



Tahoe Donner 2024

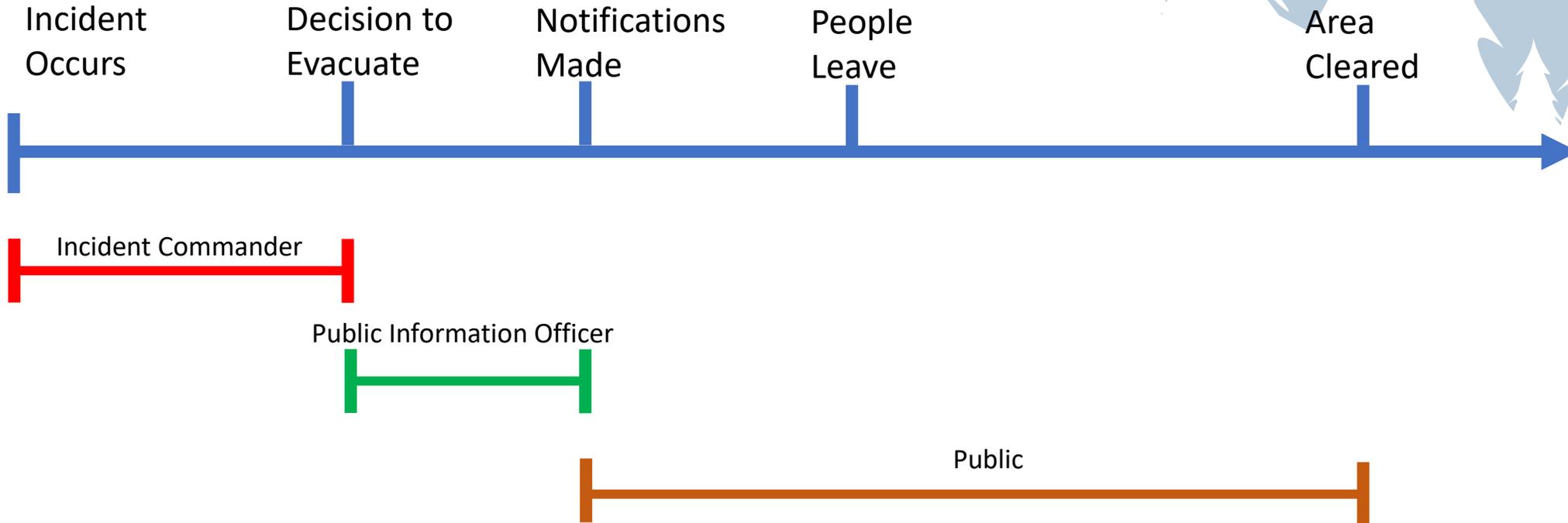
Emergency Management Presentation



What are we going to talk about?

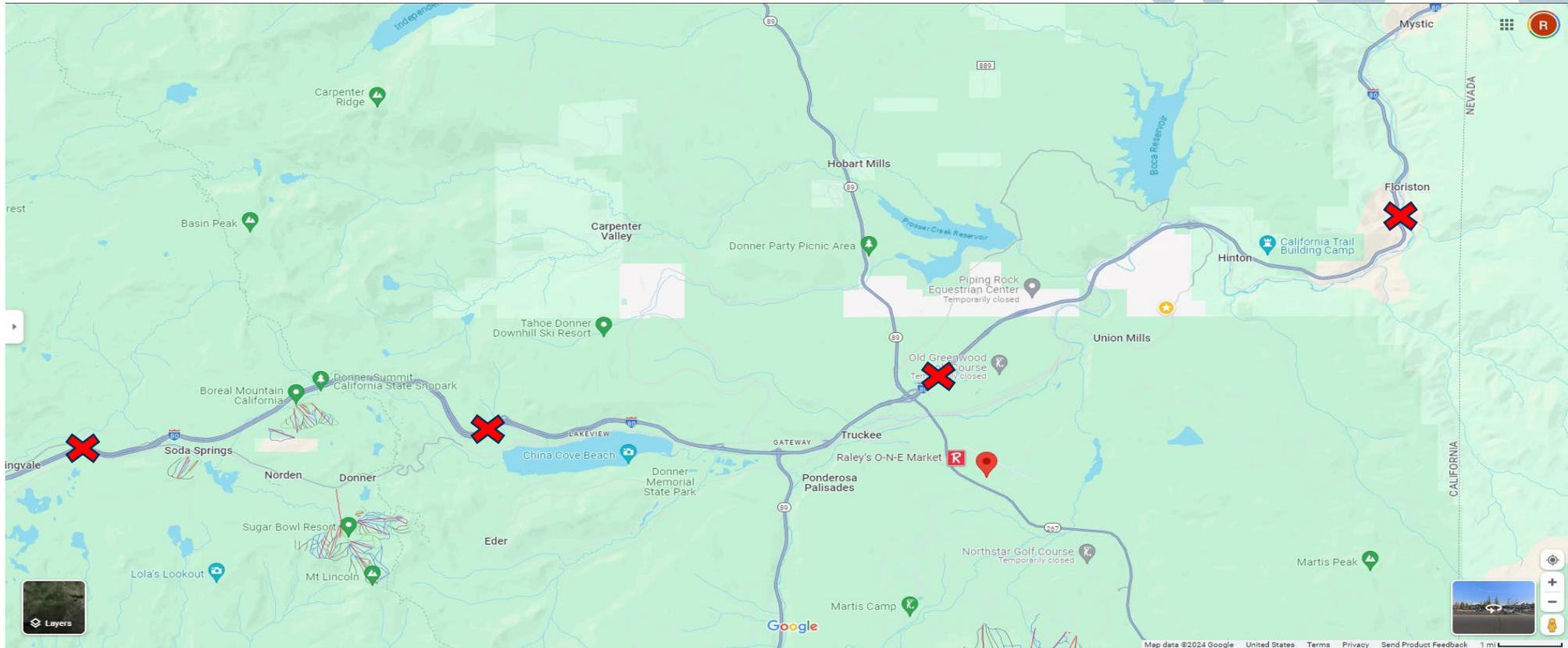
- Anatomy of an evacuation
- What is the “Safe Zone”
- What are expected times (agency vs public sites)
- Why the 3rd egress may not be all that we think and when does it help
- Updated evacuation and wildfire modeling
- How can the HOA help with evacuation times

Anatomy of an Evacuation



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

What is the “Safe Zone”



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

License Plate Reader (LPR) counts

Unique Plate Reads Summary

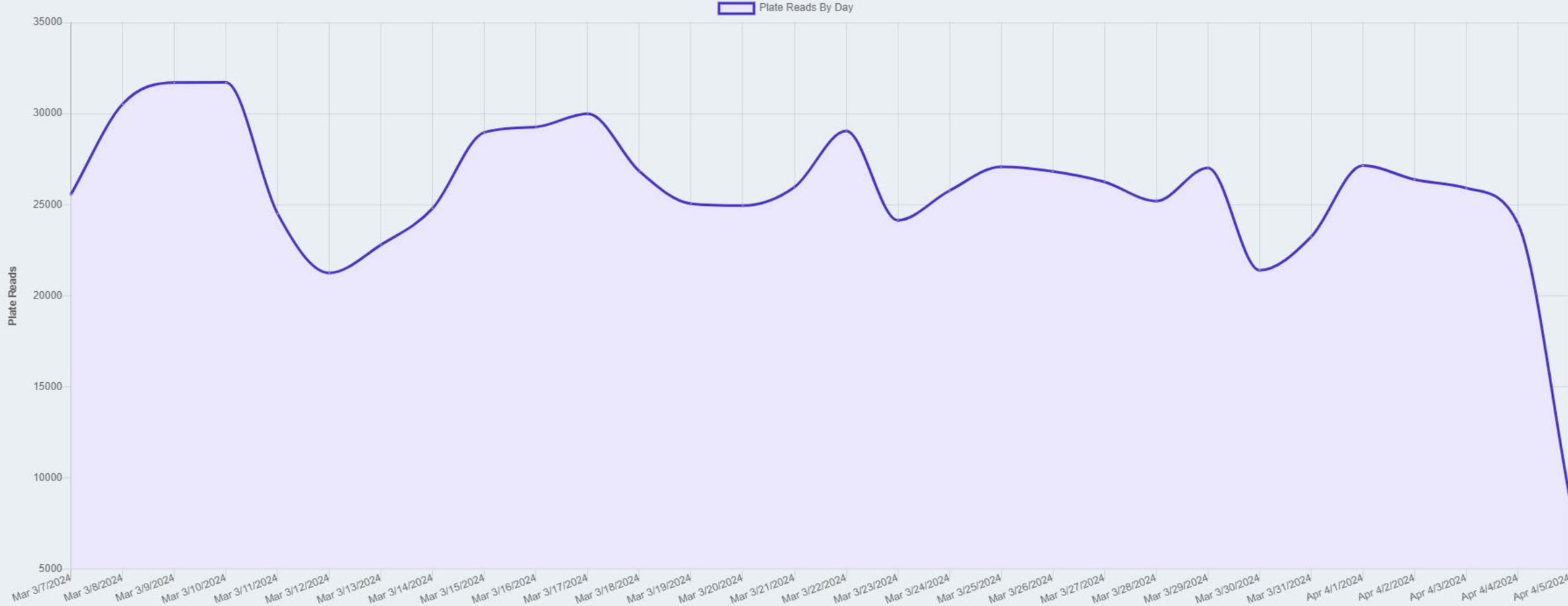
Total Unique Plate Reads:
228,431

[DOWNLOAD CSV](#)

Mar 7 - Apr 5

Devices (34) ▾

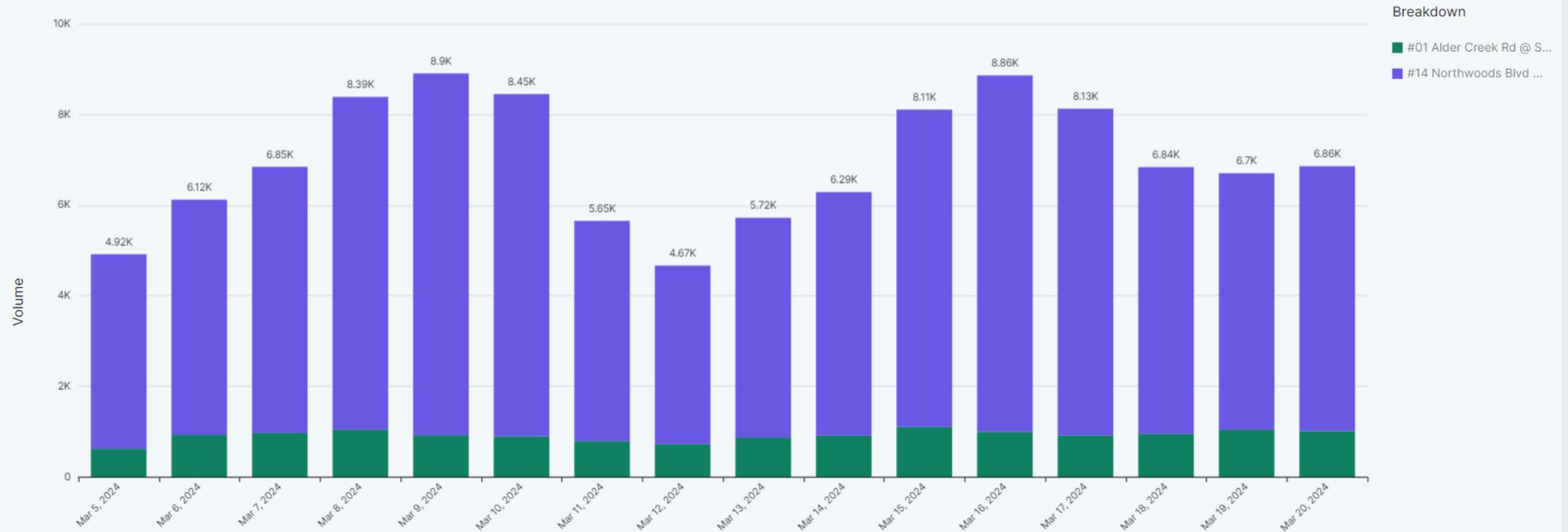
[Search](#)



Deeper dive – 2 cameras

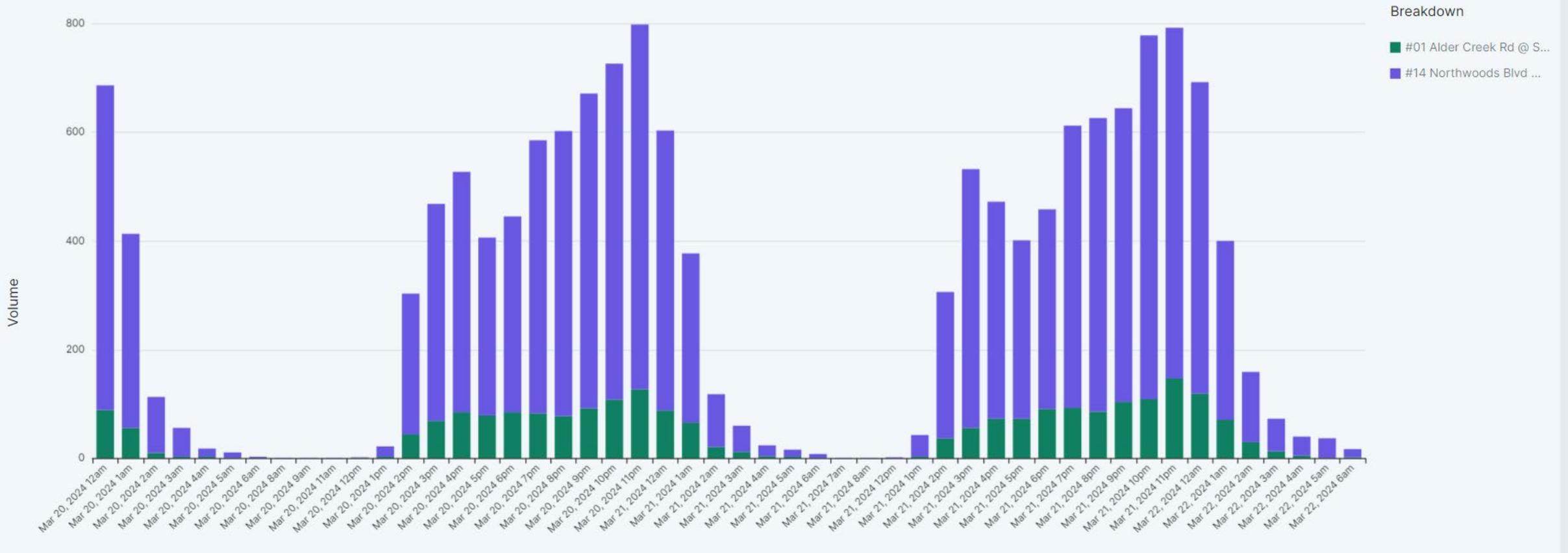
Cameras Include: #01 Alder Creek Rd @ Stony Creek Ct - WB, #14 Northwoods Blvd ...
Networks Include: All
Time Horizon: 2024/02/23 06:40... - 2024/03/22 06:40...
Time Granularity: Day
Breakdown: Camera Name
Visualization Type: Bar Chart

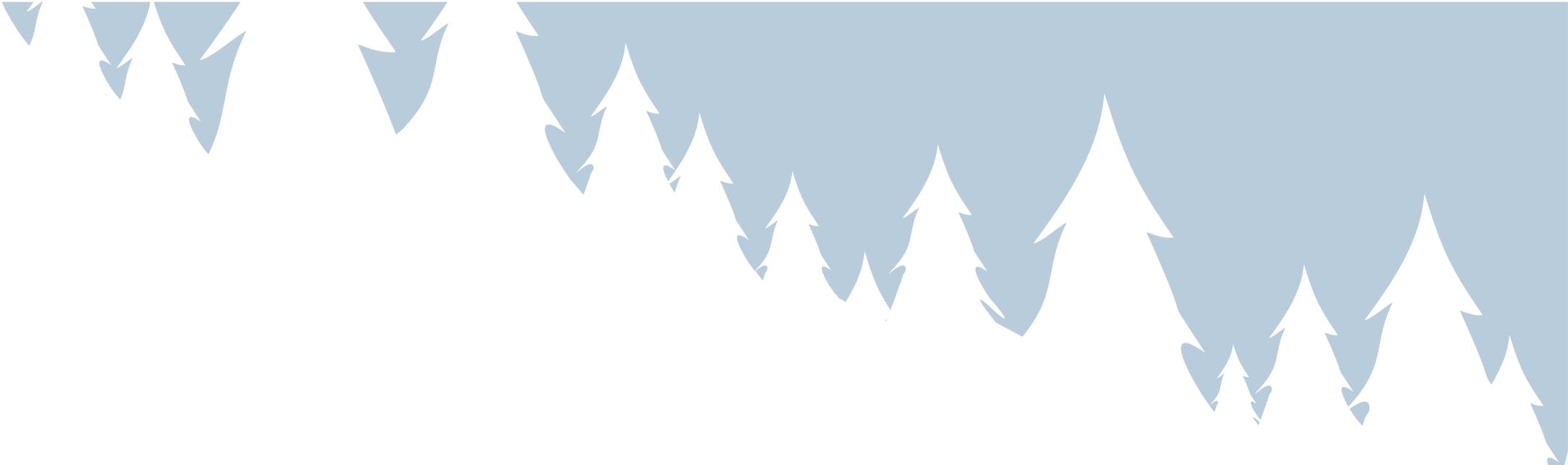
Total Vehicle Volume



Better but not Best – per hour stats

Total Vehicle Volume





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

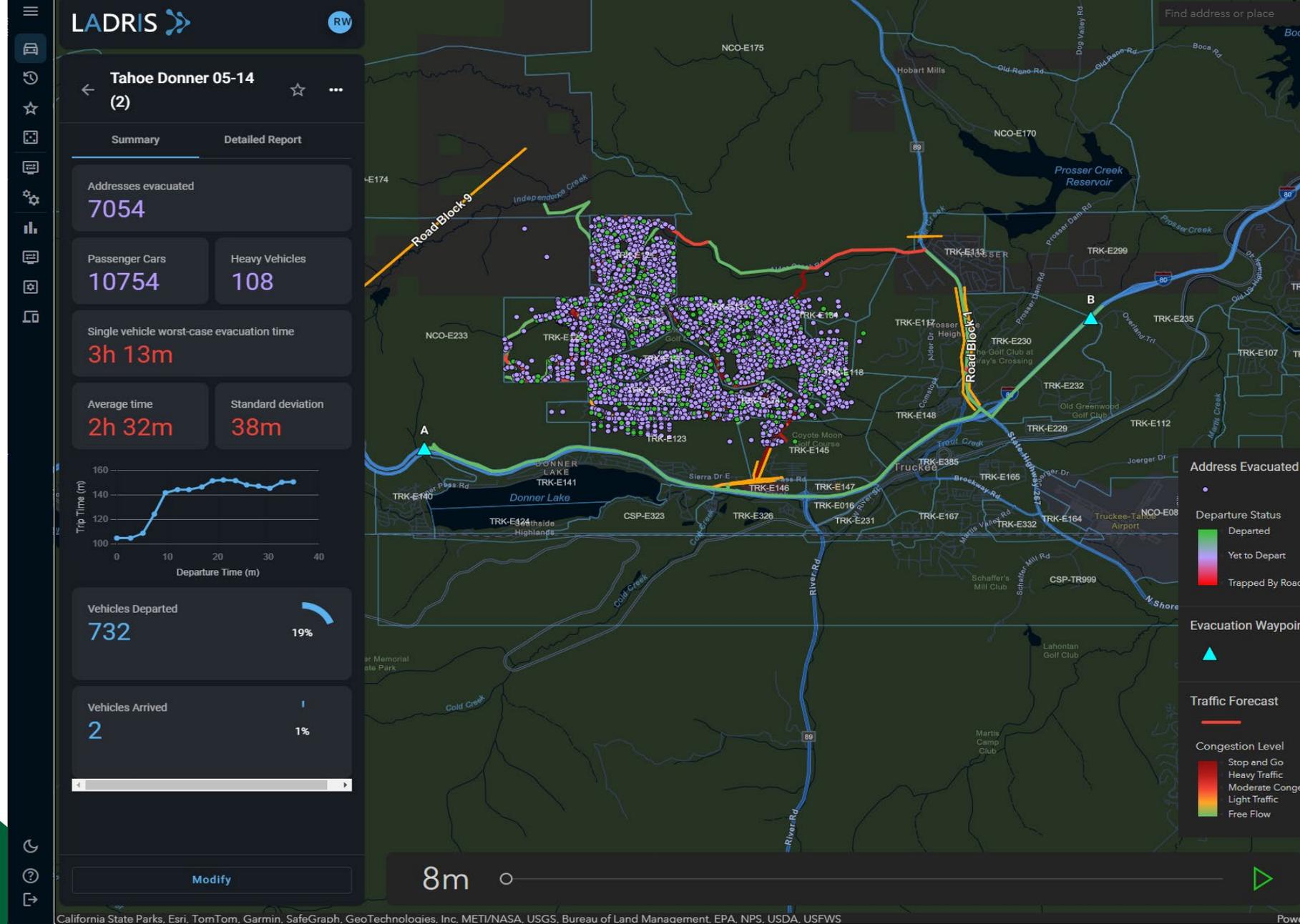
- Scholarly studies have existed for some time
 - Mostly hurricane-based modeling
- Required large amounts of supercomputer time
- Hard if not impossible to run on a desktop and certainly not as “SaaS”
- Required strong scientific / engineering background

Evacuation Modeling

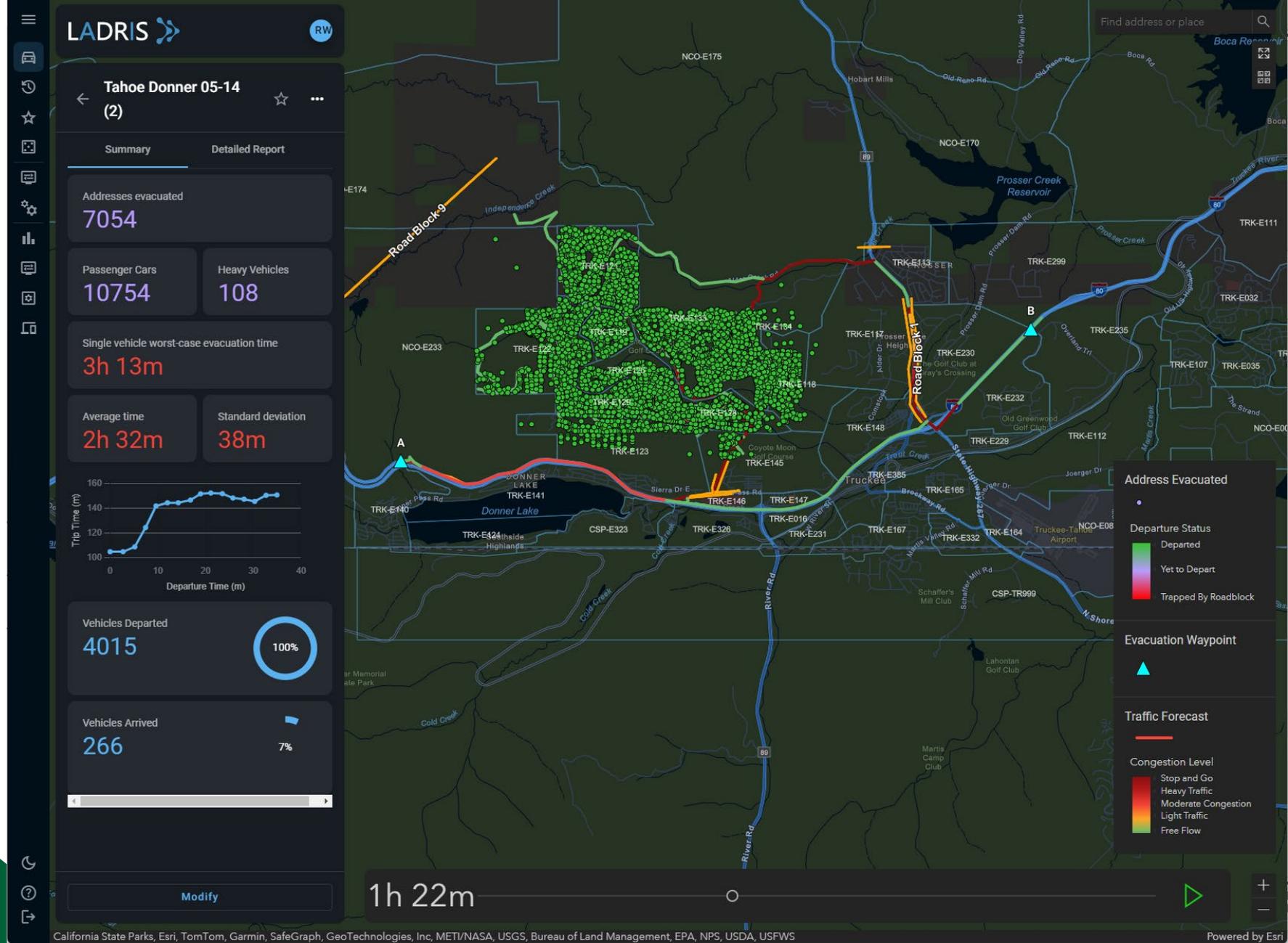
Fast Forward to 2024

- 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

Ready Nevada County Dashboard

Click Here for Nevada County Current Incidents

Evacuation Incidents | Live Webcams & Fires | Burn Permit Info | Burn Day Status | Current Wind & Weather | Air Quality Map | **Evacuation Route Pre-Planner** | Roadside Vegetation Mgmt Tracker | Feedback Form

Find address or place

Evacuation Pre-Planner

Origin
11509 Northwoods Blvd, Truckee, CA, 96161, USA

Destination
12105 Donner Pass Rd, Truckee, CA, 96161, USA

Advanced settings

Reset

Estimated evacuation time
1H 51M

During an evacuation, it could take 1H 51M or longer to reach your destination. Long travel times are projected for one or more routes in the area.

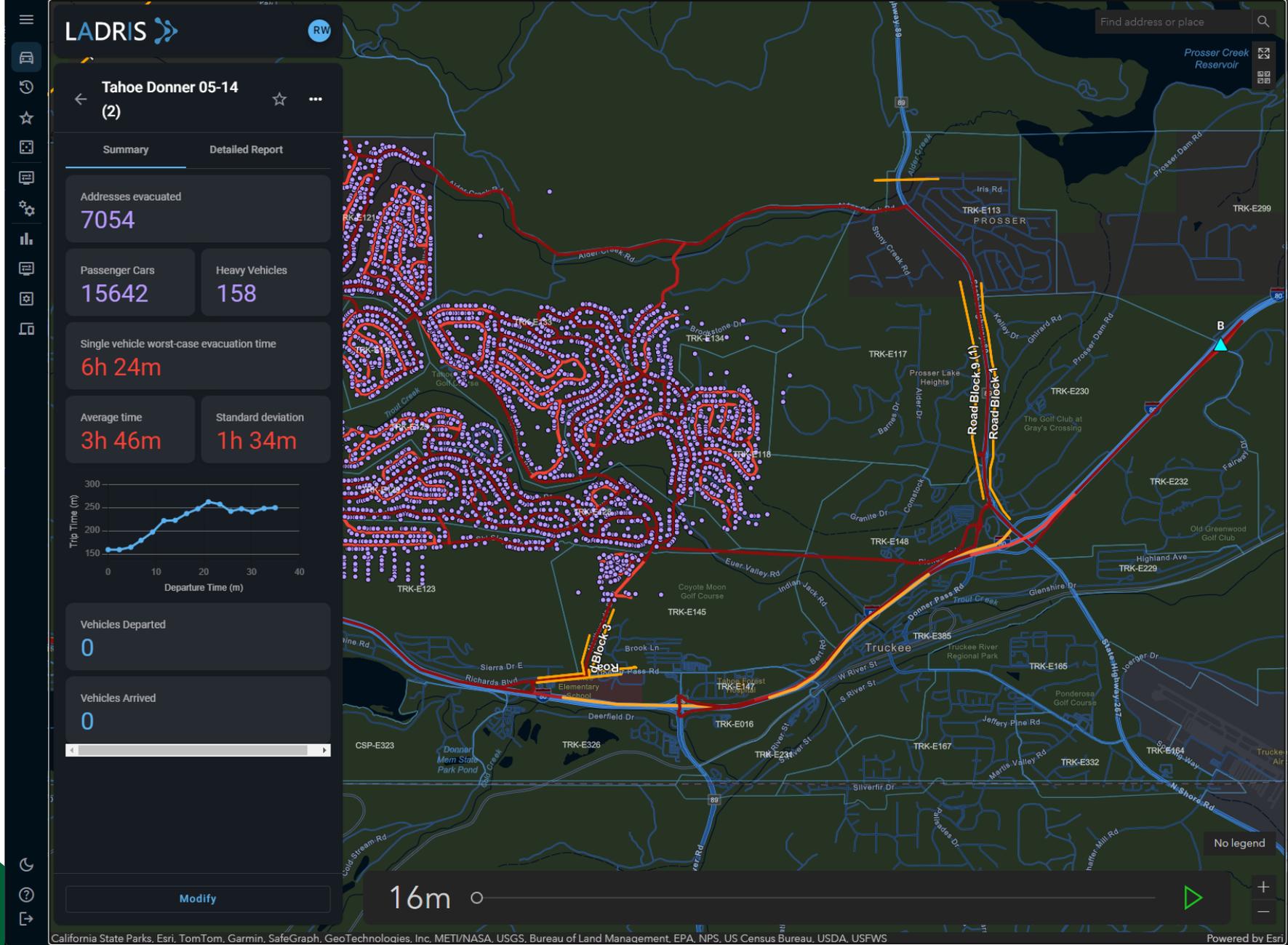
Get Directions

LADRIS

Version: 2.6.0 | Terms of Service | Privacy Policy | Help

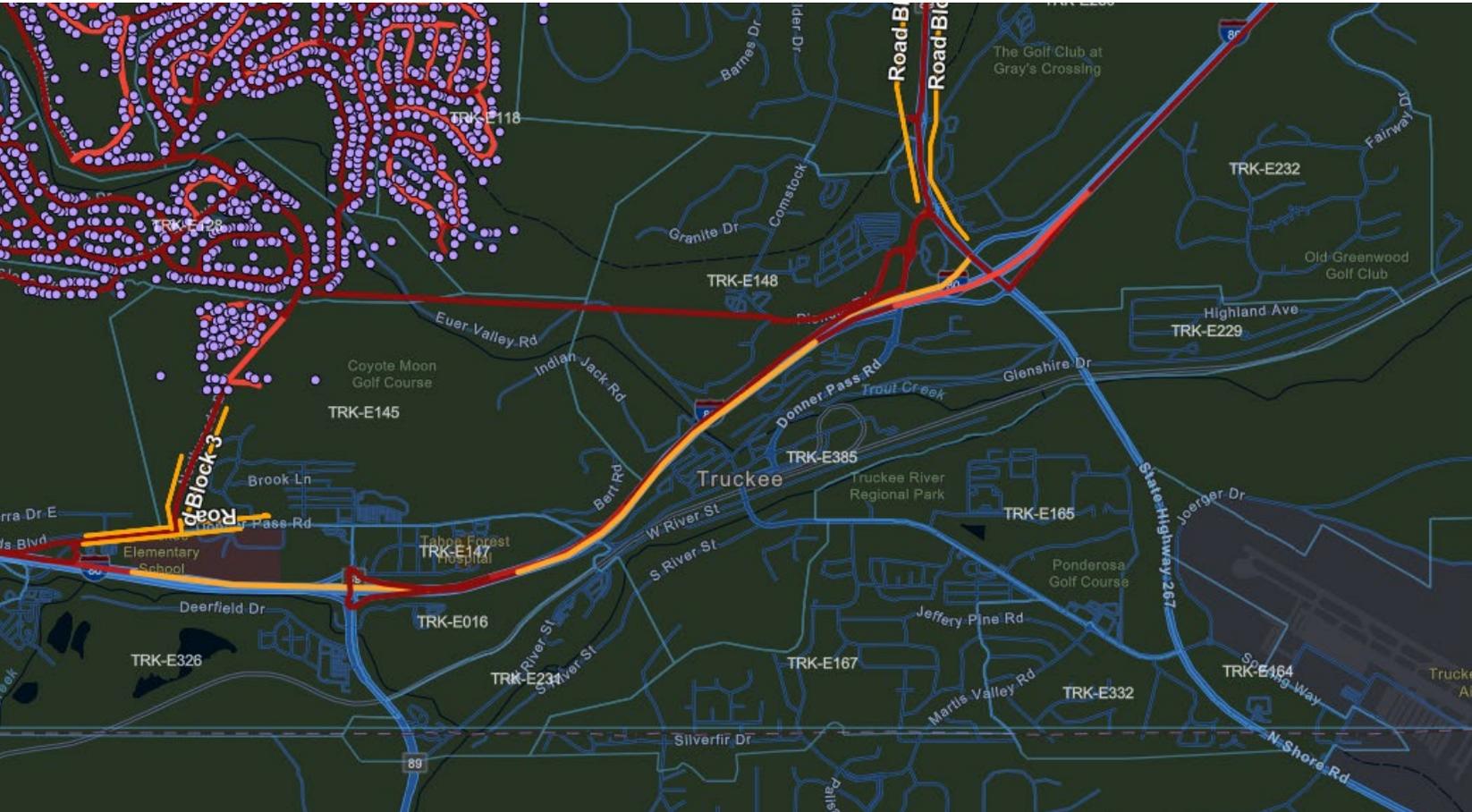
California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS | Nevada County, CA | NASA | Source: US Department of the Interior, Office of Wildland Fire | NOAA, Esri | Powered by Esri

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



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

LADRIS RW

Tahoe Donner 05-14 (2)

Summary Detailed Report

Addresses evacuated
7054

Passenger Cars **14536** Heavy Vehicles **1264**

Single vehicle worst-case evacuation time
7h 46m

Average time **6h 38m** Standard deviation **1h 20m**

Trip Time (m) vs Departure Time (m) graph

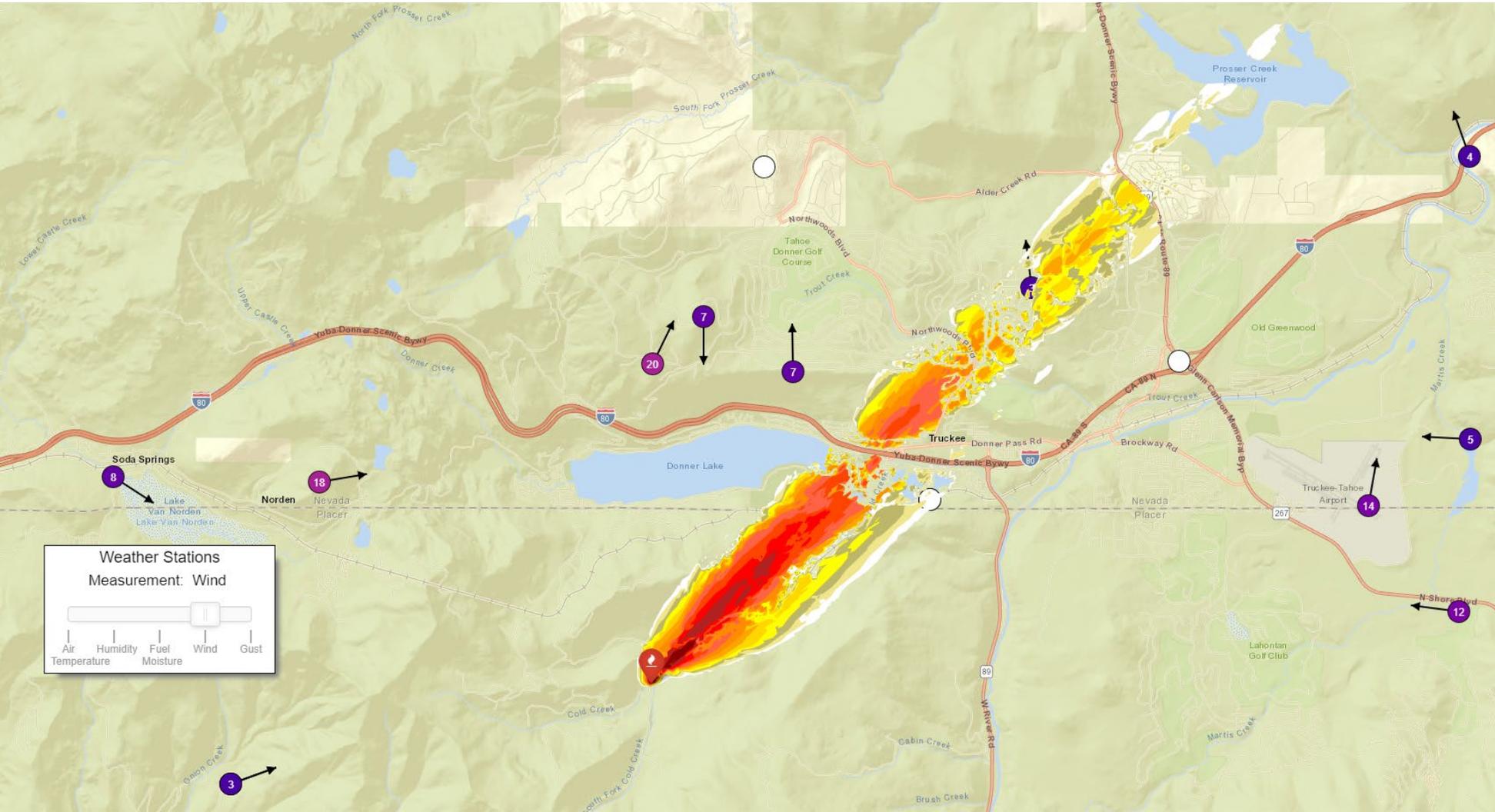
Vehicles Departed **0**

Vehicles Arrived **0**

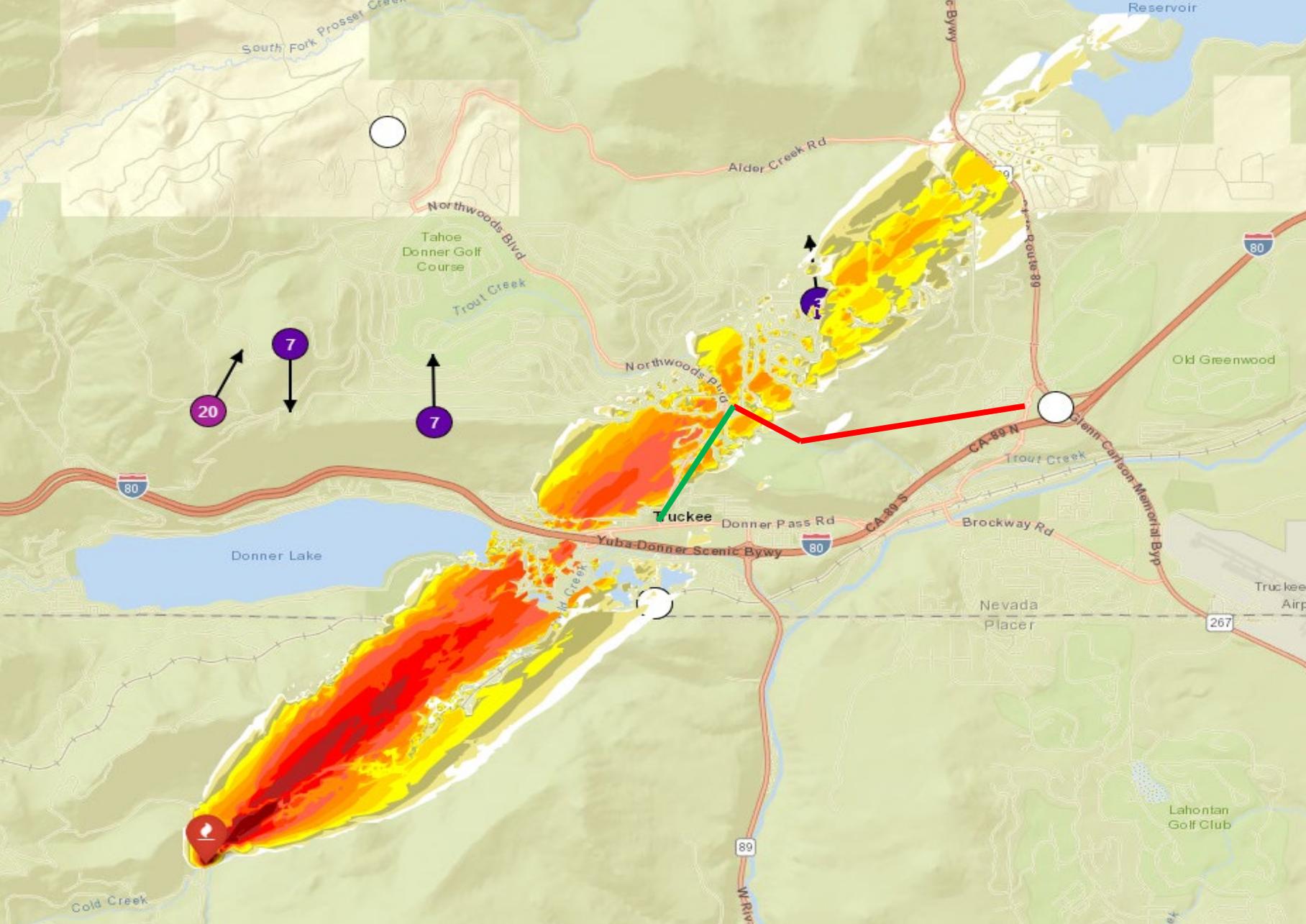
18m

California State Parks, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS
 Powered by Esri

Fire Modeling



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



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

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

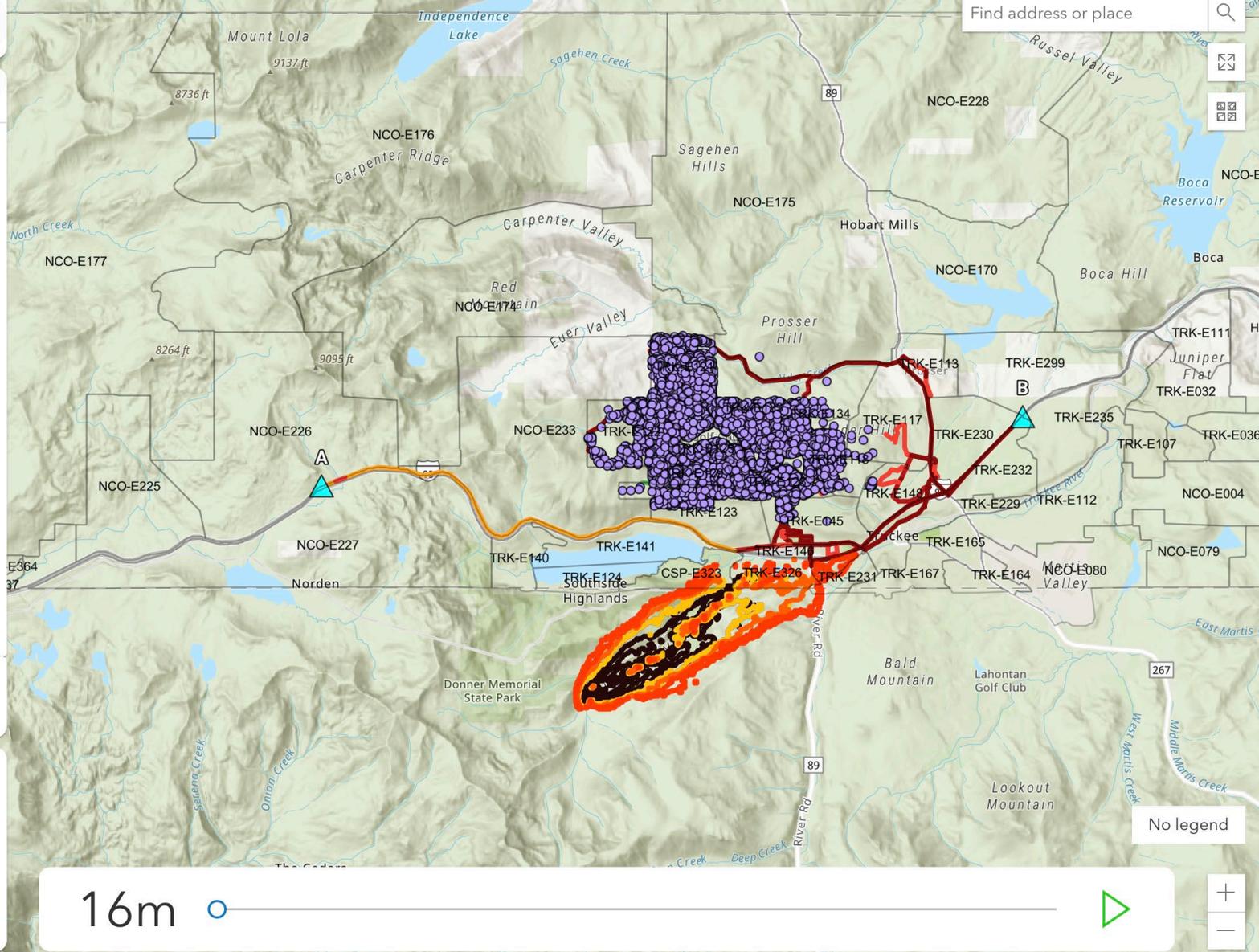


Wildfire area

0.585 sq miles

16m

No legend



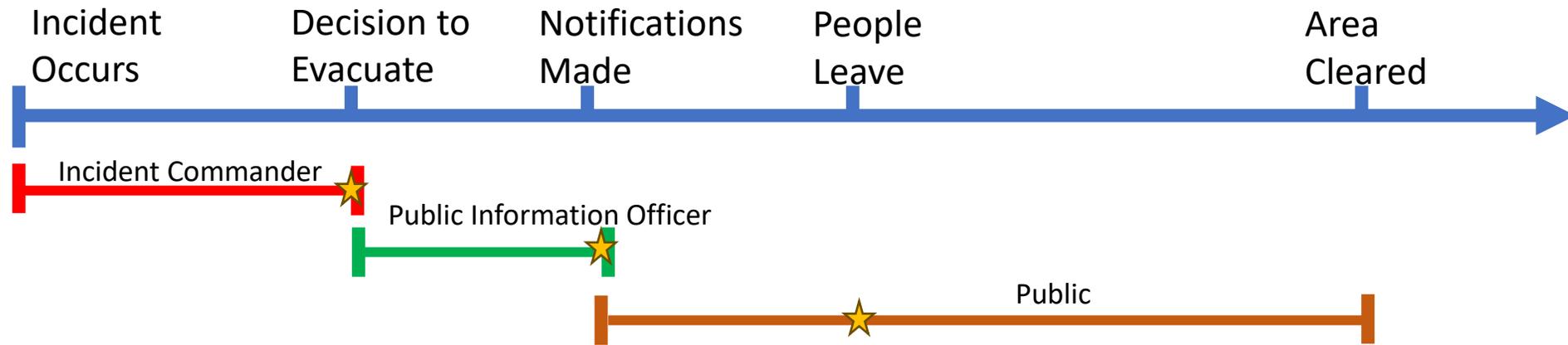
Reducing Evacuations Times

• 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?