

Station Two

- Regardless of whether a fourth bore is constructed, increased population and development will lead to a 32% to 43% increase in peak period travel demand through the Caldecott Tunnel.
- The construction of a fourth bore will result in a 4% to 11% increase in demand because of the decreased delay traveling through the tunnel.
- Because of decreased delay in the off-peak direction, there will be a small increase in demand in the peak direction because of travelers making one leg of their journey in the off-peak direction but making the other leg in the peak direction. However, even with the three lane bore alternative there will be very little additional capacity in the peak direction, so there will not be at most only a very small increase in peak direction peak hour traffic.
- Once it travels through the Caldecott Tunnel, additional traffic using the fourth bore will disperse throughout the area without a major effect on any individual route beyond Route 24.

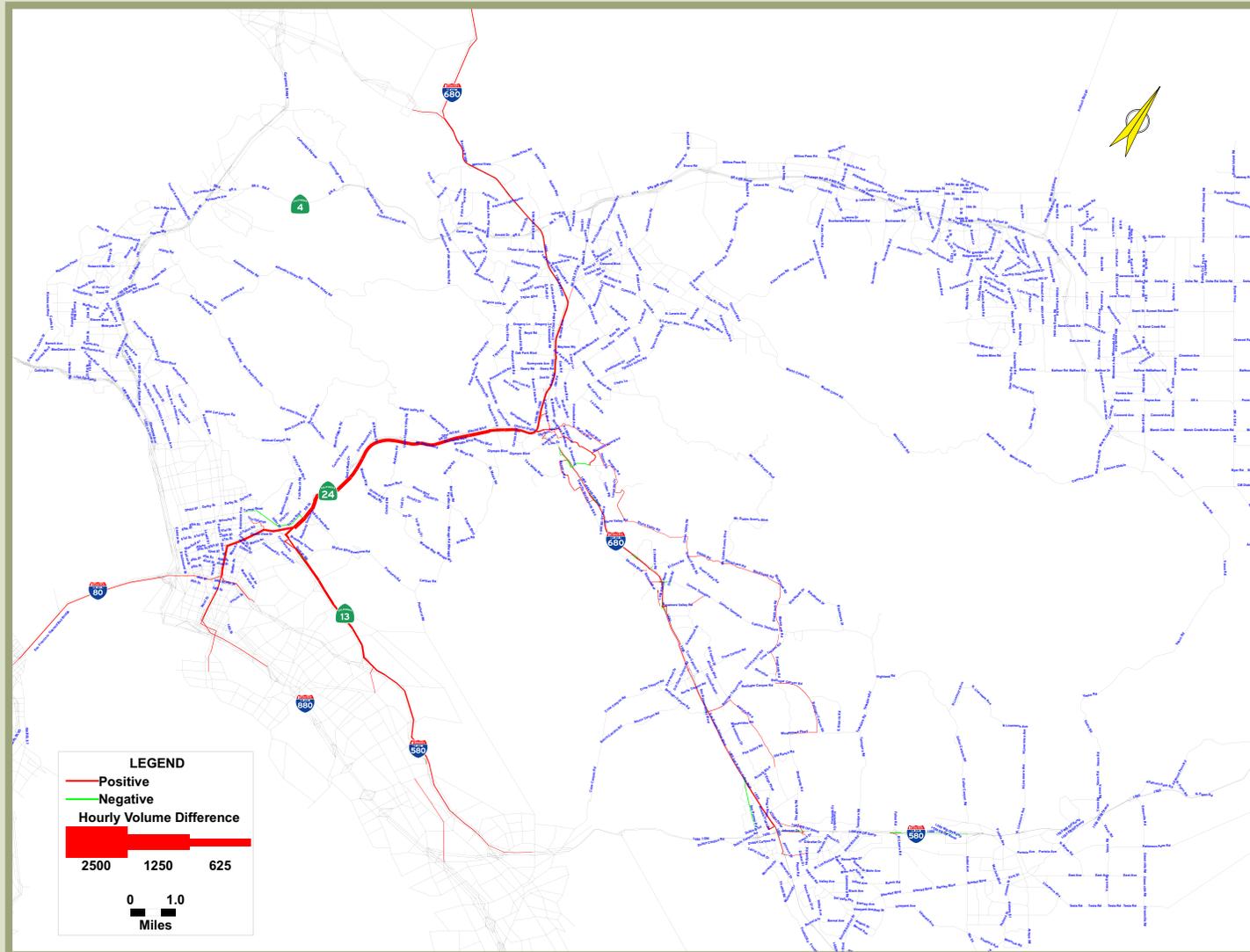
Environmental technical studies conducted for the draft environmental document include:

- Visual Impact Assessment
- Air Quality
- Historic & Cultural Resources
- Paleontology
- Natural Environment/Wetlands
- Community Impact Assessment
 - Land Use
 - Growth Inducement
 - Environmental Justice
- Water Quality/Floodplain Evaluation
- Noise & Vibration
- Traffic Forecasting & Highway Operations
- Hazardous Waste Initial Site Assessment
- Geology & Seismicity

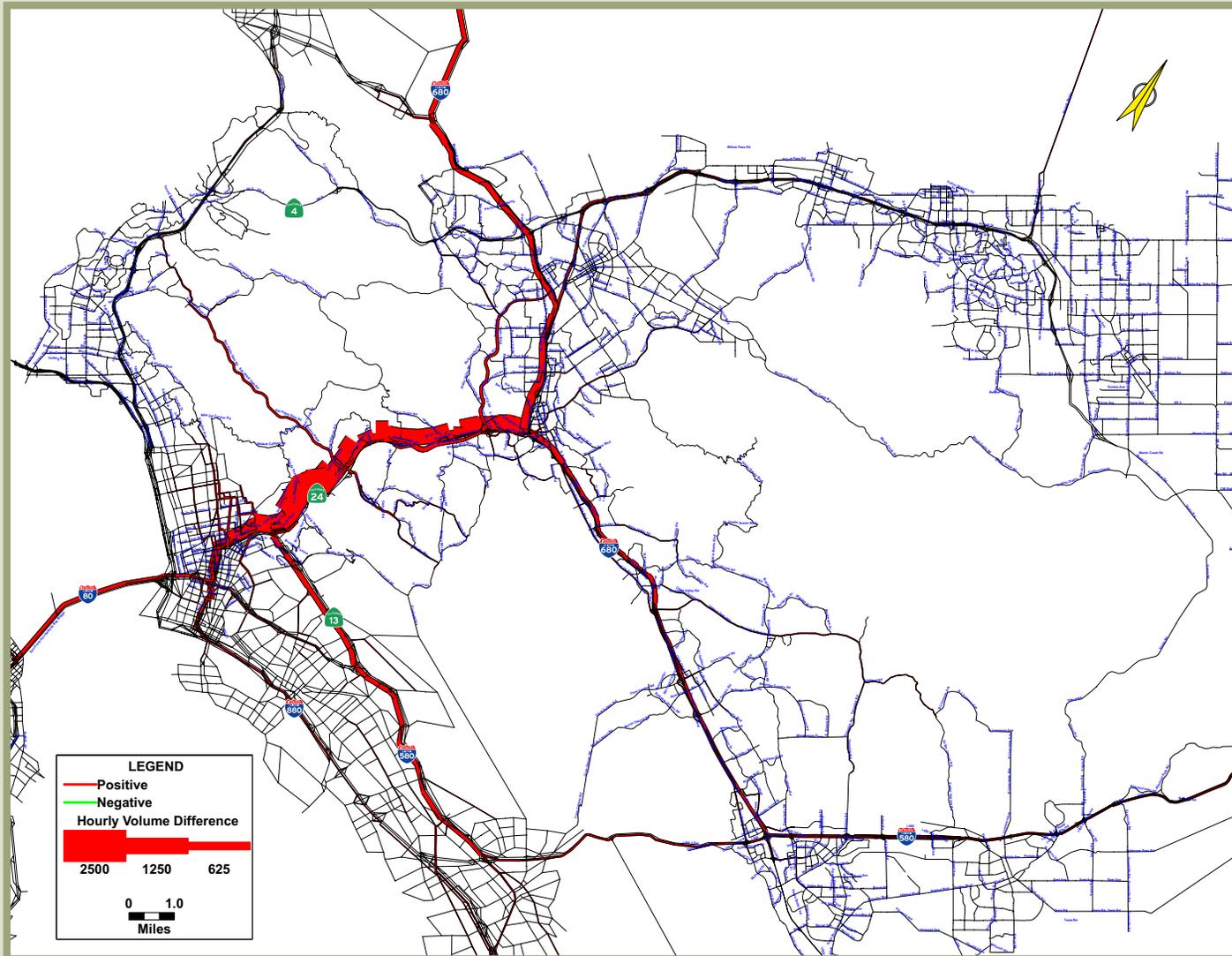


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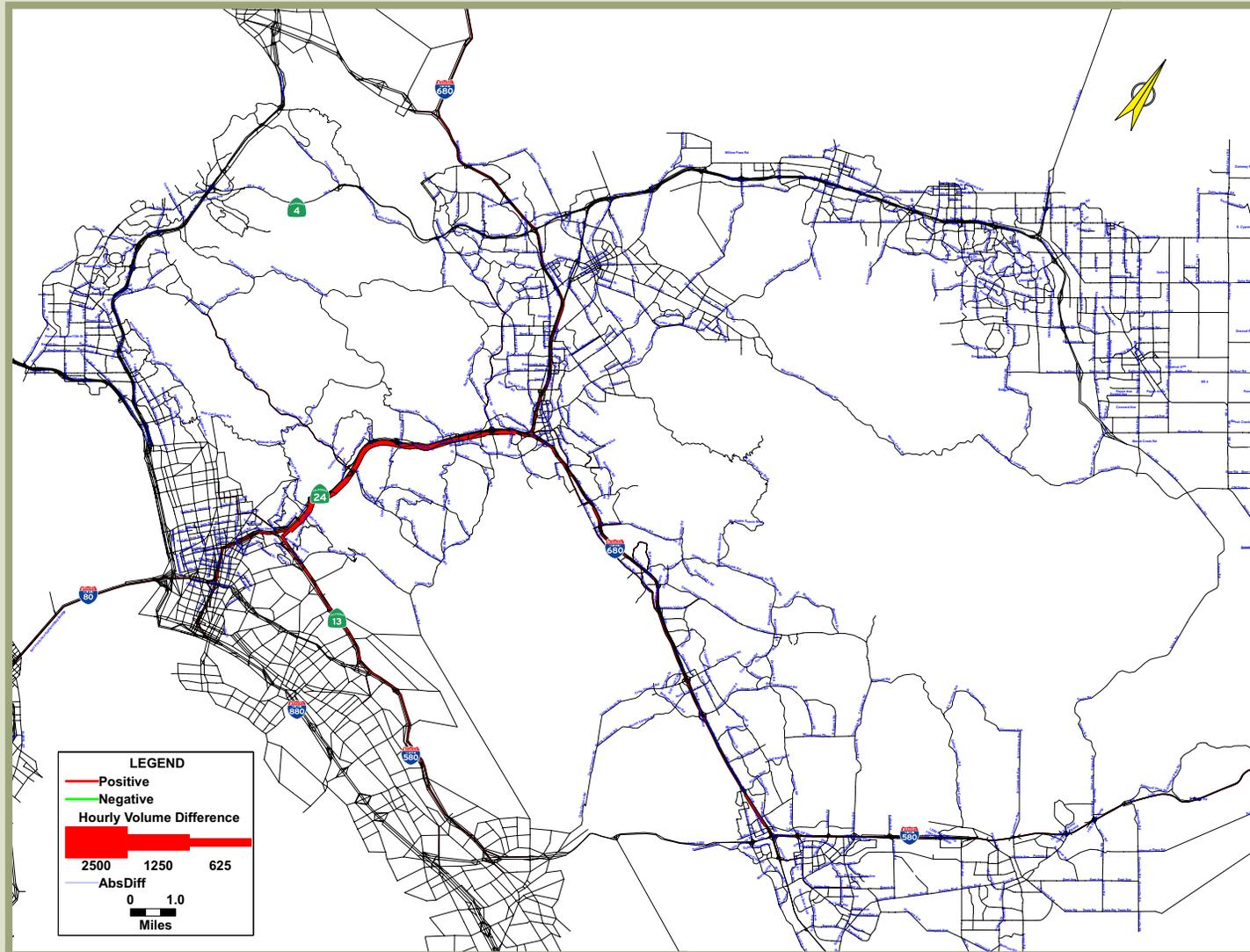
Difference Between 2-Lane & No Project (2032) Hourly Volumes—AM Eastbound



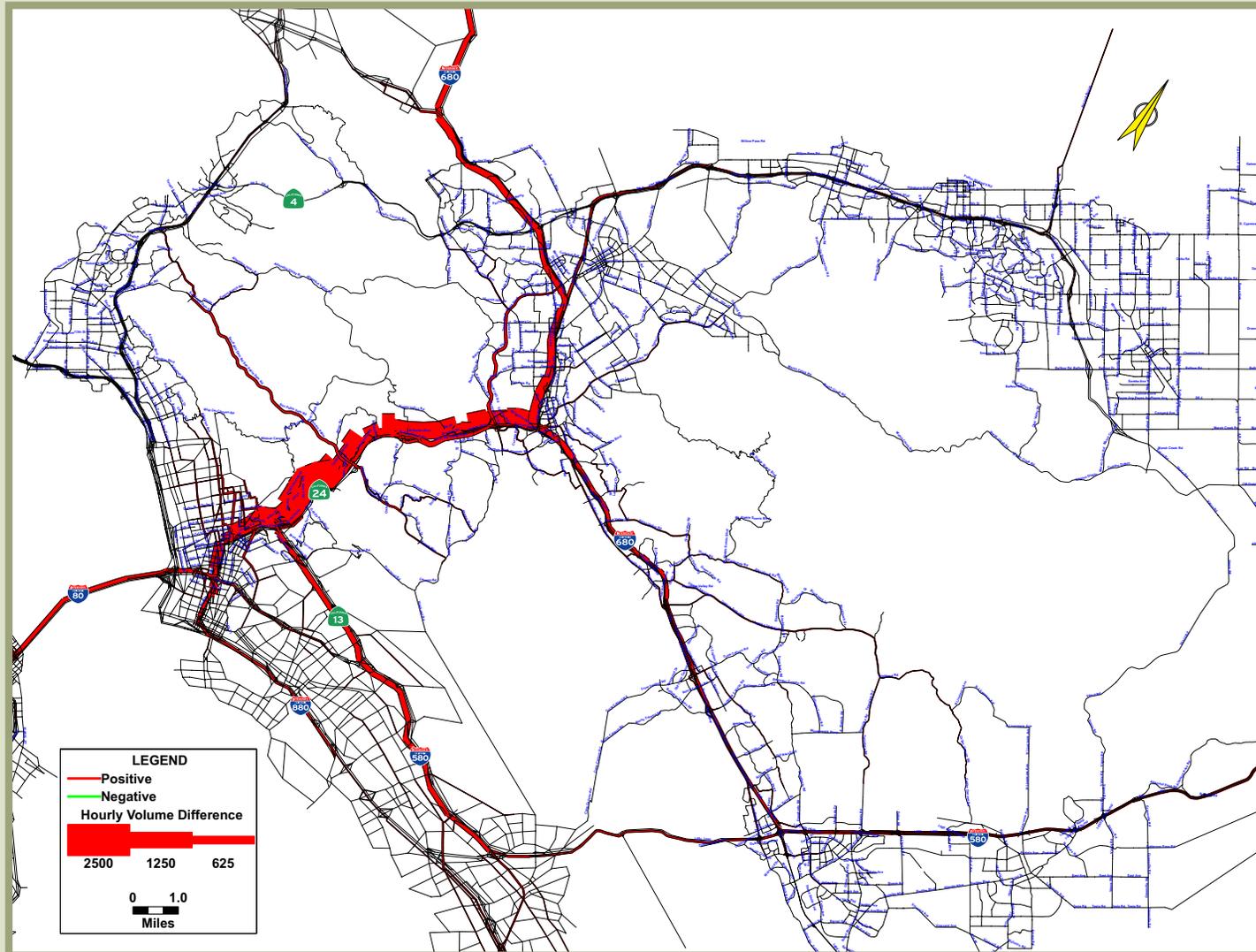
Difference Between 2-Lane & No Project (2032) Hourly Volumes—PM Westbound



Difference Between 3-Lane & No Project (2032) Hourly Volumes—AM Eastbound



Difference Between 3-Lane & No Project (2032) Hourly Volumes—PM Westbound



- **Eliminates daily tunnel bore reversal operations**
 - Reduces bore reversal related traffic conflicts
 - Reduces exposure of Caltrans maintenance personnel
 - Reduces the potential for congestion-related accidents
 - Improves mobility for traveling public and access for emergency crews

- **Relieves weekday off-peak direction congestion on Route 24**
 - Eastbound AM
 - Westbound PM

- **Relieves weekend daytime congestion on Route 24**
 - Eastbound AM & PM
 - Westbound AM & PM

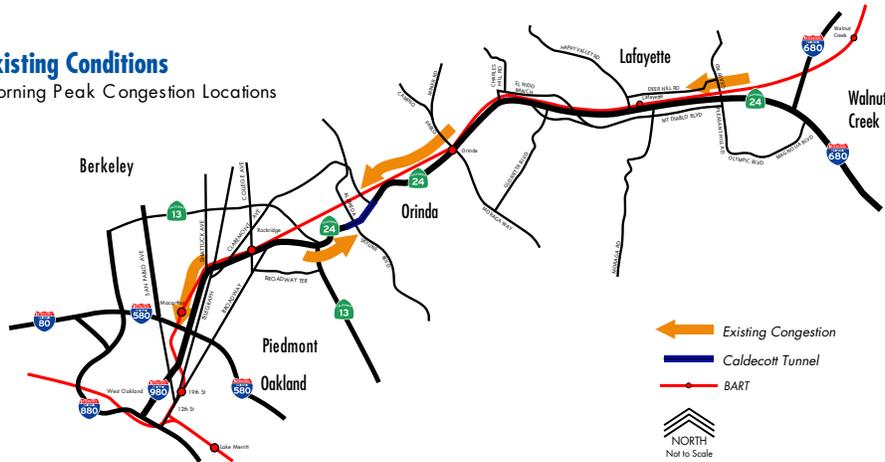
- **Relieves weekday congestion on Route 13**
 - Northbound AM



Morning Traffic Congestion

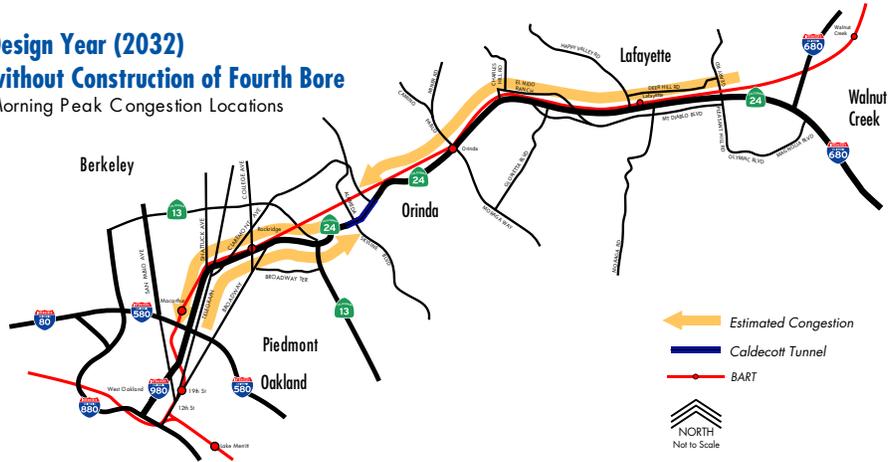
Existing Conditions

Morning Peak Congestion Locations



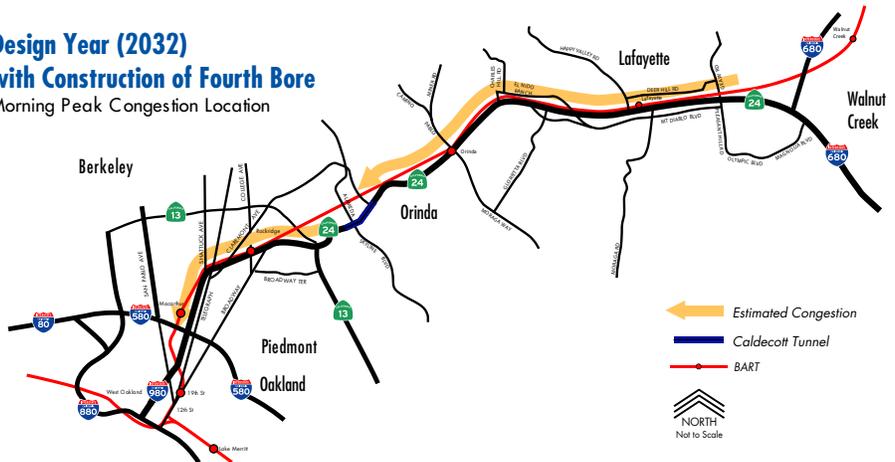
Design Year (2032) without Construction of Fourth Bore

Morning Peak Congestion Locations



Design Year (2032) with Construction of Fourth Bore

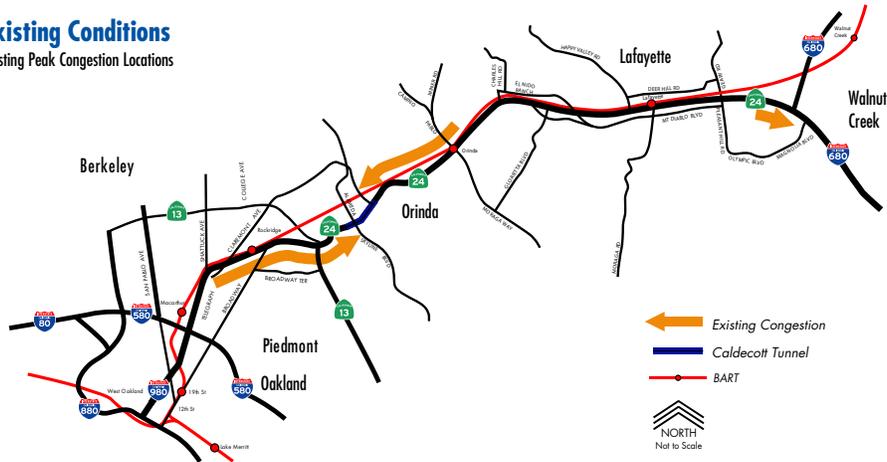
Morning Peak Congestion Location



Evening Traffic Congestion

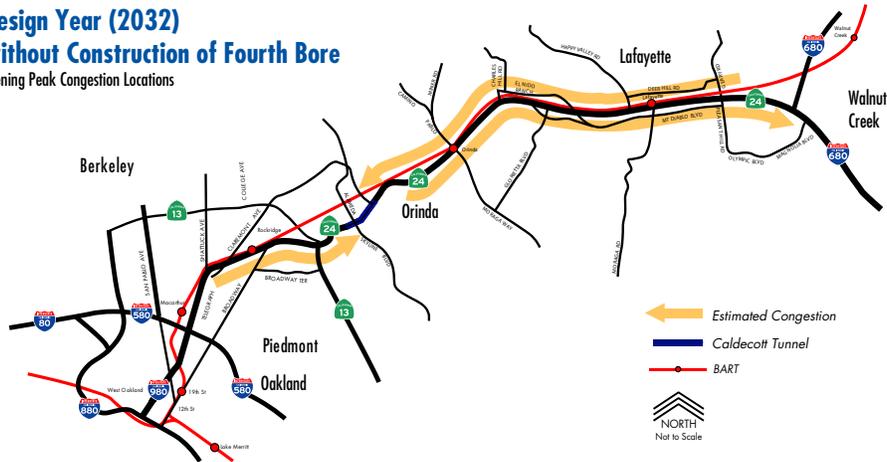
Existing Conditions

Existing Peak Congestion Locations



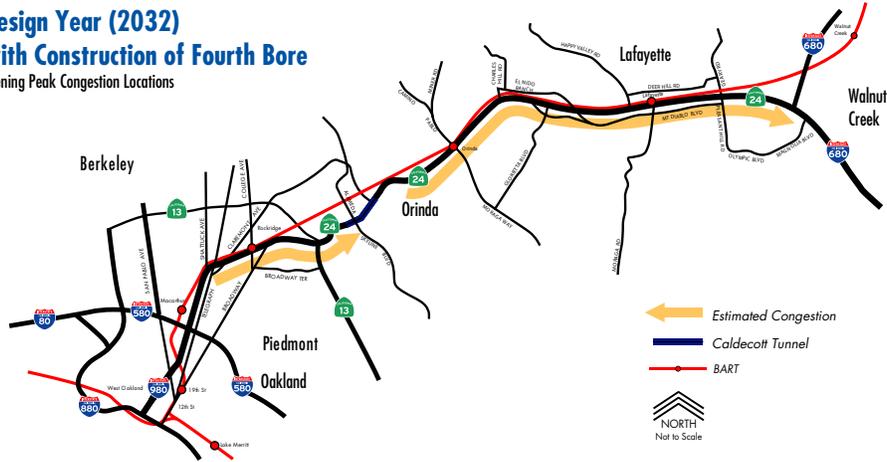
Design Year (2032) without Construction of Fourth Bore

Evening Peak Congestion Locations

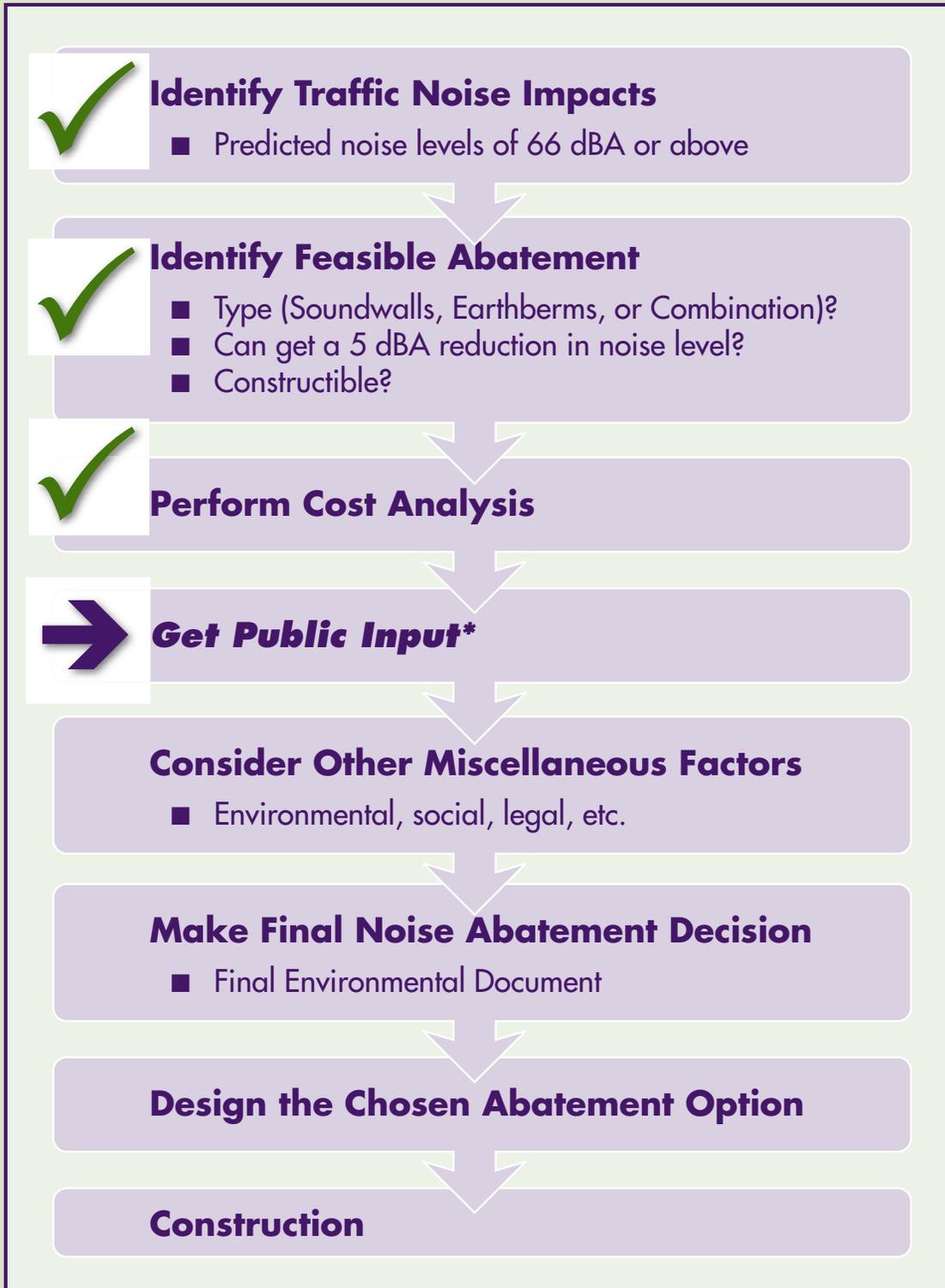


Design Year (2032) with Construction of Fourth Bore

Evening Peak Congestion Locations

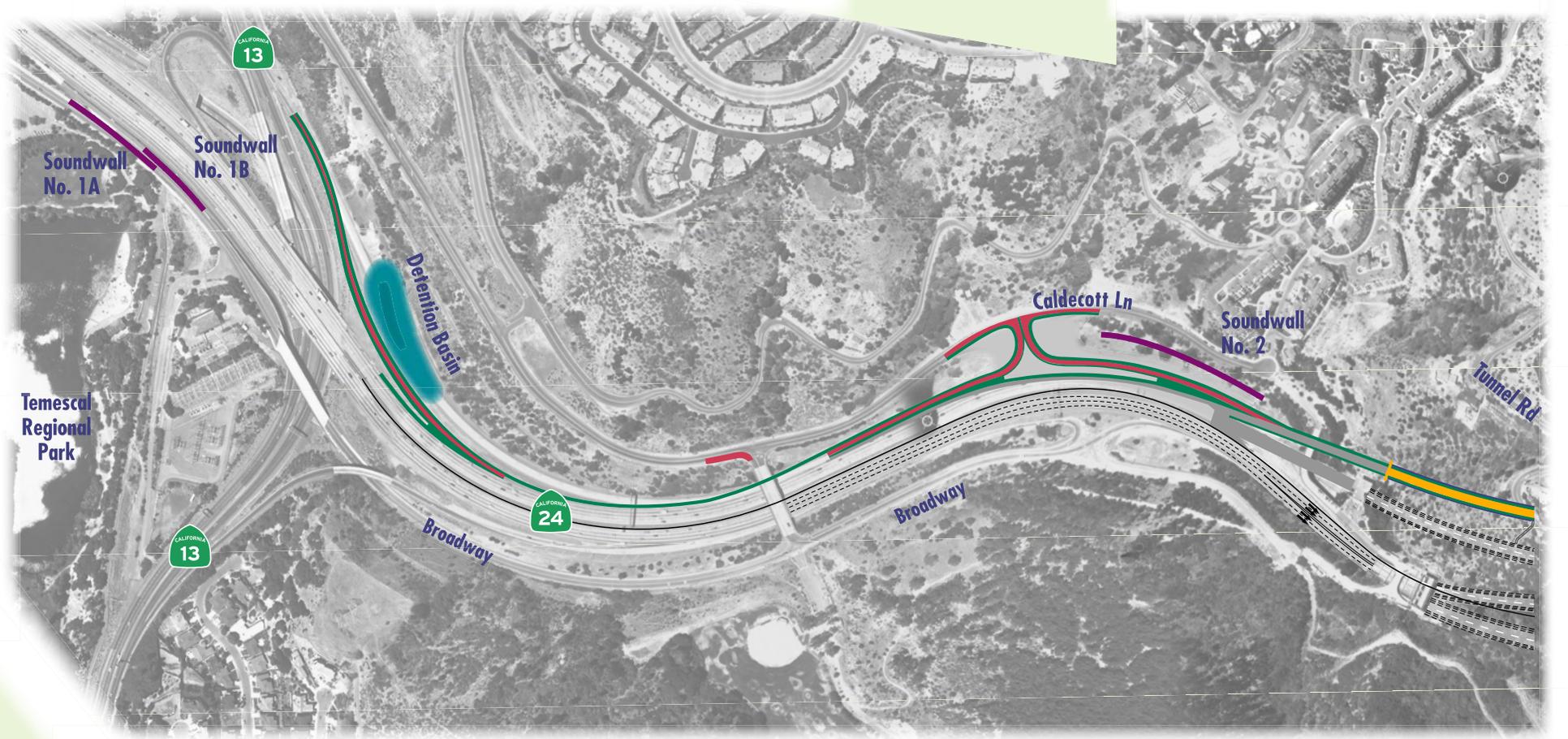


Determining Noise Abatement



***Soundwalls are not guaranteed. We need your input!**

Soundwalls Under Consideration

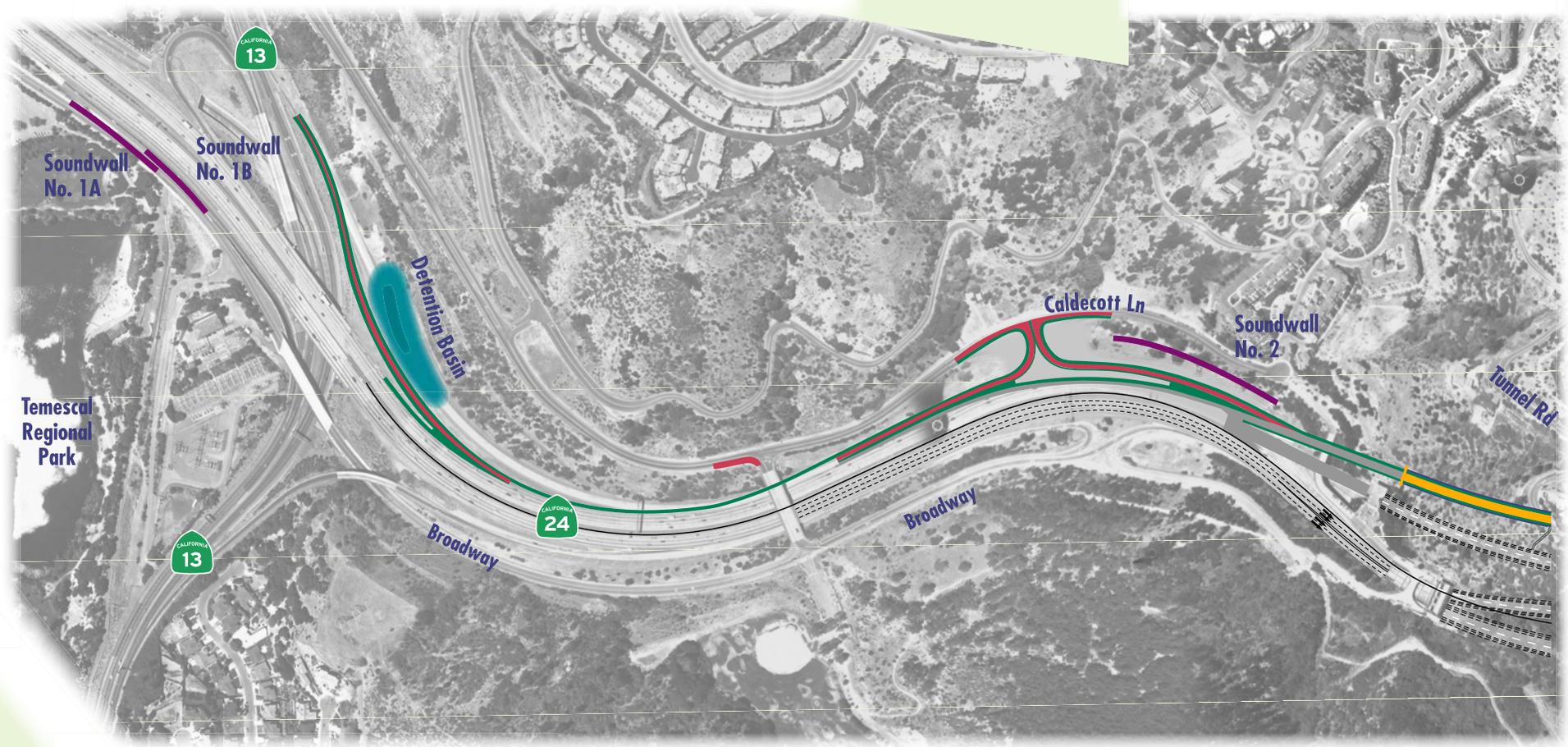


LEGEND

- Emergency Walkway
- Tunnel
- Highway
- Ramp
- Shoulder
- Soundwall



Soundwalls Under Consideration

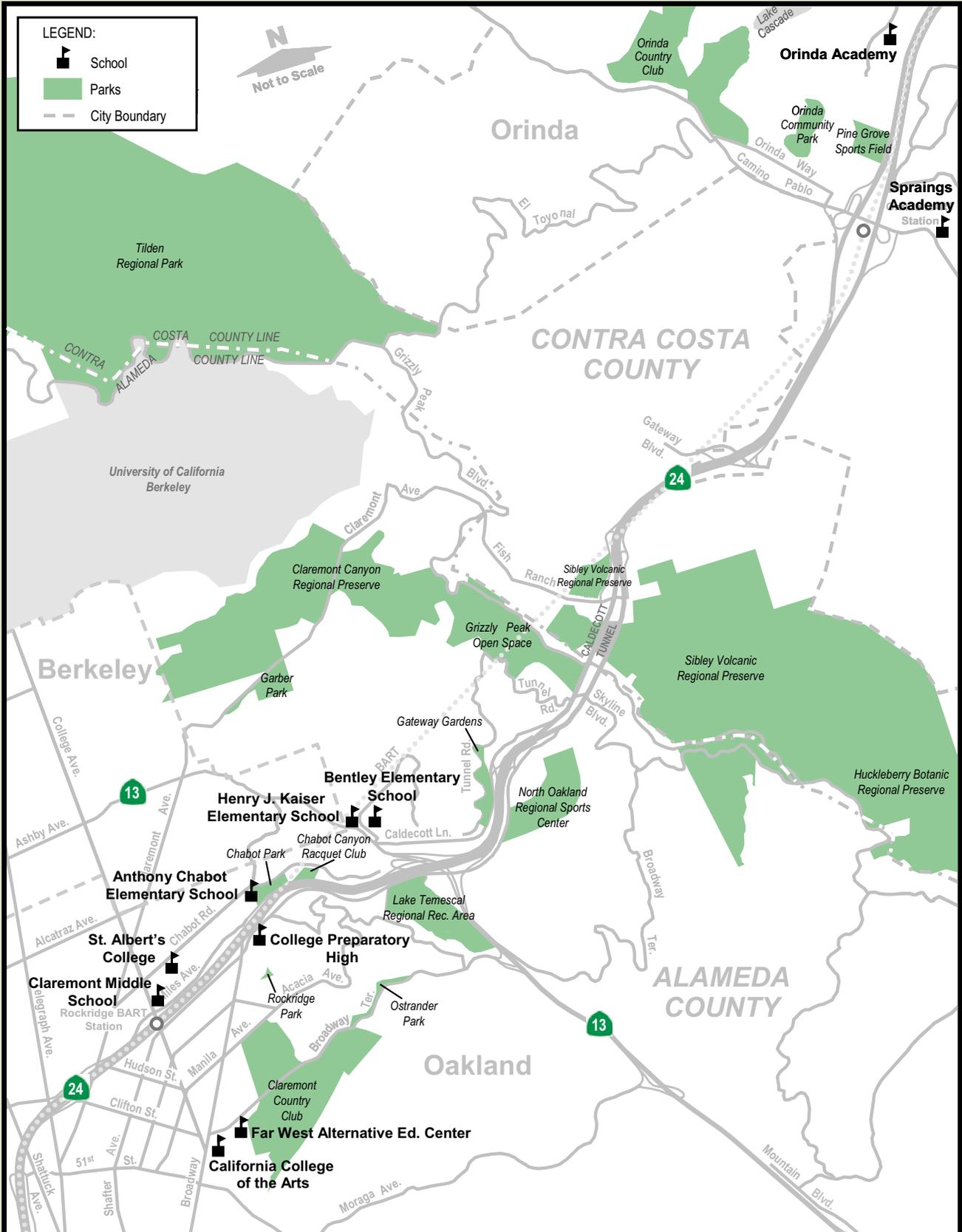


LEGEND

-  Emergency Walkway
-  Tunnel
-  Highway
-  Ramp
-  Shoulder
-  Soundwall



RECREATION AND SCHOOL FACILITIES IN THE PROJECT AREA



Environmental Findings by Alternative



AFFECTED RESOURCE	POTENTIAL IMPACTS		
	ALTERNATIVE		
	2N	3N	No-Build
Air Quality	Reduced congestion in off-peak direction would lower air emissions.		Continued congestion in off-peak direction would contribute to increased air emissions.
Construction Phase Impacts	Increased truck traffic, noise, dust, and visual impacts.		No impacts.
Cultural Resources	Archeological: Unlikely to disturb or discover buried archaeological resources.		No impacts.
	Historic: No effect on historic eligibility of Caldecott Tunnel Bores 1 and 2.		No impacts.
Geology / Seismology	Increased drainage from new tunnel could lower groundwater levels and reduce landslide hazard .		No impacts.
	Project lies within a seismically active region and is crossed by mapped traces of the Hayward Fault.		No impacts.
	Increased surface erosion could negatively affect slope stability.		No impacts.
Growth Inducement / Community Impact	Project supports local planning goals and policies to improve traffic circulation along State Route 24.		Project does not support local planning goals and policies to improve traffic circulation along State Route 24.
	Project would not induce unplanned growth.		
	Enhances access to public facilities in the project area.		Not Applicable
	Economic activity generated by project construction employment.		No impacts.
Hazardous Waste / Materials	Potential for aerially deposited lead contamination in unpaved areas from former motor vehicle exhausts.		No impacts.



Environmental Findings by Alternative



AFFECTED RESOURCE	POTENTIAL IMPACTS		
	ALTERNATIVE		
	2N	3N	No-Build
Hazardous Waste / Materials	Potential for naturally occurring asbestos and hydrocarbons.		No impacts.
Hydrology / Floodplain	Project is not within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain.		
	No major drainage alteration.		No drainage alteration.
	Potential groundwater infiltration.		No impacts.
Natural Environment	No impact.	Permanent impacts to perennial bunch grasses.	No impacts.
	Permanent impacts to annual grassland.		No impacts.
	39 individual coast live oaks removed.	43 individual coast live oaks removed.	No impacts.
	149 urban trees removed.	161 urban trees removed.	No impacts.
	Potential to introduce noxious weeds into uninfested areas.		No impacts.
	Potential for impact to California Red-Legged Frog, Western spadefoot toad, and Alameda whipsnake, which may enter project vicinity.		No impacts.
	Potential for impact to roosting and nesting sites for white-tailed kite, Raptors, and other migratory birds.		No impacts.
Noise	88 residences with noise levels higher than 66dBA Leq(h). Project-related increases would be no more than 3dBA.	90 residences with noise levels higher than 66dBA Leq(h). Project-related increases would be no more than 3dBA.	88 residences with noise levels higher than 66dBA Leq(h). No project-related increase in noise.
	22 future residential units with noise levels higher than 66dBA.		



Environmental Findings by Alternative



AFFECTED RESOURCE	POTENTIAL IMPACTS		
	ALTERNATIVE		
	2N	3N	No-Build
Paleontology	Potential for fossil finds.		
Right-of-way	R/W easements will be required; no displacements.		No impacts.
Traffic	Growth in travel demand (3N higher than 2N, and 2N higher than No-Build). Eliminate directional capacity gap in off-peak direction. Increased travel demand at nearby intersections (3N incrementally higher than 2N, and 2N incrementally higher than No-Build). No significant adverse effects to intersection operations.		No impacts. High growth in travel demand including nearby intersections.
Visual/Aesthetics	Changes in the visual setting (new portal facades, on/off ramps, retaining walls, noise barriers, vegetation loss).		No impacts.
Water Quality	Preliminary calculations estimate at least 1.1 hectares (2.8 acres) of added impervious area.	Preliminary calculations estimate at least 1.7 hectares (4.1) of added impervious area.	Greater deposition of particulates from exhaust and heavy metals from braking due to continued congestion.
Wetlands	.008 hectare (.02 acre) of slope wetland SW-03 would be permanently filled. .0008 hectare (.002 acre) of other waters of the U.S. at intermittent/ephemeral stream channel IES-05 would be permanently filled.		No impacts. No impacts.



Abatement / Mitigation Measures by Alternative



RESOURCE ISSUE

ALTERNATIVE

Construction Phase Impacts

2N

3N

Noise: enclosures for compressors; temporary soundwall; construct noise barriers as first items of work; reduce equipment noise, material deliveries, and transport of excavated material; keep community informed in advance of noisy activities.

Monitoring: if blasting is required, monitor homes for vibration.

Dust and Dirt: applying water or dust palliatives; wetting down stockpiles, providing wheel washes and street-sweeping services; sealing aggregate and cement silos; Best Management Practices.

Community Relations: on-going community coordination and construction inquiry response protocol.

Cultural Resources

If buried cultural materials are encountered, stop work until a qualified archaeologist can evaluate the find.

Geology/Seismology

Design tunnel and portals to withstand a 1,500-year seismic event and walls and other structures to withstand a 500-year event.

Ensure slope stability during construction.

Conduct detailed geotechnical investigation during final design.

Hazardous Wastes/Materials

Test for Aerially Deposited Lead (ADL), asbestos, and groundwater contamination during Zfinal design.

Implement Health and Safety Plan; special handling for any ADL and/or asbestos.

Use Best Management Practices for naturally occurring asbestos.

Extract contaminated groundwater according to regulatory requirements.

Assess need for managing naturally occurring hydrocarbons during construction.

Hydrology/Floodplain

New drainage facilities to convey roadway stormwater and tunnel washwater in current pathways.

New underdrain trench at each side of inside-tunnel pavement to protect roadway from groundwater infiltration.



Abatement / Mitigation Measures by Alternative



RESOURCE ISSUE

ALTERNATIVE

Natural Environment

2N

Not Applicable

3N

Native grassland: designate and fence areas adjacent to construction as Environmentally Sensitive Area (ESA) to prevent accidental intrusion of workers and equipment.

Perennial bunch grasses temporarily affected will be re-seeded with a native seed mix.

Oak trees: ESAs will fully enclose the dripline of oaks and any limbs that need to be removed will be pruned by an arborist in accordance with arboricultural industry standards; ESA fencing will restrict vehicle and foot traffic near trees, prohibit fueling, equipment/material storage, and placement of fill or other materials over root zone. Oak trees removed will be replaced at 3:1 to 5:1, ratio to be determined in coordination with the Department of Fish and Game (CDFG).

Urban trees: consult CDFG to determine appropriate mitigations; prepare Tree Replacement and Planting Plan consistent with local land use plans and goals.

Noxious weeds: worker awareness training, avoidance of sensitive communities, and cleaning of construction machinery before subsequent use would reduce spread of noxious weeds. Disturbed areas would be restored after construction.

California red-legged frog, Western spadefoot toad, white-tailed kite, and nesting raptors: use pre-construction surveys and protective measures to avoid impacts. Also use work windows to protect the frog and toad.

Alameda Whipsnake: consult with U.S. Fish and Wildlife Service to determine measures to be implemented.

Noise

Consider construction of noise barriers: soundwalls, earth berm or a combination.

Paleontology

Monitor during excavation of eastern tunnel approach and stop work until any vertebrate remains encountered can be evaluated or preserved.

Visual/aesthetics

Plant vines/shrubs to screen views of new sound and retaining walls.

Design sound and retaining walls with Art Deco features to compliment existing portal structures and use surface texture/stain to enhance the rural character.

Re-vegetate affected areas with similar species, particularly the hillsides around the new tunnel portal and the area between SR 24 and Caldecott Lane.

Water Quality

Reduce contaminants in runoff during and after construction in accordance with Regional Water Quality Control Board requirements.

Wetlands

Consult with U.S. Army Corps of Engineers to determine requirements.

