

# LAKE CHABOT ROAD ONE-WAY CIRCULATION EVALUATION

February 3, 2025

# Agenda

① **One-Way Circulation Evaluation**

② **Supplemental Geotechnical Investigation**

DATE	LEGISLATIVE BODY	ACTION/DISCUSSION TOPIC
<u>2/20/2018</u>	City Council	Award consultant design contract for roadway stabilization
<u>10/5/2022</u>	Facilities & Transportation Committee	Roadway Stabilization Roadway Configuration
<u>2/1/2023</u>	Facilities & Transportation Committee	Storm Damage Assessment
<u>5/3/2023</u>	Facilities & Transportation Committee	Damaged Roadway Interim Options
<u>7/5/2023</u>	Facilities & Transportation Committee	Funding request for roadway storm damage repair
<u>7/17/2023</u>	City Council	Accelerated construction award for upslope repair
<u>4/15/2024</u>	City Council	Accept federal grant funding for emergency repair
<u>7/15/2024</u>	City council	Award environmental consultant contract
<u>9/9/2024</u>	City Council	Council Referral: Repair Status Update Presentation
<u>11/6/2024</u>	Facilities & Transportation Committee	Council Follow Up: Alternating One-Way, Traffic Calming, Additional Grant Funding, Emergency access/response
<u>12/4/2024</u>	Facilities & Transportation Committee	Committee Follow Up: Supplemental geotechnical investigation fee proposal
<u>12/16/2024</u>	City Council	Award consultant design contract
<u>1/14/2025</u>	Facilities & Transportation Committee	Committee Follow Up: Supplemental geotechnical investigation, one-way circulation, mitigation measures



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# One-Way Circulation Evaluation



# Westbound One-Way Operations

## Challenges

- Detour of Eastbound Traffic
- Inbound access restricted to certain residences
- Reduced Emergency Access
- Unacceptable Sight Lines

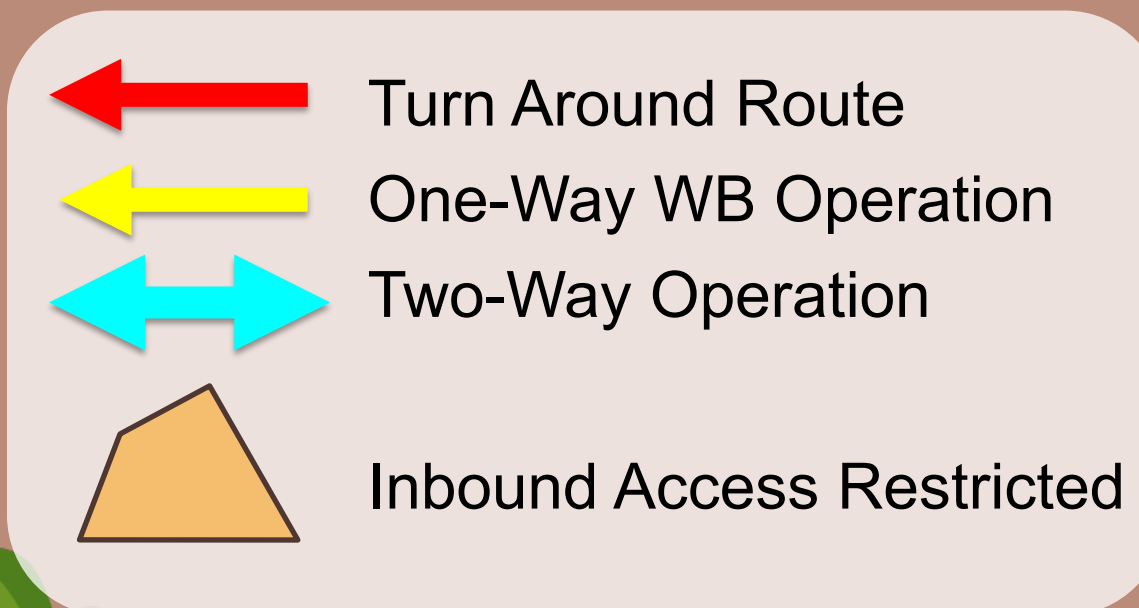




# Westbound One-Way Operations

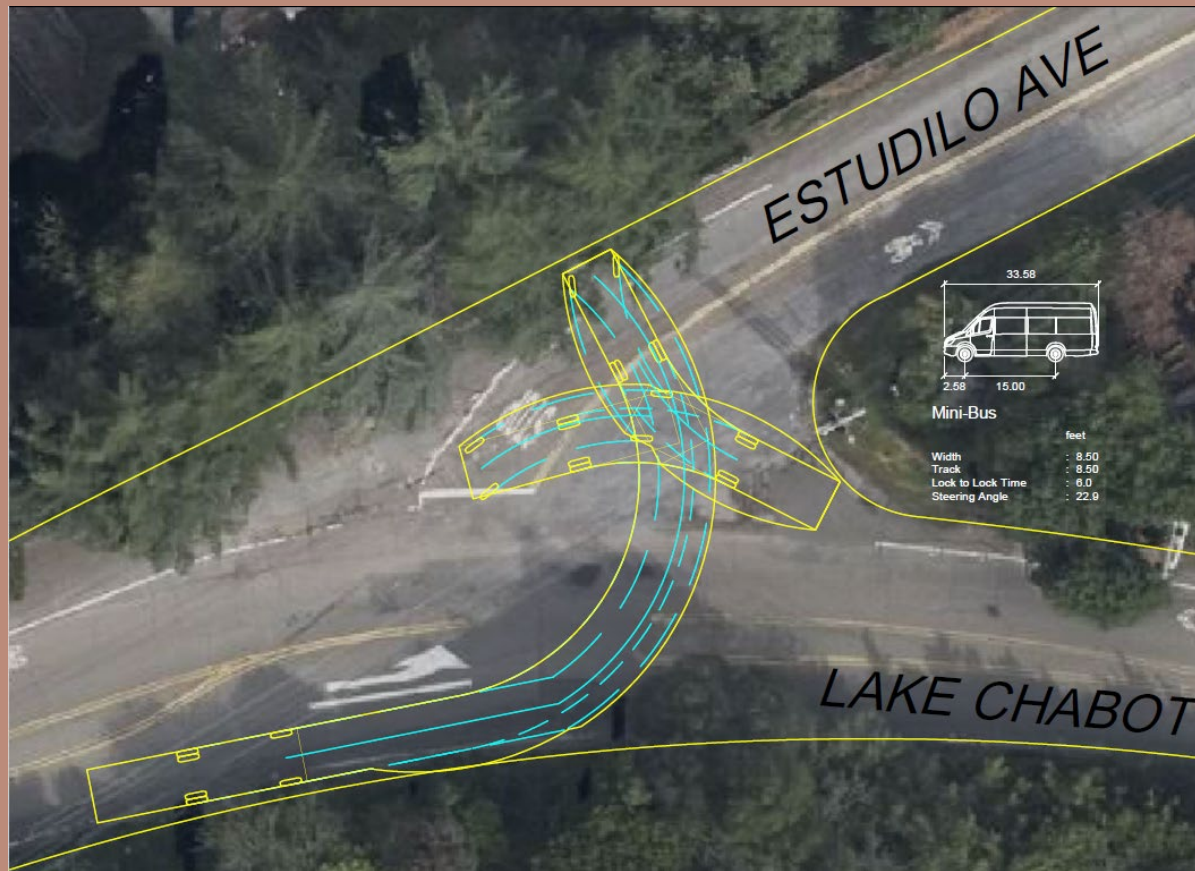
## Transition at Estudillo Ave Challenges

- Errant eastbound vehicles likely detour to local streets
- Restricted inbound access to certain residences





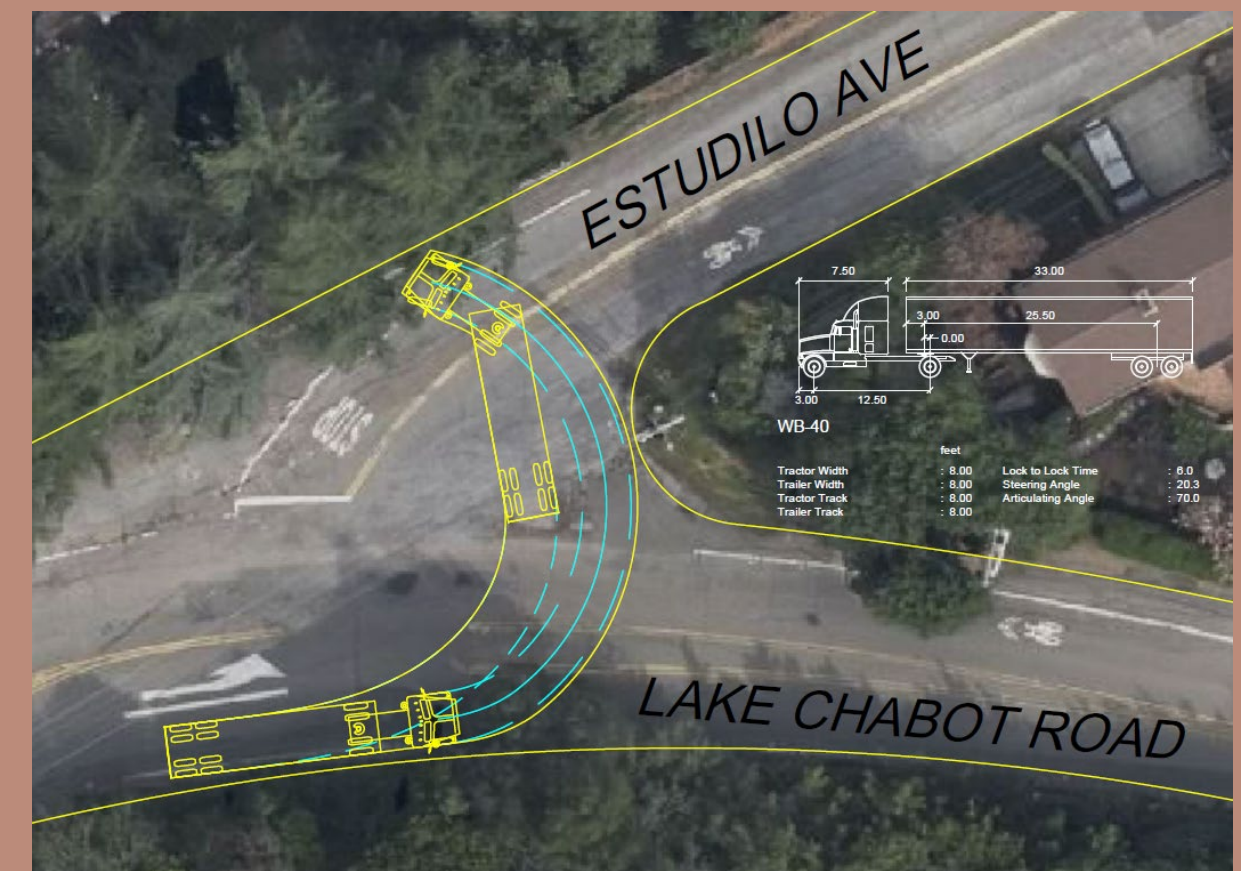
# Westbound One-Way Operations



Delivery Truck



Bus



Semi Trailer Truck

## Challenges

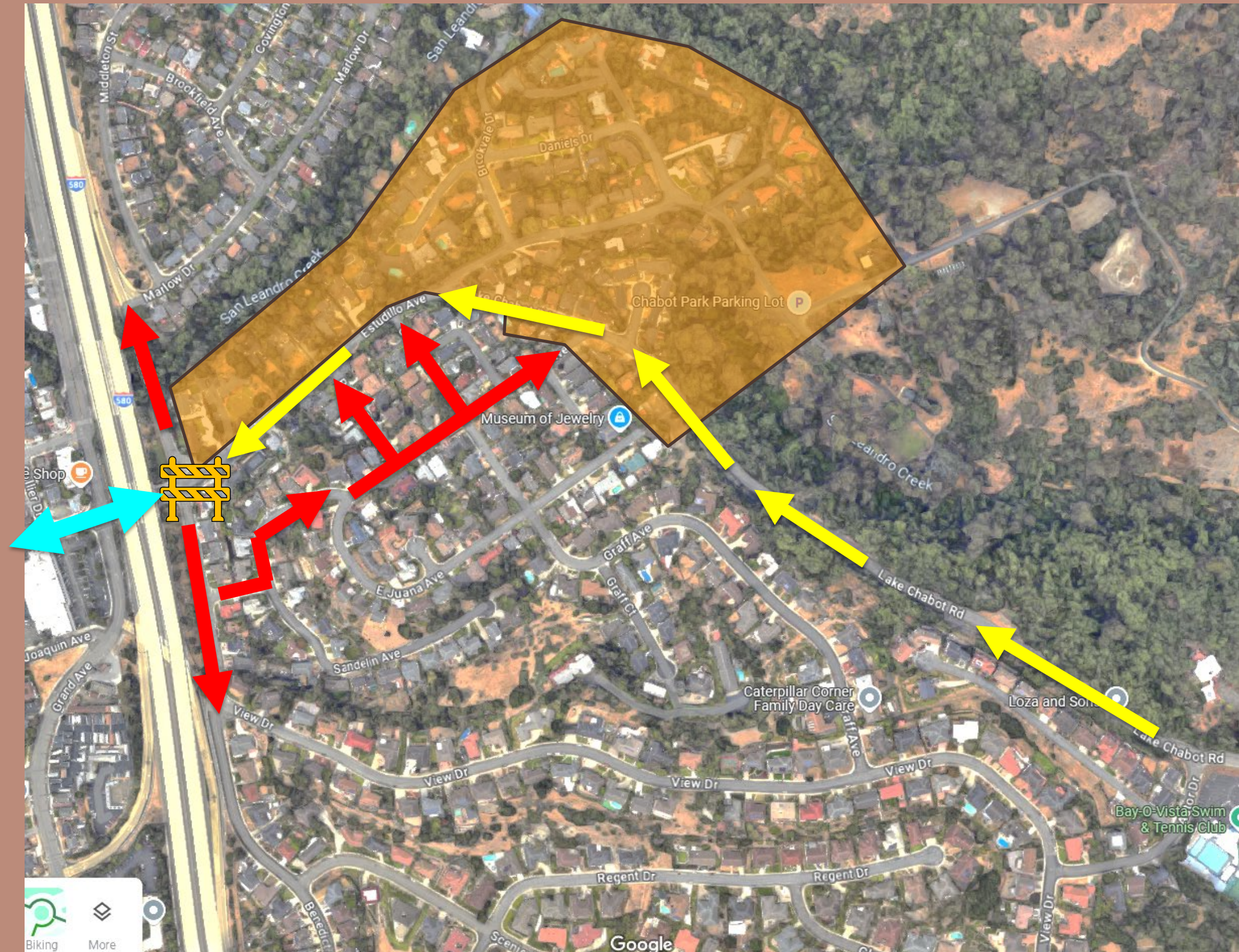
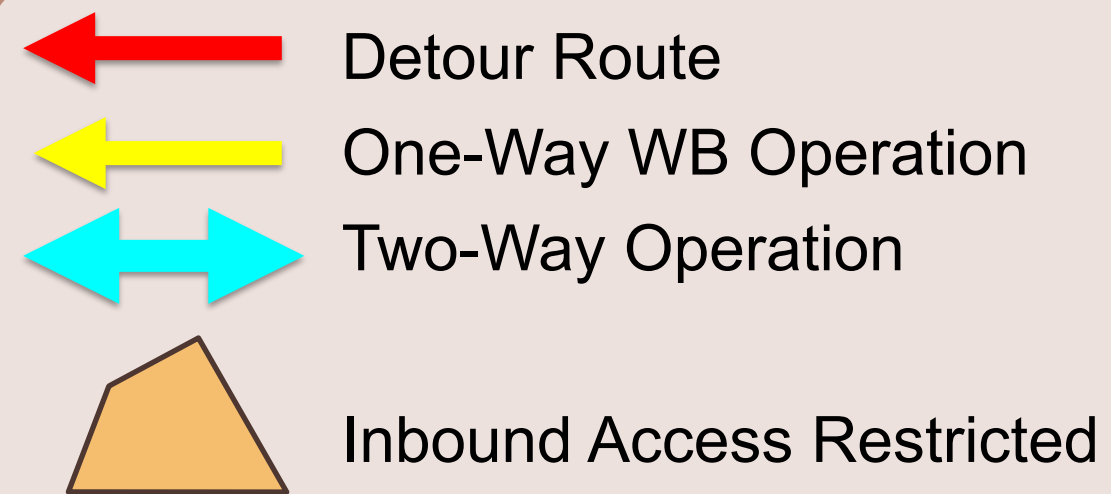
- Lake Chabot Rd & Estudillo Ave intersection not suitable for U-Turns



# Westbound One-Way Operations

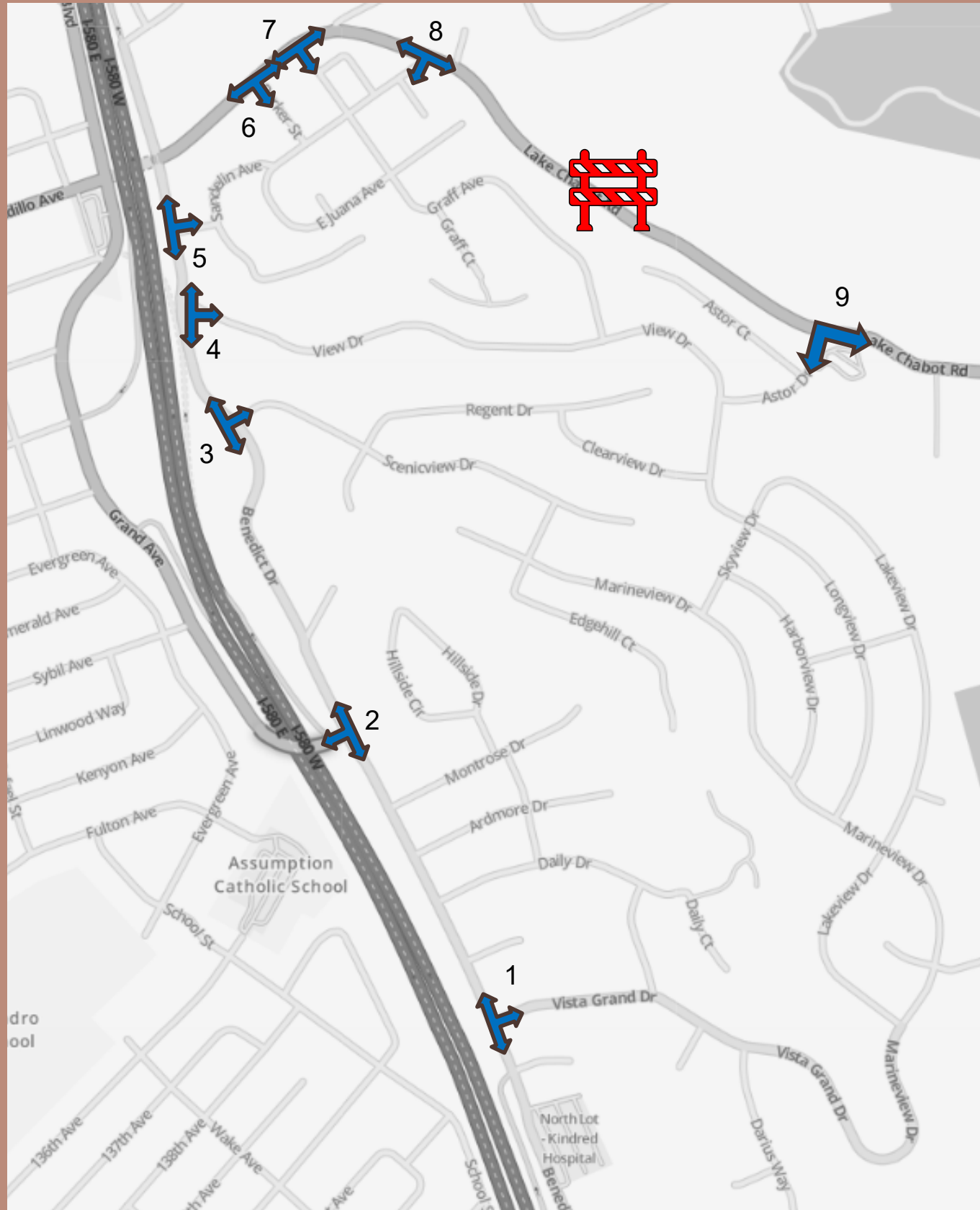
## Transition at Benedict Dr Challenges

- Residents with restricted inbound access increases
- Emergency access to residents further restricted





# EMERGENCY VEHICLE ACCESS

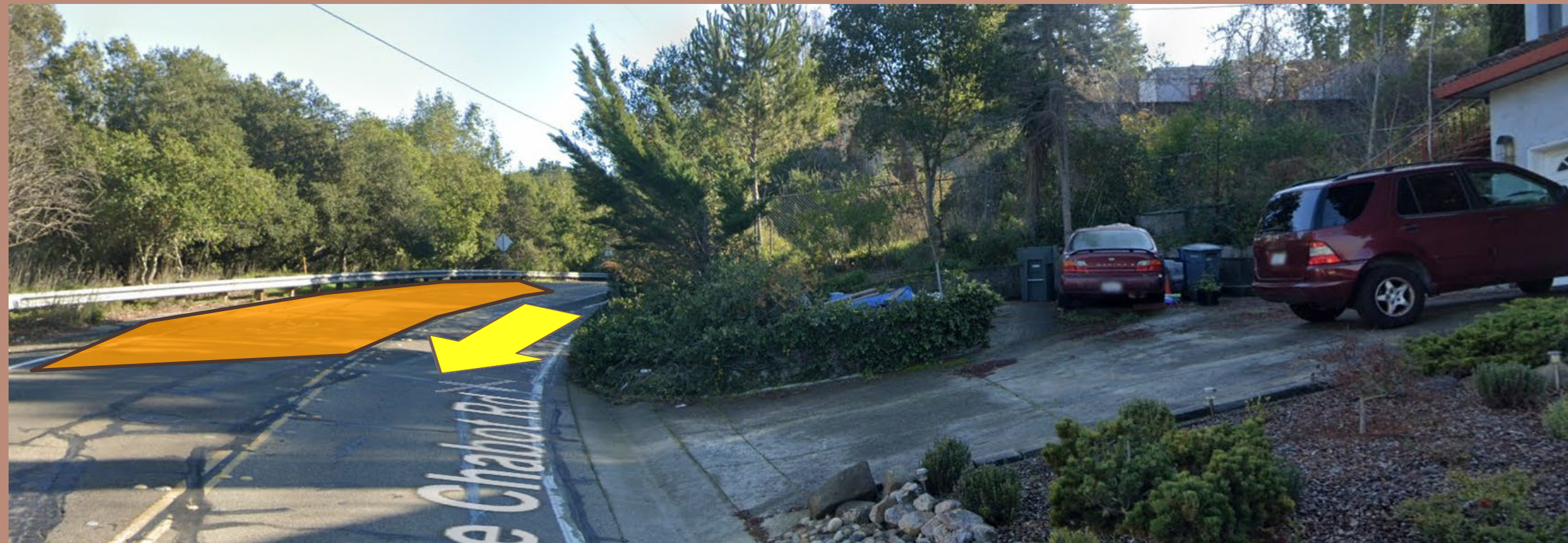




# Westbound One-Way Operations

## Challenges

### ➤ Driveway Sightlines





# Eastbound One-Way Operations

## Challenges

- Detour of Westbound Traffic
- Reduced Emergency Access







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# Supplemental Geotechnical Investigation

# PREVIOUS GEOTECHNICAL INVESTIGATIONS

**Nov 2011** ***Geological & Geotechnical Investigation Lake Chabot Stabilization***

Treadwell & Rollo (Langan)

**Jan 2019** ***Materials Report Lake Chabot Road Embankment Stabilization***

Cal Engineering & Geology

**Mar 2019** ***Design Alternatives Report Lake Chabot Road Embankment Stabilization***

Cal Engineering & Geology



# PREVIOUS GEOTECHNICAL INVESTIGATIONS



## November 2011

*Geological & Geotechnical Investigation  
Lake Chabot Stabilization  
Treadwell & Rollo (Langan)*

- Advanced six (6) borings
  - 13.3' – 39.5' depth



# PREVIOUS GEOTECHNICAL INVESTIGATIONS

November 2011

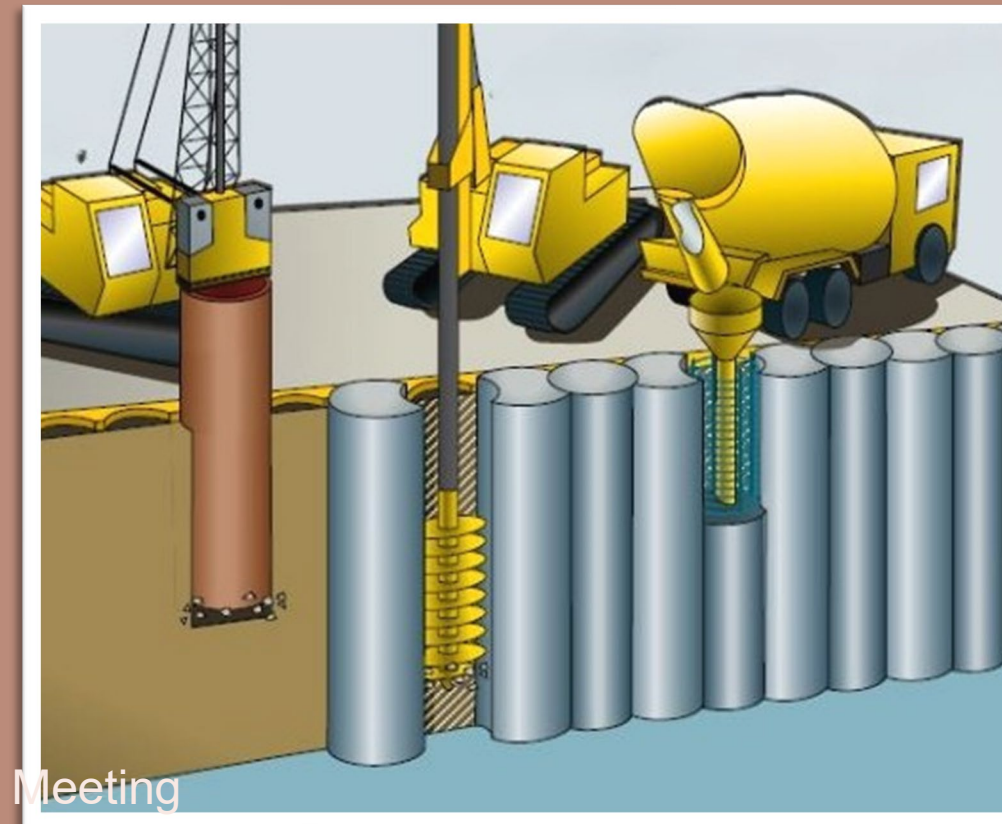
*Geological & Geotechnical Investigation Lake Chabot Stabilization  
Treadwell & Rollo (Langan)*

## Conclusions

- Observed roadway distress result of settlement of fill & fill slope creep movement
- Landslides triggered by excessive precipitation or earthquake may cause displacement of road

## Recommended Mitigation

- Stitch Pier Retention System





# PREVIOUS GEOTECHNICAL INVESTIGATIONS

January – March 2019

Cal Engineering & Geology

*Materials Report Lake Chabot Road Embankment Stabilization*

*Design Alternatives Report Lake Chabot Road Embankment Stabilization*

- Topographic Survey
- Seismic refraction profiles
  - Seven (7) additional locations





# PREVIOUS GEOTECHNICAL INVESTIGATIONS

January – March 2019

Cal Engineering & Geology

*Materials Report Lake Chabot Road Embankment Stabilization*

*Design Alternatives Report Lake Chabot Road Embankment Stabilization*

## Conclusions

- Substantiated conclusions in 2011 Treadwell & Rollo report
- Identified areas of embankment failure; downslope creep; loss of lateral support

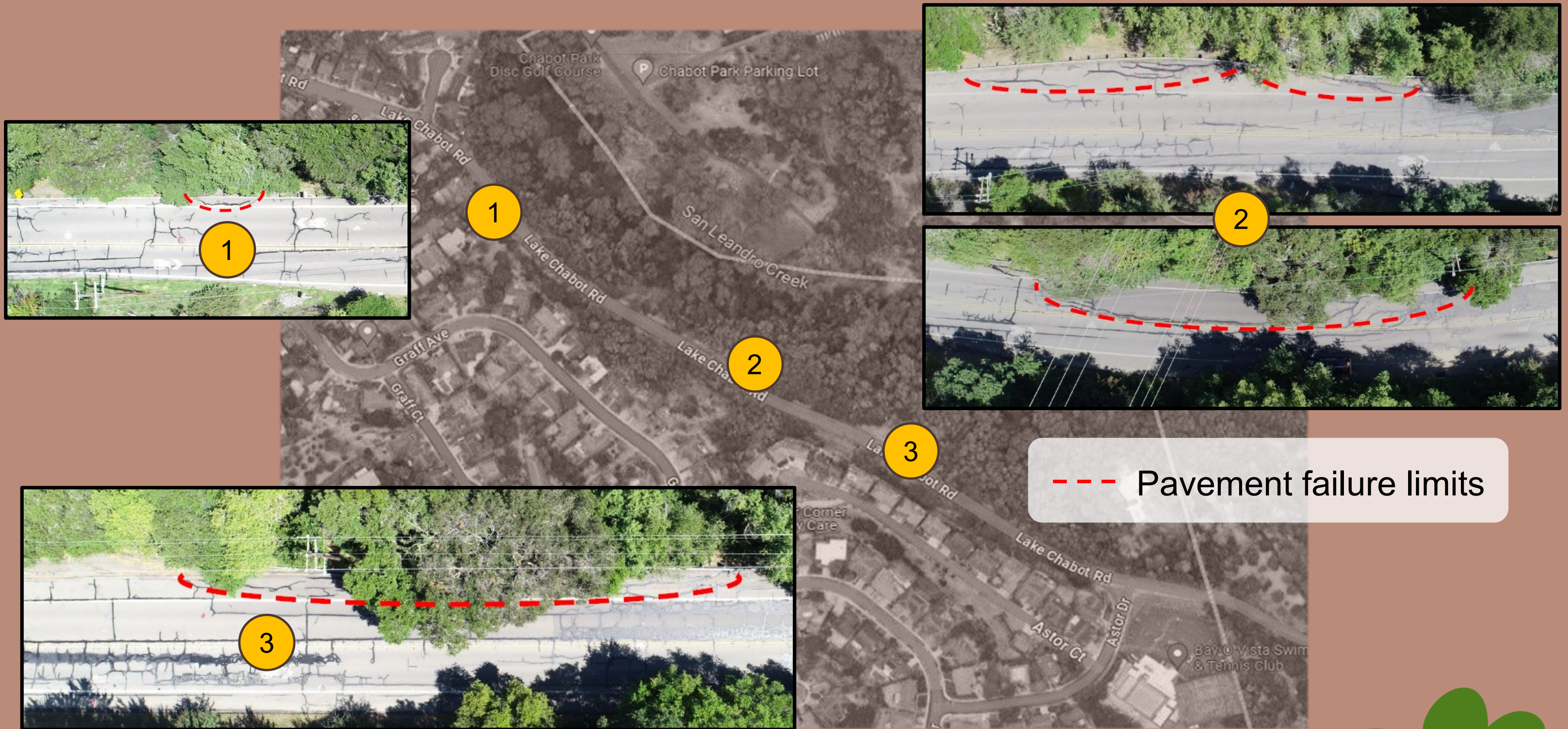
## Recommended Mitigation

- CIDH Piles
- Soldier Pile & Lagging Retaining Wall
- Drainage Improvements





# PREVIOUS GEOTECHNICAL INVESTIGATIONS





# SUPPLEMENTAL GEOTECHNICAL INVESTIGATION

December 2024

*Scope & Fee Proposal*  
Treadwell & Rollo (Langan)

## Scope

- Topographic survey; Lidar scan
- Perform slope stability evaluation
  - Geotechnical criteria for stability/safety
- Develop short-term mitigation recommendations

## Schedule

- 10 to 12 weeks

# SUPPLEMENTAL GEOTECHNICAL INVESTIGATION

December 2024

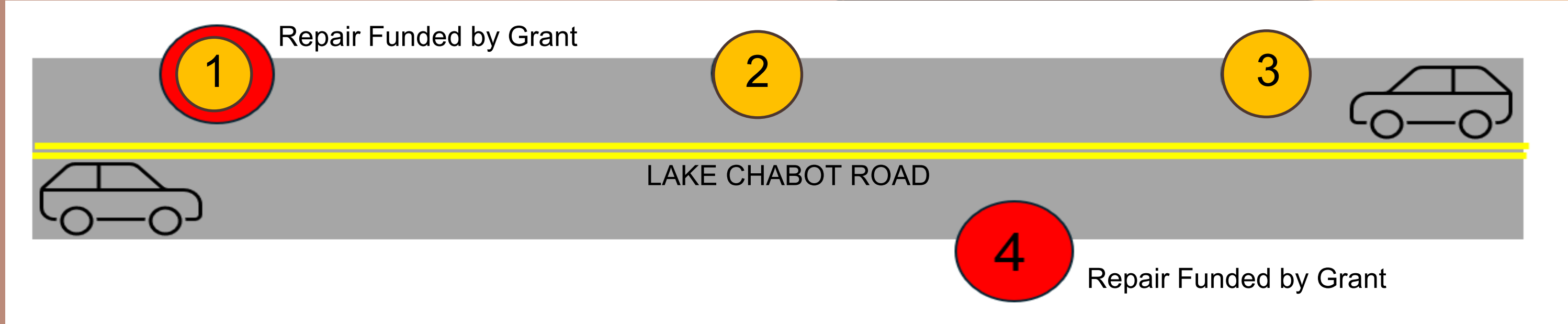
*Scope & Fee Proposal*  
Treadwell & Rollo (Langan)

## Fee

- \$89,500
- Not eligible for FEMA reimbursement
  - Topographic survey (\$40k) would have been eligible
- Current budget earmarked for construction and FEMA local match
- Additional funds would need to be allocated

# ESTIMATED COST TO REPAIR ALL SLIDES

ITEM	ESTIMATED COSTS
Slide 1 and Slide 4 Repair Costs	\$3M
Stabilize Erosion Sites 2 and 3	\$6M
Reconstruct Pavement	\$2M
Total	\$11M



- # Pre-storm erosion
- # Additional erosion

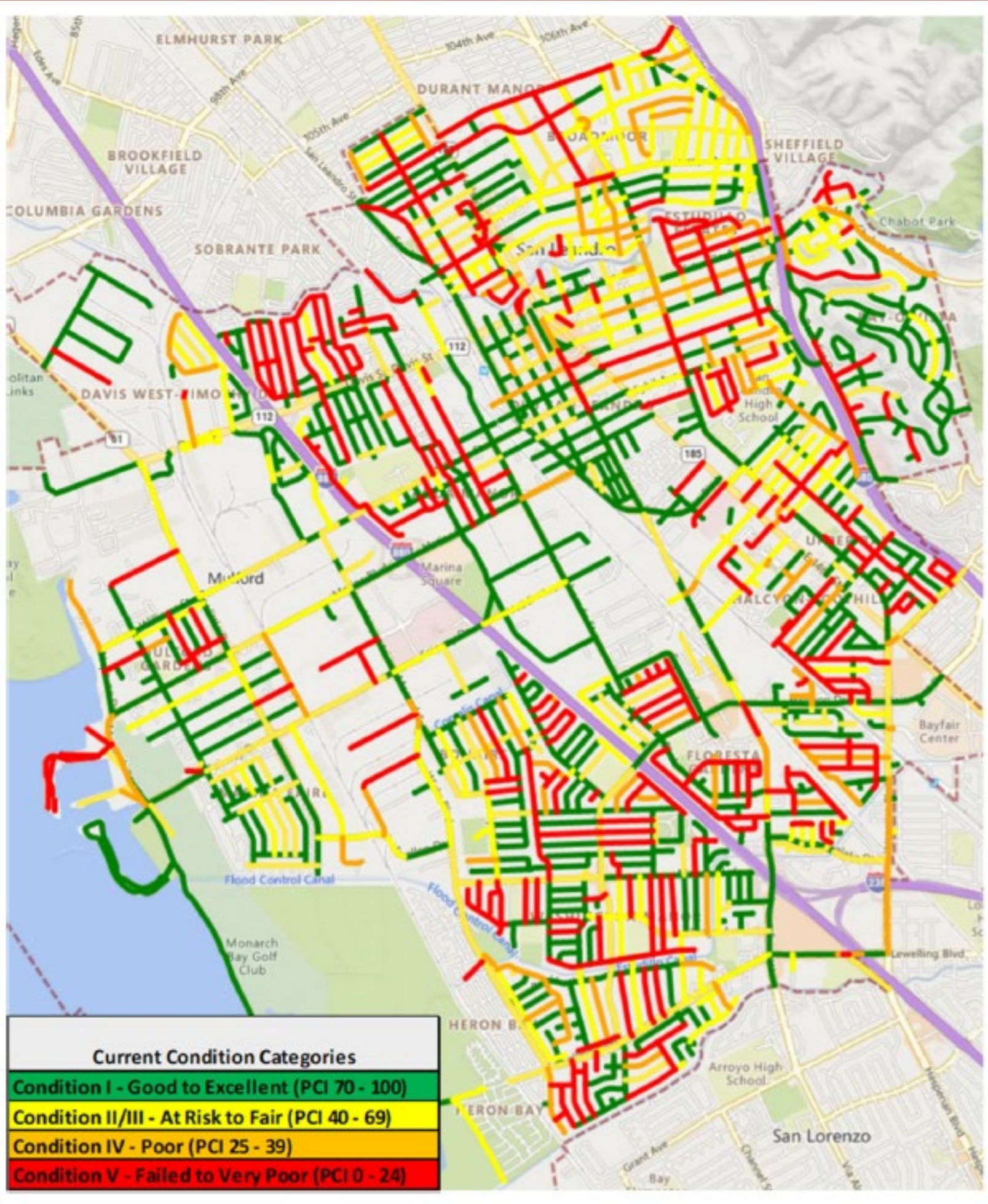


# CITYWIDE ROAD FUNDING NEEDS

0.5 mi LAKE CHABOT ROAD REPAIR COSTS	AMOUNT (est.)
Slide 1 and Slide 4 Repair Costs (estimate)	\$3M
Stabilize Erosion Sites 2 and 3 (estimate)	\$6M
Reconstruct Pavement (estimate)	\$2M
Total	<b>\$11M</b>

CITYWIDE ROAD REPAIR NEEDS	AMOUNT
43 miles of Failed roads (red, PCI<25)	\$96
26 miles of Poor roads (orange, PCI<50)	\$51M
29 miles of Fair roads, (yellow, PCI<65)	\$18M
Total (98 miles)	<b>\$165M</b>

Lake Chabot Road PCI = 37 (poor, orange)





# NEXT STEPS

## Hillside Protection



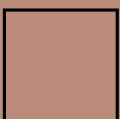
November 2024  
Completed

## Environmental Studies and Design



December 2024  
Design Contract Awarded

## Construction



*Summer 2026  
(earliest)*

# OPTIONS AND STAFF RECOMMENDATION

- ☐ Direct staff to design one-way circulation (~\$20,000)  
AND Award Agreement to perform Supplemental  
Geotechnical Investigation (\$89,500)

Select Direction: Westbound OR Eastbound

- ☒ Keep road closed to allow staff to focus on repairing  
slides 1 and 4

# STAFF RECOMMENDATIONS

1. KEEP LAKE CHABOT ROAD CLOSED, AS CONFIGURED
2. FOCUS ON COMPLETING ROAD REPAIRS, AS REQUIRED BY FHWA GRANT
3. EVALUATE AND IMPLEMENT APPLICABLE TRAFFIC CALMING MEASURES

## DEPARTMENT

## JUSTIFICATION

City Manager's Office

1. Risks associated with unrepaired storm damage at 2 slide locations
2. Risks associated natural geological hazard and erosion/slide history

Public Works Department

3. Minimizes vehicle cut-through traffic and waiting queues
4. Preserves pavement structural integrity
5. Streamlines environmental studies, design, and road/hillside inspections
6. Will allow uninterrupted road construction/repair
7. Current temporary traffic control is the lowest cost to implement and maintain

Fire and Police Department

8. Allows emergency vehicle access
9. Minimizes conflict with vehicles in the event of an emergency response
10. Allows public use in emergency circumstances