CALIFORNIA
High-Speed Rail Authority

Palmdale to Burbank Project Section: Final Environmental Impact Report (EIR) / Environmental Impact Statement (EIS)

Day 2 – June 27, 2024

LaDonna DiCamillo
Southern California Regional Director

Stefan Galvez
Director of Environmental Services

Christine Inouye
Chief Engineer of Strategic Delivery

Agenda

- Staff Response to Public Comment Received
    1. Tunneling & Seismic Concerns
    2. Project Costs
    3. Truck Trips & Hazardous Materials Spoils
    4. Business & Residential Displacements
    5. Environmental Justice
    6. Biology, Aquatics & Wildlife Connectivity
    7. Effects on Acton-Agua Dulce Unified Schools
    8. Proposed Soledad Canyon Mining Project
    9. Next Steps
- Discussion

Tunneling & Seismic Concerns

Overview of Palmdale to Burbank Tunnel Feasibility Analysis

- Maximum depth of **2,079 feet** in Angeles National Forest
- Analyzed various alignments for over nine years in **similarly complex terrain and geology**
- Specifically reviewed tunnel **project case histories**:
  - LA Metro Red Line
  - Regional Connector
  - St. Gotthard (in the Alps)
  - Lötschberg (in the Alps)
- Various **tunnel experts** involved in developing and reviewing tunnel design
- **Conclusion**: Feasible

Sarah Wilson, Tunneling Expert

Sarah Wilson holds a BS in Civil Engineering from **Drexel University** and an MS in Geotechnical Engineering from the **University of California at Berkeley**.

She is a **Principal Tunnel Engineer** with Delve Underground in San Francisco.

Ms. Wilson edited the Second Edition of ***Recommended Contract Practices for Underground Construction***, published by the UCA of SME in 2019.

Her **25 years of experience** includes design and construction management roles on large transit and underground projects in soft ground and rock in Puerto Rico, Massachusetts, Washington, D.C., New York, Georgia, Los Angeles, San Francisco, Seattle, Vancouver BC and Melbourne AU.

She is a **CMAA-certified construction manager** and a **registered professional civil engineer** in California.

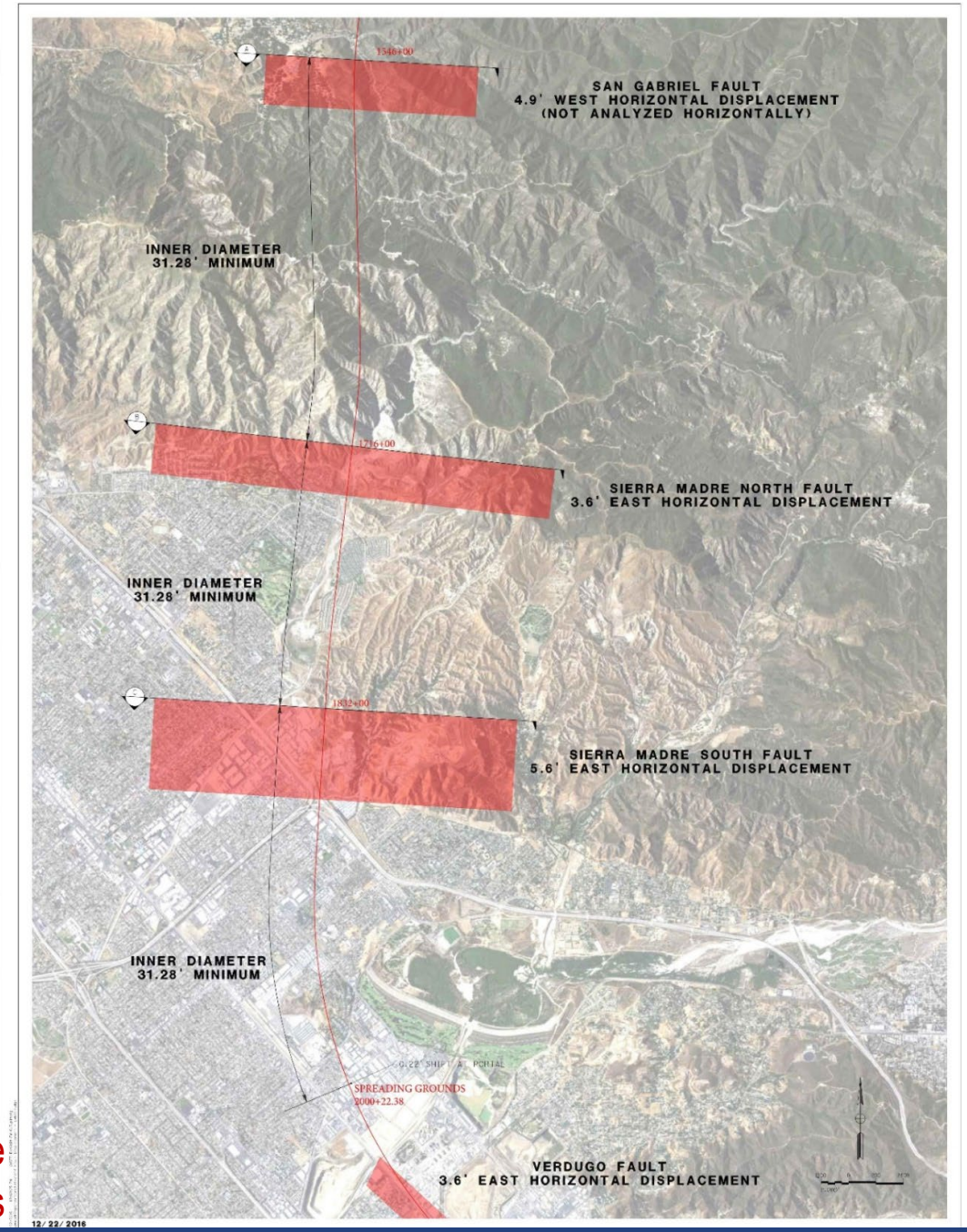
Seismic Design

Four active fault zones (*named Hazardous fault zones*) crossed by the tunnels:

- Verdugo fault
- Sierra Madre South
- Sierra Madre North
- San Gabriel fault

Seismic design to:

- Avoid tunnel structure damage
- Permit a timely reconstruction and realignment of the track and to resume operations in a short time
- The realigned track must maintain the maximum design speed of 220 mph. No reduction of speed is allowed.



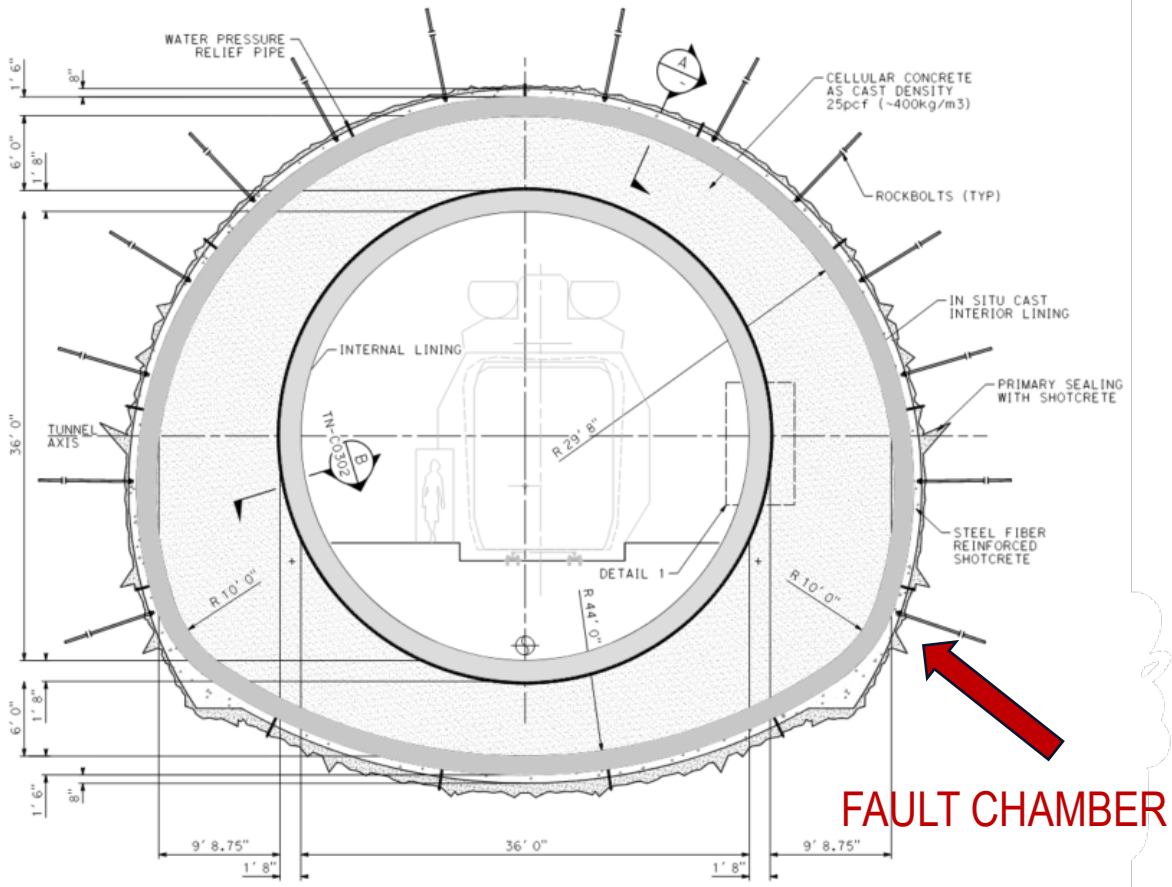
Identified Hazardous fault zones for the SR14A Build Alternative tunnels

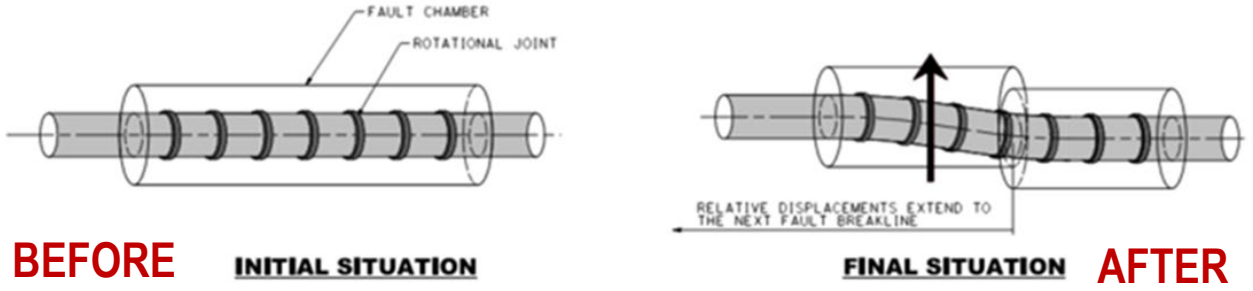
Seismic Design

Tunnel lining designed to withstand ground shaking **at all locations**.

Fault chambers designed **at fault zones to**:

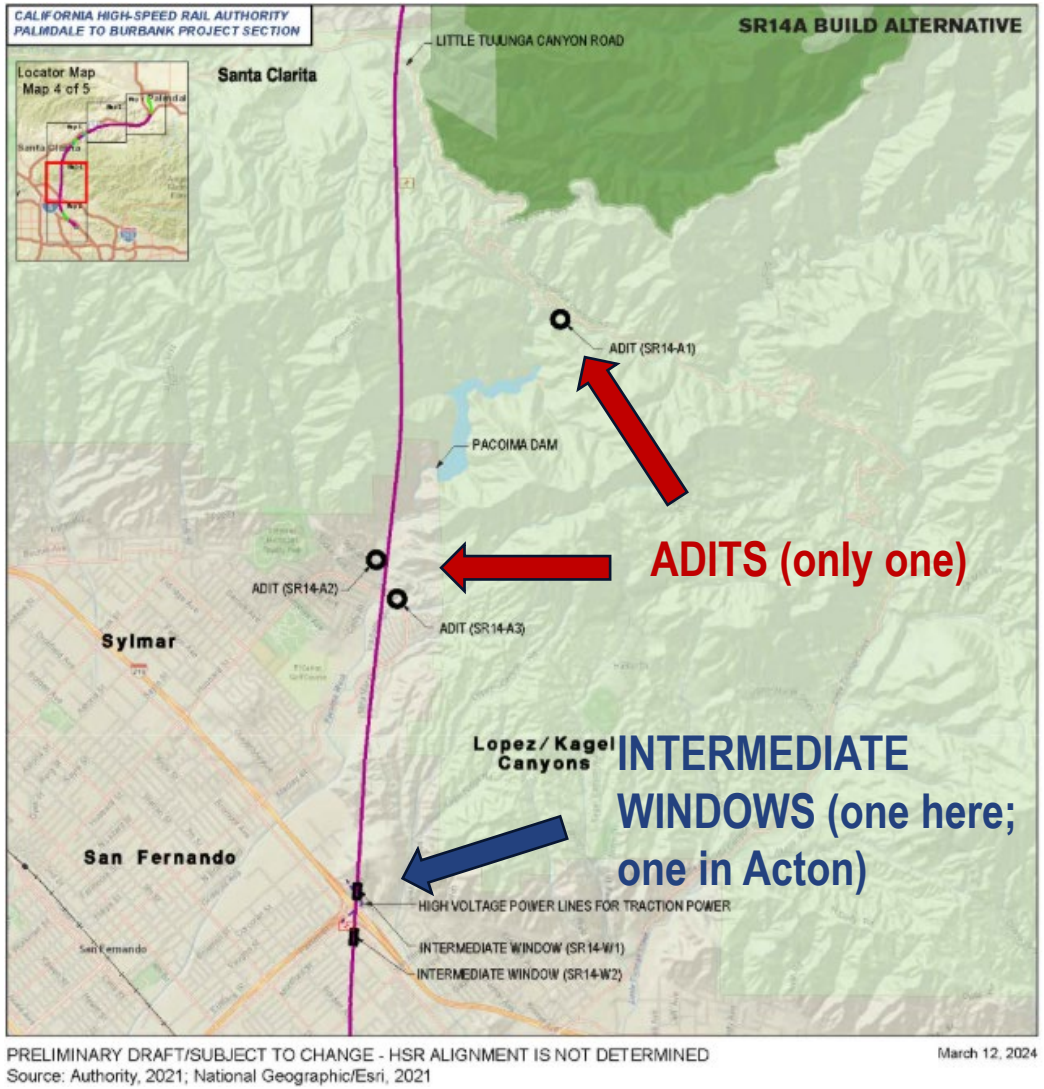
- **Reduce or eliminate the need for excavation** if there were a displacement event
- **Reduce costs and need for closures** to perform repairs while mitigating any impacts from smaller-magnitude earthquakes
- This fault chamber approach has been used on **LA Metro's Red Line (B Line)**





Adits

- Adits and intermediate windows (shafts) are cuts providing **access during construction**
- Adits **shorten** overall construction schedule:
  - » Allowing simultaneous TBM excavation
  - » Allowing fault chamber to be excavated before TBMs pass
  - » Adits can be used for maintenance after construction
- One adit and two intermediate windows are planned for SR14A.

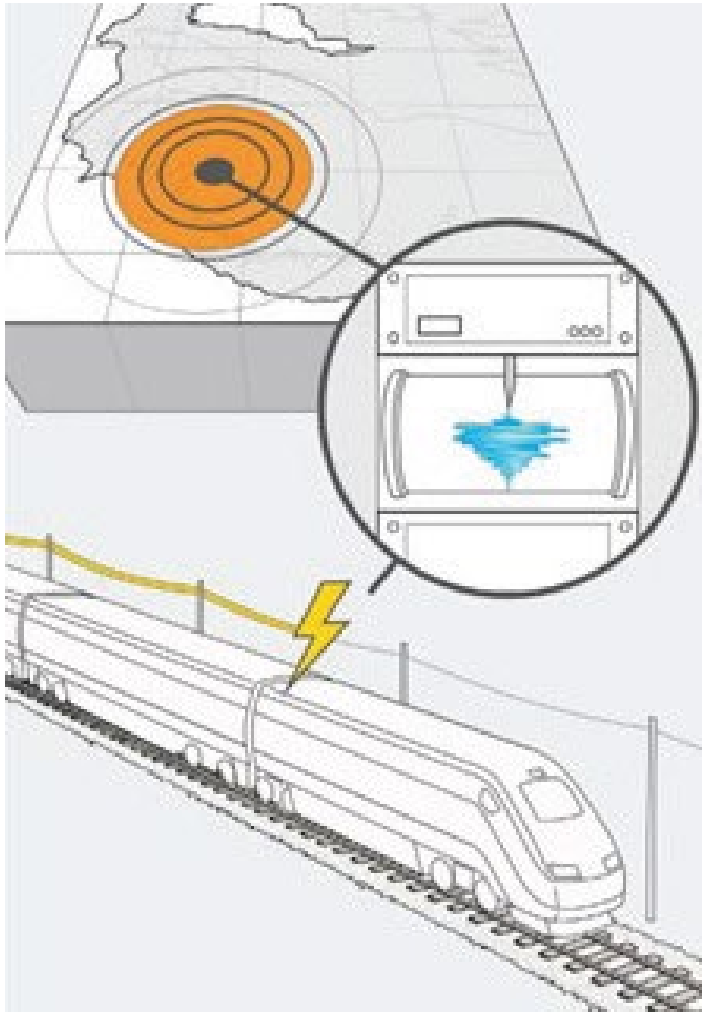


Preliminary locations for tunnel access for SR14A

Earthquake Early Warning System (EEWS)

- **Detects first earthquake wave** seconds or minutes before it arrives
- **Triggers brakes** on all trains within a certain distance
- **Trains safely stop** from 220 mph maximum design speed
- Passengers and operators **evacuate safely**

With EEWS, no trains derailed in Japan's magnitude 9.1 Tohoku earthquake on March 11, 2011.



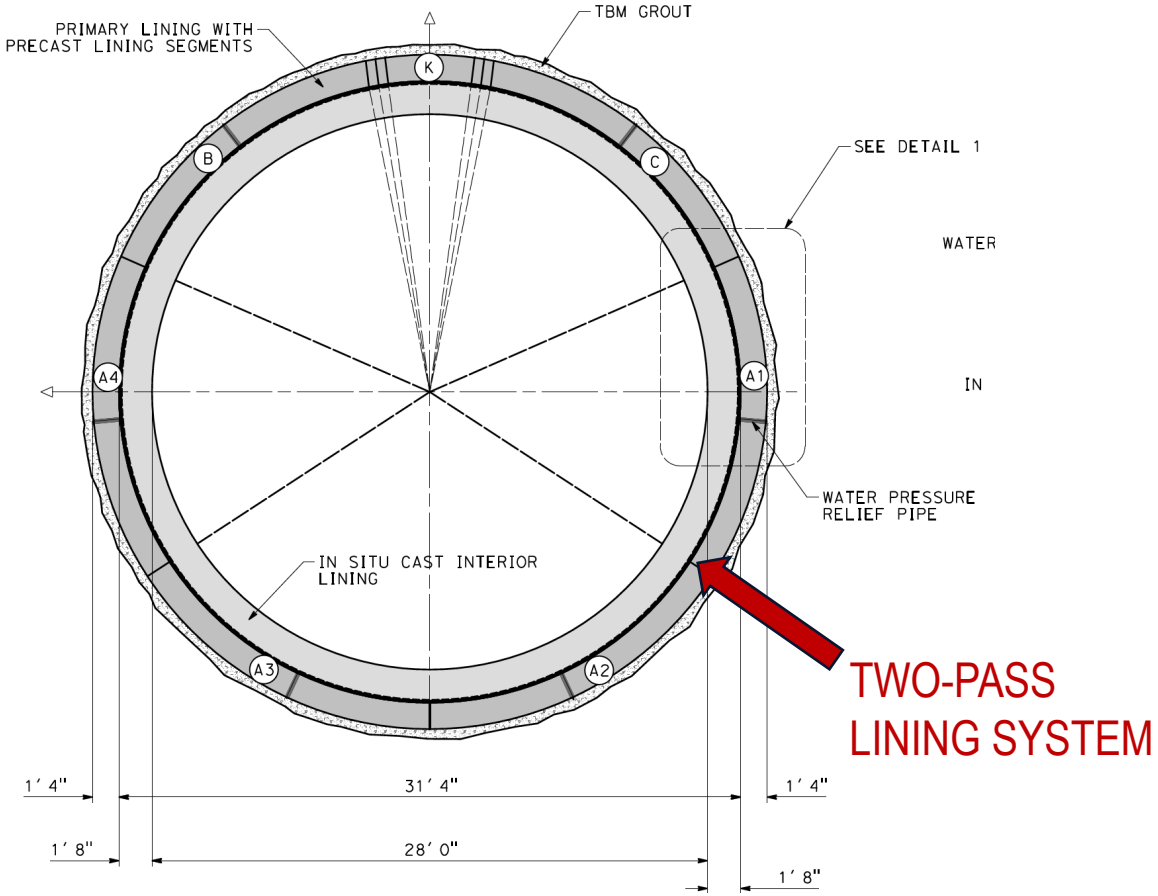
EEWS detecting an earthquake and alerting a high-speed train

Mitigating Groundwater Impacts

- **Risk categories** driven by tunneling depth, faulting and groundwater pressures
  - » No or low risk
  - » Moderate risk
  - » High risk

  The SR14 Alternatives have the lowest combined seismic/hydrogeologic tunneling risks versus the other Alternatives

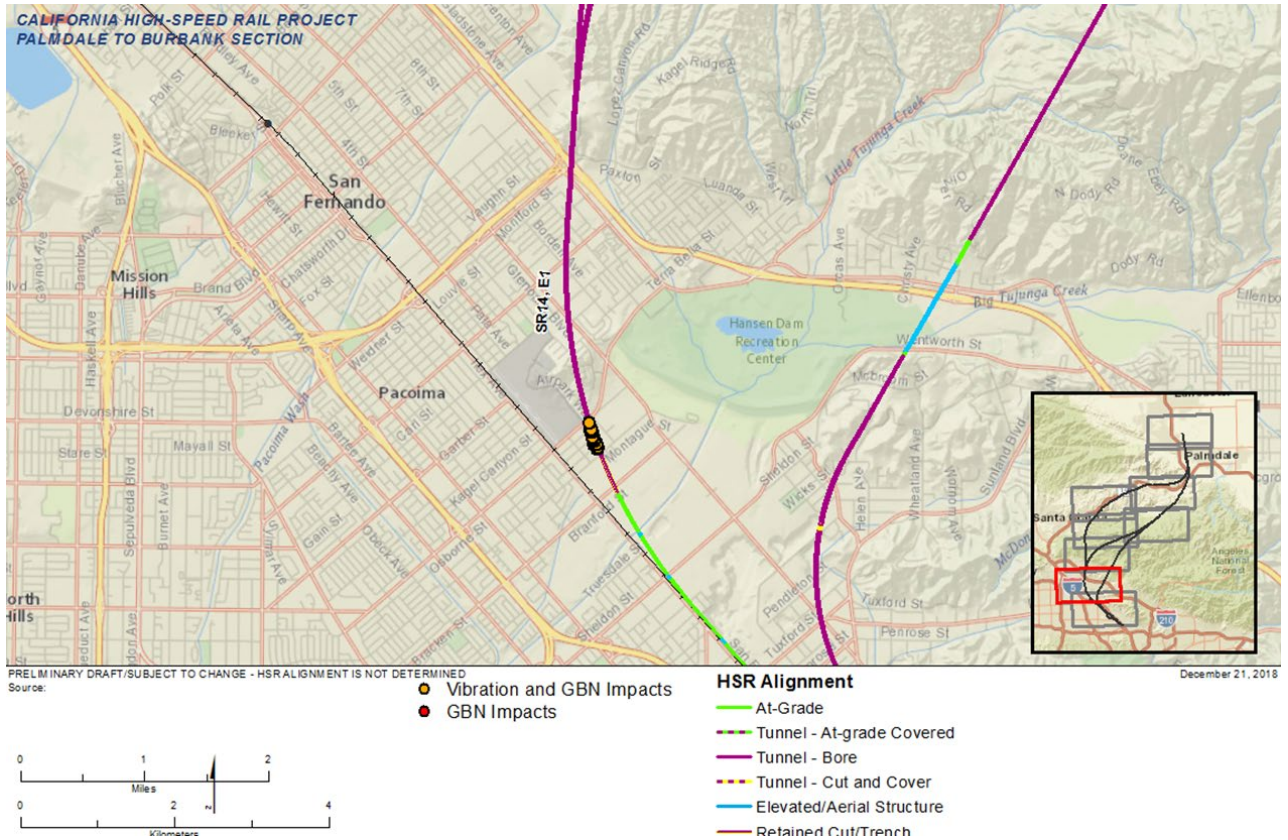
- **Ground treatment** performed ahead of TBM to reduce risk of excess pressures
- Above 25 bars of pressure, **two-pass lining system** resists long-term groundwater pressures



Proposed Montague St & Branford St in Pacoima (simulation)

Vibration Impacts in Pacoima at Montague St.

- Tunnel Boring Machine (TBM) operations for tunnel construction **could cause perceptible vibrations** in residences and other vibration-sensitive buildings
- Vibration would be **transitory** as tunneling progresses and would last approximately one week or less
- NV-IAMF#1 and N&V-MM#2 reduce construction vibration



With mitigation, effects are less than significant.

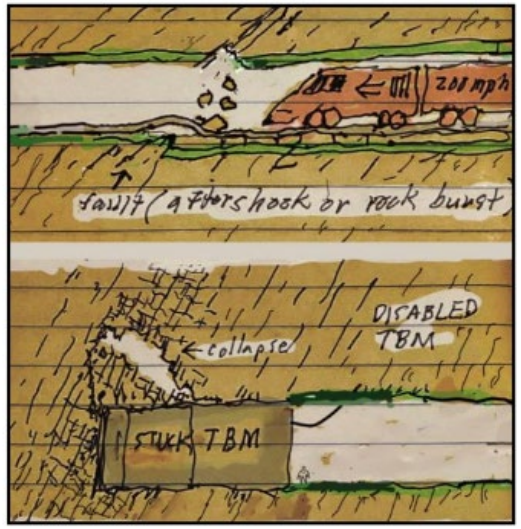
Meehan & Hamilton Letter

Concerns:

- Richard Meehan (former adjunct professor) and Douglas Hamilton (geologist) **expressed concerns** about feasibility, safety, and cost-effectiveness
- **15% design** did not have sufficient discussion and analysis of technical issues

Authority Response:

- Commenters' use of examples of unfortunate consequences **did not have relevance**
- Authority relied on case studies with **conditions likely to confront** for Palmdale to Burbank
- Authority used lessons learned that had completed tunneling safely **in similar conditions**



Richard Meehan and
Douglas Hamilton
December 1, 2022

Authority concluded it could construct tunnels safely and effectively here.

Project Costs

Allocated Risk & Contingency

- **Cost estimate methodologies** follow the Capital Cost Estimating Guidance from US DOT FRA and AACE International Recommended Practice on Cost Estimating Classifications
- Capital cost estimates in ranges (Low, Base, High) **consistent with AACE Class 4 estimates**, which reflect risks, opportunities and design uncertainty associated with project stage and complexity
  - » **Allocated contingency ranges from 10-25%** dependent on the cost category (type of activity)
  - » **Unallocated contingency is set at 5%** of base scope work, for a total of 30% contingency for certain complex areas of the project
- High range is **set at higher end** due to tunneling work, where High uses an additional 46% calculation for uncertainty (Low end is –25%)
- **Same methodology** used for project sections with significant tunneling (San Jose to Merced)
- **Contingencies updated** in accordance with the Authority policies and guidelines

Reference: Appendix 6-B Preliminary Engineering for Project Definition (PEPD) Record Set Capital Cost Estimate Report section 2.3.4. Allocated and Unallocated Contingencies

Allocated Risk & Contingency

Authority Cost Category	Refined SR14 Build Alternative	SR14A Build Alternative	E1 Build Alternative	E1A Build Alternative	E2 Build Alternative	E2A Build Alternative
10 Track structures and track	$13,387	$13,465	$13,960	$14,592	$14,238	$14,828
20 Stations, terminal, intermodal[1,2]	$582	$617	$559	$557	$692	$653
30 Support facilities: yards, shops, administration buildings[3]	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
40 Sitework, right-of-way, land, existing improvements	$3,978	$4,197	$3,506	$3,053	$3,135	$3,215
50 Communications and signaling	$186	$194	$183	$193	$174	$168
60 Electric traction	$264	$438	$251	$252	$226	$226
70 Vehicles	Considered a systemwide cost and not included as part of the Build Alternatives within individual project sections.					
80 Professional services	$2,759	$2,863	$2,809	$2,963	$2,909	$3,012
90 Unallocated contingency[4]	$750	$776	$756	$795	$765	$791
100 Finance charges	Estimate to be developed prior to project construction.					
Total	**$21,906**	**$22,550**	**$22,064**	**$22,405**	**$22,139**	**$22,894**

Allocated Risk & Contingency

SCC	Description	Allocated Contingency Ranges
10	Track Structure & Track	15% - 30%
20	Stations, Terminal, Intermodal	25%
30	Support facilities: yards, shops, administration buildings	N/A
40	Sitework, Right of Way, Land, Existing Conditions	10% - 25%
50	Communications & Signaling	15%
60	Electric Traction	15%
70	Vehicles	N/A
80	Professional Services	20%
90	Allocated Contingency	5%

- **Allocated contingency** used is 30% for tunnel impacting overall allocated contingency percentage bringing it to 27%
- **Cost estimate methodologies** follow the Capital Cost Estimating Guidance from US DOT FRA and AACE International Recommended Practice on Cost Estimating Classifications

Truck Trips & Hazardous Materials Spoils

Spoils Hauling Traffic

- 69.6 million cubic yards (mcy) of spoils will be excavated during construction
  - » 23% (16 mcy) will be beneficially re-used at Vulcan and Boulevard mine locations
  - » 71.5% (49.8 mcy) will require offsite disposal at Class III facilities
  - » 5.5% (3.8 mcy) of spoils will require offsite disposal at a Class I / II facility

- Spoils disposal could require up to 4.9 million truck trips
  - » Material will be generated from multiple locations along project alignment
  - » Hauling activities will be spread out in time through duration of construction
  - » Conveyor belts will be used as much as possible to transfer material to Vulcan and Boulevard mines

Key Locations of Construction Spoil Generation

Measures to Address Impacts from Spoils Hauling (selected IAMFs & MMs)

- **Construction Safety Transportation Management Plan (SS-IAMF#1)**
  - » Coordination with local jurisdictions
  - » Procedures for access to residences and businesses, lane closures, signage and flag persons, temporary detour provisions, alternative bus and delivery routes
- **Construction Transportation Plan (TR-IAMF#2)**
  - » Limit to the hours that are least disruptive to access for the adjacent land uses
  - » Provisions for safe pedestrian and bicycle passage and farm equipment access
  - » Minimize access disruption to residents, businesses, customers, delivery vehicles, and buses
  - » Coordination with local school districts
- **Off-street Parking for Construction-related Vehicles (TR-IAMF#3)**
- **Restriction on Construction Hours (TR-IAMF#6)**
  - » Minimize construction traffic during peak hours

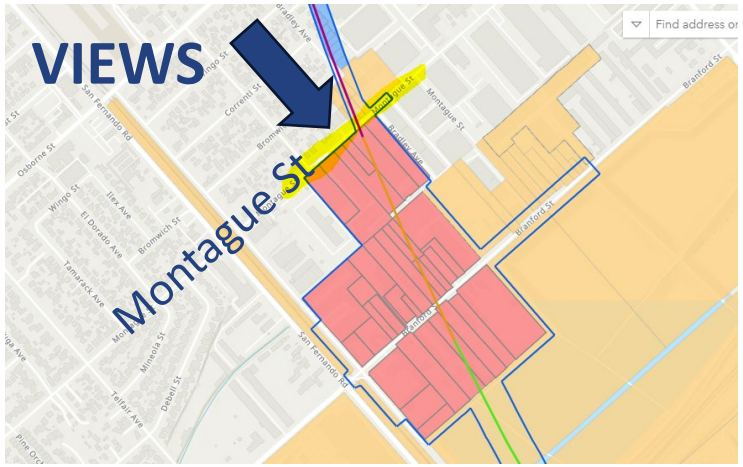
Measures to Address Impacts from Spoils Hauling (Cont'd)

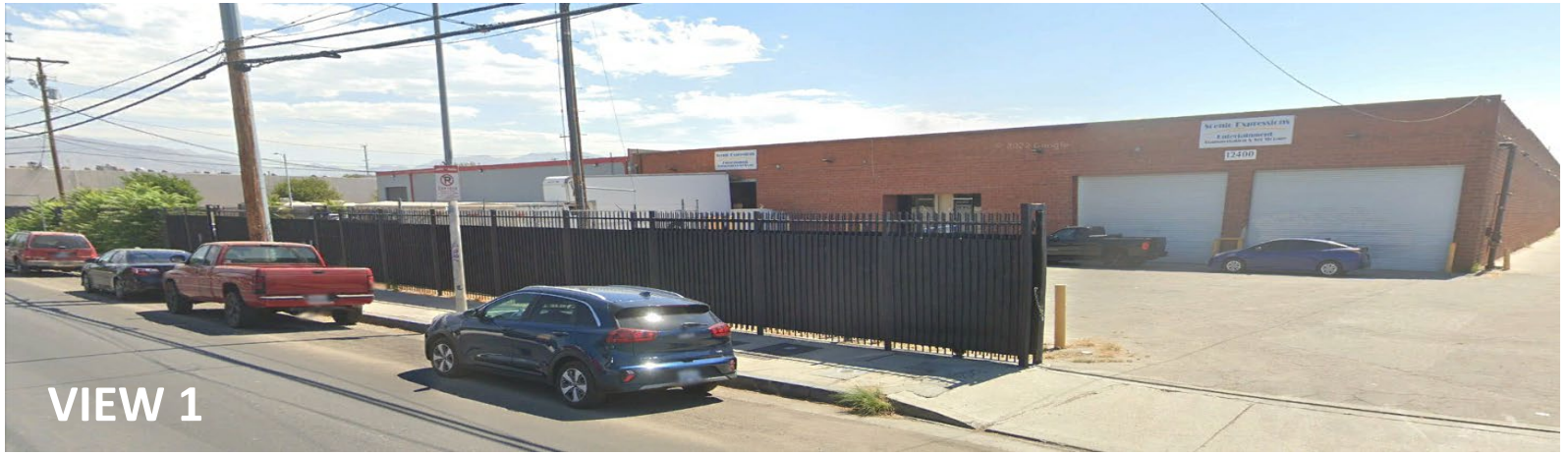
- **Construction Truck Routes (TR-IAMF#7)**
  - » Away from schools, day care centers, and residences; along routes with the least impact
- **Off Peak Hour Employee Work Shift Changes at HMF (TR-IAMF#10)**
  - » Work shifts for the heavy maintenance facilities to avoid coinciding with local peak-hour travel period
- **Renewable Diesel (AQ-IAMF#3)**
  - » Ultra low sulfur diesel
  - » Carbon intensity no greater than 50% of diesel with the lowest carbon intensity among petroleum fuels sold in California
- **Reduce Criteria Exhaust Emissions from On-Road Construction Equipment (AQ-IAMF#5)**
  - » Model year of on-road haul trucks to be 2020 or newer
- **Zero Emission (ZE) and/or Near Zero Emission (NZE) Vehicles (AQ-MM#3)**
  - » Goal that a minimum of 25 percent of all heavy-duty on-road vehicles (e.g., for hauling, material delivery, and soil import/export) associated with the project use ZE or NZE technology

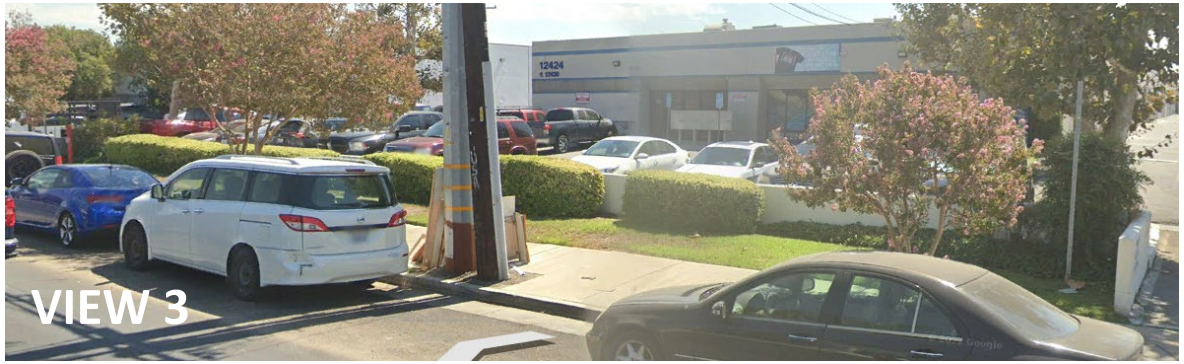
Business & Residential Displacements

Business Displacements – Pacoima / Sun Valley

Portal 10 / Montague Street (predominately storage, warehousing, light industrial)

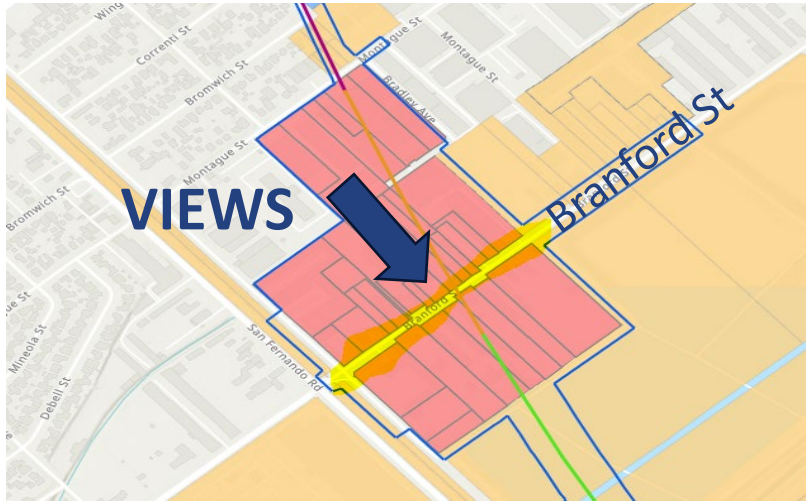


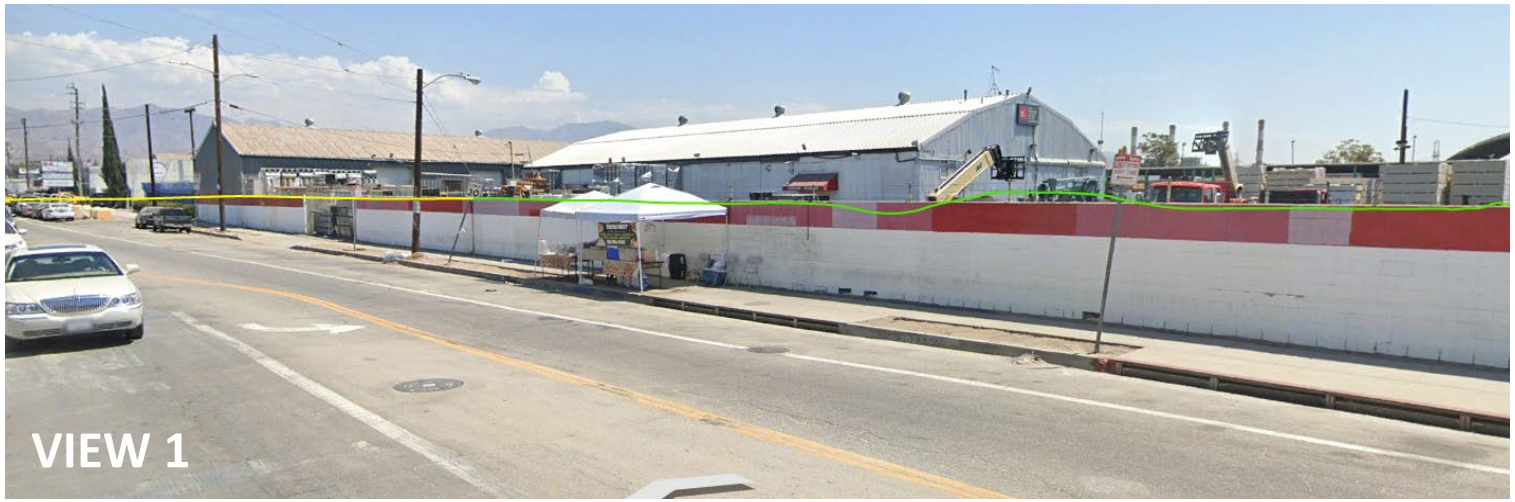




Business Displacements – Pacoima / Sun Valley

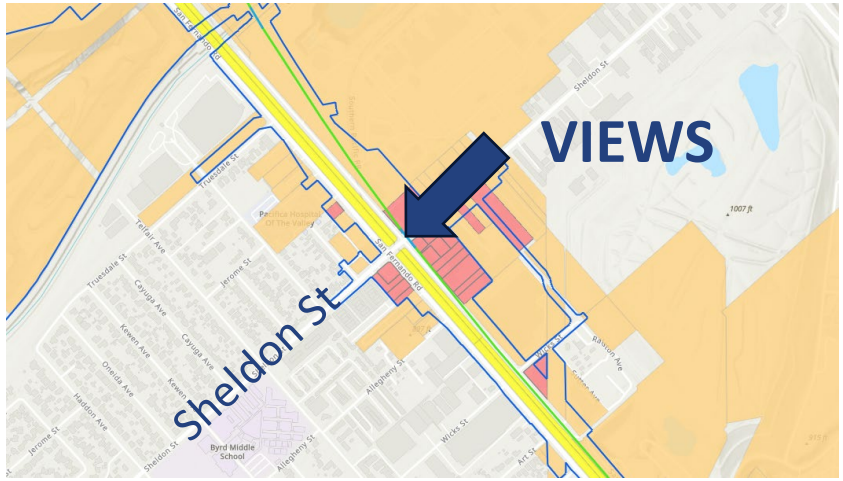
Portal 10 / Branford St (predominately auto repair & dismantling)

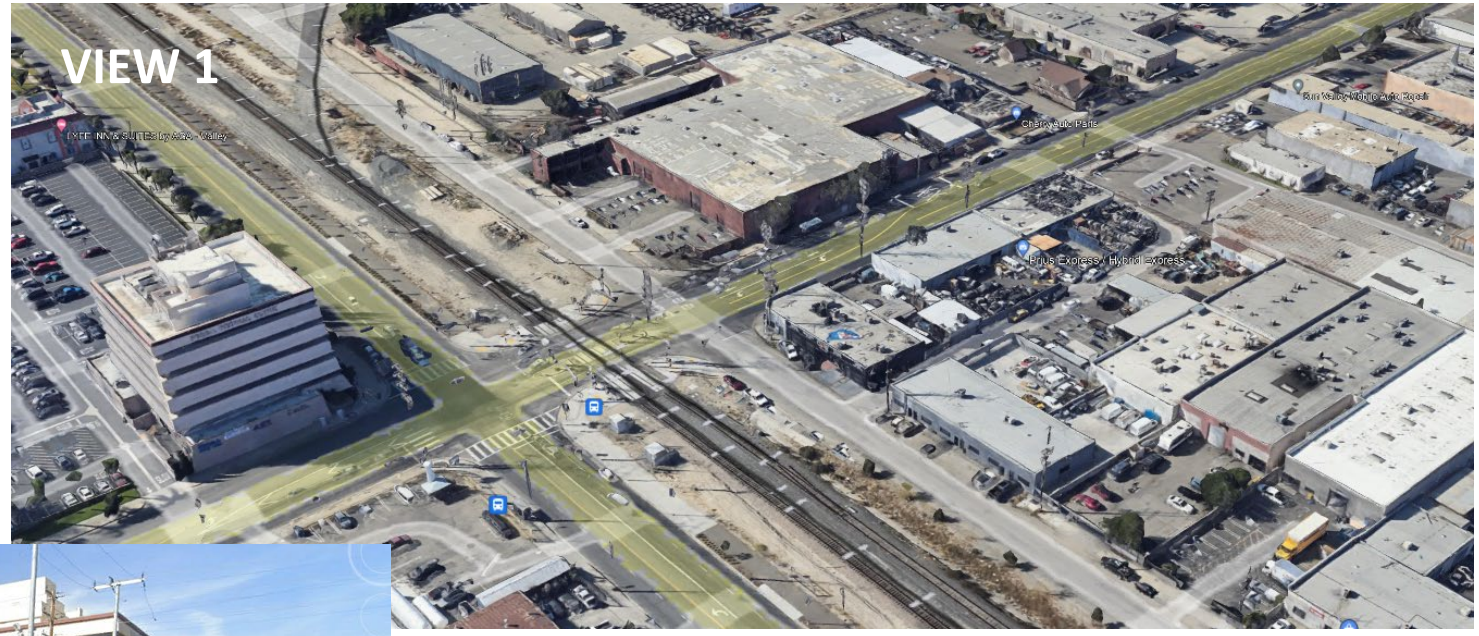


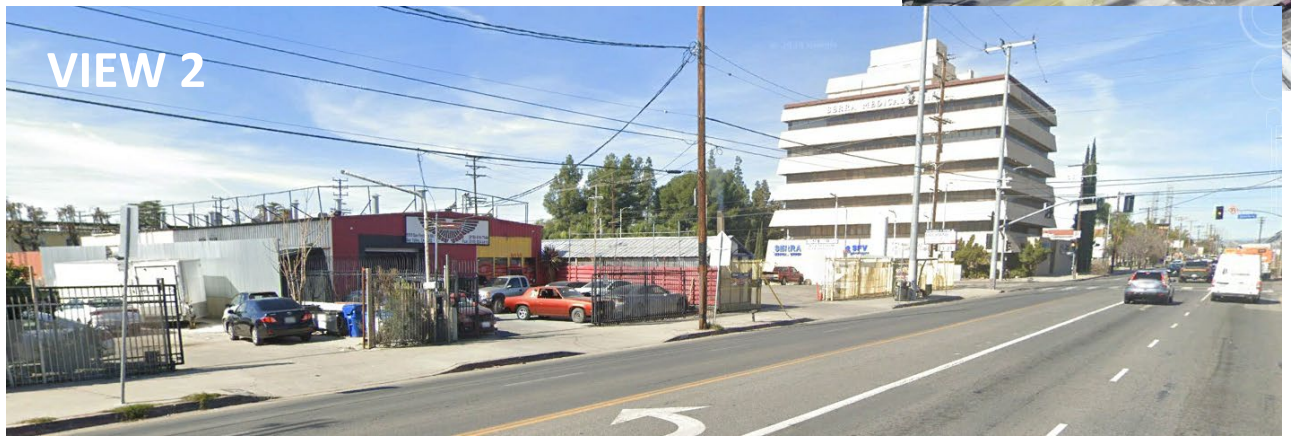


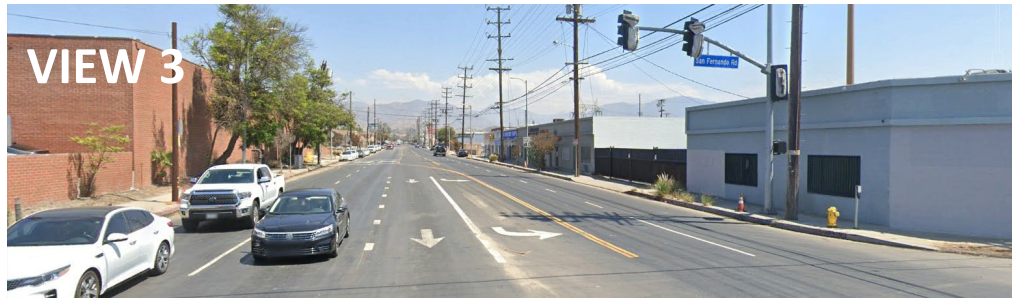
Business Displacements – Pacoima / Sun Valley

Sheldon St (predominately commercial, light industrial, automotive)









Business Displacements – Pacoima / Sun Valley

- Affecting **small percentage** of total workforce in the area
- **Sufficient commercial and industrial space** available
  - Arleta
  - Sylmar
  - San Fernando
  - North Hollywood
  - Burbank
  - Van Nuys
  - Panorama City

Community	Estimated Businesses	Estimated Employees Displaced	Estimated Employee Displacements as a Percent of Local Work Force
Central Subsection			
Acton	0	0	0.00%
Pacoima	81 – 98[1]	541 – 860[1]	0.03 – 0.04%
Sun Valley	68	510	0.03%
Burbank Subsection			
Burbank	60	3,660	1.20%
Sun Valley	4	70	<0.01%
Total	**213 - 230[1]**	**4,781 – 5,100[1]**	**0.10 – 0.11%[2]**

Types of Land Uses Affected in Pacoima / Sun Valley

MAJORITY

- **Light Industrial**

OTHER

- Auto Sales, Services
- Commercial
- Food Processing
- Industrial
- Parking Lot, Parking Structure
- Restaurant, Bar, Food Services
- Service Station, Gas Station
- Warehouse, Storage
- Miscellaneous Commercial

Residential Displacements – SR14A

Excerpt of Table 3.12-18 Residential Displacements – SR14A Build Alternative

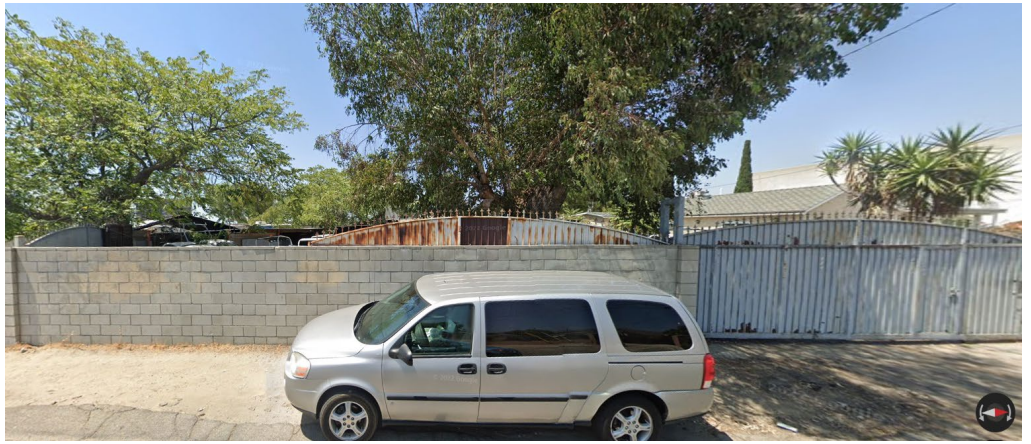
Location/Community	SFR Units Displaced	MFR Units Displaced	Total Residential Units Displaced
Central Subsection			
Palmdale	4	23	**27**
Agua Dulce	3	2	**5**
Acton	0	0	**0**
Southeast Antelope Valley	0	0	**0**
Tujunga Canyons	0-3[1]	0	**0-3[1]**
Sun Valley	1	0	**1**
Burbank Subsection			
Sun Valley	0	4	**4**
Burbank	0	0	**0**
Total	**8-11[1]**	**29**	**37-40[1]**

Source: Authority, 2019c
[1]Units displaced vary because of optional adit and window combinations.
MFR = multifamily residential; SFR = single-family residential

Residential Displacements – SR14A

- Concentrated immediately south of Palmdale
- 1 SFR and 4 MFR displaced in Sun Valley
- Sufficient available relocation resources

MFRs behind restaurant



SFR in Sun Valley

SFR = single-family residence
MFR = multi-family residence

Environmental Justice Ombudsman

Environmental Justice Ombudsman – EJ IAMF#1 Summary

- Authority Ombudsman who will coordinate with a Contractor's EJ Liaison
- Will seek community input on plans and programs
  - Construction Management Plan (SOCIO-IAMF#1)
  - Relocation Mitigation Plan (SOCIO-IAMF#3)
  - Construction Safety Transportation Management Plan (SS-IAMF#1)
  - Safety and Security Management Plan (SS-IAMF#2)
  - Transportation Construction Management Plan (TR-MM#12)
  - Operations Noise and Vibration Technical Memorandum (NV-IAMF#1)
  - Workforce Development Program
  - Aesthetics Treatment
  - Community Air Quality Monitoring
- HSR Ombudsman Stop Work Authority, specifically with respect to:
  - Safety concerns
  - Fugitive dust
  - Construction noise
  - Air Quality
  - Traffic (e.g., noncompliance with designated truck hauling routes)

Environmental Justice Ombudsman

- Measures and requirements of plans will be incorporated into construction contracts and enforced through contract management process

- Modeling after similar programs in Central Valley
  - » Central Valley Environmental Permit Compliance – Environmental Compliance Manager & others
    - Non-Conformance Report (NCR)
    - Root Cause Analysis
    - Corrective Action – Specific plans for conformance are refined through this process
  - » Central Valley Builder's Contract Requirements – Sr. Contract Manager
    - All contract requirements e.g., environmental compliance, work quality, safety
    - Builder's Contract Manager is engaged
  - » Central Valley Mitigation Monitoring Enforcement Plan (MMEP)
    - Compliance is tracked in central "EMMA" database (separate department)

Environmental Justice Ombudsman

Proposed New Direction for Resolution No. 24-11 (CEQA) and 24-12 (NEPA)

The Authority directs the staff as follows:

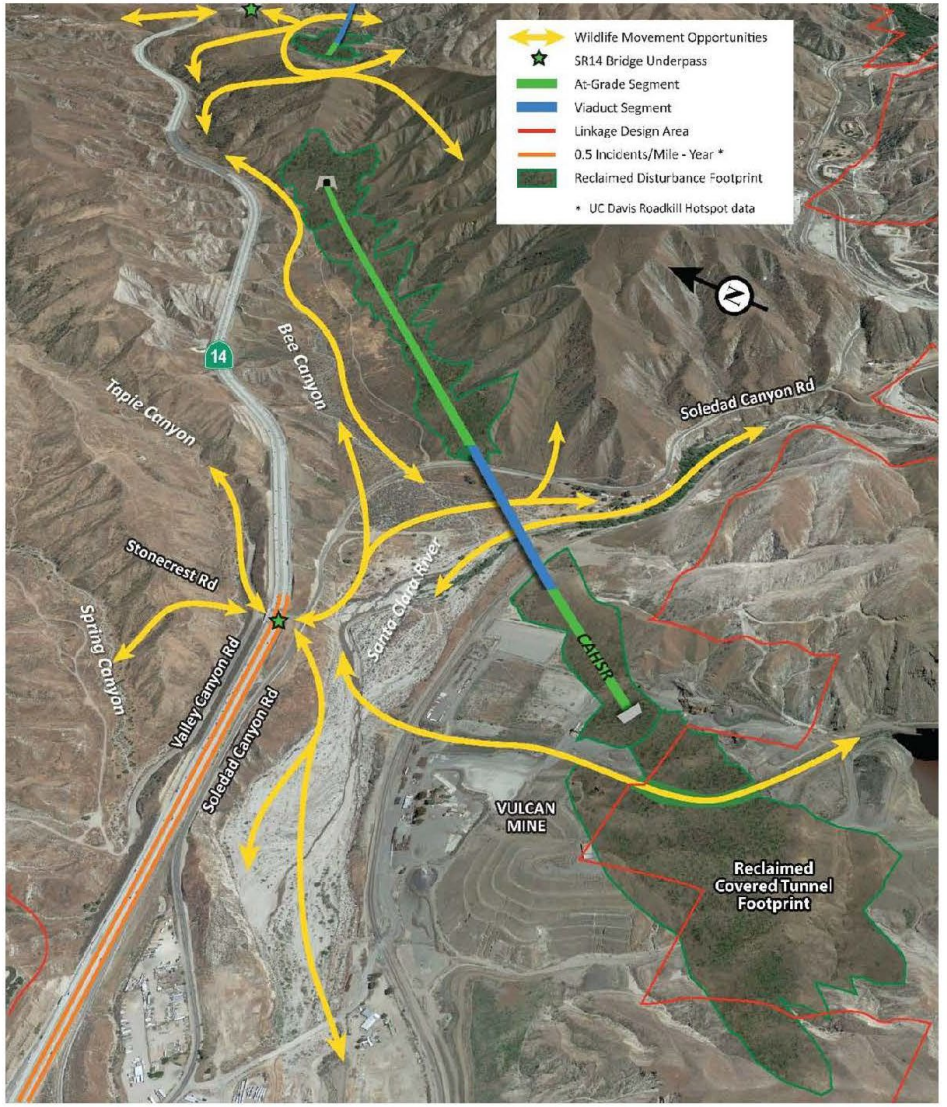
By early 2025, to develop a plan for Board review and approval which details the EJ Ombudsman position, including examples of similar positions, support frameworks, scope of authority, enforcement mechanisms, opportunities for meaningful community input, and any other information requested by the Board; and

Upon receipt of funding for the Palmdale to Burbank Project Section, to report to the Board on an annual basis on the EJ Ombudsman position, unless the Board later requires more frequent updates.

Wildlife Connectivity

Wildlife Movement in Bee Canyon

- Based on field research, extensive evaluation and best professional judgment, the Authority will **substantially maintain wildlife movement** through Bee Canyon
- **Alignment on embankment for 1.13 miles** in the same area where SR 14 is an existing barrier to wildlife movement
- In response to comments on the Draft EIR/EIS, staff evaluated **eight wildlife crossings** across SR 14 and the alignment
- Wildlife Movement Working Group with CDFW and Caltrans will lead **collaborative effort** to advance wildlife connectivity



Wildlife Movement Working Group

- CEO convenes the Working Group within one year of ROD
  - » Meets three times per year
  - » CHSRA, Caltrans and CDFW are initial members
- First priority is to develop charter
- Consider expansion to other stakeholders
- Primary objective is to complete study to identify potential wildlife connectivity opportunities
- Work together to obtain grant funding for wildlife enhancements
- Prepare annual report to the Board of Directors

Mountain lion

American badger


PALMDALE
BURBANK
LOS ANGELES
CALIFORNIA
ANAHEIM


ENTERING
ANGELES
National
Forest

Next Steps

Next Steps Board Deliberation and Action

Day 2 – Thursday, June 27

- Staff presents on issues identified by Board
- Counsel submits remarks to the Board for consideration of the approval documents
- Board deliberates and considers proposed actions:
  - » Certification of the Final EIR/EIS as CEQA Lead Agency
  - » Approve the Preferred Alternative and related CEQA decision documents
  - » Direct the Authority CEO to proceed with a Record of Decision under the Authority's NEPA Assignment