SR - 710 Tunnel Technical Study

El Sereno Community Meeting

March 26, 2009

Introductions

- Elected Officials
- Caltrans
- Metro
- Community Outreach Team
- Technical Team

Purpose of Meeting

- Learn why we are doing the Study
- Describe the Exploration Program
- Engage in two-way conversation
- Learn the best ways to communicate to you and involve you

Agenda Overview

- Tunnel Technology
- Exploration Program
- Questions, Answers, Comments
- Next Steps

Ground Rules

- Maintain mutual respect
- Maintain a respectful environment
- Listen to each other; learning from each other
- Keep an open mind – all ideas are valid
- Opinions need to be respected

Why Tunnels?

- Reduce impacts to communities and sensitive areas

Modern Tunnel Systems

- Lighting
- Communications
- Traffic Surveillance
- Ventilation
- Air Monitoring
- Motorist Aid Stations
- Emergency Egress/Refuge
- Public Address/Radio Rebroadcast

Tunnel Safety

Lighting and Communication

Traffic Surveillance and Communication

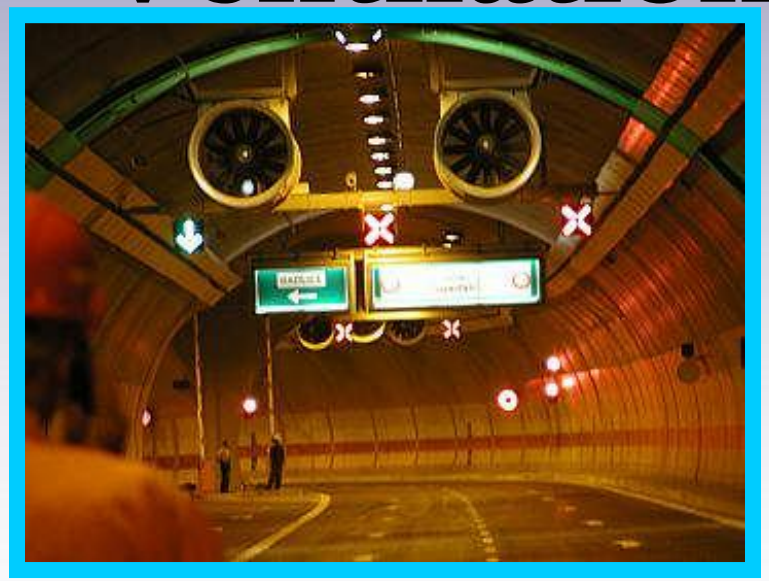
Motorist Assistance

Motorist Aid Station

Cross Passage for Emergency Access

OMC Building

Jet Fan Ventilation

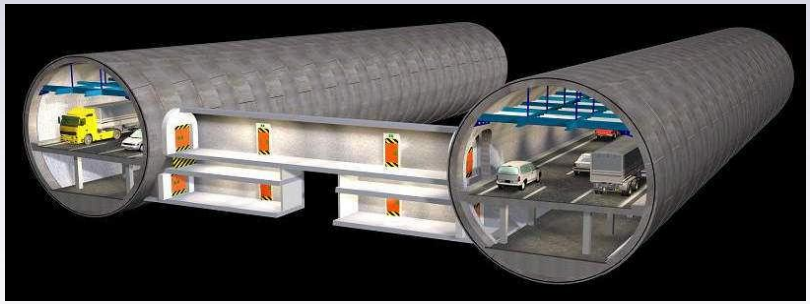


Two Basic Options

- **Tunnel Boring Machines (TBM)**
- **New Austrian Tunneling Method/Sequential Excavation Method (NATM/SEM)**

Madrid – “Calle” 30 Highway Tunnel

- **Tunnel on M-30 highway to relieve inner-city traffic congestion**
- **Twin bores 3.6 km long**
- **3 traffic lanes on top of 2 emergency lanes**

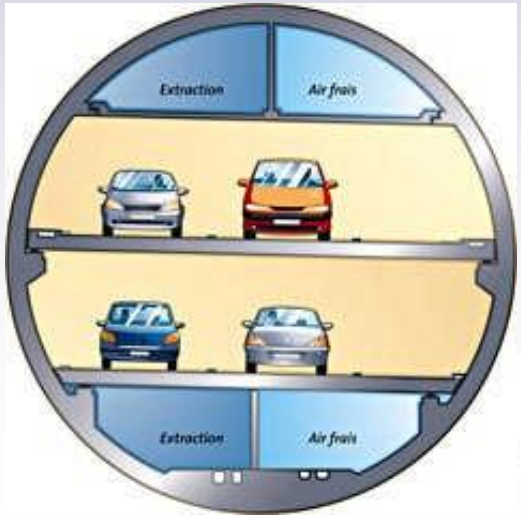


Shanghai – Yangtse River Crossing

- **Twin bores 7.2 km each**
- **3 traffic lanes in each direction**
- **Mass transit trains run on lower level**

Paris – A86 Tunnel

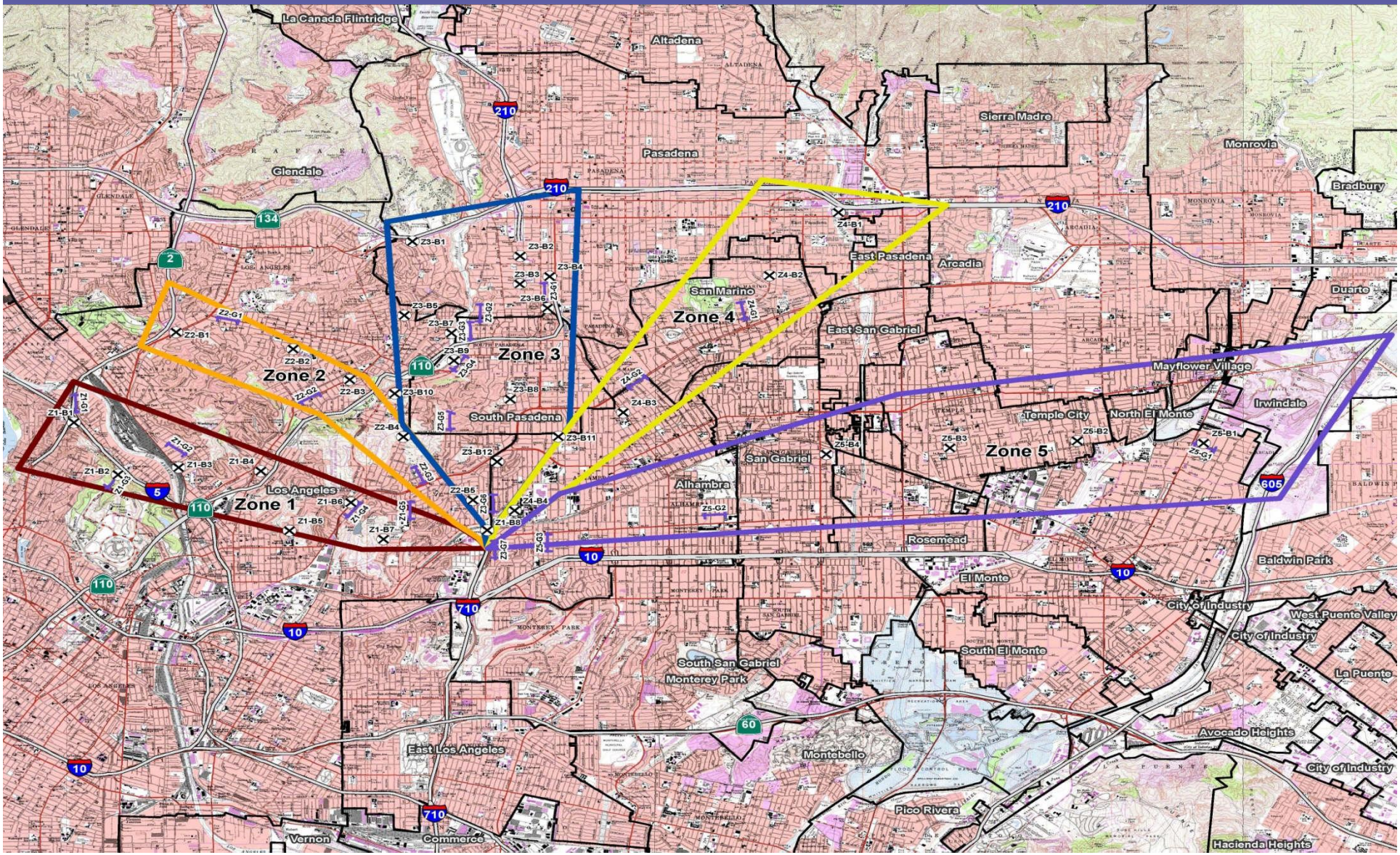
- Two tunnels 7.5 and 10 km long
- 6 traffic lanes in each tunnel (3 in each direction)



Objective of the Exploration Program

- A total of 5 potential zones will be investigated
- Collect geotechnical, geological, and hydro-geological information for each zone
- Information to be used for screening purposes

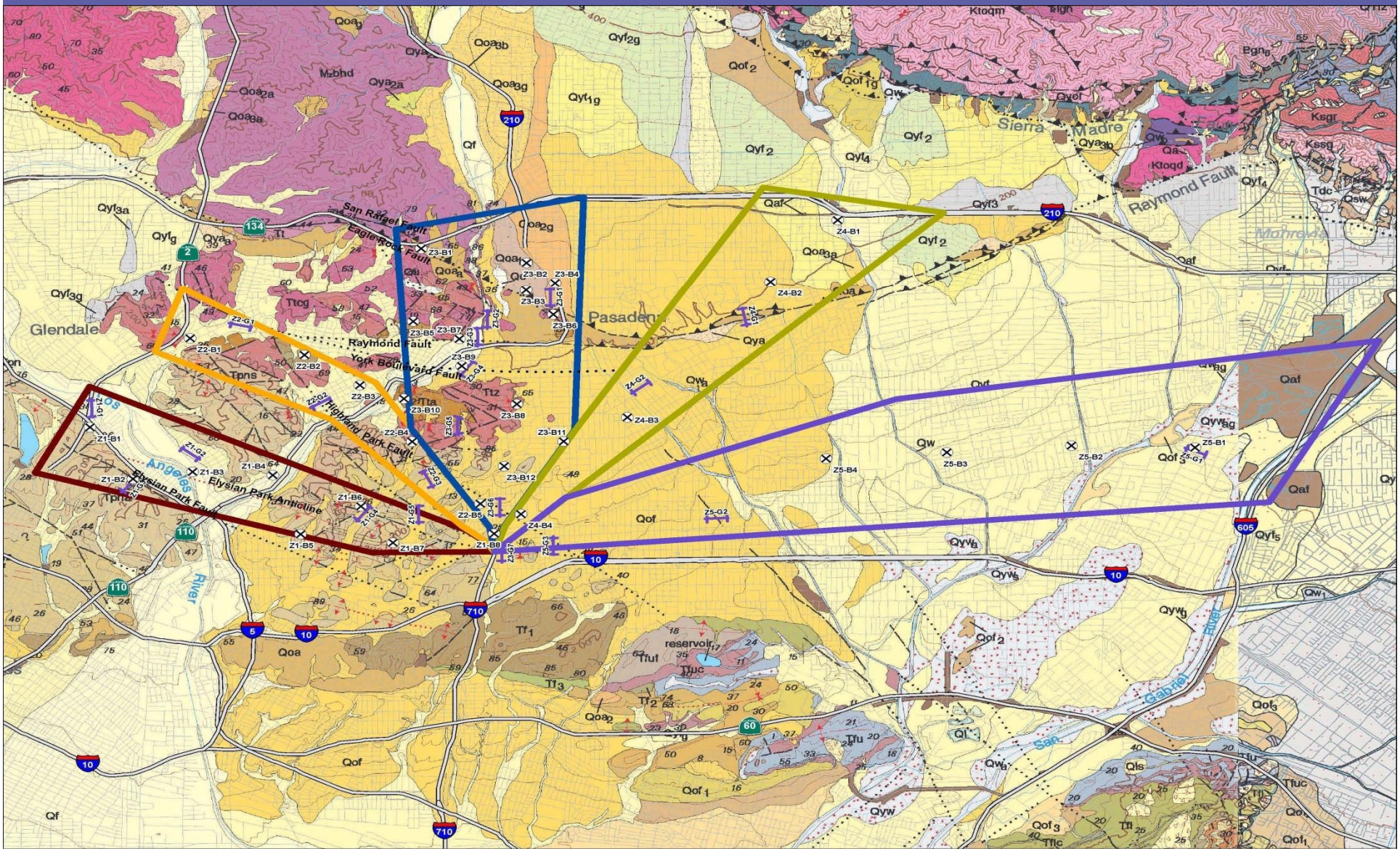
Exploration Plan Zones



Key Factors Influencing Tunneling

- Faulting
  - Fault displacement
  - Rupture zone length
- Uniformity of geologic material
- Potential for adverse tunneling conditions
  - Flowing/squeezing soils, boulders
- Properties of geologic materials
- Groundwater conditions
- Hazardous materials

Geological Zones



Geotechnical Exploration Program

- Data collection and review
- Geologic mapping
- Geophysical surveys
- Drilling, sampling, and logging
- Laboratory testing

Boring Activities

- 33 small diameter borings; four locations in El Sereno; two have been completed
- Vertical and Inclined drilling
- Each boring takes 10 to 15 days to complete
- Work area is about 12 feet by 80 feet
- Drilling performed daytime hours

North Topaz Street

(Between Pyrites Street and North Huntington Drive)

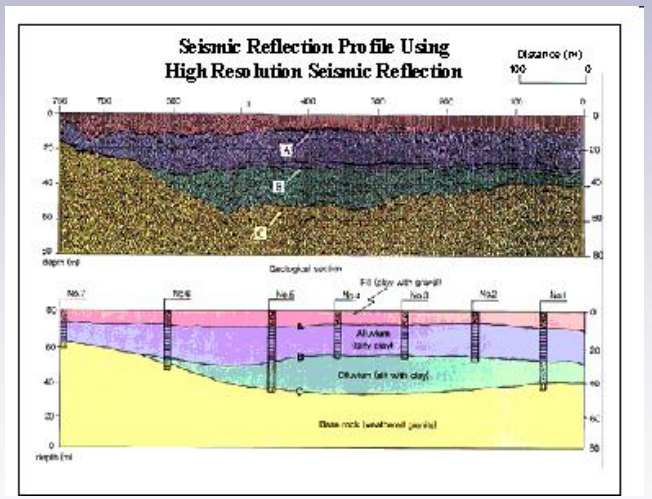
3500 Emma Street

(Between Lincoln Park Avenue and Alta Street)

Klamath Street
(at Ditman Ave.)

Seismic Reflection Testing

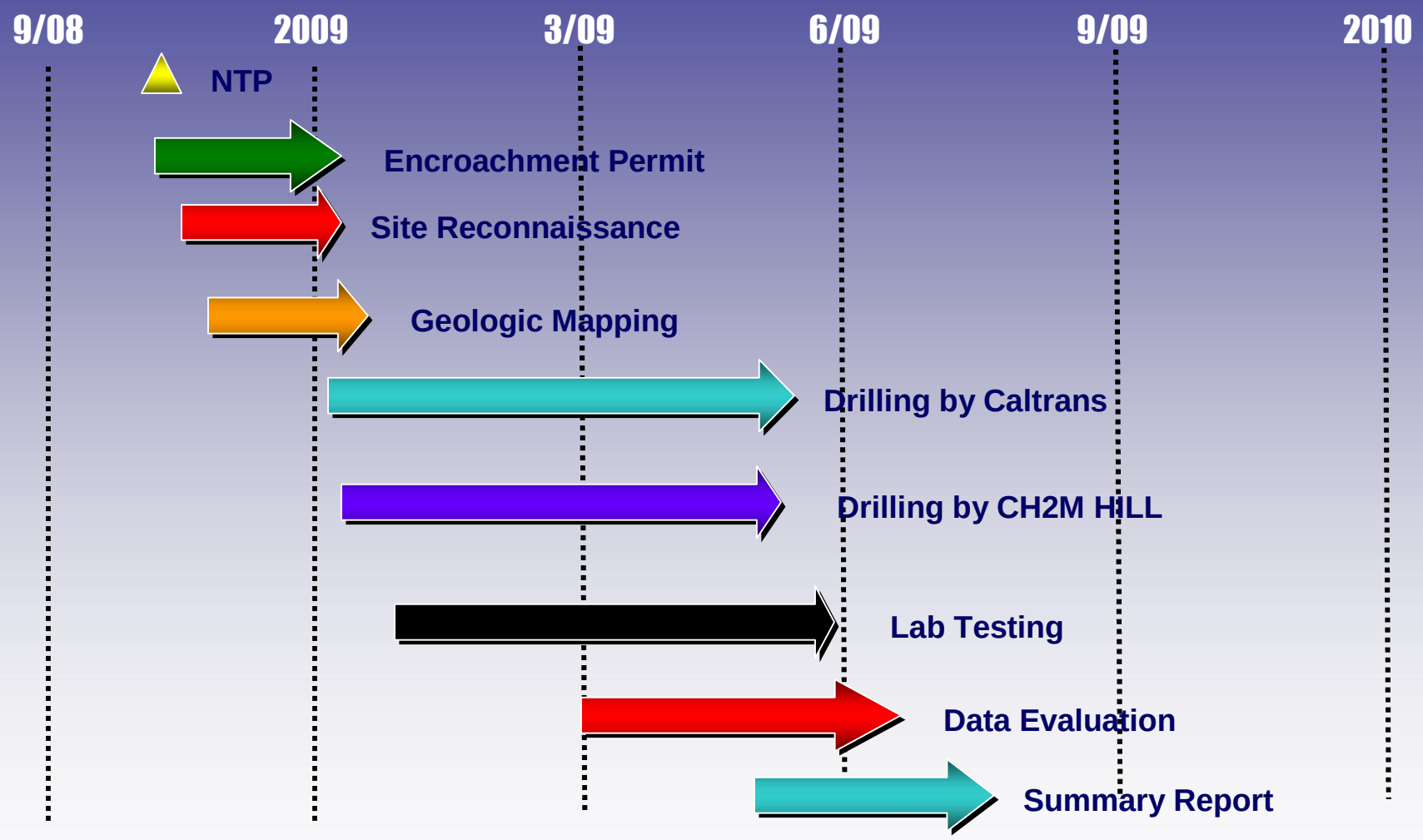
- 20 seismic reflection surveys; three locations in El Sereno
- Non-destructive
- Geophysical testing will be performed between 7 PM and 6 AM.
- One location per day



Summary

Zones	# of Borings	Total Lineal feet (ft)	# of Geophysical Lines	Length of Tunnel (mi)
1	8	2,800	5	5.2 – 5.7
2	5	1,600	3	4.9 – 5.6
3	12	3,700	7	4.4 – 5.4
4	4	1,100	2	6.2 – 7.4
5	4	1,100	3	9.6 – 11.5

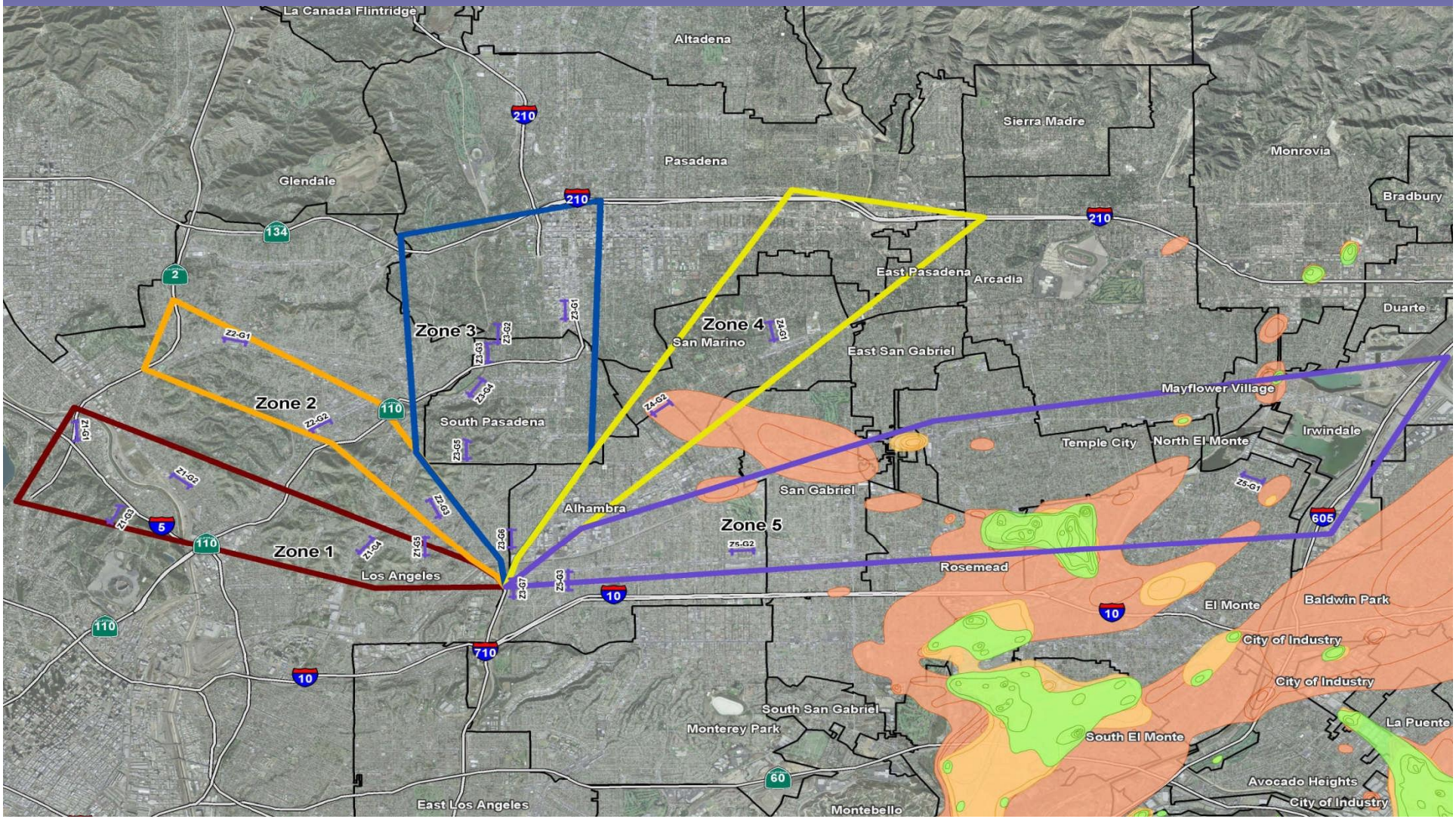
Exploration Program Schedule



Preliminary Findings

- Two superfund sites were identified
- The sites are located within Zones 4 and 5
- Groundwater in this area is known to be contaminated with Volatile Organic Compounds
- Depth of groundwater ranges from 50 feet to 150 feet below ground surface
- Tunnel is expected to be at about 200 feet below ground surface

Superfund Site Locations within Zones 4 and 5



Planned Activities

- Proceed with the borings in Zones 1, 2, 3 and 4.
- Geological data in Zone 5 has been acquired from US EPA. No borings required in Zone 5.
- Borings being done by both Caltrans and CH2M HILL
- Borings taking place January to May 2009.

Summary of Public Outreach Activities

Homes/Businesses Visited: 1,667 **Stakeholders added to database: 121**

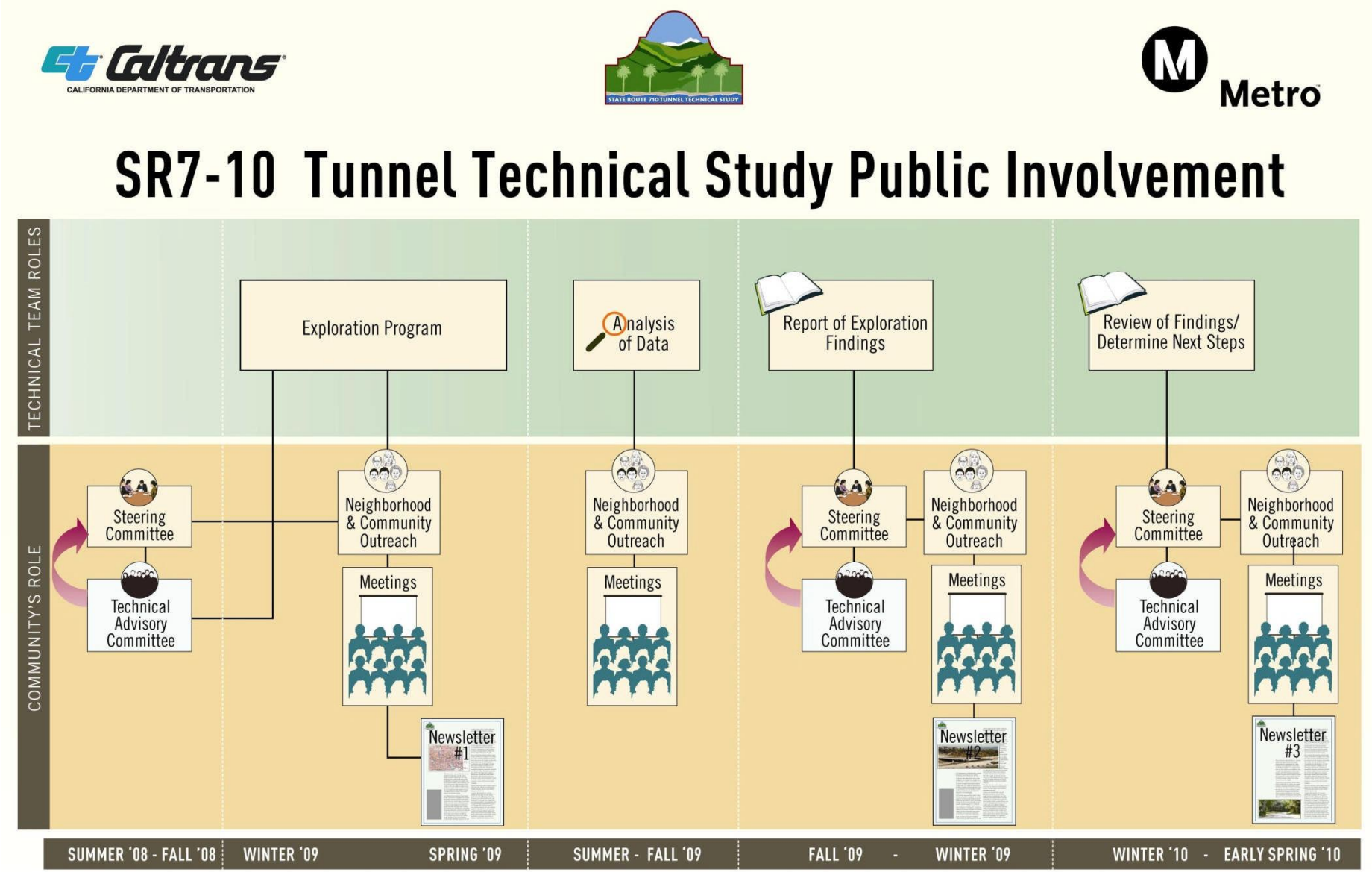
Borings: 24 **Geophysical Lines: 18**

City	Exploration Activity	# of Visits	# of Stakeholders added to Database
Alhambra	Borings: 4 Geophysical Lines: 5	443	38
Los Angeles	Borings: 12 Geophysical Lines: 8	608	51
Pasadena	Borings: 5 Geophysical Lines: 2	143	8
South Pasadena	Borings: 3 Geophysical Lines: 2	423	17
San Marino	Borings: 0 Geophysical Lines: 1	50	7

Neighborhood & Community Outreach

- Steering and Technical Advisory Committees
- Elected Officials Briefings
- Presentations
- Community Meetings & Events, Focus Groups
- Boring Notices, Fact Sheets, FAQs, Newsletter
- Website
- Canvassing
- Advertising & Articles in Local Newspapers
- Field Office and Outreach
- Information Line

Community's Involvement



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Question and Answer