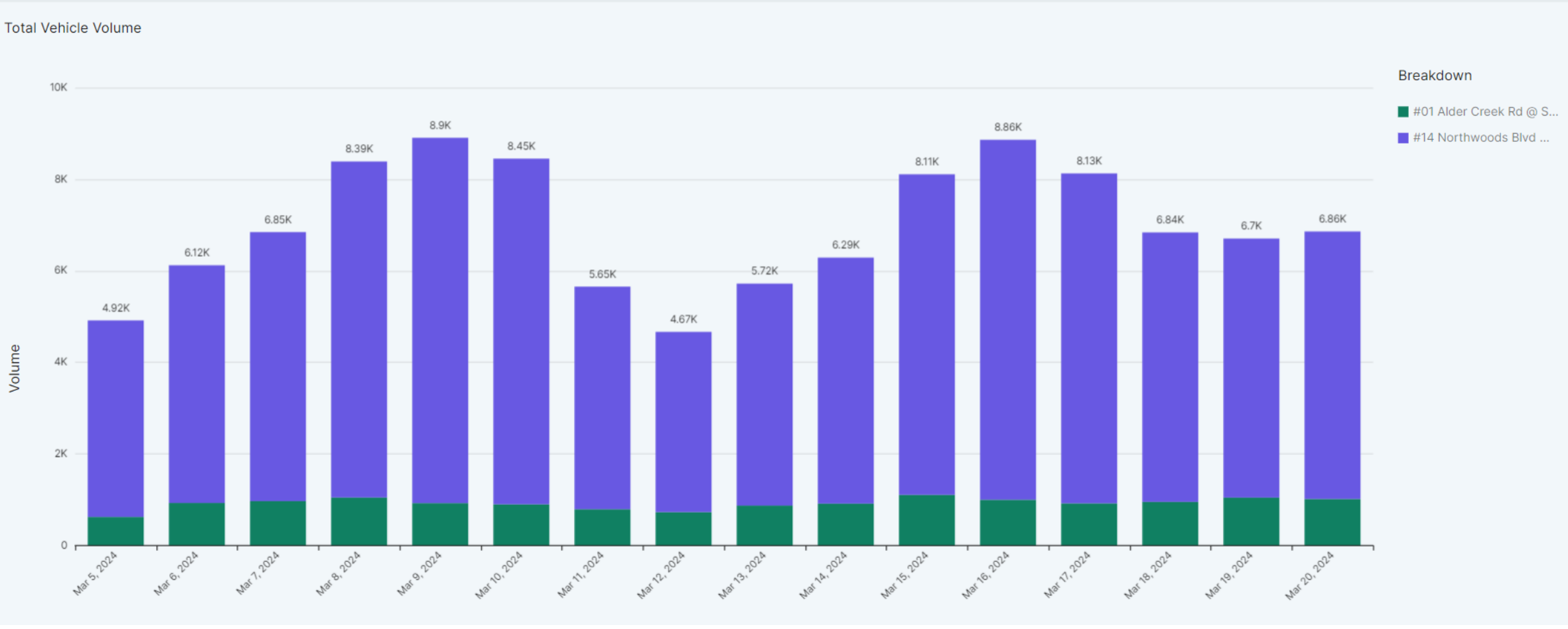
Networks Include: All

Time Horizon: 2024/02/23 06:40... - 2024/03/22 06:40...

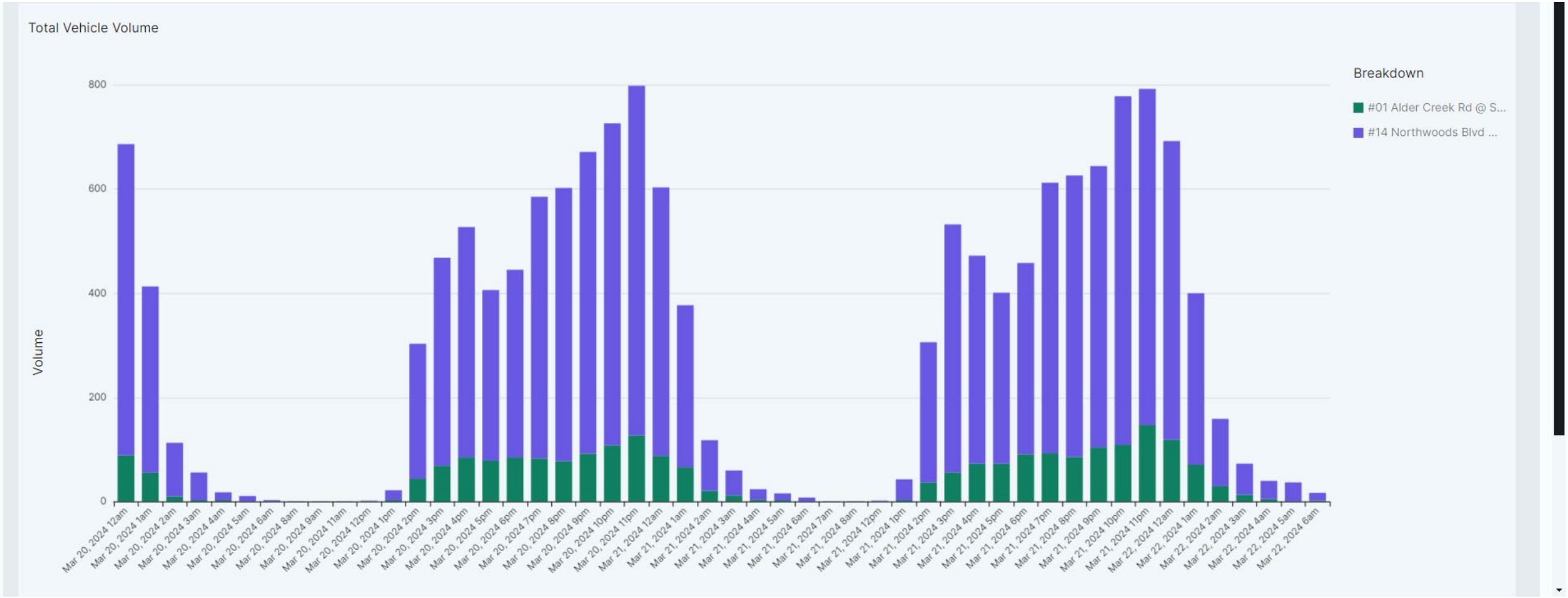
Time Granularity: Day

Breakdown: Camera Name

Visualization Type: Bar Chart



Better but not Best – per hour stats



Actionable information – 1 camera each way

What is evacuation modeling really about?

How long does it take to clear an area?

Evacuation Modeling

Not a new concept

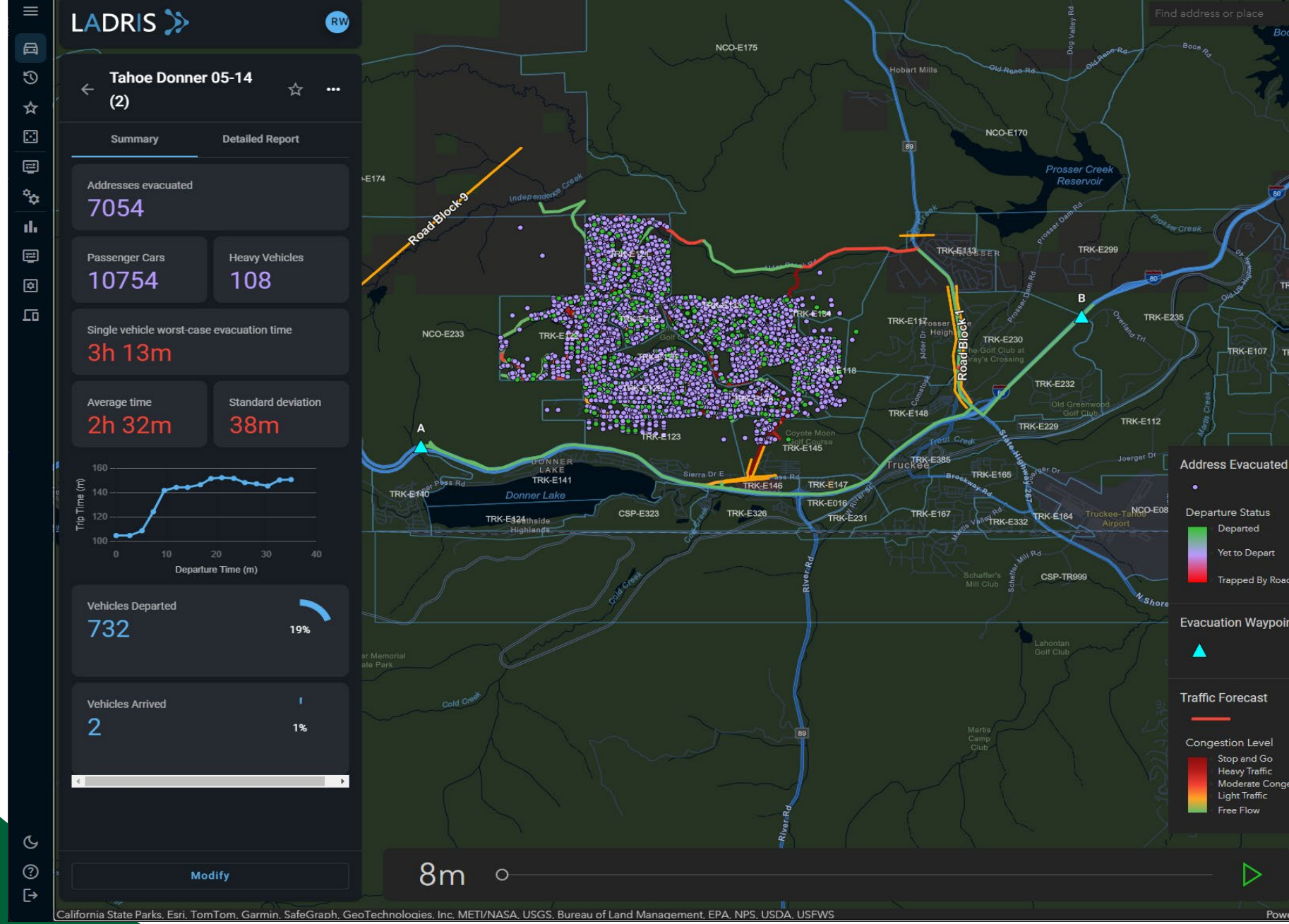
- Scholarly studies have existed for some time
  - Mostly hurricane-based modeling
- Required large amounts of supercomputer time
- Hard if not impossible to run on a desktop and certainly not as “SaaS”
- Required strong scientific / engineering background

Evacuation Modeling

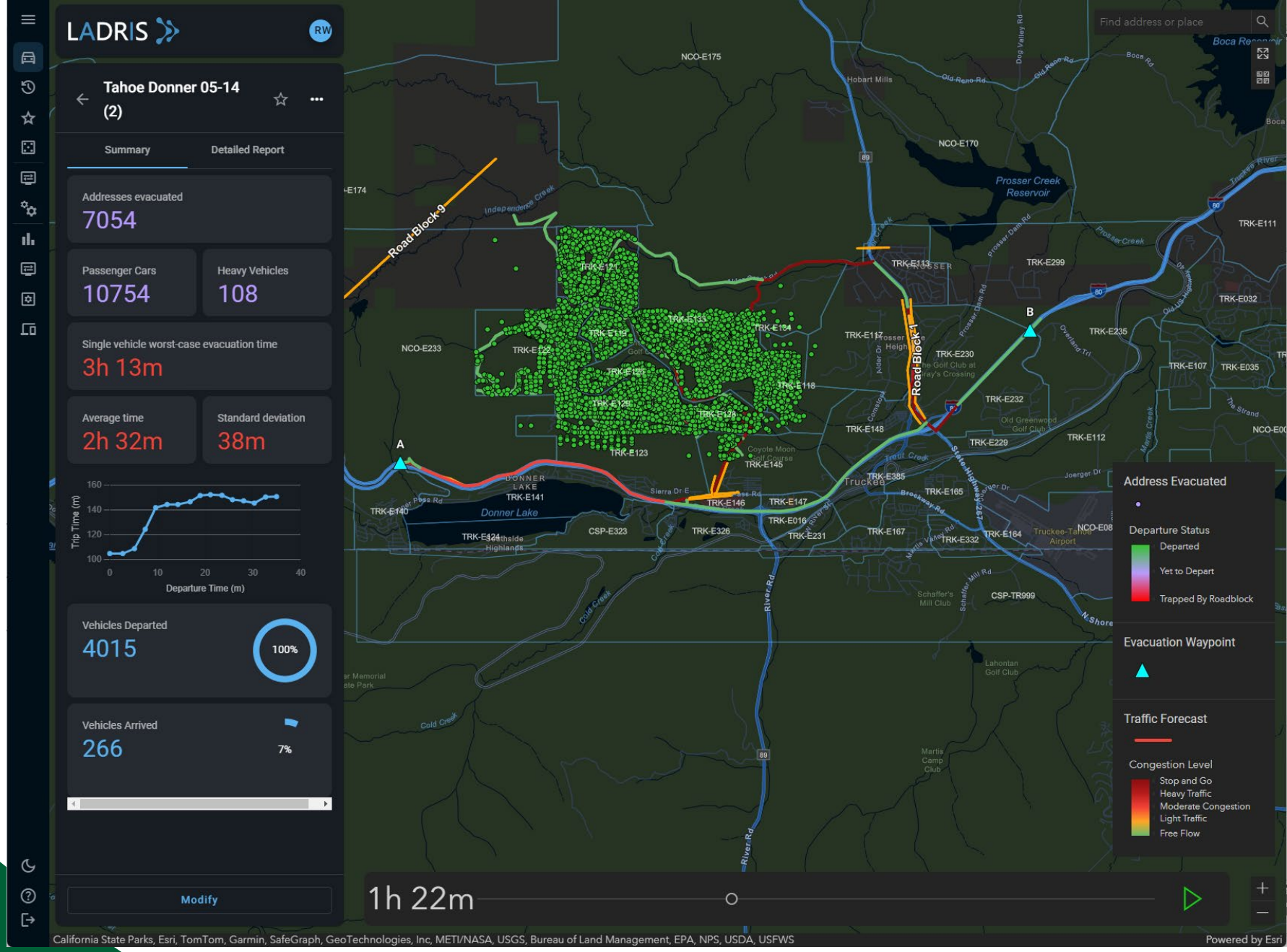
Fast Forward to 2024

- Programs run as a “SaaS” model
- Average user can do it
  - Be careful though, does take some “common sense”
- Can easily adjust values to develop specific models for conditions
  - A.I. increases reliability as it “learns”
- Still mostly hurricane based – point to point
  - Panel testifying before Congress about wildfires in the west and Hawaii

Basic Evacuation
2.8 cars per residence
80% Occupancy
2 hrs 32 min average



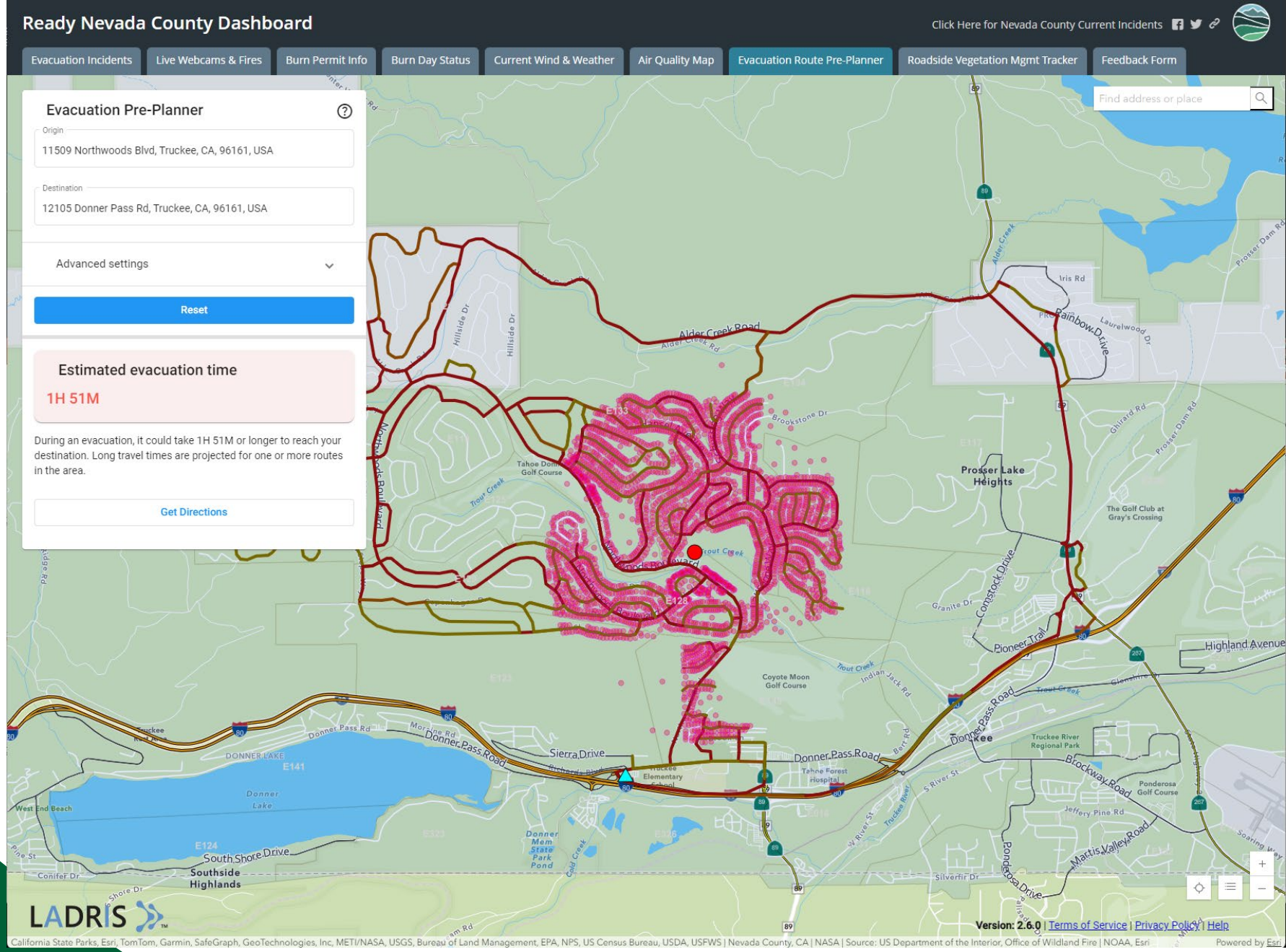
Basic Evacuation
2.8 cars per residence
80% Occupancy
1 hr 22 mins into Evac



Public Facing Site

Limited ability to set parameters – evac area

Addresses only –
2.8 cars per residence
1 hr 51 mins to evac



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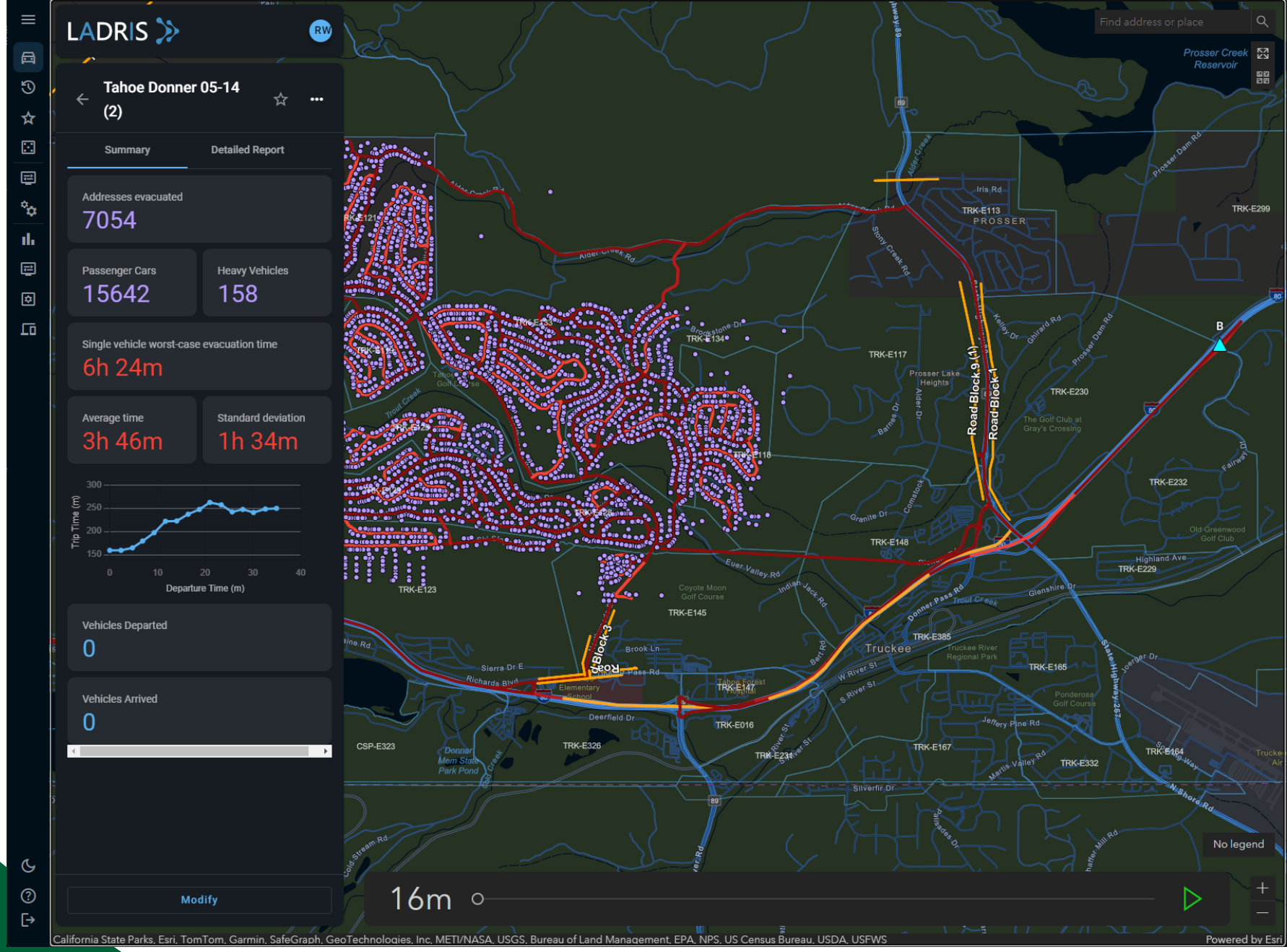
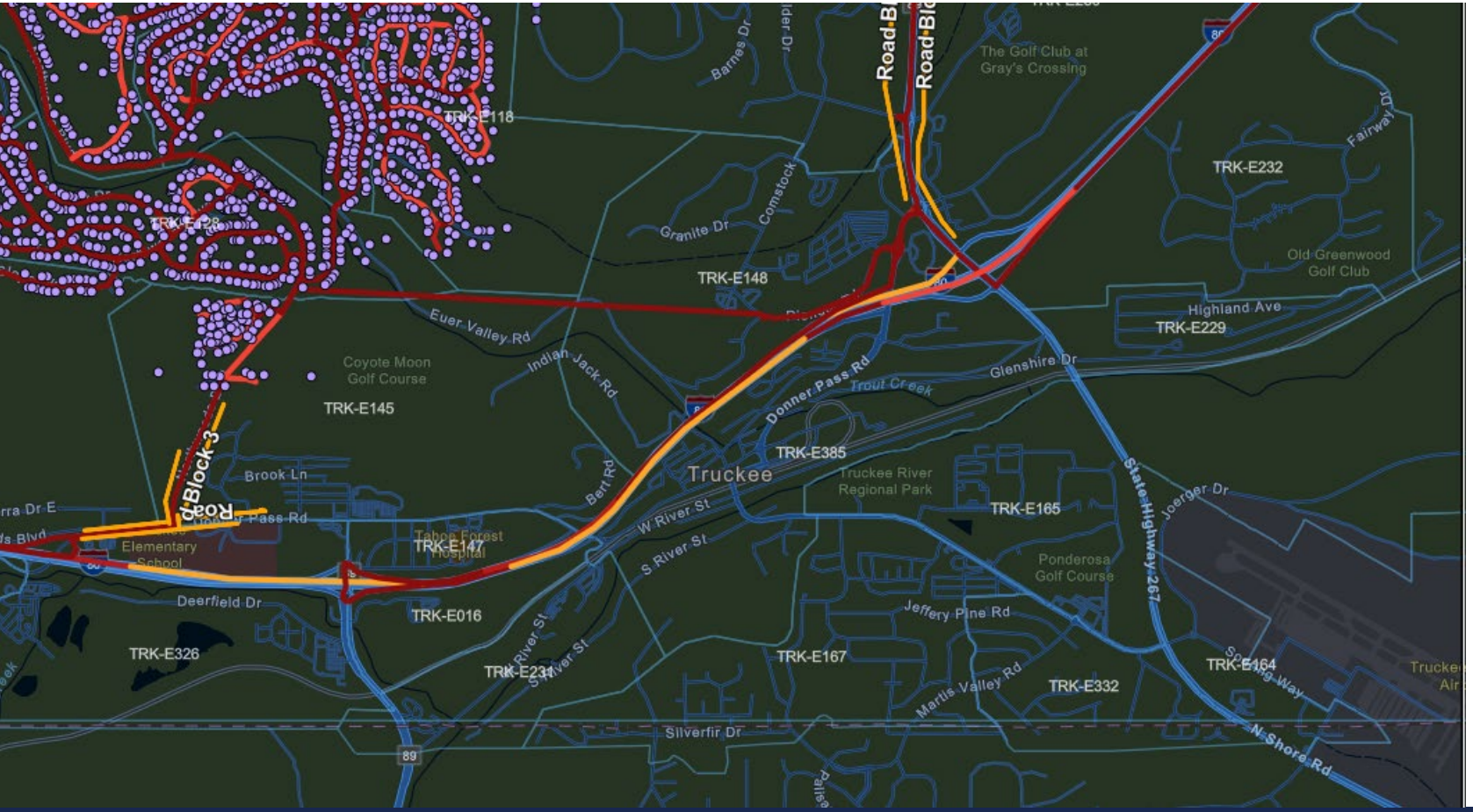
3rd Exit (Trout Creek)
2.8 cars per residence
80% Occupancy
3 hrs 46mins average

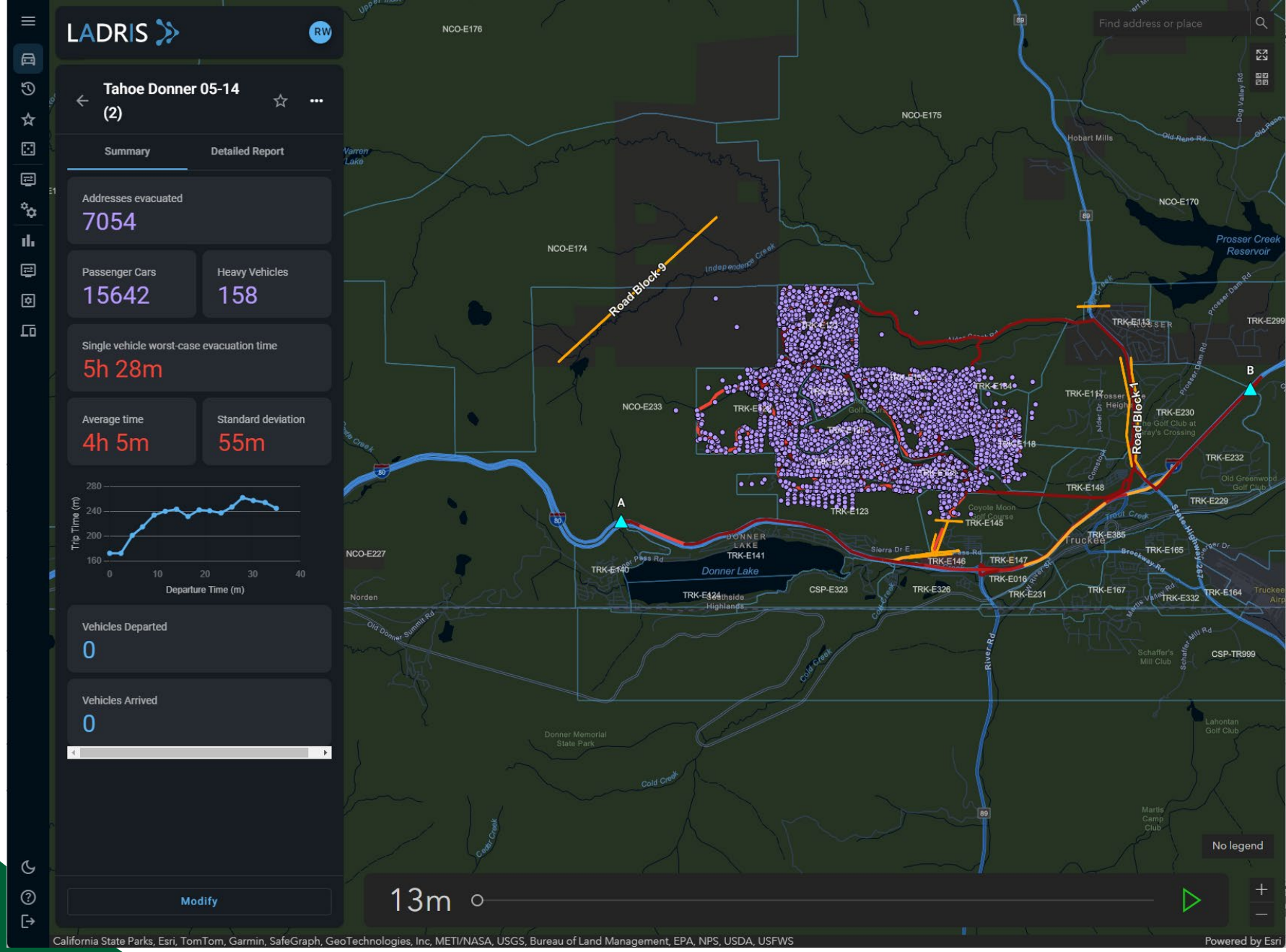


Why does the 3rd egress take an hour longer?

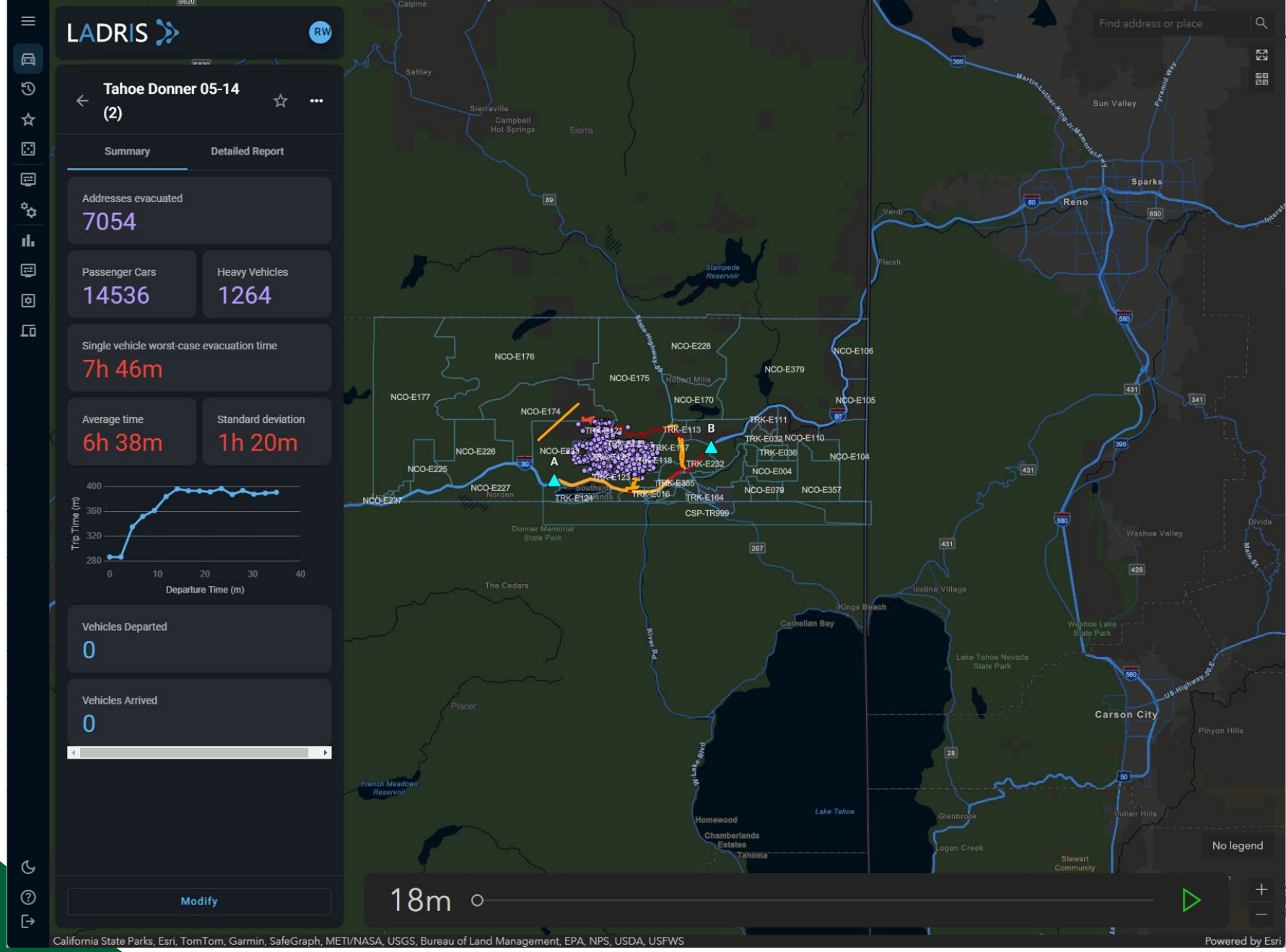
It’s all about roadway design and driver behavior



3rd Exit (Trout Creek)
Blocked Northwoods
2.8 cars per residence
80% Occupancy
4 hrs 5 mins average
(only 15 mins additional)



Northwoods Blocked
No 3rd egress
2.8 cars per residence
80% Occupancy
6 hrs 38 mins average



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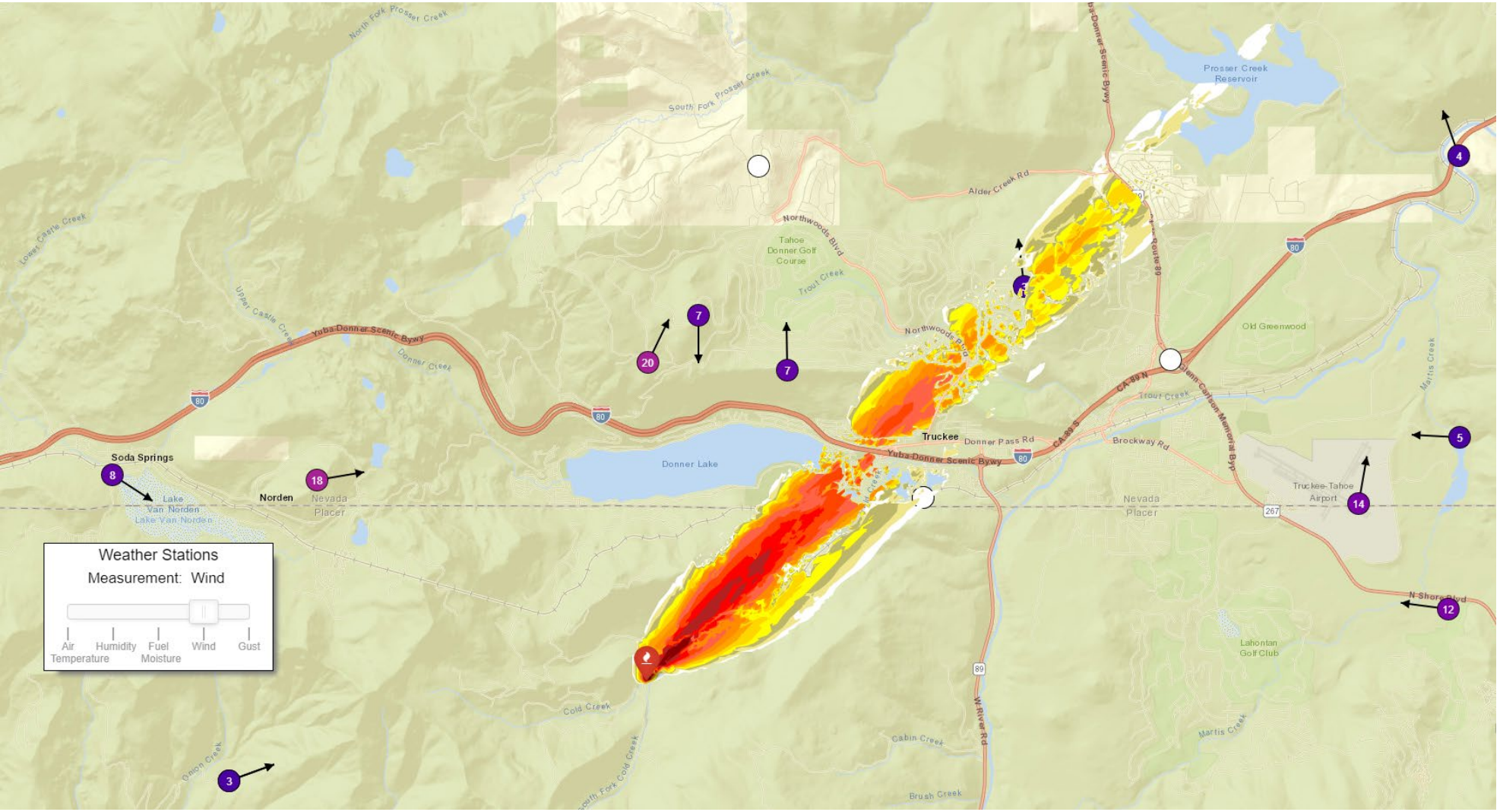
Fire Modeling



25 mph wind
9% humidity
85 degrees
240 degree wind
6 hr burn time

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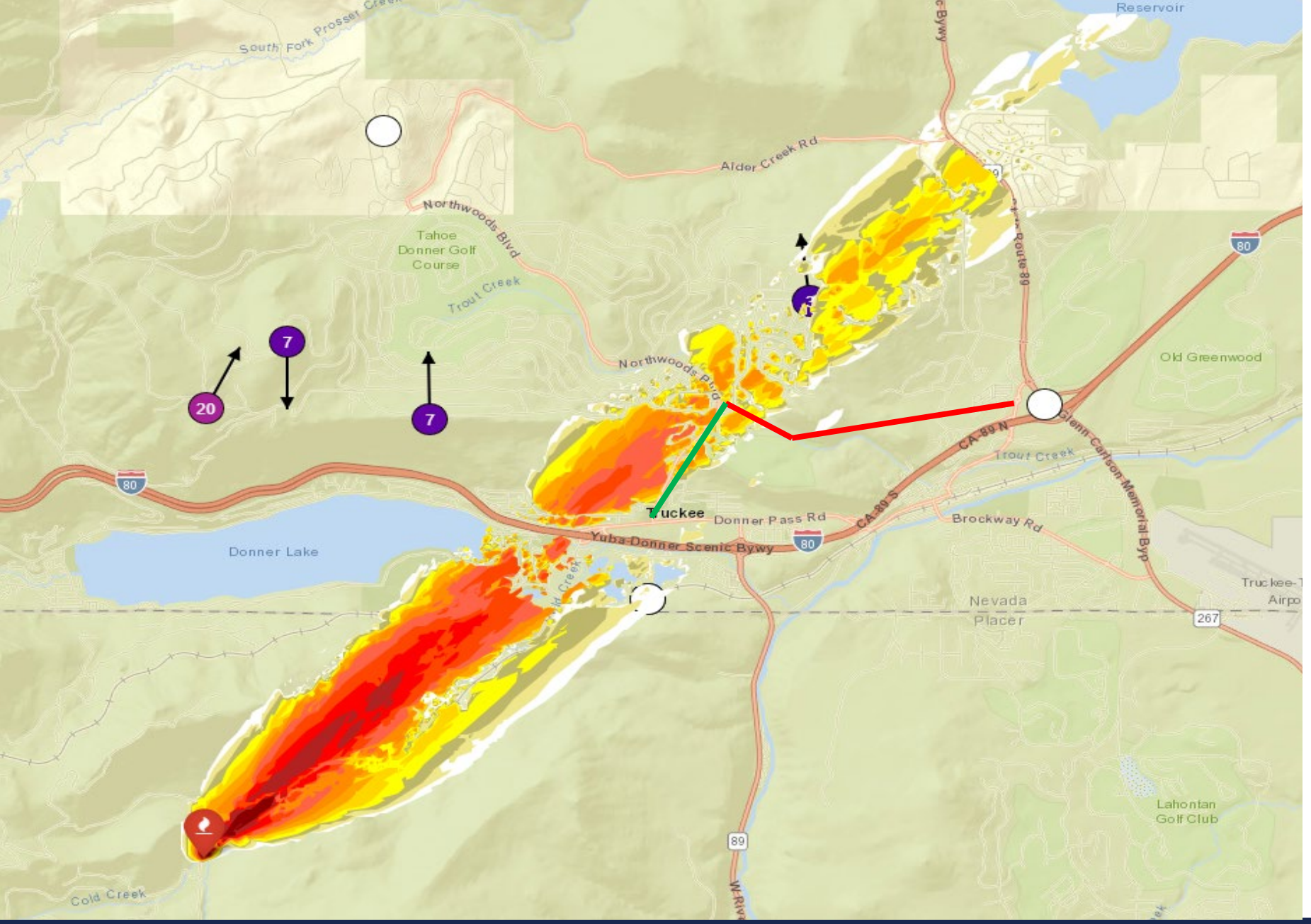

A fire that impacts Northwoods Bl. likely impacts Trout Creek drainage

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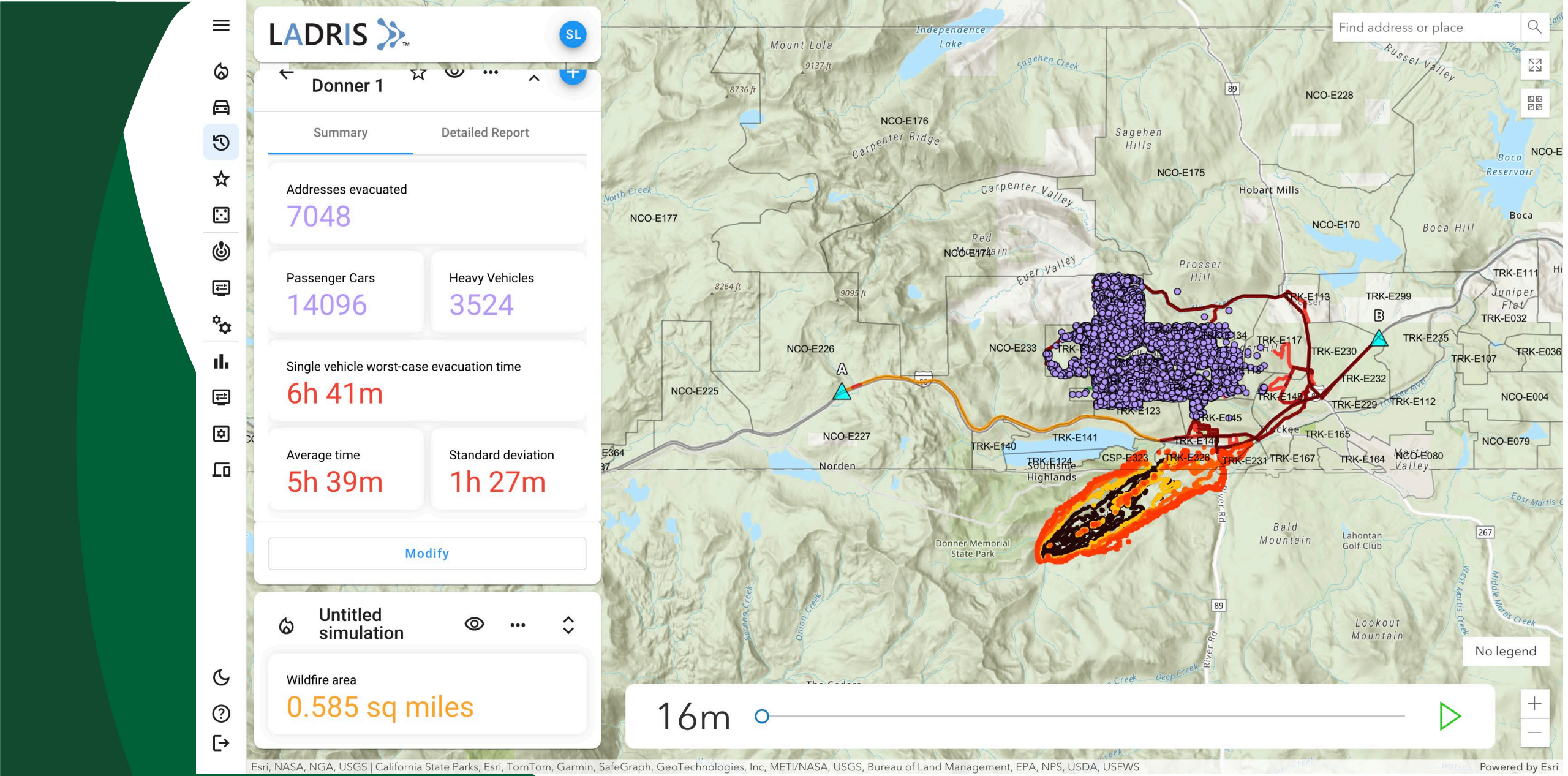
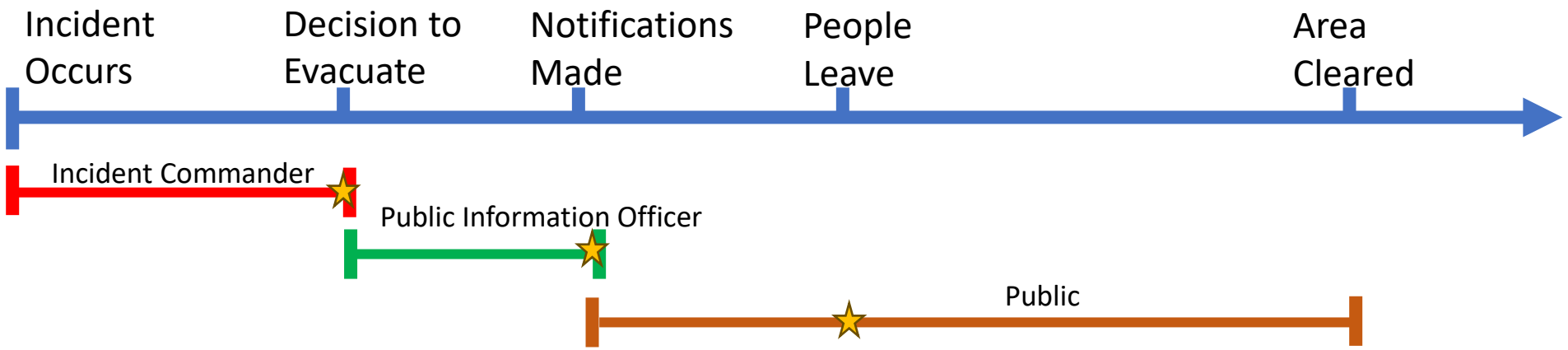

LADRIS
SL
Donner 1
Summary
Detailed Report
Addresses evacuated
7048
Passenger Cars
14096
Heavy Vehicles
3524
Single vehicle worst-case evacuation time
6h 41m
Average time
5h 39m
Standard deviation
1h 27m
Modify
Untitled simulation
Wildfire area
0.585 sq miles
Find address or place
16m
No legend
Esri, NASA, NGA, USGS | California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS
Powered by Esri

Reducing Evacuations Times

- Do we order evacuations sooner?
- Can we speed up message construction and delivery?
- Can we get people to leave faster?
- Can we make people safer during evacuations?



Final Thought

What is the course of action if cannot get people out in enough time?