



Olivenhain Community

Evacuation Analysis and Recommendations

The evaluation and analysis were based upon State and Federal guidance; San Diego County's Emergency Operations Plan, Annex Q, meetings with city, community and Sheriff personnel; and the extensive wildland fire control and evacuation experience of the subject matter experts who conducted this evaluation.

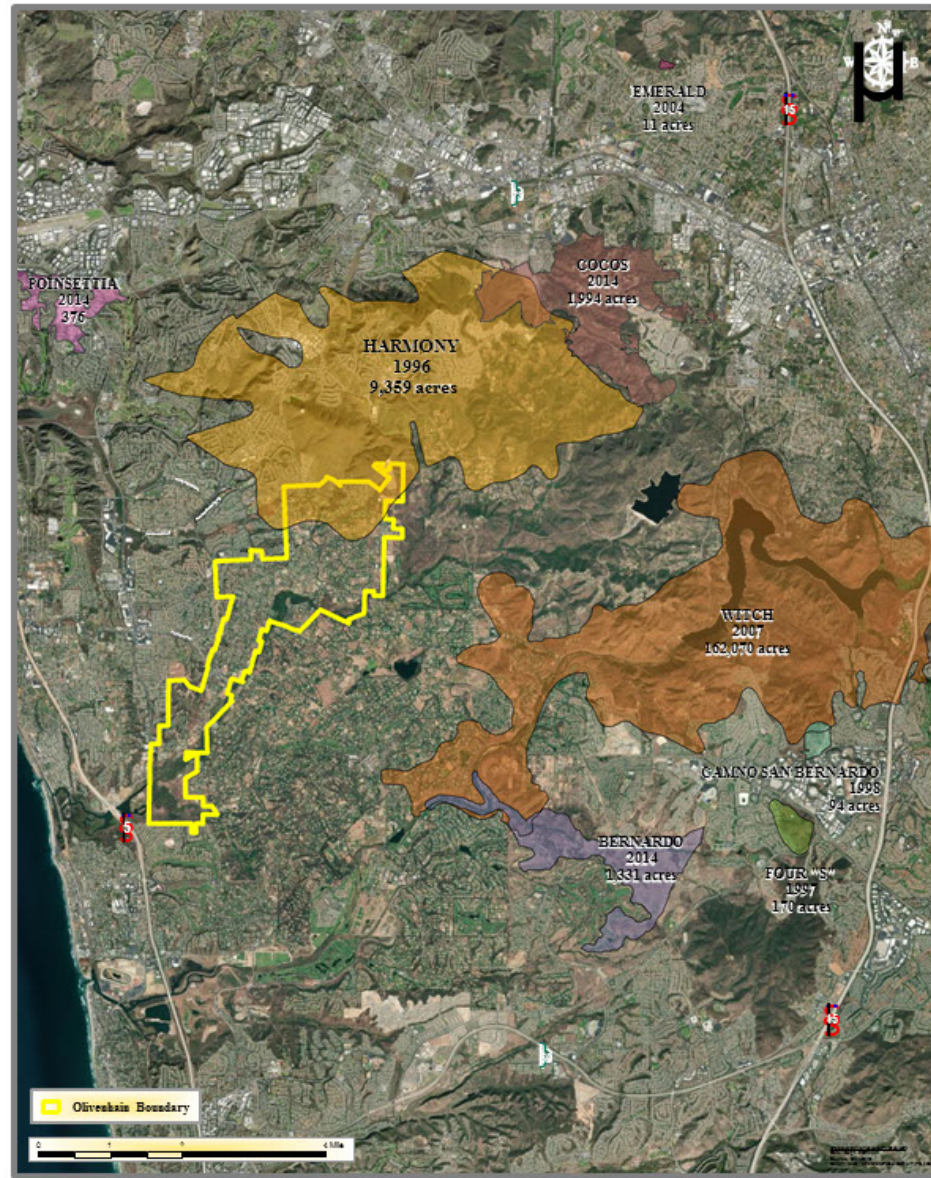
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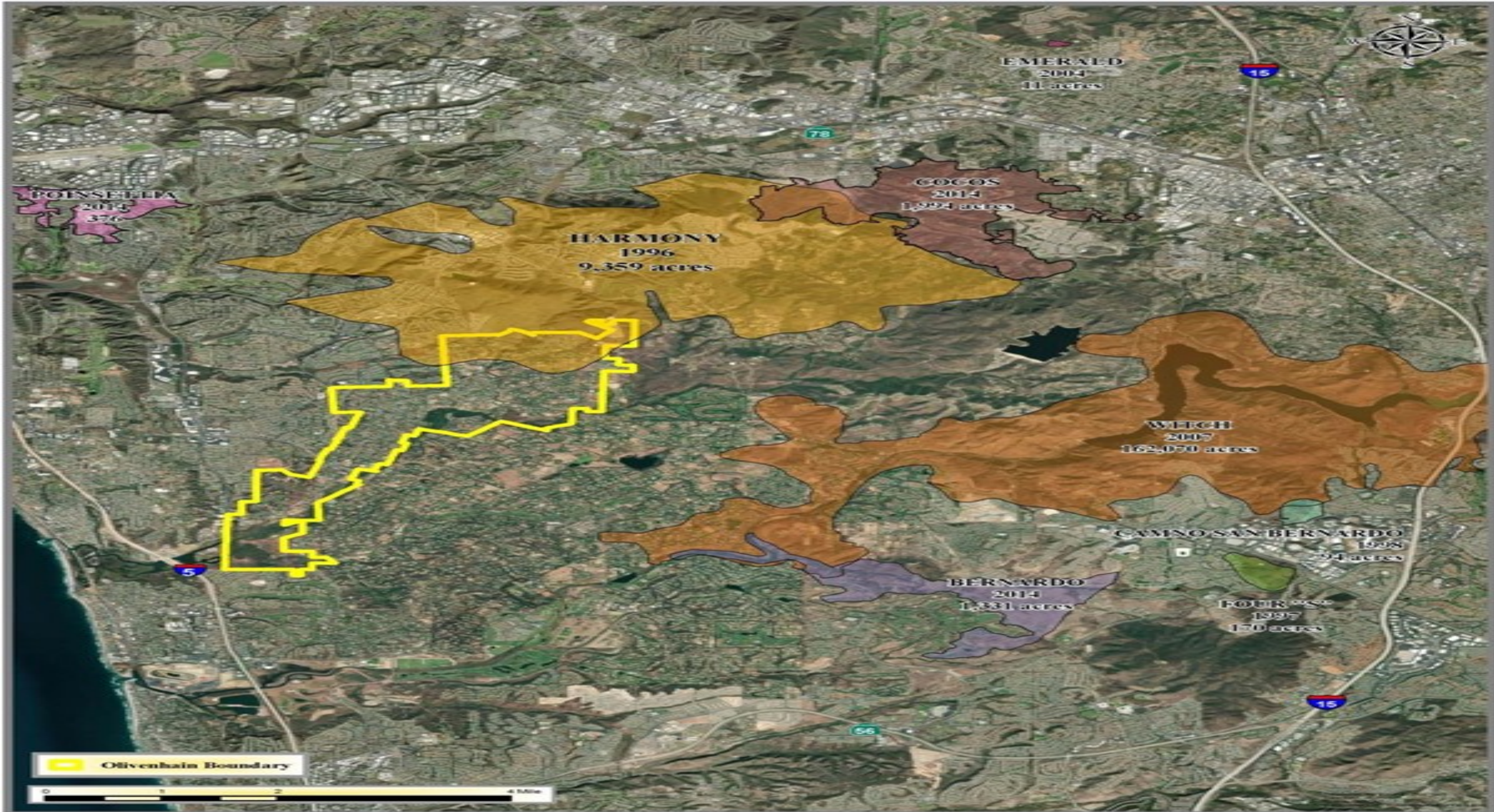
2021



Evacuation planning is an on-going process. The evacuation plan should be updated at regular intervals to ensure changes in the community, emerging or mitigated threats, and available resources are reflected in the document. In Appendix B is found an updated version of the Olivenhain Evacuation Plan (draft) produced as part of this project. This update is based upon the recommendations and findings that can be implemented in the *short-term*. However, since many of the recommendations may be difficult to implement due to budgetary considerations, a lack of available staffing, or conflicting community interests, most of the recommendations found in this document are long-term goals that may be included in future evacuation plan revisions.



Fire History



FIRE HISTORY

The City & Community have focused time and resources to complete or initiate the following:

- Both the City of Encinitas and County of San Diego have proactively planned for evacuating the Olivenhain Community.
- Regular and on-going County-wide incident exercises are conducted to ensure the validity of San Diego County's Emergency Operations Plan.
- Fire agencies have fostered a collaborative working relationship that maximizes resource utilization through automatic and mutual aid agreements.
- Encinitas is signatory to a **Mutual Threat Zone (MTZ)** Agreement for the Olivenhain community. With this Agreement, the full force of available State and County resources, including air resources, are dispatched to vegetation fires in Olivenhain.
- Encinitas Fire Department has fostered a positive relationship with the San Diego Sheriff's Department (SDSD), with a Sheriff's representative responding to the Incident Command Post (ICP) when a fire is reported in Olivenhain.
- To improve fire response times to fires and Emergency Medical Service (EMS) incidents, a fire station in Olivenhain is now constantly staffed and equipped with a rapid-response vehicle.

Actions continued

- Has adopted and regularly updated an evacuation plan that addresses the most probable onshore and offshore wildfire scenarios (Scenarios A and B) and has detailed routing for evacuations, automated access gates, and traffic control points.
- The County has identified the fairgrounds for sheltering large animals.
- A ***One-Team approach*** includes the Community Emergency Response Team (CERT), Department of Public Works (DPW), lifeguards, and City staff to support the evacuation plan.
- Mass notification systems, including AlertSanDiego, are used to provide robust and redundant media for community notifications.
- Locations for Refuge of Last Resort/Temporary Refuge Areas (TRA's) are identified.
- A tiered evacuation planning process is provided.
- Mass evacuation facilities are pre-identified.

Recommendations

- *Continue to support the Firewise Community concept.*
- *Adopt enhanced and targeted vegetation management ordinances.*
- *Enhance the defensible space inspection program.*
- *Ensure Encinitas Planning Standards are aligned with a Firewise Community concept.*
- *Require new developments to design a Wildfire Mitigation Plan and a funding source to support on-going fuels management (e.g., Homeowners' Association (HOA) Covenant).*

Fire Behavior Analysis (5-Offshore/5-Onshore)

- Assumptions:
 - Wind speed and weather are constant during the analysis periods (6-10 hours in the offshore situations, 6 hours or less in the onshore situations)
 - Fuels are as described in the USGS Landfire 2020 fuel model layer
 - No suppression actions are included in the analysis
 - Fire behavior modeled using the minimum travel time version of the Rothermel Fire model.
 - Climatology from two RAWS stations on Miramar NAS with some maintenance issues.
 - *Fire behavior/progression models do not reflect fire spread in the urban area*

Offshore Wind Scenario

The offshore wind scenarios can be evaluated by simply looking at the time of the fire's arrival after ignition. The time is indicated by the contours and color ramp indicated in the legend. The arrival times summarized at the bottom of the images is the first intrusion into the community boundary indicated on the map.

Fire Behavior Scenarios	Fine Dead Fuel Moisture %	Wind Speed mph
Extreme	3	45
Very High	5	40
High	5	20
Moderate	8	35
Moderate-low	11	35

Onshore Wind Scenario

Onshore wind scenarios are somewhat different in their evaluation. It is assumed that the fire spots simultaneously in multiple locations in the Escondido Creek. All scenarios result in fire that impinges on residences within the first hour.

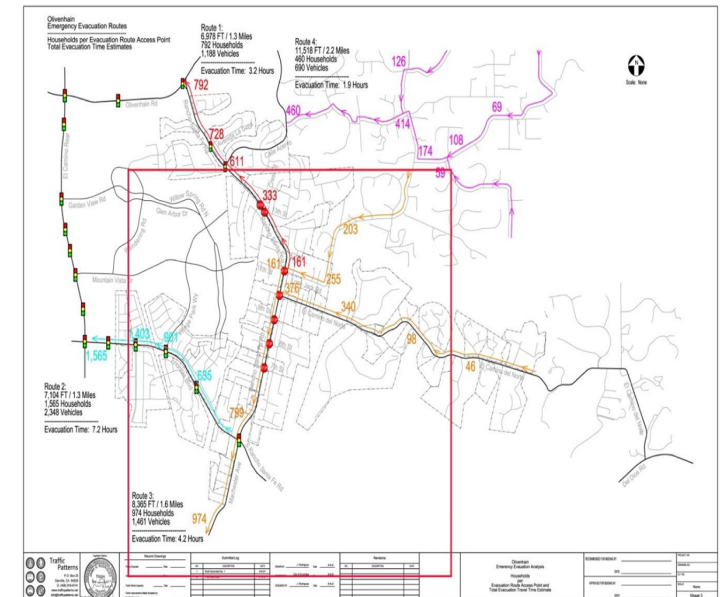
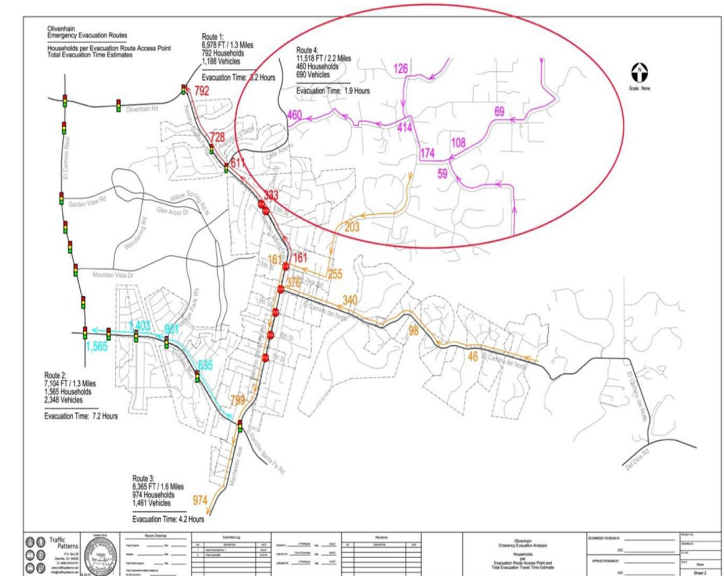
Fire Behavior Scenarios	Fine Dead Fuel Moisture %	Wind Speed mph
Extreme	3	20
Very High	3	16
High	3	13
Moderate	3	9
Moderate-low	3	5

Evacuation Route Considerations

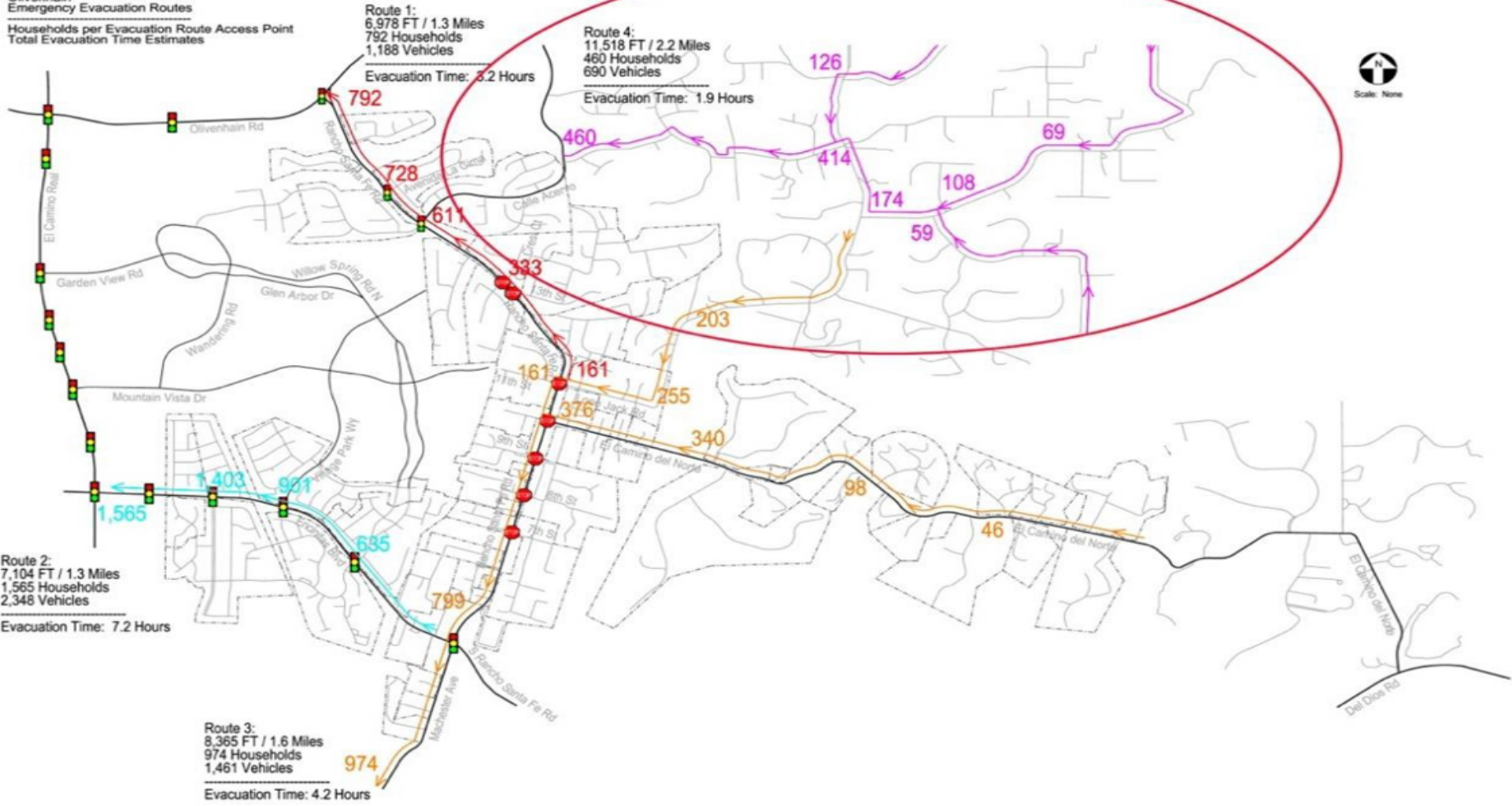
- Reflex Time
- Available routes
- Survivability
 - *Fuel loading and condition*
 - *Roadway impediments*
 - *Available TRA's*

Travel Routes

- Considering the typical traffic congestion experienced on Rancho Santa Fe Road and to reduce Evacuation Clearance Time, most of the population north of Fortuna Ranch Road will evacuate west to Lone Jack Road and through the Double LL Ranch gates (*does not accommodate horse trailers*)
- The population accessed by Fortuna Ranch Road and areas to the southwest of Fortuna Ranch Road will evacuate to Rancho Santa Fe Road, turn left on Rancho Santa Fe Road, and continue south along Manchester Avenue
- Attempting to evacuate large animals when a fast-moving fire is threatening Olivenhain will significantly extend the Evacuation Clearance Time.



**Olivenhain
Emergency Evacuation Routes**
Households per Evacuation Route Access Point
Total Evacuation Time Estimates



Traffic Patterns
P.O. Box 20
Camarillo, CA 94008
© 2008, 2014, 2015
www.tdpsolutions.com
tdp@tdpsolutions.com

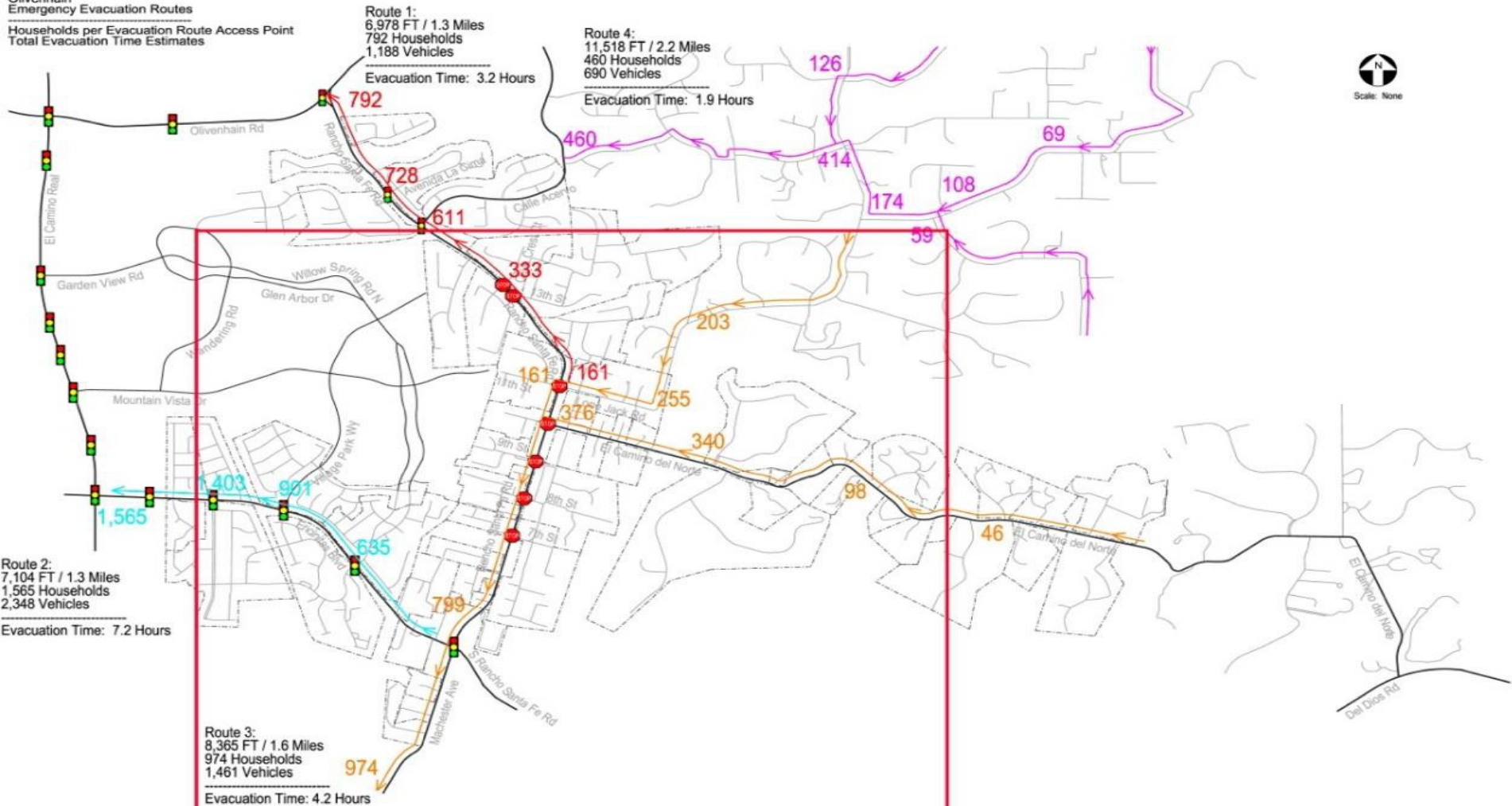
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NO.	DATE	NO.	DATE
1	08/20/15	1	08/20/15
2	08/20/15	2	08/20/15
3	08/20/15	3	08/20/15

Revisions	
NO.	DATE

Olivenhain
Emergency Evacuation Analysis
for
Households
per
Evacuation Route Access Point and
Total Evacuation Travel Time Estimates

RECOMMENDED FOR ISSUE BY:	DATE:	PROJECT NO.:
APPROVED FOR ISSUE BY:	DATE:	DRAWING NO.:
		SHEET NO.:
		None
		Sheet 2

**Olivenhain
Emergency Evacuation Routes**
Households per Evacuation Route Access Point
Total Evacuation Time Estimates



Record Drawings		Submital Log	
No.	Date	Description	Date
1	04/15/2014	Initial Submittal	04/15/2014
2	04/15/2014	Revised Submittal	04/15/2014

Revisions	
No.	Date
1	04/15/2014
2	04/15/2014

Record Drawings		Submital Log		Revisions	
No.	Date	Description	Date	No.	Date
1	04/15/2014	Initial Submittal	04/15/2014	1	04/15/2014
2	04/15/2014	Revised Submittal	04/15/2014	2	04/15/2014

Olivenhain
Emergency Evacuation Analysis
Households
per
Evacuation Route Access Point and
Total Evacuation Travel Time Estimate

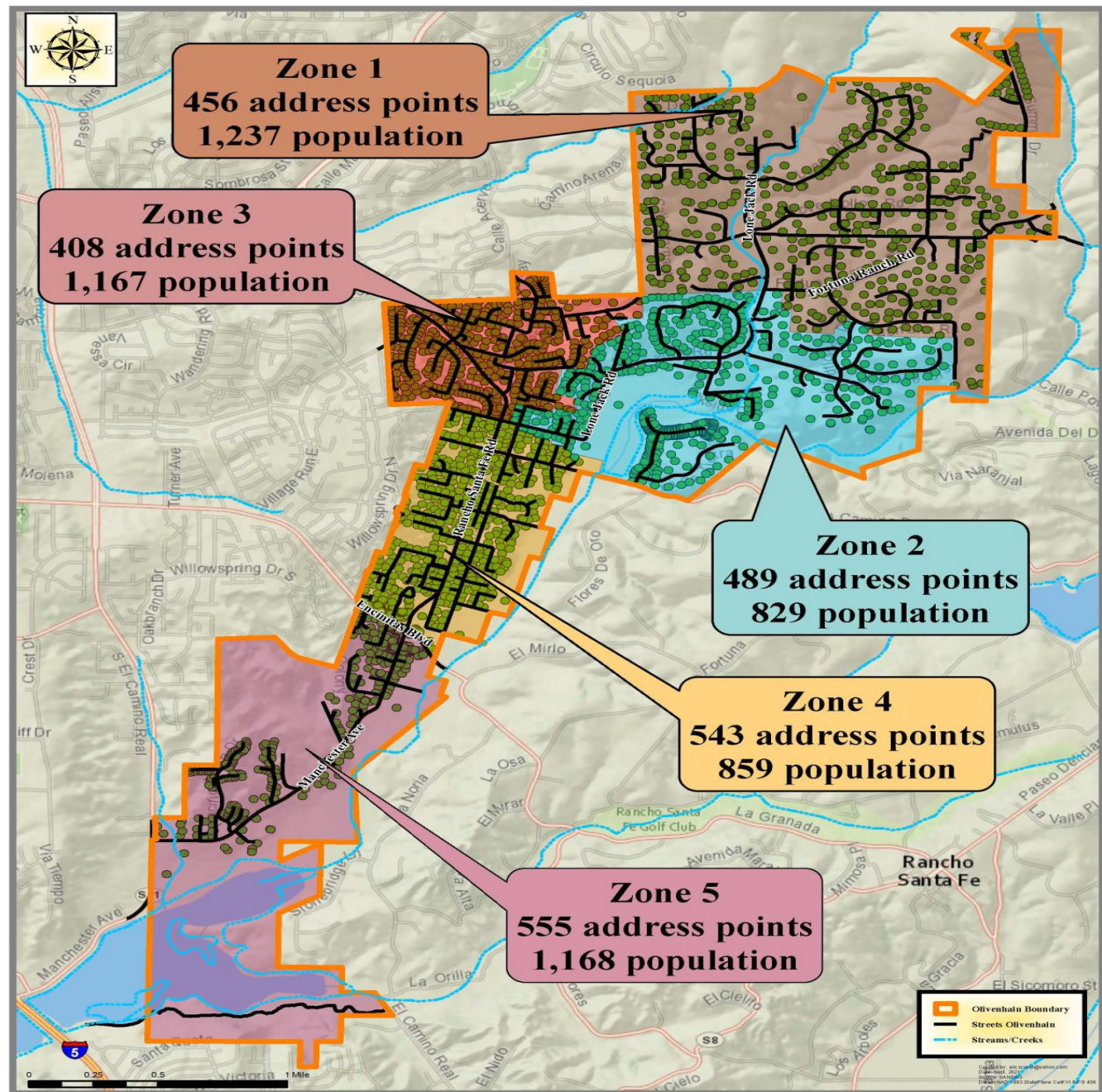
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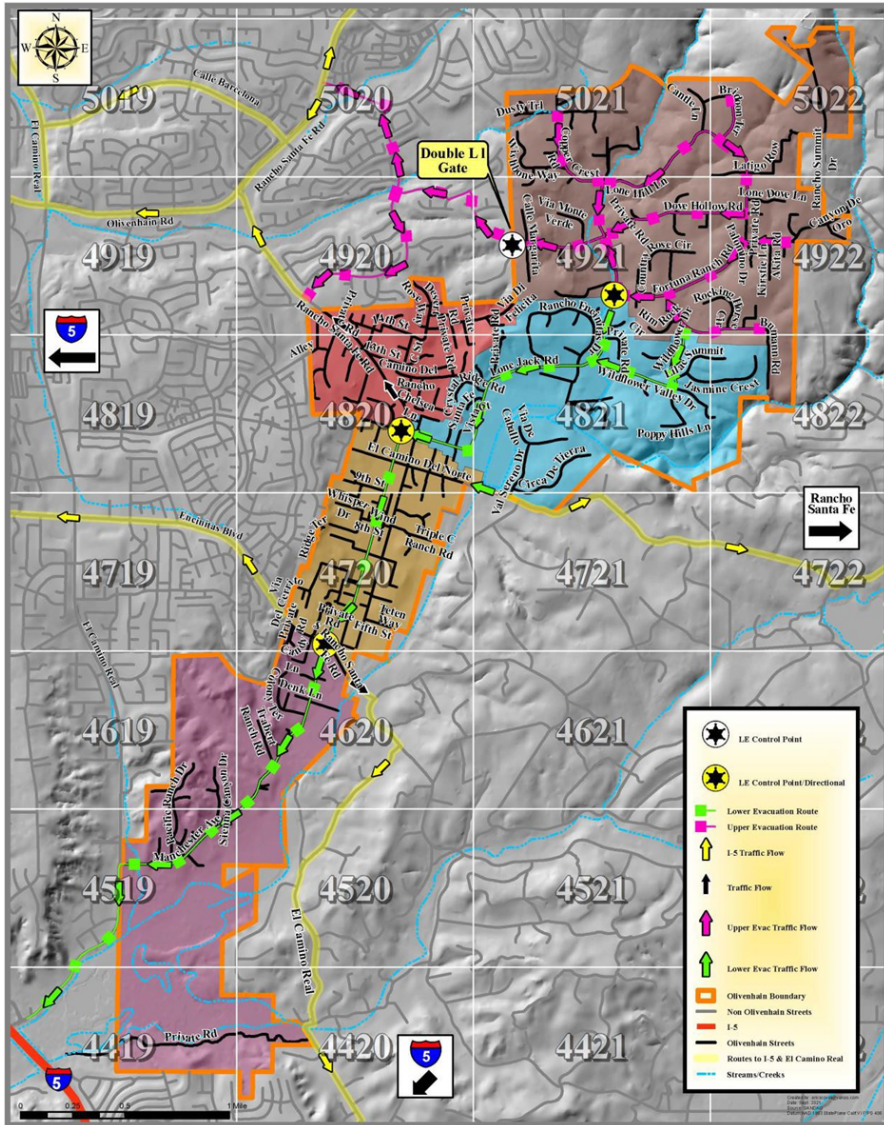
Recommendations

- *When fire weather or emerging incidents increase the probability of a wildfire threat to Olivenhain, consider the following pre-incident protective actions: Advise owners to relocate large animals to pre-identified Areas of Refuge, Suspend infrastructure projects that may impede traffic flow*
- *Ensure schools, care facilities and at-risk populations are notified of the threat and review emergency plans to prepare for evacuation*
- *Develop a comprehensive large-animal evacuation/rescue program (Appendix F)*
- *Improve secondary egress options to the north and east, including Canyon De Oro Road and the proposed emergency exit at the end of Bumann Road*
- *Mark the Wildfire Evacuation Route with fixed and visible signage*
- *Restrict traffic calming measures on all roadways used as evacuation routes*
- *Make Rancho Santa Fe Road improvements to reduce overall travel time*
- *Identify MiraCosta College as a potential Assembly Point and Reunification Location*

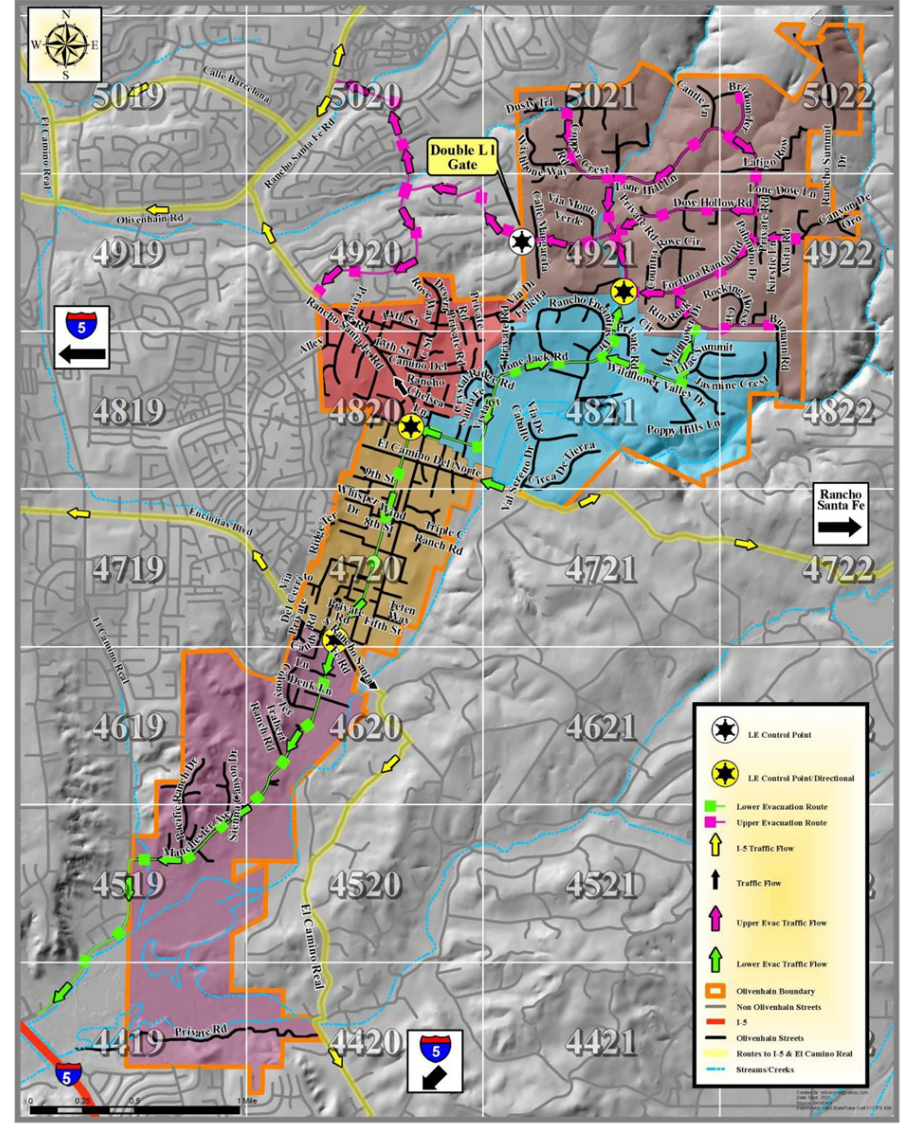
Zone Concept



EVACUATION ZONES, ADDRESS COUNTS



EVACUATION ROUTES/ZONES
A



EVACUATION ROUTES/ZONES
B

Zone-Phased Evacuation Benefits

- Reduce Evacuation Clearance Time
- Provides an enhanced Community Notification template (“Know Your Zone”)
- Increased community awareness
- Foundation for *Real Time Evacuation Planning* Models
- Public Education Tool
- Re-entry/Repopulation
- Can develop concise and understandable pre-recorded public messages

Recommendations

- *Create Evacuation Zones using San Diego County map grids.*
- *Utilize a Real Time Evacuation Planning platform (e.g., ZoneHaven).*
- *Develop concise and understandable pre-recorded public messages.*

Whole Community Approach Benefits

- Cooperation and collaboration with the entire community
- ***Fire Safe Council & Firewise Community***
- Understanding traffic calming measures impacts on primary travel routes
- Support of enhanced fire regulations and abatement programs.
- Annual community evacuation drills
- Continue to focus on public education are all strategies for increasing community awareness and participation
- *Regardless of the Evacuation Clearance Time estimates provided by the Traffic Engineer, the FBAN analysis, experience indicate that Pre-incident Proactive Actions are required*

Conclusions

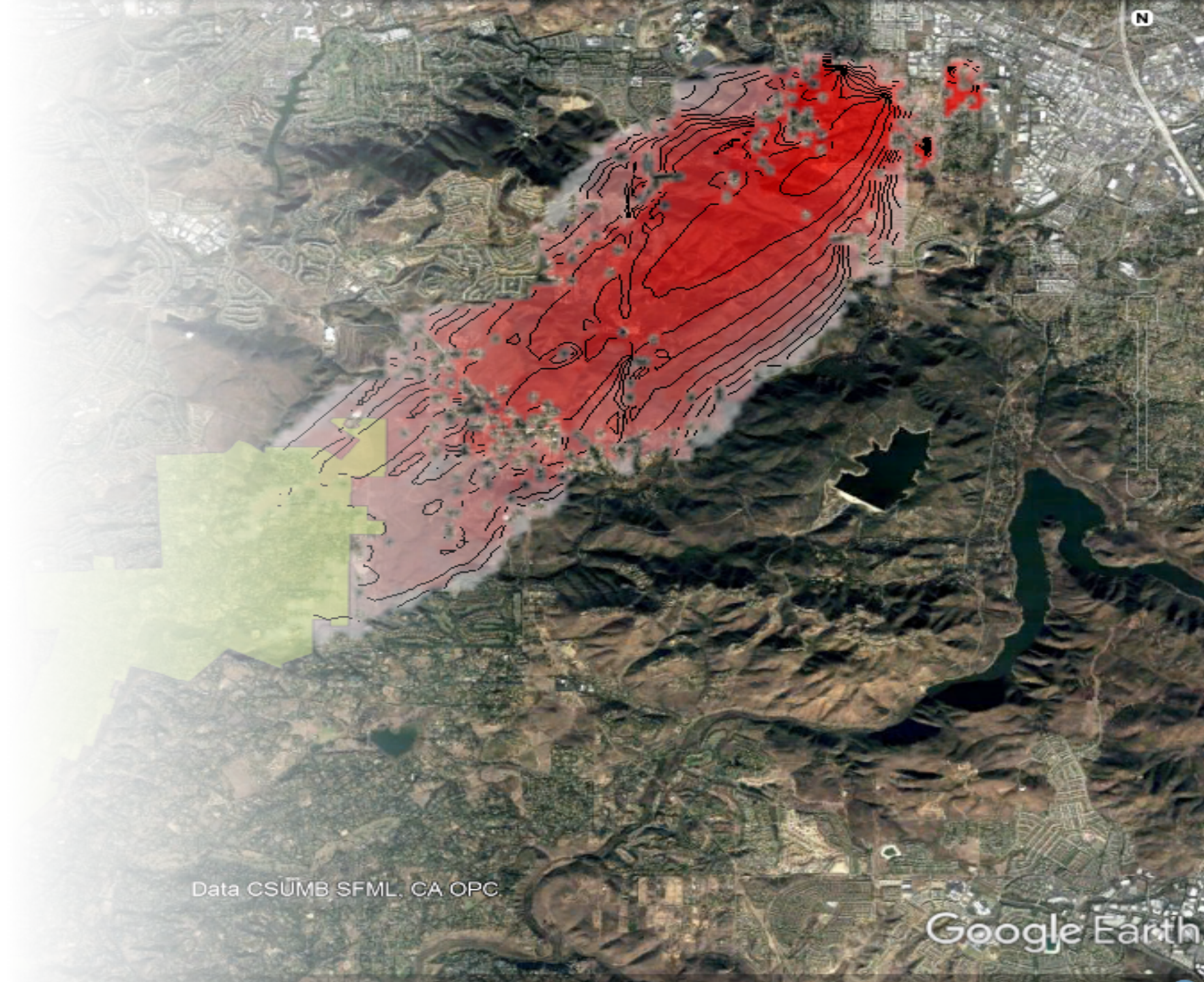
- Encinitas, in cooperation with San Diego County, has developed a detailed plan for evacuating Olivenhain in the event of a wildfire
- By adopting a Zone-Phased evacuation strategy, utilizing the decision guidance tools provided, and embracing a Whole Community Approach to wildfire mitigation and response, Evacuation Clearance Times will be reduced.
- Early plan initiation of a fire threat from an offshore wind event is validated, it is likely that all residents can be evacuated out of the area of immediate fire impact.
- Fires with an onshore wind environment can be problematic if fuels conditions persist
- ***Incident Commander(s) must use available decision guidance tools, experience, and training to determine which portions of the community can be evacuated and if others must be sheltered-in-place***
- Continue to pursue secondary egress routes north and east of Lone Jack Road and a vegetation management plan for egress routes need to be secured and implemented
- The City and County continue to foster good working relationships between allied agencies providing a robust emergency response framework

Questions



EXTREME

- Arrival Time
287 minutes
(4 hours 47
minutes)
- FDFM=3
- MPH=45

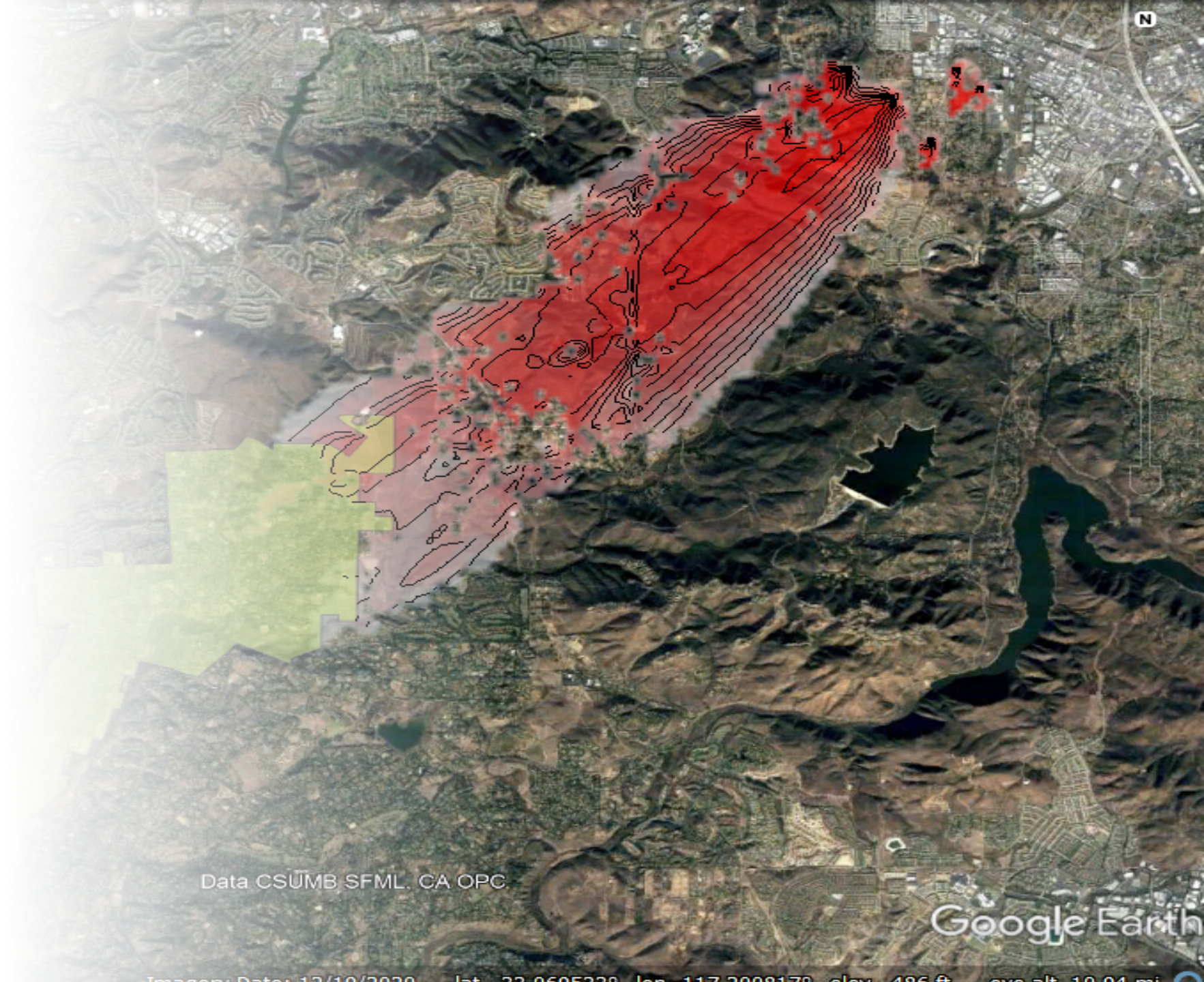


Data CSUMB SFML, CA OPC

Google Earth

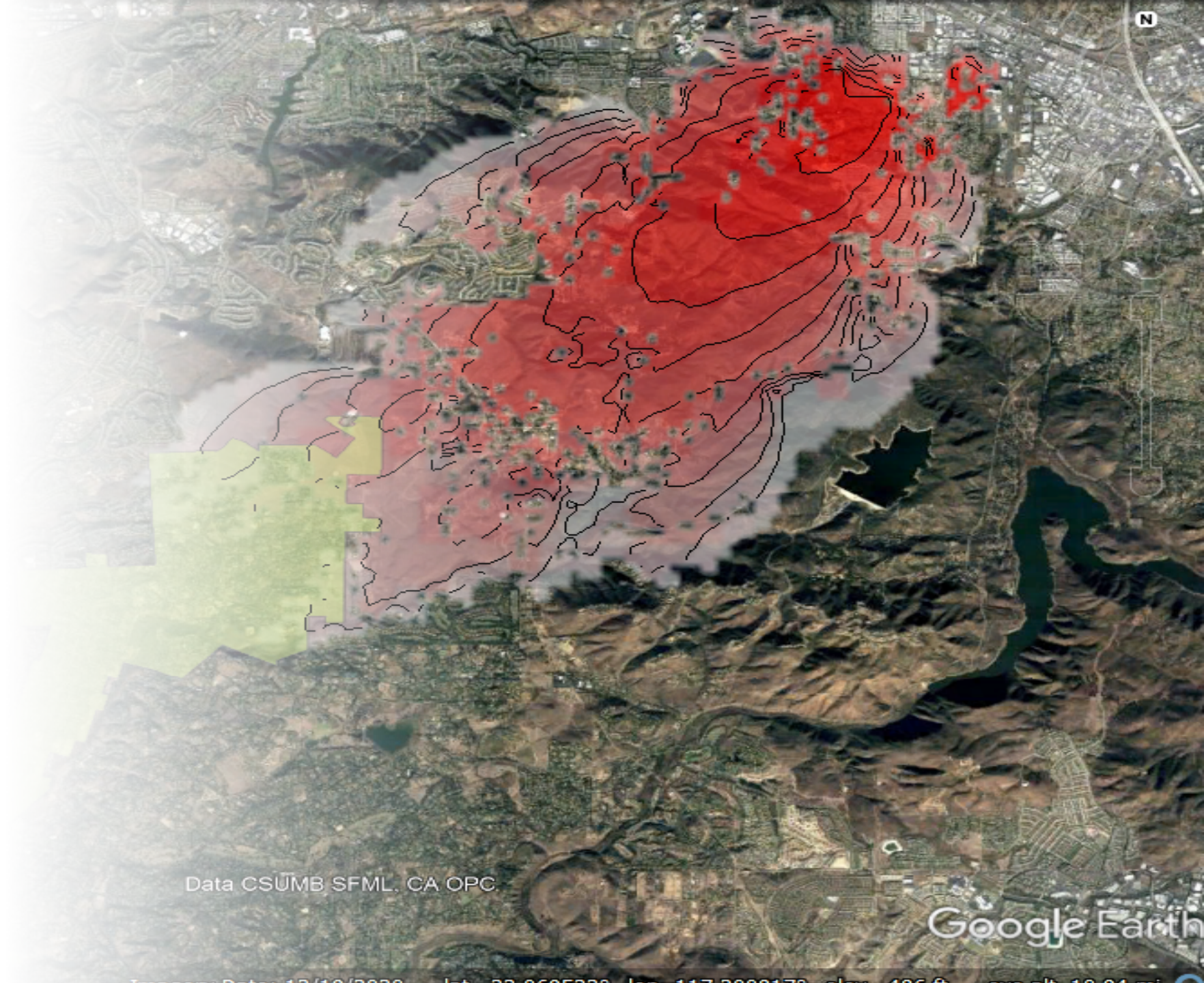
VERY HIGH

- Arrival Time
288 minutes (4
hours 48
minutes)
- FDFM=5
- MPH=40



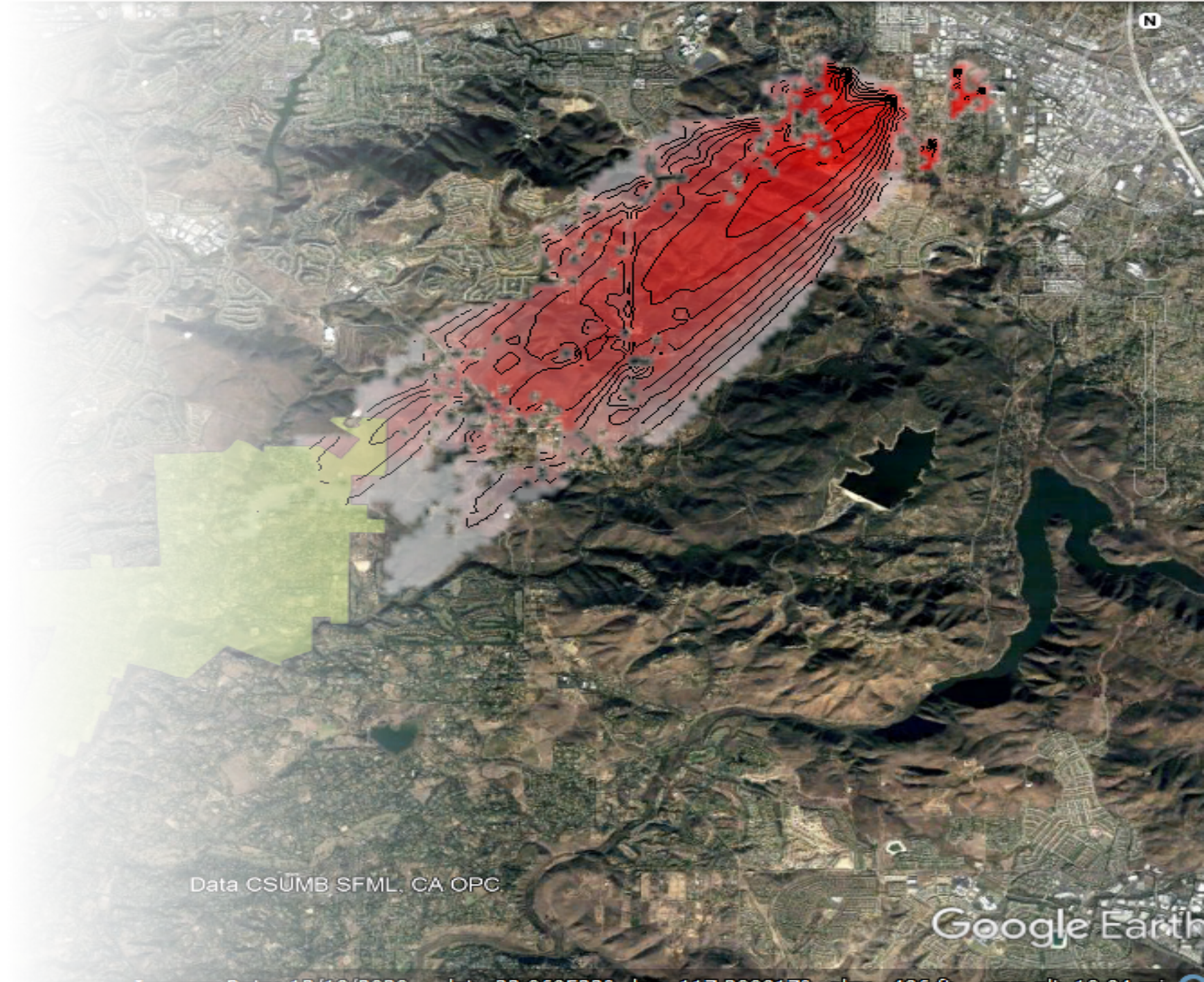
HIGH

- Arrival Time
480 minutes (8
Hours)
- FDFM=5
- MPH=20



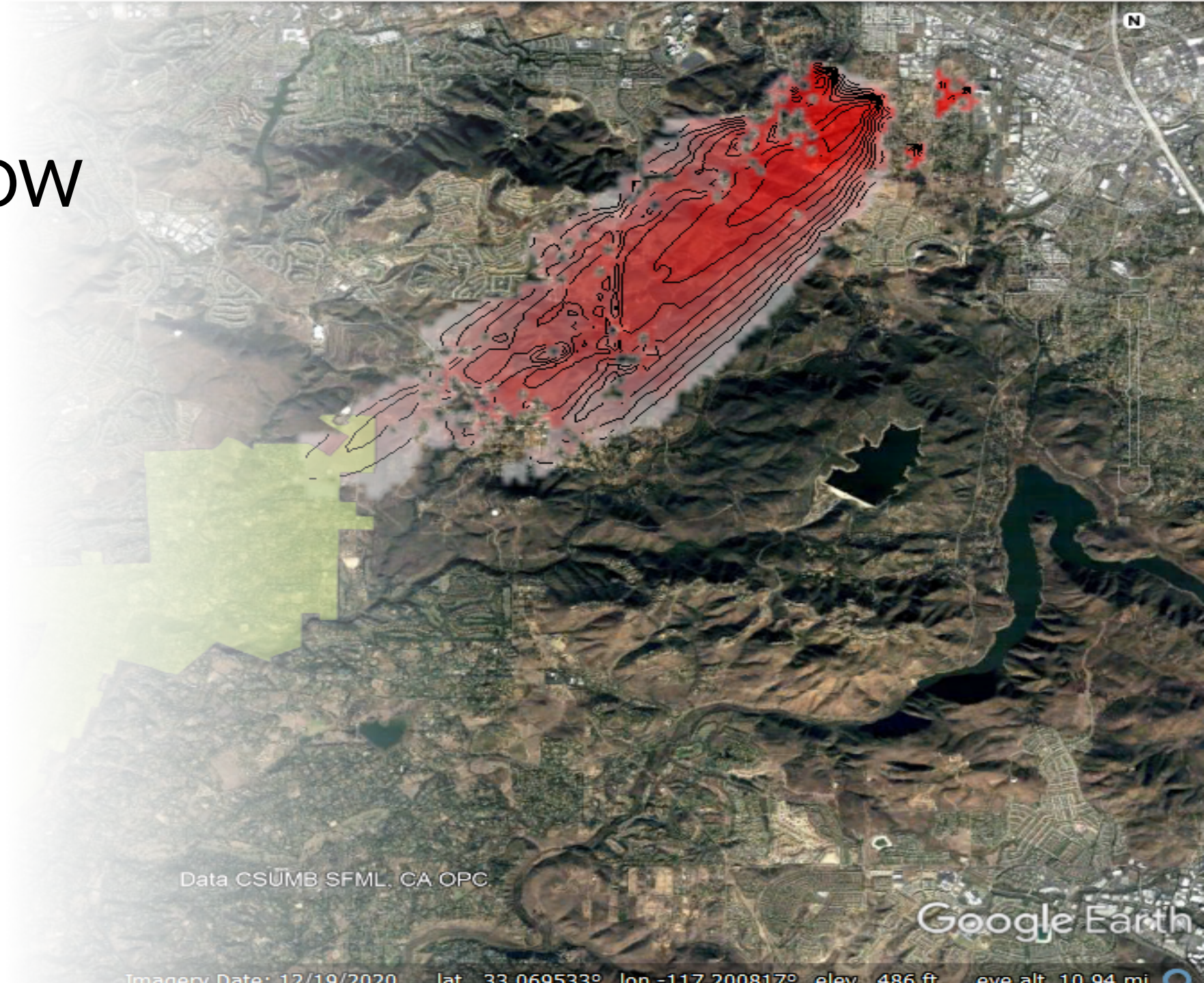
MODERATE

- Arrival Time
324 minutes
(5 hours 24
minutes)
- FDFM=8
- MPH=35



MODERATE-LOW

- Arrival Time
539 minutes (8
hours 59
minutes)
- FDFM=11
- MPH=35



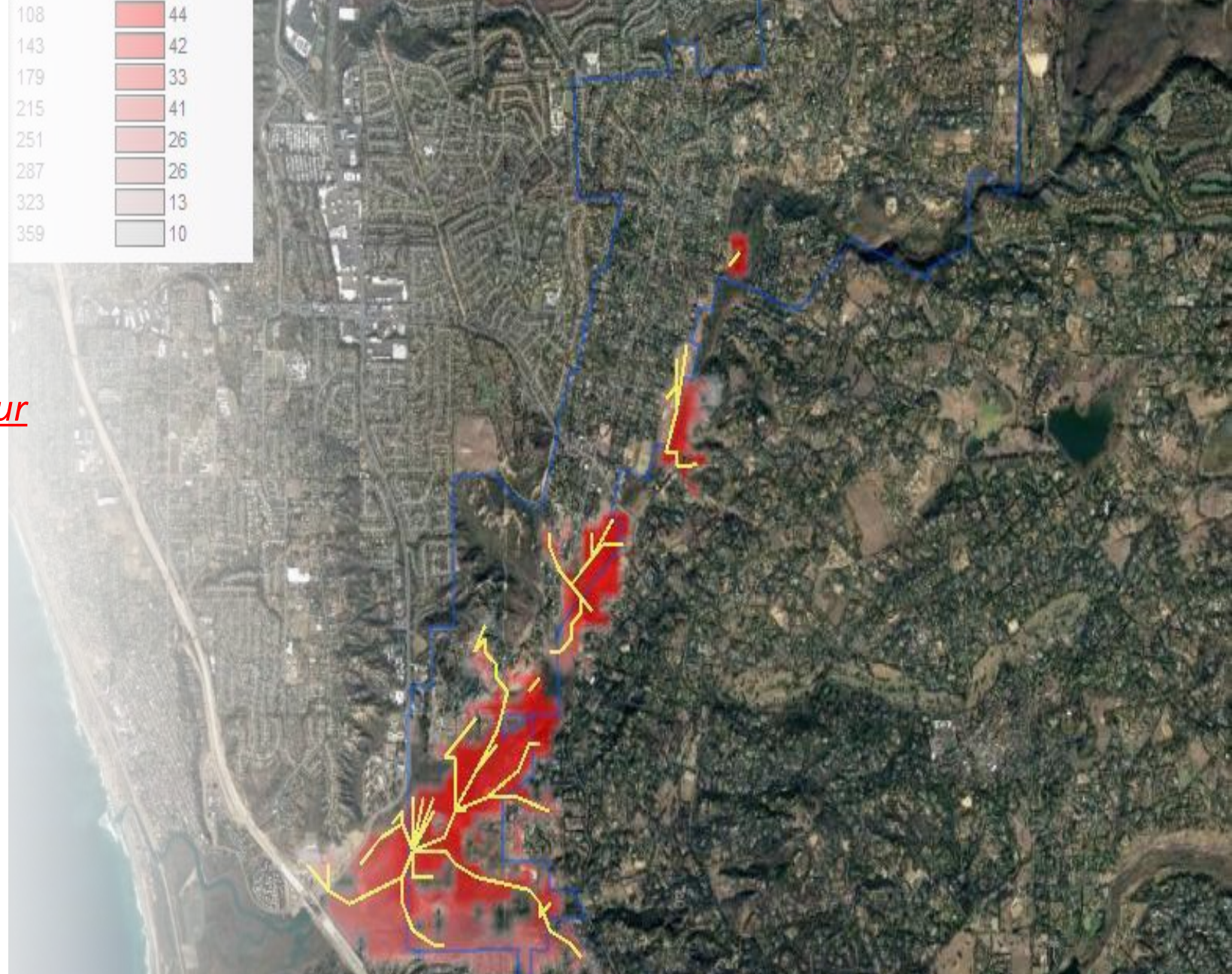
Data CSUMB SFML, CA OPC

Google Earth

Imagery Date: 12/19/2020 lat 33.069533° lon -117.200817° elev 486 ft eye alt 10.94 mi

HIGH

- Arrival Time *Within the First Hour*
- FDFM=3
- MPH=13



The Incident Commander(s) must use available fire behavior tools, knowledge, and experience to determine when and if Evacuation Warnings or Orders are to be issued.